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AN EXAMINATION OF DETERMINANTS OF INDIA'S INTRA-INDUSTRY TRADE*

L.G. Burange and Hemangi K. Kelkar

Following the economic liberalisation that took place in the early 1990s in India, the share of intra-industry trade (IIT) in total trade has increased significantly. Various factors such as the rise in Per Capita Income (PCI), Gross Domestic Product (GDP), product differentiation, ease of entry for foreign firms and reduction in trade barriers have been found to be the major determinants of IIT. These determinants of IIT have varied from country to country. However, there is an issue of whether a country's IIT is dominated by vertical IIT (VIIT) or horizontal IIT (HIIT). Various methodologies have been developed to examine this segregation. The present paper attempts to modify the existing methodologies related to segregation of IIT by attempting to identify the determinants of India's IIT during the period of 1990-91 to 2015-16. The trends in IIT show that India's IIT is dominated by VIIT though the HIIT is increasing at a higher rate over the period from 1990-91 to 2015-16. This study applies the Toda and Yamamoto method and also uses the modified Granger causality test to identify the causal relationship between IIT and its determinants. A unidirectional causality is observed from GDP, trade openness and PCI to IIT while unidirectional causality is found from EP and trade openness to HIIT.

Key words: IIT, Granger Causality, VIIT, HIIT **JEL Codes:** F140

1. INTRODUCTION

During the post-liberalisation period, the Indian economy witnessed rapid economic growth. The opening up of the economy reduced trade barriers and consequently, the share of merchandise trade in gross domestic product (GDP) surged from 12.72 percent in 1990 to 31.79 percent in 2015 [World Bank, 2016]. This remarkable growth in trade is mainly due to the simultaneous increase in exports and imports of products between two different industries (inter-industry trade) and within the same industry (intra-industry trade (IIT)). Under the new economic policy, preferential treatment was given to export-promotion policies as against import-substitution policies which were adopted in the past. Further, this policy of liberalisation has also given an impetus to economic growth,

easy market access for products, foreign investments, product differentiation, economies of scale, demand for a variety of products, etc. As a result, domestic firms began facing competition from foreign firms. The import substitution policy being no longer dominant, firms focused on specialisation in production. Since then, domestic firms have been exploiting economies of scale to specialise in production as well as to compete with imports and in the process, they have benefited from the reallocation of resources within the industry. Thus, specialisation of firms in the industry resulted in the growth of IIT [Veeramani, 2004]. Accordingly, various studies have analysed the important factors contributing to the bilateral or multilateral growth in IIT.

The literature relating to determinants of IIT can be categorised into two groups. In first one,

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the focus is on country-specific factors where macroeconomic variables such as Gross Domestic Product (GDP), Per Capita Income (PCI), market size, trade barriers, geographical distance, and exchange rate are considered while in the other group, industry-specific factors such as product differentiation, economies of scale, presence of multinational enterprises, share of research and development, etc., are examined. On the basis of product differentiation, IIT can be segregated into vertical IIT (VIIT) and horizontal IIT (HIIT). The determinants of IIT vary according to the type of IIT. There are a number of techniques that have been developed to segregate IIT. In the Indian context, there have been some empirical studies which focus on the determinants of IIT, in general, and segregation of IIT, in particular. The present paper tries to identify major factors determining India's IIT and also examines whether an increase in economic growth, foreign direct investment (FDI), PCI and exports have contributed to the growth of IIT. In other words, it attempts to examine whether there is a causal relationship between India's IIT and its possible determinants.

The paper is organised as follow. Section Two overviews the theoretical and empirical literature on the determinants of IIT while Section Three covers data sources and methodology that have been used for the analysis. In Section Four, the empirical results are presented and analysed. Finally, Section Five presents the concluding observations.

2. REVIEW OF LITERATURE

The literature relating to the determinants of IIT can be distinguished between those dealing with country-specific factors and those with industry-specific factors. However, many initial studies did not focus on the segregation of IIT into two parts, that is, HIIT and VIIT, that is (horizontal and vertical IIT). It was only after the pioneering study of Abd-el- Rahman [1991], that IIT has been classified into HIIT and VIIT. If

products are close substitutes to each other and differentiable only in their outer attributes, then IIT in such products is considered to be HIIT. These products are, thus, similar in terms of quality, cost and technology used for their production. VIIT, in contrast, is associated with large differences in the quality of the products. Thereafter, on the basis of unit value (value divided by quantity), IIT has been segregated into VIIT and HIIT by Greenaway, et. al., (GHM) [1994] and Fontagane and Freudenberg (FF) [1997]. Both these methods used the ratio of unit value of export to that of import and used a dispersion percentile (α) to segregate IIT into HIIT and VIIT [Andresen, 2003]. These methods have been widely used for empirical analysis.

According to Azhar and Elliott [2006] the GHM and FF methods did not consider the proportionality effect, *i.e.*, when the unit values of exports and imports are equal but with opposite signs with a problem arising with the disproportionate scaling of the unit values of export and import of the product. To solve this problem, they proposed a complementary approach, namely, 'Product Quality Space' (PQS) to segregate IIT. Azhar and Elliott [2006], considered a horizontally differentiated two-way trade in the products if import and export unit values of the products are at least 85 percent of their cost. "Intuitively, as quality reflects price it is useful to consider similarity in costs as a means of choosing a cut-off point. What percentage of costs, therefore, does two-way trade in a product need to share to be considered horizontally differentiated? For example, if the imports and exports of a product share at least 85 per cent of their costs (reflected in the price per unit of output) then it is not unreasonable to consider this as two-way trade in a horizontally differentiated product. Likewise, if the costs of the export country exceed those of the import country by 50 per cent (so they only share 50 per cent) then it would seem reasonable to classify this IIT as VIIT" [Azhar and Elliott, 2006, P. 485]. The product price is the final price of the

products which includes per unit advertisement or selling costs in unit costs used for this exercise [Azhar and Elliott 2006]. With a cut-off at 85 percent, the product quality of vertically differentiated index (PQV) distinguishes IIT. Thus, from a home country perspective, IIT is classified as HIIT, if $0.85 \leq PQV \leq 1.15$ and VIIT otherwise. VIIT is further classified into low quality vertically differentiated products if $PQV \leq 0.85$ and considered as high quality vertically differentiated product if $PQV \geq 1.15$. The cut-off points of 85 percent and 50 percent are arbitrarily chosen in Azhar and Elliott [2006]. However, the method developed in the present paper does not choose the cut-off point arbitrarily.

The major drawback of the methods outlined above relates to the dispersion percentile (α) to segregate IIT into HIIT and VIIT. The value of (α) is considered as an arbitrary measure. Thus, the segregation of IIT varies according to the choice of dispersion percentile. Although, the choice of cut-off point is crucial which can lead to a change in the proportion of IIT into different categories. It is also argued that the cut-off point may differ as per country specific factors such as tariff rate, transportation cost, etc. Thus, the selection of cut-off point creates the subjectivity in the empirical results.

The proposed method in this paper tries to overcome this issue. Based on the work of Azhar and Elliott [2006] (AE), the 'Product Quality Index' (PQI) is developed to segregate IIT. PQI is not a country specific measure and therefore, can be used for any type of country such as developing or developed. The proposed formula is discussed in the next section. The segregation of IIT also plays an important role in examining the determinants of IIT. It is because some of the determinants positively affect VIIT, while some determinants boost HIIT. Therefore, the segregation of IIT is necessary and useful for a detailed analysis.

Empirically, a number of studies have focused on the determinants of VIIT and HIIT, while some studies developed the theoretical links between various determinants, of HIIT and VIIT. Early studies in this area are those of Dixit and Stiglitz [1977] and Lancaster [1980] both of which focus only on horizontal product differentiation, therefore, they are not related to segregation of HIIT from VIIT. Dixit and Stiglitz [1977] proposed the love for variety approach. They developed a model showing that due to income and substitution effect, demand for variety of products goes up. In the monopolistic market structure, firms prefer to supply large quantities of commodities with less quality variations. In monopolistic market structure, many firms are ready to enter in the market with a similar kind of products, which are described as close but imperfect substitutes to each other. Thus, the product differentiation occurs in terms of outer attributes but not in terms of the quality. The traded products may not differ in terms of quality; such a pattern of trade reveals the exchange of products which may differ only in their outer attributes. This came to be known later on as horizontal product differentiation. Lancaster [1980] propounded the favourite variety approach. He assumed that consumer preferred a product for which he had maximum willingness to pay. These preferences differ from consumer to consumer. According to this model, individual consumer may have a unique ranking of different varieties, depending on how well the characteristics match with his own preferences. Opening up of the trade between two countries would boost up demand for different products. However, it depends on income of consumers and prices of the products. The consumers prefer different varieties, therefore the exchange of goods with similar quality does occur, which is known as horizontal product differentiation. Although both these approaches are based on HIIT, they highlight the fact that preferences based on the outer attributes of products can differ. Thus, there exists a demand for horizontally differentiated products.

On the basis of these two approaches, Krugman [1981] demonstrated a positive relationship between economic growth of a country and HIIT. With economic progress, a country can be integrated with other trading countries, thereby facilitating an increase in the exchange of similar products. Therefore, the proportion of HIIT increases with economic growth in terms of GDP growth rate and a positive relationship exists between the two.

In the case of VIIT, Falvey [1981] and Shaked and Sutton [1983] demonstrated that there is a positive relationship between PCI and IIT. They reasoned that high per capita income countries resort to the use of capital-intensive techniques in production and accordingly these countries tend to export high-tech capital-intensive products, leading to VIIT. With PCI being used as a proxy to measure income, an increase in PCI leads to an increase in consumption of qualitatively better products. Therefore, rise in PCI leads to an increase in demand for import of differentiated products. The increase in income creates the demand for products which are of higher (better) quality. Therefore, the increase in PCI leads to increase in VIIT. Further, opening up of the economy also tends to encourage FDI inflows. However, the link between FDI and IIT is vague. Whether FDI promotes HIIT or VIIT depends on the purpose and nature of FDI [Markusen, 1997].

On the basis of above mentioned theoretical insights, several studies focused on determinants of IIT at a bilateral or at a multilateral level. The most of them used country-specific determinants such as GDP growth, PCI, distance between trading partners, FDI, tariff rates, etc., [Balassa, 1986; Helpman, 1987; Bergstrand, 1990; Hummels and Levinsohn, 1995; Ekanayake, 2001; Veeramani, 2002; Bhattacharyya, 2005]. Some of the studies also explored industry-specific determinants of IIT [Caves, 1981; Toh, 1982; Greenaway and Milner, 1984; Hughes, 1993; Veeramani, 2007] such as product differentiation,

advertising to sales ratio, concentration ratio, share of FDI, economies of scale and research and development expenditure for the purpose of analysis. But these studies do not segregate IIT into VIIT and HIIT which was undertaken by Greenaway, Hine and Milner [1994]. They analysed country-specific factors affecting UK's IIT with 62 trading partner countries for the year 1988. Using ordinary least squares (OLS) regression, and they found that market size and membership in the customs union have a positive relationship with VIIT. Country-specific determinants for HIIT were not found to be significant. They concluded that the determinants of IIT differ according to the type of IIT, *i.e.*, the determinants of VIIT are different from that of HIIT.

Aturupane *et al.*, [1999] examined the determinants of IIT between Central and Eastern European nations from 1990 to 1995. They used the GL index [explained for our context below in equations (1) and (2)] [Grubel-Lloyd, 1975] to estimate IIT and the GHM index [Greenaway *et al.*, 1994] to segregate IIT into VIIT and HIIT. They used trade classification at six-digit level given by the European Union to estimate IIT. They found that trade data was inconsistent with three-digit industrial classification available for firm-level analysis. Accordingly, firm-level data was used to estimate industry-specific determinants. Using non-linear least squares method, they found that FDI and product differentiation had a positive and significant impact on VIIT and HIIT. However, economies of scale negatively affected HIIT, whereas it affected VIIT positively. They concluded that HIIT was largely determined by country-specific factors. Aturupane *et al.*, [1999] find the influence of country specific factors is more on HIIT than that on VIIT. It was thus confirmed that the determinants of IIT vary with the type of IIT.

Durkin and Markus [2000] explored the relationship between per capita GDP differences and IIT at a bilateral level. Bilateral IIT of United

States with its 20 OECD partner countries was examined from 1989 to 1992. Following the GHM methodology, IIT was distinguished as HIIT and VIIT. Their results revealed that GDP per capita difference and magnitude of VIIT between the trading partners was positively related. However, no such evidence was found for HIIT. Kinnerup [2005] examined country-specific determinants of IIT of France with its 61 trading partner countries. She used the Standard Industrial Trade Classification (SITC) at the five-digit level from 1990 to 1998 and found that VIIT in France increased with each of the trading partners during the period of the study. IIT was classified by using the methodology adopted by Abd-el-Rahman [1991]. The result confirmed that PCI and volume of trade were positively related to HIIT. Difference in human capital revealed a positive relationship, whereas average market size exhibited a negative relationship with HIIT. In the case of VIIT, none of the variables were significant, except volume of trade that affected VIIT positively.

Cabral *et al.*, [2013] studied the IIT of European Union with 51 trading partner countries for the year 2002. They used the GHM method to segregate IIT. Following the Chamberlain-Heckscher-Ohlin model [Helpman and Krugman, 1985], the study confirmed that the share of HIIT declined with the increase in factor endowments difference between the countries. However, the relationship with VIIT varied with the difference of factor endowments between the countries. All these studies explained that the factors determining HIIT and VIIT are different. However, none of the studies empirically examined the direction of the causal relationship between type of IIT (HIIT and VIIT) and its determinants.

Bhattacharyya [2005] examined the causal relationship between IIT and economic development for Korea. IIT was calculated using SITC revision 3 from 1963 to 1995. IIT was measured using the GL index. Further, the GHM index was

used to segregate IIT into HIIT and VIIT. The co-integration results revealed the existence of a long-run relationship between economic development and VIIT. Following the vector error correction model for Granger causality, the study observed a unidirectional causality from economic development to VIIT. However, no causality was found between economic development and HIIT.

In case of India, Das [2005] explored the determinants of India's IIT with the world, Asian economies and developed countries. The GL index for SITC manufactured products was measured from 1975 to 1992. His analysis revealed that the IIT increased during the underlying period. Using the OLS method, the study demonstrated that economic development represented by a proxy variable, namely, per capita gross national product positively affected IIT. It was also found that trade openness and the share of manufacturing export in total exports demonstrated positive relationship with IIT. Further, the ratio of total trade to GDP exhibited a negative relationship with IIT. However, the segregation of IIT was not considered in the analysis to examine the impact of each of these variables on HIIT and VIIT.

From the above review of literature, it is concluded that the determinants of IIT differ according to the type of the IIT. Various country and industry-specific factors led to the growth of IIT. The empirical literature reveals that the causal relationship between IIT (HIIT and VIIT) and its various determinants differ for each country. However, the causal relation between segregated IIT (HIIT and VIIT) has not been empirically tested in the Indian context. Furthermore, the empirical assessment of PQI has not been done so far. Thus, the objective of the paper is to analyse the causal relationship between IIT of India and its determinants during the post-liberalisation period. A new measurement technique is applied to segregate India's IIT into HIIT

and VIIT. Such an analysis is useful to understand the determinants of India's IIT. Moreover, segregating IIT into HIIT and VIIT helps to investigate the causal relationship at a more disaggregated level thereby attempting to fill the gap in the existing literature.

3. DATA SOURCES AND METHODOLOGY

This section discusses the data sources and methodology adopted for the study. Sub-section 3.1 focuses on the various data sources, adjustments made in the data and construction of the variables required for the analysis. Further, the measurement technique of IIT is discussed in this part. The proposed new index, namely, PQI, to segregate IIT is also explained. On the basis of PQI, IIT is segregated into two parts, namely, HIIT and VIIT. The methodology adopted for the study and the causality techniques are discussed in sub-section 3.2.

3.1. Data Sources, Adjustments and Construction of Variables

In order to analyse the determinants of IIT, the study relies on secondary data. The study uses India's foreign trade data given by INDIA TRADES compiled by the Centre for Monitoring Indian Economy (CMIE) from the publication of the Directorate General of Commercial Intelligence and Statistics (DGCI&S) of India titled "*Monthly Statistics of Foreign Trade*". The value of import is measured on cost, insurance, freight (c.i.f.) basis and that of exports on free on board (f.o.b.) basis. The difference in the estimation of C.I.F and F.O.B. leads to overvaluing import; as a result, the gap between export unit value and import unit value widens. Thus, export unit values on an f.o.b. basis are multiplied by 1.05, to adjust with import unit values on a c.i.f. basis as has been done in Ando [2006].

The study uses trade classification based on the Harmonised System (HS) of product description. This is the international standard system developed by World Customs Organisation (WCO) in 1988. It classifies traded products according to composition of the product. The HS is organised into 21 sections, these sections are further sub-divided into 99 chapters. Chapter 77 is set aside for common use by the countries. Chapters 98 and 99 are reserved for national use. Chapter 98 is reserved for special classification and miscellaneous goods. Similarly, Chapter 99 is used for temporary modifications. Therefore, these three chapters are excluded and remaining only 96 chapters for the analysis.

The detailed description of Sections and Chapters is given in Appendix-A, Table A1. At four-digit level, the chapters are further subdivided into industry. Each four-digit industry code is subdivided into an eight-digit product code. The eight-digit product code is the highest disaggregated HS-code. The study uses eight-digit HS code for the period 1990-91 to 2015-16. The data for GDP, PCI and FDI are obtained from the *Handbook of Statistics on the Indian Economy*, published by the Reserve Bank of India [RBI, 2016]. The data are in billion (100 crore) Rupees, which are converted into million (10 lakh) US Dollars by dividing by annual average exchange rate [RBI, 2016]. Since, the original data is in current prices, indices of real effective exchange rates have been used to convert it into constant prices with 2004-05 as the base year [RBI, 2016].

In order to find out the determinants of IIT, the first step is to construct the GL index. The GL index measures the degree of IIT. The index lies between 0 and 100. If exports for a year exactly match its imports, the GL index takes the maximum value of 100. On the other hand, a value of zero indicates only the inter-industry trade and no IIT.

$$GL_i = \frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)} \quad \dots(1)$$

where,

GL_i = IIT of the i th product

X_i = Exports of the i th product

M_i = Imports of the i th product

For aggregating the GL index at the two-digit level such as a section (S) and Chapter (C), a weighted average of IIT of a product at 8-digit is used where the weights considered are the share of each product in the total trade [Burange and Chaddha, 2007].

$$GL = \frac{\left[\sum_{i=1}^n (X_i + M_i) - |X_i - M_i| \right]}{\sum_{i=1}^n (X_i + M_i)} \times 100 \quad \dots(2)$$

The Compound Annual Growth Rate (CAGR) using the semi-log method has been estimated to analyse the growth of IIT. In the second stage, IIT has been segregated into VIIT and HIIT. Based on the methodology suggested by Azhar and Elliott [2006], the PQI is constructed (see Appendix-B). Similar to earlier methodologies, the unit value is measured by dividing monetary value of the product by the quantity of the product. After estimating the unit value, the product quality export index (PQXI) and product quality import index (PQMI) are constructed as follows:

$$PQXI_i = \frac{UV_i^X}{\overline{UV}_i} \quad \dots(3)$$

where,

$PQXI_i$ = Product Quality Export Index of i th Product

UV_i^X = Unit Value of Exported i th Product

$\overline{UV}_i = \frac{UV_i^X + UV_i^M}{2}$ = average unit value of the i th product

Similarly, the ratio of import unit value of the i th product to average unit value of the i th product is calculated as:

$$PQMI_i = \frac{UV_i^M}{\overline{UV}_i} \quad \dots(4)$$

$$PQI = PQXI - PQMI \quad \dots(5)$$

Substituting the values of PQXI and PQMI,

$$PQI = \frac{UV_i^X}{\overline{UV}_i} - \frac{UV_i^M}{\overline{UV}_i} \quad \dots(6)$$

$$PQI = \frac{UV_i^X - UV_i^M}{\overline{UV}_i} \quad \dots(7)$$

To summarise the result at the section level, weights for PQI are assigned as below,

$$W_i = \frac{UV_i^X + UV_i^M}{\sum_{i=1}^n (UV_i^X + UV_i^M)} = \frac{UV_i^T}{\sum_{i=1}^n UV_i^T} \quad \dots(8)$$

Superscript T refers to the total of import and export unit values. Thus, the weighted PQI of i th product takes the following form:

$$PQI_{wi} = PQI_i \frac{UV_i^T}{\sum_{i=1}^n UV_i^T} \quad \dots(9)$$

From a home country perspective, IIT is classified as HIIT, if PQI value lies between (-) 1 to 1 i.e., $-1 \leq PQI \leq 1$ and VIIT otherwise. If the quality of export and import products is similar then unit values of such products are close to each other. In such cases PQI takes values either zero or close to zero and therefore product is classified as HIIT products. However, the difference between the export unit value and import unit value of such products can be greater than one or less than minus one due to many factors such as transportation cost, packaging, advertisement, market imperfections, tariff and other trade barriers, etc. If such difference is more than one then it is assumed that export quality of the product is different from the import quality, hence the

product is classified as VIIT. Thus, when the export unit value is higher than the import unit value by more than one, then PQI assumes value more than one. On the other hand, when the export unit value is lower than import unit value of the product by more than one, then PQI assumes value less than one. Therefore, if PQI varies from -1 to 1 then products are grouped into HIIT.

Moreover, if exported and imported products are qualitatively different then difference between export unit value and import unit value is expected to be more than one. Thus, when value of PQI ranges ($PQI < -1$) and ($PQI > 1$) it's known as VIIT. When export unit value is substantially lower than the import unit value, then the PQI value is between -1 to -2, and the product is classified as LVIIT product. On the other hand, when the export unit value is substantially higher than the import unit value, the PQI is in the range of 1 to 2, then, the product is considered as HVIIT product. In short, if PQI ranges from $-1 \leq PQI \leq -2$ then trade is considered as low quality vertically differentiated intra-industry trade (LVIIT) and if PQI scaled between $1 < PQI \leq 2$ then the trade is considered as high quality vertically differentiated trade (HVIIT). Thus, on the basis of value of PQI the IIT is classified into three parts LVIIT, HIIT and HVIIT such as $-2 \leq LVIIT < -1 \leq HIIT \leq 1 < HVIIT \leq 2$. For LVIIT the country exports very low value products and imports high value products. For HVIIT products the country exports high value products and imports low value products. The separation of LVIIT and HVIIT will be useful in identifying the determinants of these two types of vertical integration.

In this way, the arbitrariness in the selection of the dispersion limit is removed. As mentioned in the review of the literature the choice of dispersion limits is crucial because the growth of each type of ITT (HIIT, LVIIT and HVIIT) depends on it. Therefore, the modified PQI index helps to distinguish IIT with a generalised method

that is without considering the arbitrary dispersion limit (Appendix B). Furthermore, The PQI is easy to estimate compared to other methods developed by GHM, FF and AE. It also has an advantage over these three methods as it is not country specific.

The other variables used to estimate the causal relationship are as follows:

Gross Domestic Product (GDP): It is considered as an indicator of economic growth of the country. We are using log of GDP as proxy for economic growth. It can also be used as a proxy for economic size. The data for GDP at factor cost at constant prices with base year 2004-05 is considered for the analysis.

Per Capita Net Domestic Product (PCNDP): PCNDP is defined by Per Capita Net Domestic Product at factor cost at constant prices using 2004-05 prices. It is used as an indicator of purchasing power of the people in a country.

Export Performance (EP): It is estimated by taking the ratio of country's export of merchandise goods to country's GDP. Intra-industry trade index covers only the merchandise trade and not the trade in the services. Thus, we have taken country's export of merchandise goods to country's GDP as a proxy for Export performance of the country [Bhattacharyya, 2005].

FDI: FDI inflows are an indicator of participation of the multinationals in the production process. This indicator is assumed to influence IIT positively. However, the causal relationship is dependent on the nature of FDI [Veeramani, 2002].

Hufbauer Index (HI): HI is constructed using the ratio of standard deviation of the export unit values to the un-weighted mean of those export unit values. It is simply the coefficient

of variation of export unit values. It indicates the variation in the export unit values; thus as the variation in export unit value increases, it is assumed to be proxy for greater product differentiation. It is expected to influence IIT positively.

Trade Openness (TO): It is defined as the ratio of total trade (export + import) to the GDP of the country. The larger the ratio, the higher is the country's integration with rest of the world and the country's trade openness. Therefore, we expect a positive relationship of it with IIT [Das, 2005].

3.2. Testing for Causality

The main objective of the study is to find the determinants of India's IIT. Given the variables that have been defined, the Granger causality test has been employed to identify the causal relationships between these variables and IIT. X_t is said to Granger-cause Y_t if lagged values of X_t provide statistically significant information to forecast Y_t [Granger, 1969]. Thus, a variable is said to Granger cause IIT if the past values of the variable are able to forecast future values of IIT. The null hypothesis of X_t not Granger causing Y_t is tested using the standard F-test. Therefore, if the test rejects the null hypothesis then X_t is said to Granger cause Y_t . If the variables are found to be level stationary, then the standard vector autoregressive (VAR) model can be used to estimate the causal relationship. However, when some of the series in VAR model are non-stationary, the Wald test statistic does not follow its usual asymptotic Chi-square distribution under the null. To overcome the issue, Toda and Yamamoto [1995] proposed modified Wald test under which when VAR is a combination of time-series following $I(0)$, $I(1)$ and $I(2)$ processes then modified Wald statistic will be asymptotically Chi-square distributed.

Toda and Yamamoto [1995] developed a technique to estimate the causal relationship for the variables with different orders of integration. The Toda and Yamamoto approach is based on Granger non-causality equation with an extra lag determined by the order of integration. This procedure requires the estimation of an augmented VAR in three steps. In the first step, the lag length (k) is determined. In time-series analysis, the dependent variables respond to the independent variable with a time lag. Thus, it is important to include the lagged values of the dependent variables. In order to determine the time period lag, the most widely used criteria are Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC) [Gujarati, 2004]. The second step involves the selection of the maximum order of integration ($dmax$) for the variables in the system. The stationarity of the time series is verified using the Augmented Dickey-Fuller (ADF) test developed by Dickey and Fuller [1979]. The null-hypothesis of non-stationarity is tested against the alternative hypothesis of stationarity. The t-statistic is compared with appropriate critical values designed by Dickey and Fuller to check the stationarity of the variables. If the value of t-statistic is greater than the critical value, then time-series is confirmed as stationary [Enders, 2004].

In the final step, the augmented VAR is formulated with selected lags plus the maximum order of integration ($k+dmax$) [Toda and Yamamoto, 1995]. Thus, even if variables are found to be a mixture of level stationary and first difference stationary, then the methodology proposed by Toda and Yamamoto [1995] can be used to establish the causality. The functional relation between IIT and its determinants can be shown as:

$$LIIT = f(LGDP, LPCI, LEP, LFDI, LHI, LTO) \dots (10)$$

where,

LIIT = Log of GL index

LGDP = Log of GDP

LPCI = Log of PCI
 LEP = Log of merchandise export as a percentage of GDP
 LFD = Log of FDI
 LHI = Log of HI
 LTO = Log of total trade as a percentage of GDP

Following the Toda and Yamamoto [1995] technique the bi-directional causality between IIT and its determinants is tested which can be written as:

$$\begin{aligned} \text{IIT} = & \alpha + \sum_{i=1}^{k+dmax} \beta_i \text{GDP}_{t-i} + \sum_{i=1}^{k+dmax} \delta_i \text{PCI}_{t-i} \\ & + \sum_{i=1}^{k+dmax} \gamma_i \text{EP}_{t-i} + \sum_{i=1}^{k+dmax} \theta_i \text{FDI}_{t-i} \\ & + \sum_{i=1}^{k+dmax} \phi_i \text{HI}_{t-i} + \sum_{i=1}^{k+dmax} \omega_i \text{TO}_{t-i} + \mu_t \end{aligned} \quad \dots(11)$$

Where, $\beta, \delta, \gamma, \theta, \phi, \omega$ are the parameters of the model and $dmax$ is the maximum order of order of integration. The null hypothesis of non-causality is tested to find the bi-directional causality between IIT and its determinants.

4. EMPIRICAL RESULTS:

The empirical results based on the methodology discussed in the earlier sections are presented in the following two sub-sections. In the first sub-section, the performance of India's IIT during post-liberalisation period is analysed. Section 4.2 explains the factors determining the growth of India's IIT and also reports the results from the causality test carried out.

4.1. Performance of India's IIT:

The performance of India's IIT is examined using the GL index for the period 1990-91 to 2015-16. GL index is expressed in percentage terms. The trend line in Figure 1 confirms that India's IIT is growing over the period under consideration. As shown in Table 1, the GL index stood at 7.11 in the year 1990-91, it reached a double-digit figure in 1996-97 and continued

Table 1. Index of India's IIT at the eight-digit level

Year	GL-Index
(1)	(2)
1990-91	7.17
1991-92	6.96
1992-93	7.23
1993-94	7.92
1994-95	9.01
1995-96	9.58
1996-97	10.06
1997-98	11.44
1998-99	10.58
1999-00	11.12
2000-01	12.04
2001-02	13.06
2002-03	13.37
2003-04	15.49
2004-05	16.53
2005-06	16.57
2006-07	18.52
2007-08	19.77
2008-09	24.23
2009-10	20.85
2010-11	23.43
2011-12	19.53
2012-13	20.35
2013-14	19.62
2014-15	19.78
2015-16	22.14
CAGR(%)	5.16

thereafter; it reached at a peak of 24.23 in 2008-09. This steady increase in IIT reached to 22.14 in 2015-16, (Table 1). The IIT recorded a CAGR of 5.16 per cent during the period of two decades under consideration for the study. At the turn of the 21st century, the IIT of India has increased significantly. The contribution of IIT in total trade also increased. The share of number of IIT products in the total number of traded products (the number of IIT products divided by the total number of traded products, expressed as percentage) increased from 38 per cent in 1990-91 to 85 per cent in 2015-16 (Appendix-C, Table C1). In the early nineties, India's foreign trade was dominated by the one-way traded (inter-industry) products. More than sixty per cent of the traded products were one-way traded in the year 1990-91 and about forty per cent products were traded within the same industry (intra-industry). However, in recent years, the ratio has

been reversed. It also confirms that, in the wake of liberalisation, not only India's share of foreign trade in the world trade has increased but trade within the same industry (intra-industry) also increased significantly [Kelkar and Burange, 2016].¹

Figure 1: QI and UVI of India's Export to Japan at the HS-08 Digit Level



The GL index recorded the highest level in 2008-09, which was largely driven by VIIT. Increase in IIT shows that trade liberalisation entails reallocation of resources within the industry rather than between industries. The trade liberalisation measures implemented, during the reform process, gave an impetus to the factors like economies of scale, imperfect competition, product differentiation and created demand for varieties of products leading to simultaneous exports and imports of products within industry. The liberalisation process also led to reallocation of resources. Veeramani [2002] argued that reallocation of resources within an industry is easier because the required labour skills and other factors of production are likely to remain similar, compared to inter-industry trade, where transfer of resources takes place between the industries, where the nature of two industries is different. Thus, he concludes that liberalisation gave impetus to reallocation of resources in favour IIT in India.

The GL index (IIT) is decomposed into HIIT and VIIT on the basis of unit value measurement. The unit value is the average price of the product in the given bundle. Therefore, the products for which quantity data are unavailable (for any year) have not been classified into HIIT and VIIT. The number of products for which either quantity or value data is missing is declining over the period of time. The number of such products decreased from 174 in 1990-91 to 8 in 2015-16 with minor fluctuations. However, adding those products will add a spurious trend in GL which would show spurious effect on the other variables introduced as explanatory variables. Further, the excluded products are very small in number relative to the included products and the total weight of those excluded products is negligible in total IIT. India's exports and imports of products within the same industry with marginal differences in the price are classified as HIIT. However, the export and import unit price significantly varies, which means that products differ in terms of quality and

thus are classified as VIIT.² This presumes that the export unit price and the import unit price change in the same proportion over time.

As mentioned in the methodology, VIIT is further classified into two categories: low-quality VIIT and high quality VIIT. Accordingly, a decomposition of IIT index into HIIT and VIIT reveals that India's IIT is primarily dominated by HIIT (Table 2). It is also to be noted that IIT in

horizontally differentiated products has increased over a period of time with their composition witnessing a significant change. The index of HIIT increased to 18.95 in 2010-11 from 3.93 in 1990-91, but afterwards it decreased to 17.96 in the year 2015-16. The HIIT increased at a CAGR of 7.29 during 1990-91 to 2015-16. This indicates a narrowing of the gap between export and import unit values.

Table 2. Segregation of IIT index into HIIT and VIIT

Year	IIT						
	IIT Total (IIT + IIT not classified)	IIT	IIT not classified*	HIIT	VIIT (LVIIT+HVIIT)	LVIIT	HVIIT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1990-91	7.17	6.54	0.63	3.93	2.61	2.37	0.25
1991-92	6.96	5.90	1.06	3.25	2.65	2.38	0.27
1992-93	7.23	6.51	0.72	3.43	3.08	2.83	0.25
1993-94	7.92	7.34	0.58	4.23	3.11	2.85	0.26
1994-95	9.01	8.43	0.58	5.63	2.80	2.40	0.41
1995-96	9.58	9.00	0.58	6.28	2.72	2.31	0.41
1996-97	10.06	9.72	0.34	6.58	3.14	2.68	0.47
1997-98	11.44	11.00	0.44	6.91	4.09	2.79	1.31
1998-99	10.58	10.15	0.43	6.41	3.74	2.60	1.15
1999-00	11.12	10.79	0.33	6.88	3.91	2.35	1.57
2000-01	12.04	11.53	0.51	8.14	3.39	2.30	1.10
2001-02	13.06	12.58	0.48	8.82	3.76	2.42	1.35
2002-03	13.37	12.70	0.67	9.00	3.70	2.66	1.04
2003-04	15.49	15.27	0.22	10.62	4.65	3.25	1.41
2004-05	16.53	16.18	0.35	12.29	3.89	3.10	0.80
2005-06	16.57	16.18	0.39	12.55	3.63	2.66	0.97
2006-07	18.52	18.15	0.37	14.12	4.03	2.84	1.20
2007-08	19.77	19.20	0.57	15.61	3.59	1.84	1.76
2008-09	24.23	23.68	0.55	19.30	4.38	2.52	1.87
2009-10	20.85	20.23	0.62	15.12	5.11	2.93	2.19
2010-11	23.43	22.91	0.52	18.95	3.96	2.62	1.34
2011-12	19.53	19.43	0.10	16.03	3.40	2.44	0.97
2012-13	20.35	20.23	0.12	16.07	4.16	3.12	1.04
2013-14	19.62	19.49	0.13	16.14	3.35	2.15	1.21
2014-15	19.78	19.68	0.10	16.21	3.47	2.14	1.34
2015-16	22.14	21.90	0.24	17.96	3.94	2.16	1.78
CAGR (%)	5.16	5.57	-5.51	7.29	1.39	-0.23	7.20

*Either value or quantity data is not available

N.B.: These computations are based on application of the modified Azhar and Elliott method.

On the other hand, among VIIT, low-quality VIIT, LVIIT, is seen to dominate (Table 2). The VIIT index was 2.61 in 1990-91 but went up to 3.63 in 2005-06 and maintained the same level thereafter with some fluctuations. It increased at a CAGR of 1.39 percent during the period of the study. When the import unit value is higher than the export unit value, it implies that the country tends to export cheaper variety of products and imports the costlier variety. Such products are classified as low-quality VIIT. Although, the share of LVIIT is more in VIIT, the CAGR of LVIIT shows a negative growth of 0.23 during 1990-91 to 2015-16. This also reflects a narrowing of the gap between export and import unit values.

The major sections such as machinery and mechanical appliances (S-16), products of chemical and allied industries (S-6), plastic and rubber articles (S-7) recorded low-quality VIIT throughout the period of the study (Appendix-C; Table C2). Prepared foodstuffs beverage and tobacco (S-4) also contributed to HIIT; thus, most of the products traded under this section are considered as horizontally differentiated products. The HVIIT index recorded a CAGR of 7.20 percent during 1990-91 to 2015-16, improving from 0.25 in 1990-91 to 1.78 in 2015-16 (Table 2). The growing importance of HVIIT in VIIT reveals that the export of products for which the export unit value is higher than the import unit value is increasing over the period of time.

Economic theory postulates a positive relationship between economic growth of a country and the quality of traded products. With economic development of the country, the product quality improves from low-quality VIIT to HVIIT. This is revealed by the decline in the difference

between unit values of export and import. It is observed that the unit value of exported products has increased relative to the unit value of imported products and overall IIT shifted from low quality VIIT towards high-quality VIIT. Increase in HIIT and HVIIT confirms that India's IIT is improving in qualitative terms during period of 1990-91 to 2015-16.

4.2. Causality Test Results:

To examine the causal relationship between IIT and underlying variables, a three-step procedure is adopted. In the first step, stationarity of the variables is tested using the ADF test. It is found that the time trend is significant. Accordingly, the model with a constant and a time trend is chosen for testing stationarity. The results of ADF test are presented in Table 3. The null hypothesis on the existence of unit root has been tested for all the variables. From Table 3, it is observed that variables such as GDP, PCI, FDI and HI are found to be stationary at 5 percent level of significance. In contrast, variables such as GL, HIIT, VIIT, EP and TO are stationary at their first difference. These variables become stationary after first differencing. A VAR model is constructed using the variables with different orders of integration following Toda and Yamamoto [1995] method. The proposed method has an advantage that VAR can be formulated irrespective of the order of integration and co-integration properties. Before proceeding with the causality test, the appropriate lags have been chosen based on AIC and SBC (Table, 4). The selection of the lag is important in causality analysis as the result may vary with the differentiated lags. As per the lag selection criteria, one lag is chosen for the analysis.

Table 3. ADF Test Results

Variable	LEVEL			FIRST DIFFERENCE			Order of Integration
	t-statistic	Critical Value*	P-value	t-statistic	Critical Value*	P-value	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
lnGL	-3.60	-1.66	0.73	-3.61	-7.21	0.00	1(1)
lnHIIT	-3.60	-1.74	0.10	-3.61	-6.42	0.00	1(1)
lnVIIT	-3.60	-3.18	0.39	-3.62	-5.23	0.00	1(1)
lnGDP	-3.60	-4.46	0.00	--	--	--	1(0)
lnPCI	-3.60	-4.20	0.01	--	--	--	1(0)
lnEP	-3.60		0.18	-3.61	-4.60	0.00	1(1)
lnFDI	-3.61	-3.75	0.03	--	--	--	1(0)
lnHI	-3.60	6.45	0.00	--	--	--	1(0)
lnTO	-3.62	-0.92	0.93	-3.61	-3.55	0.05	1(1)

*indicates critical values at 5 percent level of significance.

Table 4. Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0.00	98.94	NA	0.00	-7.36	-7.01	-7.26
1.0	234.91	184.9182*	1.69e-15*	-14.31311*	-11.58283*	-13.55585*

* indicates lag order selected by the criterion

LR: Sequential modified LR test statistic.

FPE: Final prediction error.

AIC: Akaike information criteria.

SC: Schwartz information criteria.

HQ: Hannan-Quinn information criteria.

Furthermore, the results of the modified Wald test are presented in Table 5. It is seen from the Table that a unidirectional causality exists from GDP, PCI, TO and HI to IIT. However, causality from IIT to these variables is not found. It is therefore inferred that economic growth, rise in PCI and product differentiation increase the IIT of India. This result is in line with the theoretical reasoning that the proportion of IIT increases with the economic growth of the country. It can be argued that with the liberalisation of the Indian economy, policy efforts are made to reduce trade and investment barriers. For example, a policy of

import-substitution was substituted by an export promotion policy. All these factors lead to increased GDP, PCI and FDI in India. Rise in PCI has led to the demand for differentiated products. The increase in demand for various products has boosted product differentiation, leading to the exchange of similar products between the countries. Thus, it is inferred that increasing EP and PCI are boosting the IIT.³ Consequently, the variable HI which is used as a proxy for product differentiation also showed the unidirectional causal relationship to IIT.

Table 5. Toda-Yamamoto Causality Test Results for IIT

Null Hypothesis	Chi-square	Probability	Granger Causality
(1)	(2)	(3)	(4)
GDP Does not Granger Cause IIT	13.03782***	0.0015	GDP to IIT
IIT Does not Granger Cause GDP	0.191474	0.9087	
PCI Does not Granger Cause IIT	13.1799***	0.0014	PCI to IIT
IIT Does not Granger Cause PCI	0.1271	0.9384	
EP Does not Granger Cause IIT	12.1489**	0.0023	EP to IIT
IIT Does not Granger Cause EP	1015.32***	0.000	
FDI Does not Granger Cause IIT	4.569	0.101	IIT to FDI
IIT Does not Granger Cause FDI	22.1655***	0.000	
HI Does not Granger Cause IIT	15.0963***	0.0005	HI to IIT
IIT Does not Granger Cause HI	0.4886		
TO Does not Granger Cause IIT	8.9826**	0.0112	TO to IIT
IIT Does not Granger Cause TO	1.0424	0.5938	

***, ** and *denote 1, 5 and 10 percent level of significance (l.o.s.), respectively.

Two-way causality is found between EP and IIT; it inferred that the increasing share of export of merchandise goods in GDP boost trade within the same industry. Further, the increase in IIT also assists the growth of export and a growing IIT in the various sectors encourages FDI. Thus, unidirectional causality is found to be significant from IIT to FDI.

Having looked at the determinants of IIT, the

analysis is extended to HIIT and VIIT. Table 6 shows a unidirectional causality from TO and EP to HIIT. Rise in HIIT implies that the gap between export unit value and import unit value of the products is narrowing. This is the positive impact of trade openness. Thus, past values of TO assist the rise in HIIT. The unidirectional causality from HIIT to FDI is also found to be significant. However, no causality is observed between GDP, PCI, HI and HIIT.

Table 6. Toda-Yamamoto Causality Test Results for HIIT

Null Hypothesis	Chi-square	Probability	Granger Causality
(1)	(2)	(3)	(4)
GDP Does not Granger Cause HIIT	1.0145	0.6021	No Causality
HIIT Does not Granger Cause GDP	2.2784	0.3201	
PCI Does not Granger Cause HIIT	3.2295	0.1989	No Causality
HIIT Does not Granger Cause PCI	1.7438	0.4181	
EP Does not Granger Cause HIIT	11.9598	0.0025***	EP to HIIT
HIIT Does not Granger Cause EP	0.0918	0.9551	
FDI Does not Granger Cause HIIT	1.1252	0.5697	HIIT to FDI
HIIT Does not Granger Cause FDI	6.7579***	0.0341	
HI Does not Granger Cause HIIT	3.9446	0.1391	No Causality
HIIT Does not Granger Cause HI	22.8518	0.2403	
TO Does not Granger Cause HIIT	11.1203	0.0038	TO to HIIT
HIIT Does not Granger Cause TO	0.4803	0.7865	

***, ** and * denote 1, 5 and 10 percent l.o.s. respectively.

In a similar manner, the causal relationship between VIIT and other variables is also tested using Toda-Yamamoto Granger causality test. Significance of all the coefficients in the vector using chi-square distribution of modified Wald test is presented in Table 7. Unidirectional causality exists from TO and FDI to VIIT. The results match with the theoretical expectations. This might be due to the fact that India has abundant supply of labour and relative scarcity of capital. Thus, India exports a basket of commodities dominated by labour-intensive products and imports capital-intensive products [Bhat, 2011]. Although India's import basket is composed of high-technological products, it also exports similar low-technology intensive products [Das, 2005]. These exports and imports of technologically differentiated products boost VIIT which get reflected in unidirectional causality from TO to VIIT.

In addition, it is also inferred from Table 7 that unidirectional causality is found from FDI to VIIT. The increase in FDI is considered as being complementary to trade. The relationship between FDI and IIT depends on the nature of FDI. As per our findings, the growth in FDI leads to product differentiation due to which VIIT increases. Therefore, the result supports the theoretical argument that FDI complements trade, in the process increasing high quality imports. It is also observed that one-way causality exists from trade openness to VIIT. This is due to the fact that trade liberalisation favoured the intra-industry rather than inter-industry reallocation of resources (Veeramani, 2002). Such type of reallocation is dominated by vertically differentiated products. As a result, trade openness causes VIIT.

Table 7. Toda-Yamamoto Causality Test Results for VIIT

Null Hypothesis	Chi-square	Probability	Granger Causality
(1)	(2)	(3)	(4)
GDP Does not Granger Cause VIIT	2.6470	0.2662	No Causality
VIIT Does not Granger Cause GDP	2.2691	0.3216	
PCI Does not Granger Cause VIIT	4.5554	0.1025	No Causality
VIIT Does not Granger Cause PCI	2.4119	0.2994	
EP Does not Granger Cause VIIT	3.1671	0.2052	No Causality
VIIT Does not Granger Cause EP	0.5886	0.745	
FDI Does not Granger Cause VIIT	8.2265	0.0164	FDI to VIIT
VIIT Does not Granger Cause FDI	2.8511	0.2404	
HI Does not Granger Cause VIIT	1.4753	0.4782	No Causality
VIIT Does not Granger Cause HI	0.4650	0.7925	
TO Does not Granger Cause VIIT	3.8140	0.0014	TO to VIIT
VIIT Does not Granger Cause TO	1.2042	0.5476	

***, ** and * denote 1, 5 and 10 percent l.o.s. respectively.

5. CONCLUSIONS

The determinants of India's IIT for the post-liberalisation period are examined in this paper. India's IIT increased significantly from 1990-91 to 2015-16. It registered a CAGR of 5.16 percent per annum during the period of study. A new method, namely, using PQI has been used to segregate IIT into low quality vertical intra industry trade (LVIIT), horizontal intra industry trade (HIIT) and high quality vertical intra industry trade (HVIIT). This method has an advantage over the previous methodologies. The PQI does not consider the arbitrary dispersion limit hence it assists to reduce the ambiguity in the segregation of IIT. On the Basis of PQI, IIT is classified in HIIT and VIIT. It is inferred that this growth in IIT is largely influenced by VIIT. In contrast, the dominance of HIIT is found to be increasing over the period. The narrowing gap

between export unit values and import unit values leads to increase in HIIT of India. Economic theory postulates a positive relationship between economic growth and IIT. This relationship is examined using the modified Granger causality test developed by Toda and Yamamoto (1995). For estimation, variables such as GL, GDP, PCI, export to GDP ratio, FDI, HI and trade openness are used. Moreover, the causal relationship between these variables and IIT, HIIT and VIIT is also examined.

For estimating causal relationship, Toda-Yamamoto technique is applied where the variables are found to be integrated of different orders. The results show a unidirectional causality from GDP, PCI, HI to IIT. The economic growth of India boosted IIT which supports the contention that the proportion of IIT has increased with economic growth. In addition, an analysis of the

segregation of IIT into HIIT and VIIT reveals that the factors determining type of IIT are different. A unidirectional causality from TO and EP to HIIT is observed. In case of VIIT, one-way causality is observed from TO and FDI to VIIT. Adoption of policies by Government of India to attract FDI in various sectors led to the simultaneous growth of exports and imports of the products within the same industry [Burange et.al, 2015]. Thus, the policies in favour of FDI contributed to the growth of VIIT. The growing proportions of HIIT and VIIT indicate that India's foreign trade is increasing over the period. The rising trade to GDP ratio, i.e., trade openness, helped IIT to grow. In short, the opening of the economy not only increased GDP, PCI, FDI, export to GDP ratio and product differentiation but also increased India's IIT during the period 1990-91 to 2015-16.

NOTES

1. The present paper goes beyond our earlier publication. In the earlier publication, our focus was only to segregate India's IIT into HIIT and VIIT for the period 1990-91 to 2014-15. There we used the methodology developed by Azhar and Elliott [2006] to segregate IIT. However, in the present paper, we have used the modified PQI index to segregate IIT and we also try to analyse the determinants of IIT (1990-91 to 2015-16).

2. The export and import unit price may also reflect the general price rise of traded commodities in global trade. However, we consider the ratio of export unit price to its import unit price. Any changes in the said ratio over time due to the general price rise will be treated here to be tantamount to a change in the quality of the product over time.

3. These results support the theoretical insights developed by Falvey [1981] and Shaked and Sutton [1983].

REFERENCES

- Abd-el-Rahman, Kamal, 1991; Firms, competitive and national comparative advantages as joint determinants of trade competition, *Weltwirtschaftliches Archiv*, Vol. 127, No. 1.
- Ando, Mitsuyo, 2006; Fragmentation and Vertical Intra-Industry Trade in East Asia, *North American Journal of Economics and Finance*, Vol. 17 No. 3.
- Aturupane, Chonira, Simeon Djankov and Bernard Hoekman, 1999; Horizontal and vertical intra-industry trade between Eastern Europe and the European Union, *Weltwirtschaftliches Archiv*, Vol. 135, No. 1.
- Azhar, Abdul K. M., Elliott R. and Liu Junting, 2008; On the measurement of product quality in intra-industry trade: an empirical test for China, *China Economic Review*, Vol. 19 No. 2.
- Azhar, Abdul K. M. and Elliott R., 2006; On the measurement of product quality in intra-industry trade, *Review of World Economics*, Vol. 142, No. 3.
- Balassa, Bela, 1986; Intra-industry specialisation: a cross-country analysis, *European Economic Review*, Vol. 30.
- Bergstrand, Jeffrey. H., 1990; The Heckscher-Ohlin-Samuelson Model, the Linder hypothesis and the determinants of bilateral intra-industry trade, *Economic Journal*, Vol. 100 No. 403.
- Bhat, T. P., 2011; 'Structural Changes in India's Foreign Trade', A Study Prepared for Research Programme, *Structural Changes, Industry and Employment in the Indian Economy*, Macro-economic Implications of Emerging Pattern, Indian Council of Social Science Research (ICSSR), Institute for Studies in Industrial Development, New Delhi.
- Bhattacharyya, Ranajoy, 2005; Economic Development and Intra-Industry Trade in the Republic of Korea, *Journal of Economic Integration*, Vol. 20, No. 4.
- Burange, L. G., Pooja Thakur and Hemangi K. Kelkar, 2015; 'Foreign Direct Investment and Intra-Industry Trade in India's Manufacturing Sector: A Causal Relationship', ISFIRE Working Paper Series, WP-8, March.
- Burange, L.G. and Sheetal J. Chaddha, 2007; 'Growth in India's Intra-Industry Trade', *Journal of Indian School of Political Economy*, Vol. 19, Nos. 1 and 2.
- Cabral Manuel, Rod Falvey and Chris Milner, 2013; Endowment differences and the composition of intra-industry trade, *Review of International Economics*, Vol. 21, No. 3.
- Caves, Richard E., 1981; Intra-industry trade and market structure in the industrial countries, *Oxford Journals*, Vol. 33, No. 2.
- Das, Gouranga Gopal, 2005; Growth and pattern of intra-industry trade in manufactures in India's overall trade: A quantitative analysis, *Indian Journal of Economics and Business*, Vol. 4, No. 1.
- Dickey, David, A and Wayne A. Fuller, 1979; Distribution of the estimators for autoregressive time series with a unit root, *Journal of the American Statistical Association*, Vol. 74, No. 366.

- Dixit, Avinash K. and Joseph E. Stiglitz, 1977; Monopolistic competition and optimum product diversity, *The American Economic Review*, Vol. 67, No. 3.
- Durkin John T. and Markus Krygier, 2000; Differences in GDP per Capita and the share of intra-industry trade: The role of vertically differentiated trade, *Review of International Economics*, Vol. 8, No. 4.
- Ekanayake, E. M., 2001; Determinants of intra-industry trade: The case of Mexico, *The International Trade Journal*, Vol. 15, No. 1.
- Enders, Walter, 2004; *Applied Econometric Time Series*, Second Edition, Wiley Series in Probability and Statistics, John Wiley and Sons (Asia) Pvt. Ltd.
- Falvey, Rodney E., 1981; Commercial policies and intra-industry trade, *Journal of International Economics*, Vol. 11, No. 4.
- Fontagné, Lionel and Michael Freudenberg, 1997; Intra-industry Trade: Methodological Issues Reconsidered' CEPII Working Paper 97-01, Centre d'Etudes Prospectives et d'Informations Internationales, Paris.
- Granger C.W., 1969; Investigating Causal Relations by Econometric Models and Cross-spectral Methods, *Econometrica*, Vol. 37, No. 3.
- Greenaway, David, Robert Hine and Chris Milner, 1994; Country specific factors and pattern of horizontal and vertical intra-industry trade in the UK. *Weltwirtschaftliches Archiv*, Vol. 130, No. 1.
- Greenaway, David and Chris Milner, 1984; A cross section analysis of intra-industry trade in the U.K. *European Economic Review*, Vol. 25, No. 3.
- Grubel, H. G. and P. J. Lloyd, 1975; *Intra-Industry Trade: The Theory and Measurement of International Trade in Differentiated Products*, London: Macmillan Press.
- Gujarati, Damodar, 2004; *Basic Econometrics*, Fourth Edition, The McGraw-Hill
- Helpman, E., 1987; Imperfect competition and international trade: evidence from fourteen industrial countries, *Journal of the Japanese and International Economies*, 1.
- Helpman, E. and P. R. Krugman, 1985; *Market Structure and Foreign Trade- Increasing Returns, Imperfect Competition and the International Economy*, Cambridge, MA: MIT Press.
- Hughes, K., 1993; Intra-industry trade in the 1980s: A panel study. *Weltwirtschaftliches Archiv*, Vol. 129, No. 3.
- Hummels, David and James Levinsohn, 1995; Monopolistic competition and international trade: reconsidering the evidence, *Quarterly Journal of Economics*, Vol. 110, No. 3.
- Kelkar, Hemangi and L.G. Burange, 2016; India's vertical and horizontal intra industry trade during post-liberalisation period, *Trade, Investment and Economic Development in Asia: Empirical and Policy Issues*, Edited by Debashis Chakraborty and Jaydeep Mukherjee, Routledge Studies in Development Economics, Routledge, Taylor and Francis Group, Abingdon, UK.
- Kinnerup, Kristina, 2005; Country-specific determinants of intra-industry trade: A case for France. Student publication for Master's degree, Department of Economics, School of Economics and Management, LUND University, Sweden.
- Krugman, Paul, 1981; Intra-industry specialisation and the gains from trade, *Journal of political Economy*, Vol. 89, No. 5.
- Lancaster, Kelvin, 1980; Intra-industry trade under perfect monopolistic competition, *Journal of International Economics*, Vol. 10, 2.
- Markusen, James. R., 1997; Trade versus investment liberalisation, *Working Paper*, No. 6231, National Bureau of Economic Research.
- Reserve Bank of India, 2016; *Handbook of Statistics on the Indian Economy*, Reserve Bank of India, Mumbai, India.
- Shaked, Anver and John Sutton, 1983; Natural oligopolies, *Econometrica*, Vol. 51, No. 5.
- Toda, Hiro.Y. and Taku Yamamoto, 1995; Statistical inference in vector autoregressions with possibly integrated processes, *Journal of Econometrics*, Vol. 66, Nos. 1-2.
- Toh, Kiertisak, 1982; A cross-section analysis of intra-industry trade in U.S. manufacturing industries, *Weltwirtschaftliches Archiv*, Vol. 118, No. 2.
- Veeramani, Choorikkad, 2002; India's intra-industry trade under economic liberalisation: trends and country specific factors, *Weltwirtschaftliches Archiv*, Vol. 138, No. 3.
- Veeramani, Choorikkad, 2004; Growing intra-industry trade in manufacturing: implications for policy, *Economic and Political Weekly*, Vol. 39, No. 41.
- Veeramani, Choorikkad, 2007; Industry-specific determinants of intra-industry trade in India, *Indian Economic Review*, Vol. 42, No. 2.
- World Bank, 2016; *World Data Bank: World Development Indicators*, The World Bank. Retrieved on October 18, 2016 from <http://databank.worldbank.org/data/databases.aspx>

Appendix-A
Table A1. Description of HS Classification (Sections and Chapters)

Section	Chapter	Description of Sections and Chapters (Two Digit HS Classification) Description
(1)	(2)	(3)
S-01	(01-05)	Live Animals; Animal Products
	C-01	Live animals
	C-02	Meat and edible meat offal
	C-03	Fish and crustaceans, molluscs and other aquatic invertebrates
	C-04	Dairy produce; bird's eggs; natural honey; edible products of animal origin
	C-05	Products of animal origin, not elsewhere specified or included
S-02	(06-14)	Vegetable Products
	C-06	Live trees and other plants; bulbs, roots and the like
	C-07	Edible vegetables and certain roots and tubers
	C-08	Edible fruit and nuts; peel of citrus fruit or melons
	C-09	Coffee, tea, mate and spices
	C-10	Cereals
	C-11	Products of the milling industry; malt; starches
	C-12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants;
	C-13	Lac; gums, resins and other vegetable saps and extracts
	C-14	Vegetable plaiting materials; vegetable products not elsewhere specified
S-03		Animal and Vegetable Fats and Oils and their Coverage Products
	C-15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes
S-04	(16-24)	Prepared Foodstuff, Beverages, Spirits Vinegar. Tobacco and Manufactured Tobacco Substitutes
	C-16	Preparation of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates
	C-17	Sugars and sugar confectionery
	C-18	Cocoa and cocoa preparations
	C-19	Preparations of cereals, flour, starch or milk; pastry cooks' products
	C-20	Preparations of vegetables, fruit, nuts or other parts of plants
	C-21	Miscellaneous edible preparations
	C-22	Beverages, spirits and vinegar
	C-23	Residues and waste from the food industries; prepared animal fodder
	C-24	Tobacco and manufactured tobacco substitutes

(Contd.)

Appendix-A (Contd.)

Section	Chapter	Description of Sections and Chapters (Two Digit HS Classification)
		Description
(1)	(2)	(3)
S-05	(25-27)	Mineral Products
	C-25	Salt; sulphur; earths and stone; plastering materials
	C-26	Ores, slag and ash
	C-27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
S-06	(28-38)	Products of Chemicals and allied Industries
	C-28	Inorganic chemicals
	C-29	Organic chemicals
	C-30	Pharmaceutical products
	C-31	Fertilisers
	C-32	Tanning or dyeing extracts; tannins and their derivatives;
	C-33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations
	C-34	Soap organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations,
	C-35	Albuminoidal substances; modified starches; glues; enzymes Explosives; pyrotechnic products; matches; pyrotechnic alloys; certain
	C-36	combustible preparations
	C-37	Photographic or cinematographic goods
	C-38	Miscellaneous chemical products
S-07	(39-40)	Products of Plastic and Rubber and articles thereof
	C-39	Plastics and articles thereof
	C-40	Rubber and articles thereof
S-08	(41-43)	Raw Hides and Skins, Leather Fur skin and article thereof
	C-41	Raw hides and skins (other than fur skins) and leather
	C-42	Articles of leather; saddlery and harness, travel goods, handbags and similar containers
	C-43	Fur skins and artificial fur, manufactures thereof
S-09	(44-46)	Wood and articles thereof
	C-44	Wood and articles of wood; wood charcoal
	C-45	Cork and articles of cork
	C-46	Manufactures of straw, of esparto or of other plaiting materials;
S-10	(47-49)	Pulp of Wood and Fibrous Cellulosic Material
	C-47	Pulp of wood or of other fibrous cellulosic material; recovered
	C-48	Paper and paperboard; articles of paper pulp, of paper or of paperboard
	C-49	Printed books, newspaper, pictures and other products of the printing industry; manuscripts, typescripts and plans

(Contd.)

Appendix-A (Contd.)

Section	Chapter	Description of Sections and Chapters (Two Digit HS Classification)
		Description
(1)	(2)	(3)
S-11	(50-63)	Textile and Textile Articles
	C-50	Silk
	C-51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric
	C-52	Cotton
	C-53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn
	C-54	Filaments man-made
	C-55	Man-made staple fibres
	C-56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof
	C-57	Carpets and other textile floor coverings
	C-58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery
	C-59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use
	C-60	Knitted or crocheted fabrics
	C-61	Articles of apparel and clothing accessories, knitted or crocheted
	C-62	Articles of apparel and clothing accessories, not knitted or crocheted
	C-63	Other made up textile articles; sets; worn clothing and worn textile articles; rags
S-12	(64-67)	Footwear and Umbrellas etc
	C-64	Footwear, gaiters and the like; parts of such articles
	C-65	Headgear and parts thereof
	C-66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding crops and parts thereof
	C-67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair
S-13	(68-70)	Articles of Stones, Cement, Plaster and Ceramic Products
	C-68	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware
	C-69	Ceramic products
	C-70	Glass and glassware
S-14		Natural and Cultured Pearls Precious and Semi-Precious Stones
	C-71	Natural or cultured pearls, precious or semi-precious stones, precious metal, metals clad with precious metal and articles thereof; imitation jewellery; coin

(Contd.)

Appendix-A (Concl.)

Section	Chapter	Description of Sections and Chapters (Two Digit HS Classification)
		Description
(1)	(2)	(3)
S-15	(72-83)	Base Metals
	C-72	Iron and steel
	C-73	Articles of iron or steel
	C-74	Copper and articles thereof
	C-75	Nickel and articles thereof
	C-76	Aluminium and articles thereof
	C-78	Lead and articles thereof
	C-79	Zinc and articles thereof
	C-80	Tin and articles thereof
	C-81	Other base metals; cermet; articles thereof
	C-82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal
	C-83	Miscellaneous articles of base metal
S-16	(84-85)	Machinery and Mechanical Appliances
	C-84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
	C-85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers
S-17	(86-89)	Vehicles and Aircraft, Vessels and Other Transport Equipment
	C-86	Railway or tramway locomotives, rolling-stock and parts thereof
	C-87	Vehicles other than railway or tramway rolling - stock
	C-88	Aircraft, spacecraft and parts thereof
	C-89	Ships, boats and floating structures
S-18	(90-92)	Optional musical, Cinematographic, Medical Instruments
	C-90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.
	C-91	Clocks and watches and parts thereof.
	C-92	Musical instruments; parts and accessories of such articles.
S-19		Arms and ammunition; parts and accessories thereof
	C-93	Arms and ammunition; parts and accessories thereof
S-20	(94-96)	Miscellaneous Manufacturing Articles
	C-94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishing; lamps and lighting fittings, not elsewhere specified
	C-95	Toys, games and sports requisites; parts and accessories thereof
	C-96	Miscellaneous manufactured articles
S-21		Woks of Arts Antiques and Pieces
	C-97	Works of art, collectors' pieces and antiques

Appendix-B

The studies (GHM, FF and AE) pertaining to the classification of IIT faced mainly two drawbacks. First, the arbitrary selection of dispersion limit leads to ambiguity in the classification of IIT. Second, the unequal proportion between HIIT and VIIT leads to an upward bias in the VIIT products while segregating the IIT and/or a downward bias in HIIT. The proposed PQI index tries to overcome these shortcomings. The methodological development of the IIT is evolved from the various empirical studies [Rahman, 1991], (GHM, FF, AE). The practical applications of the various indices help to understand the measurement related problem and also assist in overcoming the existing flaws. The issue pertaining to the segregation of IIT is important because it helps to understand the gap between export unit value and import unit value of the products. On the basis of the assumption that higher quality products are traded at high price, it can be inferred that a larger gap between export unit values and its import unit value reveals qualitative differentiation in the product [Veeramani, 2001]. Such trade is known as VIIT. The reallocation cost for VIIT is more than HIIT. Therefore, it is essential to segregate IIT to measure the appropriate trade adjustment cost. All the above-referred three indices lead to asymmetric distribution of IIT into HIIT and VIIT. There is no upper and lower limit to the ratio of export unit value to its import unit value for GHM and FF methods. Thus, with arbitrary selection of dispersion limit, say 15 percent, leads to asymmetric classification of IIT into HIIT and VIIT. If the total space of IIT products is considered as one, then, with 15 percent dispersion limit, the range for HIIT products narrows down to 30 percent of the total range. If we look at the construction of FF and GHM index then it can be noted that the range for these two indices is 0 to infinity. If we assume this total area is equal to one then with the 15 percent dispersion limit the upper and lower bound for GHM (FF) index is set at 1.15 and 0.85, respectively. By considering one is the centre point of the measuring scale, the total area occupied is thirty percent of the total space. Thus, total area provided for HIIT is 30 percent of the total space as against 70 percent for VIIT. As per the AE method, the total product quality space ranges from 0 to 2. With the cut-off point of 85 percent, the lower and upper limit of 0.85 and 1.15, respectively, are used to segregate IIT [Azhar and Elliott, 2006]. Thus, the space for

Figure 2: QI of India's Import from Japan at the HS-08 Digit Level

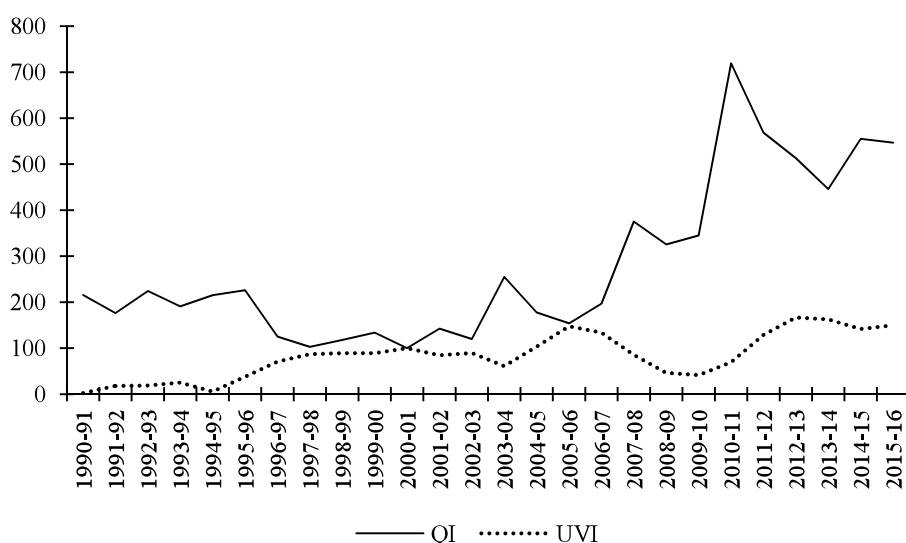
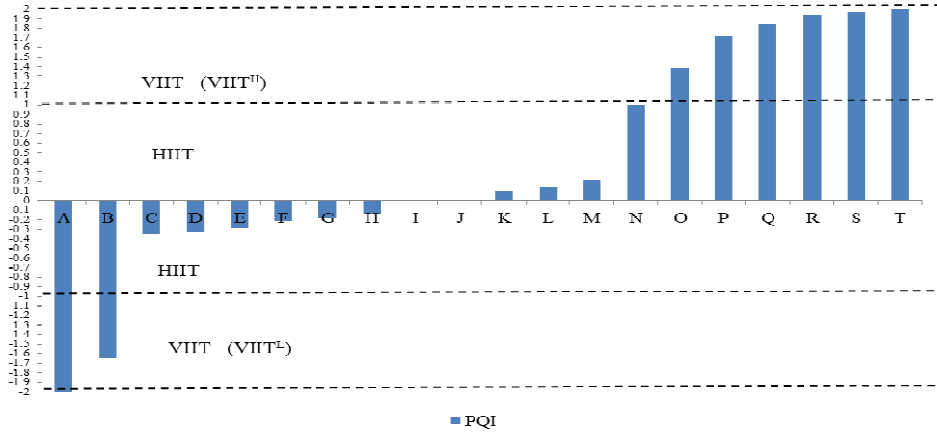


Figure A2: Classification of IIT as per PQI

HIIT is equal to 30 percent and that for VIIT is 70 percent of the total space (Figure A1). This leads to an upward bias in the measurement of VIIT and a downward bias in the measurement of HIIT. As the total array for PQI is symmetrically distributed compared to the AE method, it helps to classify IIT more symmetrically (Figure A2). By construction, the lower and upper bounds for PQI are defined at -2 and 2, respectively. To maintain the symmetry between classifications of IIT the lower and upper bounds for HIIT products are set at -1 and 1, respectively, and those for VIIT from -1 to -2 and 1 to 2. Thus, HIIT and VIIT get equal space in the total space ranging from -2 to 2 in figure A2. Furthermore, the space for VIIT is also equally allotted between VIIT^L (-1 to -2) and VIIT^H (1 to 2). In brief, there is no bias in the classification of IIT at any level. Thus, we try to modify the AE method to overcome the above-mentioned two drawbacks. Therefore, considering the existing shortcoming in the indices, the paper attempts to extend the existing measurement technique to segregate IIT. This index tries to overcome the methodological issues related to the segregation of IIT. Similar to the earlier methodologies, The PQXI (PQMI) is the same as the PQV (PQH) index explained in Azhar and Elliott (2006). Implicitly, quality of the product is reflected by unit value (price) of the product. Therefore, PQXI and PQMI are defined on the basis of unit value of exports and imports.

$$PQXI_i = 1 + \frac{UV_i^X - UV_i^M}{UV_i^X + UV_i^M} \quad \dots (B1)$$

Or,

$$PQXI_i = \frac{UV_i^X}{\frac{UV_i^X + UV_i^M}{2}} \quad \dots (B1.1)$$

However, since,

$$\frac{UV_i^X + UV_i^M}{2} = \overline{UV}_i \quad \dots (B1.2)$$

We have

$$PQXI_i = \frac{UV_i^X}{\overline{UV}_i} \quad \dots (B1.3)$$

Similarly, PQMI, *i.e.*, the ratio of import unit value of the *i*th product to average unit value of the *i*th product is calculated as:

$$PQMI_i = \frac{UV_i^M}{\overline{UV}_i} \quad \dots (B2)$$

$$PQI = PQXI - PQMI \quad \dots (B3)$$

Thus, the ratio of the export (import) unit value of the *i*th product to average unit value of the *i*th product is given by PQXI (PQMI). After constructing PQXI and PQMI the PQXI minus PQMI gives the PQI index. Thus, PQI can be used to segregate IIT from a home country perspective, IIT is classified as HIIT, if $-1 \leq PQI \leq 1$ and VIIT otherwise. VIIT is further classified into low quality vertically differentiated (LVIIT) products if $PQI < -1$ and considered as high quality vertically differentiated (HVIIT) product if $PQI > 1$. Therefore, the modified PQI helps to distinguish IIT with a symmetrical way. Furthermore, PQI is very simple and easier to estimate. The PQI ranges from -2 to 2. This total space within PQI is divided equally between HIIT and VIIT. In a nutshell, for the symmetrical distribution of total space in PQI (-2 to 2) the upper and lower limit for HIIT are set at 1 and -1, respectively. Thus, to maintain the proportionate segregation of IIT, the half of the total space (-1 to 1) is allotted for HIIT and remaining half of the -2 to 2 is allotted for VIIT. Within VIIT the space is equally allotted for LVIIT and HVIIT with symmetry.

Appendix-C

Table C1. Share of IIT and Inter-Industry Traded Products in India's Total Trade

Year	Share of IIT products	Share of Inter-industry products	Total
(1)	(2)	(3)	(4)
1990-91	38.38	61.62	100
1991-92	39.13	60.87	100
1992-93	51.91	48.09	100
1993-94	48.62	51.38	100
1994-95	57.28	42.72	100
1995-96	58.25	41.75	100
1996-97	59.01	40.99	100
1997-98	62.21	37.79	100
1998-99	62.74	37.26	100
1999-00	67.48	32.52	100
2000-01	65.32	34.68	100
2001-02	81.38	18.62	100
2002-03	83.64	16.36	100
2003-04	90.36	9.64	100
2004-05	90.42	9.58	100
2005-06	84.81	15.19	100
2006-07	93.60	6.40	100
2007-08	94.17	5.83	100
2008-09	95.56	4.44	100
2009-10	95.17	4.83	100
2010-11	95.67	4.33	100
2011-12	94.98	5.02	100
2012-13	76.90	23.10	100
2013-14	76.46	23.54	100
2014-15	80.18	19.82	100
2015-16	85.04	14.96	100

Table C2. Index of India's Product Quality Index (PQI) for Sections (Weighted Average of the Eight-Digit)

Section	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
S-01	0.47	0.45	0.47	0.33	0.54	-1.53	0.08	1.86	-0.78	0.06	-0.32	-0.51	-0.67
S-02	-1.80	-0.46	-1.56	-0.54	-0.68	-0.81	-0.04	-0.21	-0.37	-0.17	-0.30	-0.25	-0.12
S-03	1.04	0.72	0.33	0.19	0.43	-0.02	0.42	0.68	0.51	-0.07	0.45	0.54	0.41
S-04	-0.81	-0.53	-1.14	-1.10	-1.09	-0.68	-0.89	-0.52	-0.23	-0.80	-0.42	-0.57	-0.90
S-05	-0.77	-0.10	-1.13	-0.74	-0.51	-0.82	1.27	-0.23	-0.20	0.49	-0.63	-1.10	-0.66
S-06	-0.35	-0.44	0.04	-0.66	-0.94	-0.52	-1.12	-0.87	-1.05	-1.31	-0.52	-0.42	-0.95
S-07	-1.59	-1.48	-1.54	-1.49	-1.33	-1.27	-1.37	-1.12	-0.79	-0.99	-1.13	-0.88	-0.76
S-08	0.41	-0.28	-0.69	-1.14	-0.69	-0.32	0.10	0.26	0.05	0.09	0.21	0.28	0.40
S-09	-0.36	0.21	-0.70	-0.94	-1.82	-1.26	-1.24	-0.38	-0.39	-0.29	1.11	-0.35	-0.14
S-10	0.22	-0.23	-0.53	-0.33	0.04	-0.33	-0.47	-0.80	-1.34	-1.27	-1.32	-1.40	-1.52
S-11	0.10	0.11	-0.24	-0.16	-1.47	-0.21	0.05	-0.14	-0.06	0.01	-0.11	0.06	0.03
S-12	0.72	0.84	0.33	0.36	0.64	0.57	-0.38	-0.67	0.00	0.30	-0.10	0.09	0.07
S-13	-0.55	-1.38	-0.38	-1.42	-0.33	0.99	-1.18	-1.31	-1.30	-1.05	-1.42	-1.16	-1.08
S-14	0.65	0.57	0.57	-0.21	-0.44	-0.03	0.59	0.57	0.05	-0.28	0.04	0.10	-0.63
S-15	-1.20	0.18	-1.02	-1.40	-0.39	-0.16	-0.37	-0.80	-0.43	-0.54	-0.47	-0.63	-0.45
S-16	-1.73	-1.66	-1.62	-1.46	-1.31	-1.32	-0.95	-1.28	-1.17	-1.19	-0.91	-1.43	-0.98
S-17	-1.48	-1.75	-0.83	-0.41	-0.68	-1.26	-1.03	-0.89	-1.49	-1.06	-1.93	-0.82	-0.02
S-18	-0.41	-1.19	-1.52	-0.41	-1.28	-1.04	-1.39	-1.42	-1.04	-1.07	-0.99	-0.97	-0.67
S-19	-	-	-1.16	-0.42	-0.94	-1.49	1.09	-1.56	-0.68	0.31	0.50	1.53	-0.98
S-20	-0.27	-0.61	-0.10	-0.49	-1.70	-1.52	-0.09	-0.83	-0.64	-0.66	-1.01	-0.45	-0.95
S-21	--	--	-1.72	-1.71	-1.61	-1.73	-1.81	-1.07	-1.95	-1.26	0.36	0.13	-1.34

(Contd.)

Table C2. (Concl.)

Section	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
(1)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
S-01	-0.81	-1.80	-1.15	-1.26	-0.80	-1.48	-0.56	-1.86	-0.30	-1.42	-1.66	-1.15	-1.82
S-02	-0.59	0.11	-0.43	-0.72	-1.16	-1.13	-0.64	-0.67	-0.70	-1.24	-0.86	-0.67	-1.22
S-03	0.16	-0.29	-0.30	-0.34	-0.52	-0.66	-0.33	-1.85	-0.13	-0.47	-1.37	-0.21	-1.48
S-04	-0.57	-0.77	-0.70	-0.71	-0.54	-0.57	-0.70	-0.65	-0.27	-0.21	-0.39	-0.44	-0.53
S-05	-0.87	-1.09	-1.59	-0.41	-0.30	-0.48	-1.26	-0.40	-0.31	-0.45	0.00	-0.19	-0.33
S-06	-0.99	-1.42	-1.54	-1.35	-1.41	-1.17	-1.44	-1.64	-1.49	-1.71	-1.47	-1.26	-1.31
S-07	-0.51	-1.05	-1.18	-1.39	-1.11	-0.98	-1.26	-0.83	-1.31	-1.25	-1.20	-0.81	-1.06
S-08	0.30	0.38	0.46	0.26	0.84	0.06	0.68	0.47	1.31	0.41	0.03	-0.61	-0.10
S-09	0.01	-0.05	0.20	-0.11	-0.29	1.25	0.22	0.32	0.11	0.43	0.12	0.10	0.28
S-10	-1.55	1.39	-0.14	1.68	-1.82	1.90	1.49	0.65	-1.48	0.04	-1.17	-0.28	0.86
S-11	-0.61	-0.40	-0.50	-0.64	-0.79	-0.95	-0.69	-0.66	-0.49	-0.70	-0.37	-0.46	-0.40
S-12	0.65	0.25	0.37	0.43	0.50	1.00	0.54	0.88	0.56	0.40	0.66	0.23	0.24
S-13	-0.13	-0.55	-0.46	-0.42	-0.30	-0.45	-0.52	-0.54	-0.94	-0.52	-0.43	-0.03	-0.11
S-14	-0.39	-0.70	-0.37	-0.42	-1.30	-0.45	-1.46	-0.09	0.92	-0.65	0.40	0.39	0.00
S-15	-0.62	-0.51	-0.37	-0.42	-0.21	-0.09	0.01	1.52	-0.10	0.06	0.09	0.11	0.06
S-16	-1.22	-1.23	-1.25	-0.84	-1.21	-1.56	-1.21	-1.12	-1.41	-1.33	-0.73	-0.73	-0.88
S-17	-0.82	-0.89	0.43	-0.70	-0.76	0.42	-1.41	-1.10	-0.93	-1.22	-0.62	-0.44	0.12
S-18	-0.74	-1.15	-1.35	-1.33	-1.33	-1.41	-1.17	-1.33	-1.18	-1.41	-1.42	-0.93	-1.11
S-19	-0.99	0.50	-0.74	-1.01	-1.61	-0.13	-1.00	-1.68	-0.45	-1.07	0.91	-0.76	1.92
S-20	-0.30	-0.38	0.21	-0.36	0.03	-0.25	0.80	1.15	1.48	-0.88	-1.23	-0.46	0.13
S-21	-1.86	-1.06	-1.50	-1.60	0.46	0.76	-1.41	-1.66	-1.57	-1.77	0.29	-1.12	-1.03

TRENDS AND PATTERNS OF BILATERAL MERCHANDISE TRADE BETWEEN INDIA AND JAPAN*

Neha N. Karnik and L.G. Burange

The paper tries to examine trends of merchandise bilateral trade between India and Japan during the period from 1990-91 to 2015-16, using Quantity Index and Unit Value Index. It also evaluates and compares international and bilateral competitiveness of India and Japan during 1996 to 2015. The paper examines intra-industry trade (IIT) by constructing Grubel and Lloyd (G-L) index between India and Japan. It also decomposes India's IIT with Japan into horizontal IIT and vertical IIT and further, segregates vertical IIT into low quality and high quality IIT using Product Quality Index. India's IIT with Japan is displaying a positive trend. However, it has been dominated by horizontally differentiated products in terms of both number and share in the value of total merchandise trade between India and Japan. High economic growth and increase in per capita income of India resulted in higher demand as well as supply for horizontally differentiated products.

Key words: Trade, Quantum Index, Unit Value Index, Revealed Comparative Advantage, Intra-industry Trade, Horizontal Intra-industry Trade, Vertical Intra-industry Trade

JEL Codes: F10, F14

1. INTRODUCTION

India is the fourth largest economy in terms of gross domestic product (GDP) in purchasing power parity (PPP) with a fairly high growth rate of 7 percent per annum for last two decades [World Bank, 2014]. New industrial policy of 1991 with measures to promote globalisation and liberalisation played a very important role in integrating India with the world. Since liberalisation, India's international trade has accelerated very sharply. Economic literature related to IIT suggests that high economic growth coupled with trade integration between the countries expands the share of intra-industry trade. Globalisation and trade in technology-intensive manufactured products has increased level of IIT in the world trade. It exists when it is profitable to export and import similar products of the same industry. Currently, one fourth of total international trade of the world is of intra-industry in nature [Brühlhart, 2008]. The increasing share of IIT in

the bilateral trade generally results from economies of scale, product differentiation, imperfect competition, increase in per capita income and changes in trade policy, etc. [Greenaway, Hine, and Milner, 1995], Stone and Lee [1995], Clark [1993], Lundberg [1992; 1982], Ballance *et al.*, [1992], Ray [1991], Hamilton and Kniest [1991], Globerman and Dean [1990], Helpman [1987], Toh [1982], Caves [1981], and Pagoulatos and Sorensen [1975]. Das [2007] empirically suggested that level of IIT is positively correlated with per capita GNP, trade integration, share of manufacturing exports in total exports, technology intensiveness of the production process and variety-seeking demand patterns. However, According to Ekanayake [2001] IIT is negatively correlated with income inequality, differences in country sizes, distance, and trade imbalance. Further, IIT can be categorised as vertical and horizontal IIT. Vertical IIT is defined as the two-way trade of products that differ in quality whereas horizontal IIT is defined as the exchange

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of products that are differentiated by other characteristics rather than quality. The presence of Vertical IIT can be seen between unequal partners, based on factor endowment theory. It suggests that relatively capital abundant country exports higher quality goods, while labour abundant country exports low quality goods [Sharma, 2004]. It is determined by the country-based factors such as GDP levels, per capita GDP differences, geographical distance, etc. On the other hand, horizontal IIT has a greater significance of trade between developed countries. It is determined by industry-based factors such as scale economies and product differentiation. [Veeramani, 2002].

Globalisation, liberalisation and trade diversification policies after 1991 led to economic growth and trade expansion in India. Foreign Direct Investments (FDIs) supported production of technology-intensive manufacturing products. Hence, India has had a fair opportunity to increase its Intra-industry Trade (IIT) with its dominant trading partners. Veeramani [2002] analysed India's IIT in bilateral trade with its major trading partners. He confirmed that trade liberalisation positively affects IIT. Burange and Chaddha [2008] constructed G-L index of IIT at HS-04 digit level for India with the world and found that IIT increased from 23.48 percent to 32.09 percent from 1987-88 to 2005-06. Similarly, Srivastava and Medury [2011] examined G-L index of IIT at HS-06 digit for India and showed that IIT increased from 29.80 percent to 34.00 percent from 1988 to 2008 and predominantly, it was vertical intra-industry trade (VIIT) in nature. Significant change in India's production base and export structure in the last decade has brought enormous opportunities for increasing India's intra-industry trade with its major trading partners. During the last decade, India has also moved to strategic economic partnership with some of the Asian Countries which includes Comprehensive Economic Co-operation Agreement (CECA)/Comprehensive Economic Partnership

Agreement (CEPA) with Singapore in 2005, Korea in 2010, Malaysia in 2011 and Japan in 2011. India's CEPA with Japan has a special significance. It was a first deal that India signed with a major industrial country. Further, Japan was among top 5 trading partners of India including USA, Soviet Union, Japan, Germany and UK. Among these partners Japan experienced consistent fall in its share in India's total trade (After dissolution, Soviet Union disappeared from the list of top trading partners of India). In 1990-91, Japan's share in India's total trade was 8.48 percent which decreased to 2.05 percent in 2015-16. India-Japan trade has stagnated even after India followed liberal trade regime. Japan was nowhere in the list of India's top ten trading partners. This situation is in contrast with other East Asian trade partners of India such as China, Hong Kong, Republic of Korea, Indonesia, and Malaysia which marked their presence in the list of India's top ten trading partners. Hence, India and Japan took a concrete action in terms of CEPA to encourage bilateral trade between India and Japan. The CEPA aimed to eliminate tariff on 90 percent of Japanese exports to India and 97 percent of imports from India in five years. Against this background, this paper focuses on examining trends of the bilateral trade between India and Japan over the period, using Quantity and Unit Value Indices. Indian economy experienced a structural change after economic reforms initiated in 1991. Thus, it is essential to examine structural change in the composition of exports to and imports from Japan. India is a labour abundant country whereas Japan is capital (and skilled labour) abundant.¹ Such complementarity is very helpful in vibrant and fruitful trading opportunities. Thus, it would be worthwhile to study impact of economic growth and difference in factor endowments on the patterns of bilateral trade. Significant change in production structure and export base in the last decade brings enormous opportunities to India to shift from the traditional vertical trade to horizontal trade [Government of India, 2006]. Thus, the paper examines growth in

the contribution of Intra-industry trade and also tries to analyse change in patterns of IIT between India and Japan. The paper is organised as follows: Section 2 overviews existing literature on bilateral trade between India and Japan. Section 3 describes methodology and data sources for our study. Section 4 deals with analysis of the bilateral merchandise trade between India and Japan. Section 5 concludes the paper.

2. LITERATURE REVIEW

There are various studies which examined India and Japan trade relations and their diplomatic ties. However, high level negotiations followed by affirmative actions on strategic partnership upgraded bilateral ties between the two. This has resulted in several attempts to analyse bilateral trade relation between India and Japan in the last decade.

Mehta [2001] examined composition of bilateral trade between India and Japan and found a significant change in India's export to Japan during 1990 to 2000. Initially, it was concentrated heavily in gems and jewellery, marine products and iron-ores. The concentration on these products has decreased and has been replaced by manufacturing products. On the contrary, the composition of Japan's exports to India did not vary significantly. Although it was not concentrated in a few products, project goods and electrical machinery and mechanical appliances contributed considerably. The study noted that at the beginning of 1990s, there was substantial decline in the bilateral trade between India and Japan. This fall has been attributed to many reasons such as stagnation of Japanese economy, increased bilateral trade between Japan-China, high tariff rate imposed by Japan for commodities in which India has export potential, large number of non-tariff barriers imposed by Japan and India's protectionist policies. He also pointed out that lack of investment and financial flows between India and Japan adversely affected bilateral trade between them.

The Joint Study Report [Government of India, 2006] emphasised on a decreasing trend in the bilateral trade between India and Japan. Japan's share in India's total exports dropped from 9.3 percent in 1990 to 2.5 percent in 2004. Similarly, imports of India from Japan descended from 7.5 percent in 1990 to 2.8 percent in 2004. The study found that India's export to Japan greatly concentrated in a narrow range of products. It was dominated by raw materials and minerals. Nearly 60 percent of India's total export to Japan consisted of gems and jewellery, marine products, iron ore, cotton yarn fabrics and petroleum products. Machinery and electronics ranked highest in the list of India's imports from Japan. The study underlined change in the production structure and export base of India. As a result, in the last decade, India's trading pattern shifted from vertical to horizontal trade. This structural change was visible due to increase in contribution of value added manufacturing products in the bilateral trade such as pharmaceuticals, inorganic chemicals and auto components.

The history of bilateral trade with Japan was overviewed by Rajamohan *et al.*, [2008]. They emphasised that during 1970s and 1980s the bilateral trade between India and Japan was passive due to their different approaches towards international politics and management of domestic economy. However, India's Look East Policy in 1991 fuelled bilateral trade between the two. Nonetheless, against the backdrop of India's nuclear test in 1998, the two-way trade between India and Japan reached its lowest point. The study also pointed that Indo-Japanese trade was weakening on account of flourishing Indo-China relations. The study analysed trade between India and Japan for the period from 1989 to 2006 and noted that India was never in the list of top exporters or suppliers to Japan. The share of Japan's export to India was always below 1 percent of its total exports. Similarly, Japan's contribution to India's total imports was always insignificant. The study also compared India's

bilateral trade with China and Japan during 1989 to 2006 and found a shift in manufacturing base from Japan to China. India's bilateral trade has been decreasing with the former and increasing with the latter.

Nataraj [2010] noted that India's bilateral trade with Japan increased at the rate of 35.56 percent during 2003 to 2007. Moreover, in 2007-08 the year-on-year (Y-o-Y) growth rate of export of India to Japan increased at the rate of 34.73 percent over the year 2006-07 while import of India from Japan increased at 37.20 percent in 2007-08 from 2006-07.

Mathur [2012] examined two-way trade between India and Japan for the period from 2001 to 2010. She noticed that bilateral trade was expanding especially in the second half of the last decade. Initially, India's export to Japan focused on gems and jewellery, marine products, textiles, iron-ore and petroleum products. However, in the later period, India started exporting oil related products to Japan. Conversely, Japan's exports basket to India mainly consisted of machinery, electronics, steel products and automobiles and chemical products.

Bhattacharyay and Mukhopadhyay [2013] evaluated the (likely) economy wide impact of the proposed CEPA between India and Japan at 2020 using Computable General Equilibrium (CGE) model. Results exhibited fair amount of trade creation with a marginal increase in growth of export. As per their estimates, India's export to Japan would increase by 18.25 percent per annum while for Japan its export to India would increase by 4.65 percent per annum. The Study predicted that India would gain more than Japan during 2010-20. According to the authors, Japan would suffer short-term negative impacts due to natural calamities. But, in the long-run Japanese economy would expand through reconstruction efforts post powerful earthquake and tsunami in 2011 and return to productive activities which would

lead to improved economic co-operation between the two countries. They examined India's two-way trade with Japan and inferred that it had almost tripled during 1990 to 2009. This surge was credited to policy improvement especially economic reforms of liberalisation and adopting open door policy by India. However, total trade with Japan was less compared to India's other major trading partners.

Sundar and Ambrose [2014] assessed nature and strength of the bilateral trade between India and Japan using Trade Intensity Index (TII) for the period 2001 to 2010. TII has been used to measure the share of one country's trade with other country as a proportion of the other countries' share in the world trade. The results confirmed that export and import intensities of both India and Japan have declined over the years. India's export intensity with respect to Japan and Japan's both import and export intensities were below 100, which implies that actual trade was less than the potential trade. Thus, the study concluded that large unexplored potential exists between India and Japan.

A more comprehensive study on India's bilateral trade with Japan was done by Nataraj and Ashwani [2014] covering the period from 1998 to 2008. The study found that two-way trade between India and Japan has been increasing. However, spike in the bilateral trade was more evident after 2004. India's imports from Japan comprised products on higher side of value chain whereas India's export to Japan consisted of products on low value ladder. The study constructed Bilateral Revealed Comparative Advantage (BRCA) for two years, 2005 and 2008. BRCA is a modified form of RCA looking at bilateral comparative advantage between countries (defined below). It reflects the competitiveness of both countries in each other's market in comparison with the rest of the world. BRCA index showed a decreasing trend for both the countries at all HS levels. This fall could be due

to stagnation in the bilateral trade between India and Japan. The study also constructed Export Specialisation Index (ESI) for products with each other for the year 2008. The ESI for a product is estimated as the ratio of trade deficit/surplus to total trade for each product. It brought out that there has been large scale intra-industry trade between the two countries. However, the study noted that in 2008, India exported more intra-industry products to Japan and imported less of inter-industry products from Japan. Additionally, the study examined the impact of CEPA. The CEPA between India and Japan was signed on 16th February, 2011 and came into force from 1st August of the same year. The agreement had two major concerns: infrastructure in India- the two countries agreed to collaborate on US \$90-billion Delhi-Mumbai Industrial Corridor (DMIC) project in 2006; - and non-tariff barriers in Japan. The pact aimed to eliminate tariffs on 90 percent of Japanese exports to India, such as auto parts and electric appliances, and 97 percent of imports from India, including agricultural and fisheries products, till 2021. It found that reduction in the tariff barriers would help India to accelerate its exports. Particularly of pharmaceuticals, agriculture and textiles products, while Japan would be benefited through the imports by India of automobile and high value added consumer goods.

The above empirical literature on the bilateral trade between India and Japan suggests that with economic development of India there has been a compositional change in the trading pattern between them. Compositional change in trading pattern affects nature of trade; especially it encourages intra-industry trade between trading partners. [See Nataraj and Ashwani 2014]. Building further on this finding, the present paper is an effort to track changes in the pattern of intra-industry trade between a developing country, India, and an industrially developed country, Japan. Additionally, the paper tries to examine trends in the bilateral trade but with relative

importance of changes in quantity and price in the value of India's export to Japan and import from Japan. It also compares international and bilateral competitiveness between India and Japan with each other by constructing International Revealed Comparative Advantage (IRCA) and Bilateral Revealed Comparative Advantage (BRCA) with each other for the period of 1996 to 2015. It also examines the patterns of bilateral trade between India and Japan by classifying IIT into horizontal intra-industry trade (HIIT), low quality vertical intra-industry trade (LVIIT) and high quality vertical intra-industry trade (HVIIT).

3. METHODOLOGY

In order to examine trends in the merchandise bilateral trade between India and Japan the study constructs Quantity Index (QI) and Unit value Index (UVI). This study evaluates International Revealed Comparative Advantage (IRCA) of India and Japan. Additionally, it investigates Bilateral Revealed Comparative Advantage (BRCA) of them with each other. Furthermore, it aims to analyse intra-industry trade with the help of Grubel and Lloyd (GL) index. To be precise in evaluating IIT, it constructs Product Quality Index (PQI) which decomposes India's intra-industry trade (IIT) into Horizontal intra-industry trade (HIIT) and Vertical intra-industry trade (VIIT) between India and Japan at HS-08 Digit level. The higher level of technical specification ensures products that are exported and imported are of comparable quality and it also minimises illusions resulting from the nomenclature. Thus, unit values of export and import are comparable with quality [Abd-el- Rahman, 1991, Pp. 83-97].

3.1 Quantum and Unit Value Indices:

The value of the exports/imports is affected by changes in quantity exported/imported and by changes in unit value of exports/imports. The relative importance of these factors can be determined with the help of price and quantum indices. There are two commonly used indices for

this, namely, Paasche and Laspeyres indices. Both of them measure price evolution of a given basket of goods, between a base and the current years. Laspeyres volume index values quantities at the fixed prices of the base year, while the Paasche volume index uses prices of the current period. Laspeyres price index measures cost of quantity using common set of prices while the Paasche price index weights base year prices by current quantities. Thus, the study constructed Quantum Index (QI) using Laspeyres formula and Unit Value Index (UVI) using Paasche's formula to examine growth and trends of bilateral trade between India and Japan.

The analysis of price and quantum indices are often used as substitutes in the measurement of inflation transmission, terms of trade (effects), and to deflate import and export value series to derive volume series. Their widespread use is mainly due to their relatively low cost compared with establishment of price surveys [Silver, 2007, P. 4].

Quantum index (QI) constructed using the Laspeyres formula is as follows,

$$QI = \left[\frac{\sum Q_i P_o}{\sum Q_o P_o} \right] \times 100 \quad \dots(1)$$

where,

P_o = Price in the base year.

P_i = Price in the i th year.

Q_o = Quantity in the base year.

Q_i = Quantity in the i th year.

Laspeyres Quantum index values the quantities at the fixed prices of the earlier period. Quantum index is constructed to show movements in the aggregate quantity of export/import after eliminating effects of change in prices [Joshi, 1977].

Unit Value Index (UVI) is based on Paasche's formula

$$UVI = \left[\frac{\sum Q_i P_i}{\sum Q_i P_o} \right] \times 100 \quad \dots(2)$$

Paasche's formula is the ratio of export/import at current prices to exports/imports at the constant prices multiplied by 100. Paasche index weights prices by current quantities. The UVI helps to measure price movements. It compares present unit value with base year's unit value.

3.2 International Revealed Comparative Advantage (IRCA):

The concept of comparative advantage is ascribed to Adam Smith, David Ricardo and J. S Mill. Comparative advantage indicates strength of a country to export particular product in which she enjoys relatively lesser cost of production. On the contrary, that country can import those products from other partner country that enjoys a comparative advantage in exporting that particular product. The principle of comparative advantage indicates that trading patterns depend upon relative costs or productivity within a country that differ from the other trading countries (or the rest of the world). This is the result of differences in production scale and factor endowments. In other words, the theory of comparative cost/advantage takes into consideration an intrinsic advantage of a country in the production of a particular commodity relative to that of other countries which is consistent with the countries' relative factor endowments and productivity. In 1965, Bela Balassa elaborated the idea of Revealed Comparative Advantage (RCA) which was related to relative trade performance of an individual country. In fact, the concept of the RCA was pioneered by Liesner [1958]. But, it was refined and popularised by Balassa [1965, Pp. 99-123; 1989] and thus, it is popularly known as the Balassa Index. The idea is to determine country's strong sector by analysing its export flow. The actual export flow reveals a country's strong sectors, therefore, its RCA. There exists a range of alternative indices for measuring IRCA

which have been suggested and employed in the literature, such as Yu *et al.*, [2009], Hoen and Oosterhaven [2006], Proudman and Redding [2000], Lafay [1992], Bowen [1983], Wolter [1977], Donges and Riedel [1976], and Michaely [1967], etc. Apart from these, Vollrath [1991] offered three alternative ways of measurement of a country's RCA. These alternative specifications of the RCA are relative trade advantage (RTA), logarithm of the relative export advantage (ln RXA) and the revealed competitiveness (RC). These alternative measures of the RCA give incomplete and unstable results. Nonetheless, it is important to indicate that Balassa and Vollrath indices are grounded on different concepts, and hence are not comparable [Utkulu and Seymen, 2004]. Trade patterns always have been depending upon government interventions. Government subsidies and import barriers or protectionist policies distort RCA indices, thus, leading to misinterpretation of comparative advantage. Utkulu and Seymen [2004] tried to test stability of various RCA indices and inferred that results were reasonably stable for both Vollrath three alternative indices and Balassa's RCA.

The present study applies Balassa's RCA index [Balassa, 1965] to estimate the trade performance of an individual country for a particular product. It is a very commonly used measure of the revealed comparative advantage of a country in foreign trade. A modified formula of the RCA [Burange and Chaddha, 2008] has been used in the present study for the measurement of comparative advantage for export and is given as follows,

$$IRCA_{ij} = \frac{\left[\frac{x_{ij}}{X_i} \right]}{\left[\frac{x_{wj}}{X_w} \right]} \quad \dots(3)$$

where,

$IRCA_{ij}$ = International RCA of the i th country's for j th industry,

x_{ij} = Merchandise exports of the j th industry by the i th country,

X_i = Total merchandise exports of the i th country,

x_{wj} = World merchandise exports of the j th industry,

X_w = Total merchandise exports of the world.

The index of the $IRCA_{ij}$ has a relatively simple interpretation. If the value of $IRCA$ is greater than one, it signifies that the country's export of a product relative to the country's total exports is more than the world export of that product relative total world exports of all products in that particular year. In other words, the $IRCA$ measures a country's relative competitiveness in the exports of a particular commodity.

This index is used to construct competitiveness in export and import separately. This is the most relevant index for the analysis of competitiveness of export and import of India and Japan because it takes into account export and import data separately. $IRCA$ index is widely used due to its simplicity of calculation and appropriateness in dealing with trade data. Moreover, one can use this index for a variety of sectors, industries and products and also rank it in terms of estimated $IRCA$ values. One can also employ this index for cross-commodity, cross-country and inter-temporal comparisons. Hence, to explore India's competitiveness with Japan compared to the rest of the world the study applied Bilateral Revealed Comparative Advantage

3.3 Bilateral Revealed Comparative Advantage (BRCA):

The $IRCA$ is a useful index in analysing relative comparisons of export performance of a country. However, it may not reveal the competitiveness of a country in the export of a product in a particular market due to export subsidies at

unilateral or multilateral agreements. Comparative advantage cannot distinguish the gains that arise from changes in factor endowment and trade policies of a country [Batra and Khan, 2005]. IRCA identifies the product(s) in which country possesses comparative advantage globally. BRCA is a modified form of IRCA designed to examine bilateral comparative advantage between the countries. It is possible to construct BRCA with some variation in the standard IRCA. Several authors have used the concept of BRCA in various ways, and using different formulae. One of the variations of BRCA gives an indication of how much a country is exporting to a given market relative to how much the world is exporting to the same market [Phan and Jeong, 2012; Colley, 2015; Khan, 2015]. Another variation estimates the comparative advantage of a country relative to another country [Manzano, 2014; Sharma and Bugalya, 2013]. It is helpful for the purpose of finding out the competitive trading environment between the countries because it shows one country has revealed comparative advantage with respect to another country for producing particular product.

This study followed the third version of Balassa's RCA [Pasche's, 2002; Tondon, 2012; Sahoo, 2012; Riaz and Jansen, 2012] which is as follows;

$$BRCA_{ij}^k = \frac{\left[\frac{X_{ij}^k}{X_{ik}^k} \right]}{\left[\frac{X_{ij}^w}{X_{iw}^w} \right]} \dots(4)$$

where,

$BRCA_{ij}^k$ = Bilateral RCA of ith Country in the export of jth industry to the kth country

X_{ij}^k = Merchandise exports of ith country of jth industry to kth country

X_{ik}^k = Total exports of ith country to kth country

X_{ij}^w = Merchandise exports of ith country of jth industry to World

X_{iw}^w = Total Merchandise exports of ith country to World

BRCA of an export category/industry of country i vis-à-vis a country k has been defined as a ratio of share of country i's merchandise export of product j to country k in country i's total merchandise exports to country k to the share of country i's exports of product j to the world in country i's total exports to the world. This index reflects the competitiveness of both countries in each other's market in comparison to the rest of the world in respect of a given export category or export industry. Thus, the study assessed the bilateral competitiveness of India and Japan at section, chapter and product levels. It is a way of identifying in which sectors or products a country appears to be competitive vis-à-vis another country. This concept has some particular strength. It is consistent with relative comparative advantage rather than absolute trade advantage or disadvantage. It enables one to recognise countries competitive sectors in the bilateral trade with another particular country. However, one can note that the existence of an international comparative advantage is not a sufficient condition for comparative advantage in bilateral trade. Conversely, the presence of BRCA may not necessarily imply IRCA because a country may enjoy BRCA for particular product because of bilateral pacts and negotiations with its trading partner. Additionally, the BRCA index is independent of size and overall trade surplus/deficit situations [Pasche, 2002].

3.4 Intra-Industry Trade Index (IIT):

The attempts to measure IIT dates back to Verdoorn [1960], Michaely [1962], Kojima [1964] and Balassa [1965]. However, it was explicitly raised and discussed by Grubel and Lloyd in their two contributions in 1971 and 1975,

hence; the IIT index developed by them is popularly known as the GL index. They examined various indices and then proposed their own which was the modification of Balassa Index. According to Grubel and Lloyd [1971], the principal disadvantage of previous measures was that they were unable to evaluate the average IIT. Conversely, GL index measures average IIT as a percentage of the export plus import. GL index is based on intensity of trade overlap for each product. Grubel and Lloyd [1971] define IIT as a difference between total trade and trade imbalance. Thus, in order to compare trade between industries and countries, the IIT is presented as percentage of trade. It captures both the trade imbalance and the strength of IIT. However, Grubel and Lloyd [1975] were aware that the mean of their measure of IIT is biased downward if country's trade is imbalanced. Thus, they suggested that in the case of considering total trade in all commodities, adjustment must be made for the aggregated trade imbalance by calculating intra-industry trade as a proportion of total commodity export plus import trade less the trade imbalance [Grubel and Lloyd, 1971, P. 497].

The Grubel and Lloyd (1975) index of IIT is as follows;

$$B_i = \frac{[(X_i + M_i) - |X_i - M_i|]}{(X_i + M_i)} \times 100 \quad \dots(5)$$

where,

B_i = Index of intra-industry trade of the i th industry,

X_i = Export of the i th industry,

M_i = Imports of the i th industry

B_i ranges from 0 to 100. If the entire bilateral merchandise trade taking place is of intra-industry type then B_i would be 100, whereas in absence of intra-industry trade B_i would be equal to 0. In other words, it implies bilateral trade is of inter-industry type. Thus, $(100 - B_i)$ measures the extent of inter-industry trade.

The weighted average of the HS-08 digit level has been used to summarise GL index at the chapter and section level. Hence,

$$GL = \sum_{i=1}^n B_i * W_i \quad \dots(6)$$

where,

$$W_i = \left[\frac{(X_i + M_i)}{\sum_{i=1}^n (X_i + M_i)} \right] \quad \dots(7)$$

where, W_i is the relative share of the total trade of each product in the total trade. Thus, the comprehensive picture of level of IIT with Japan has been given by GL index [Burange and Chaddha, 2007].

$$GL = \left[\frac{\left[\sum_{i=1}^n (X_i + M_i) - |X_i - M_i| \right]}{\sum_{i=1}^n (X_i + M_i)} \right] \times 100 \quad \dots(8)$$

In order to obtain comprehensive measure of growth in IIT at section and chapter level, the Compound Annual Growth Rate (CAGR) has been estimated using semi-log method.

The two-way trade in the similar type of product is called intra-industry trade which dominated the international trade literature in the 1960s and 1970s. However, in the early 1980s, the theoretical literature classified IIT into two sub-groups, namely, Horizontal IIT (HIIT) and Vertical IIT (VIIT).

3.5 Horizontal IIT (HIIT) and Vertical IIT (VIIT):

Theoretically one of the reasons for IIT to occur is product differentiation. When different varieties of a product with similar quality are being traded, it is called HIIT, whereas when varieties of the product being traded differ in quality, it is considered to be VIIT. Abd-el-Rahman [1991, 1986, Pp. 89-115; and 1984] was the pioneer who actually decomposed IIT into

HIIT and VIIT by applying unit value as a measure of product differentiation. According to him, quality of exportable and importable products was comparable with the maximum difference of 15 percent. There are two more traditional approaches to segregate IIT into HIIT and VIIT, *i.e.*, first, that of Greenaway, Hine and Milner [1994] (GHM) and second, that of Fontagni and Freudenberg [1997] (FF). Both approaches were based on the same methodology as suggested by Abd-el-Rahman [1991, 1986 and 1984]. The ratio of unit value of export to that of import generated and a dispersion percentile (α) was chosen to separate the horizontal from the vertically differentiated products. The choice of α was arbitrary between the values of 0.15 or 0.25. Azhar and Elliott [2006, Pp. 476-495] identified the problem related to the functional form of a UV ratio UVX/UVM. They called it as disproportionate scaling issue which means the rate of change in ratio in respect of UVX and UVM was not similar. This led to distortions in the measurement of product quality in IIT and hence, it is not a proper measure of horizontal as well as vertical product quality. [Azhar and Elliott, 2006]. Thus, Azhar and Elliott [2006] introduced a new method of segregating IIT into VIIT and HIIT *i.e.*, Product Quality Space method. This method provided a solution to the scaling problem in measuring and comparing product quality differences by using traditional G-L to measure level of product quality in IIT. Their index exhibits proportionate scaling effect. However, the arbitrariness of selecting dispersion limit leads to unequal classification of IIT into HIIT and VIIT. It creates upward bias in VIIT products or downward bias in HIIT products. Thus, Burange and Kelkar [2018] tried to remove this arbitrariness of dispersion limit with the help of Product Quality Index (PQI) which is based on Azhar and Elliott [2006]. They computed PQXI (PQMI) which is same as the PQV (PQH) index explained in Azhar and Elliott [2006]. *For the formulae used in computations here, see [Burange and Kelkar, 2018a; also 2018b in this issue].*

If the value of PQI lies between $(-1 \text{ to } 1)$ *i.e.*, $-1 \leq \text{PQI} \leq 1$ the IIT is categorised as HIIT. In such cases PQI takes values either zero or close to zero. It means the quality of export and import products is similar. Thus, unit values of such products are similar to each other. However, due to many factors such as transportation cost, packaging, advertisement, outer look, market imperfections, tariff and other trade barriers, etc., difference between the export unit value and import unit value of such products could be greater than one or less than minus one. In such cases, it is assumed that export quality of the product is different from the import quality, hence product is classified as VIIT. Thus, when the export unit value is higher than the import unit value by more than one, then PQI takes the value more than one and hence IIT classified as a High quality VIIT. In the case of low quality VIIT, then PQI takes values less than one which implies export unit value is lower than import unit value of the product. [Burange and Kelkar, 2018]

For summarising HIIT and VIIT at chapter and section level, weighted average of the HS-08 digit level has been used. The share of unit value of each two-way traded product in total trade value. Unit value of intra-industry traded products is considered as the weight [Burange and Kelkar, 2018a; also 2018b in this issue].

The study is based on two types of data sets. Firstly, India's foreign trade data which is published by Directorate General of Commercial Intelligence and Statistics (DGCI&S) in Monthly Statistics of the Foreign Trade data of India. This data is retrieved from 'India Trades' of Centre for Monitoring Indian Economy (CMIE) for period from 1990-91 to 2015-16. The trends, compositional change, QI, UVI, G-L index for intra-industry trade and PQI of segregating IIT into HIIT and VIIT are computed at Harmonised System (HS) eight digit classification.² The HS system has been developed and maintained by World Customs Organisation (WCO) located in

Brussels, Belgium. The HS classification is "harmonised" in relation to the classifications of the United Nations and the European Community. Goods are classified according to simple objective criteria and applications. The HS system of coding organises the data into 21 broad categories called sections. These sections are further divided into 99 chapters. Chapter 77 is reserved for future international use only. Chapters 98 and 99 are reserved for national use. Chapter 98 comprises special classification provisions, and chapter 99 contains temporary modifications pursuant to a parties' national directive or legislation. The chapters then are further disaggregated at the four, six and eight digit levels. HS has 1,241 headings at the four-digit level, 930 of which are further divided in sub-headings. HS-1996 (revision 1) represented a total of 5,113 separate categories of goods identified by a six-digit code. It is arranged in a legal and logical structure and also backed by well-defined rules to achieve uniform classification. This system is quite universal, more than 200 countries use it for the collection of international trade statistics on the basis for their customs tariffs. Over 98 percent of the international merchandise trade is classified in terms of the HS classification. Most of the countries have adopted HS and also added one or more digits to further the classification of products depending upon their particular national interest (8-digit or 10-digit level). HS has been periodically updated in light of technological developments and changes in trade patterns. The HS Committee also prepares amendments updating HS every 5-6 years. The World Customs Organisation (WCO) has published the accepted amendments to the Harmonized System (HS) nomenclature that came into force on 1st January, 2017. It includes 233 sets of amendments consisting of 85 agricultural sectors, 45 chemical sectors, 13 wood sectors, 15 textile sectors, 6 base metal sectors, 25 machinery sectors, 18 transport sectors and 26 other sectors [World Customs Organisation, 2015]. However, CMIE data set incorporates

revisions of HS classification. It provides both old code along with the new revised product code with the traded quantity and value.

The data for export is on f.o.b price and import is on c.i.f price. This is the major limitation of the intra-industry trade analysis. The study tries to eliminate the difference between f.o.b price and c.i.f price. Thus, the export values on an f.o.b. basis are multiplied by 1.05, a proxy, to adjust with import values which are on a c.i.f. basis [Ando, 2006, Pp. 257-281].

Secondly, the data from UNCOMTRADE is the basic data source for the analysis of International and Bilateral Revealed Comparative Advantage (BRCA). The data are retrieved from World Integrated Trade Solutions (WITS). It provides data for export and import of a country for calendar years. The IRCA and BRCA are constructed for the period 1996 to 2015. However, there are few limitations of WITS, UNCOMTRADE database. Firstly, world here is assumed to consist of the countries which report their data to UNCOMTRADE. Thus, countries which do not report their data are being excluded from the world. Secondly, world trade data is available up to HS-06 digit. Thus, the analysis of IRCA and BRCA is restricted to HS-06 digit level of classification. Thirdly, this database keeps on updating its data, as and when it receives more information from the reporting countries. Therefore, there may be discrepancy in the data retrieved afterwards. Lastly, project goods (Chapter 98) and unspecified products (Chapter 99) are excluded because data for these have not been reported in the UN-COMTRADE database.

To evaluate compositional change in the bilateral trade between India and Japan, the study used UNCTAD's technology-based classification in this study. Technological innovations play a crucial role in determining the trading structure of the country. UNCTAD classifies Standard International Trade Classification SITC (Rev 3)

products into mainly (1) primary and (2) manufacturing products and then as per different levels of technology used in disaggregated export activities and their up-gradation over time. Manufacturing products are further classified into sub-categories on the basis of degrees of skill, technology, capital and scale. According to UNCTAD classification, manufacturing products are classified as;

- * **Labour-intensive resource-based manufacturing products (LIR):** LIR products require simple techniques of production but their production is based on natural resource endowments.
- * **Low-technology skill-based manufacturing products (LTS):** LTS manufacturing products used simple but well diffused technologies largely embodied in capital equipment, with low R&D and skill requirements and low economies of scale.
- * **Medium-technology skill-based manufacturing products (MTS):** MTS manufacturing products makes use of complex but not fast-changing technologies, with moderate levels of R&D with advanced engineering and design skills and large scales of production.
- * **High-technology skill-based manufacturing products (HTS):** HTS manufacturing products used advanced manufacturing capabilities, massive R&D investments, advanced technology infrastructures. The close interaction between firm, universities and research institutions is required. Innovation plays very important role in their production.
- * **Other manufacturing products:** The products that do not fall into any of these categories are separately grouped into other manufacturing products (Appendix A1, Table A1.2).

4. TRENDS AND PATTERN OF MERCHANDISE BILATERAL TRADE

This section consists of four sub-sections. First sub-section examines trends and composition in the bilateral merchandise trade between India and Japan. Second Sub-section deals with a comparison of international and bilateral RCA of India and Japan. Third sub-section analyses IIT between India and Japan with the help of GL index. Forth sub-section with help of Product Quality Index (PQI) further decomposes IIT into HIIT and VIIT.

4.1 Trends and Composition of Trade between India and Japan

India's exports to Japan increased at CAGR of 6.77 percent per annum whereas imports augmented significantly at the annual rate of 9.61 percent. During the entire period from 1990-91 to 2015-16, India had a trade deficit with Japan, with the exception of 2002-03. In the year 2002-03, India's export to Japan was marginally higher than its import from Japan. The sharp increase in export to and import from Japan in 2011-12 and 2012-13 is evident in Table 1. This sudden bounce is the result of CEPA between India and Japan which was signed in 2011. Initially, export of India to Japan were dominated by ores, slag and ash (C-26), fish and crustaceans, mollusks and other aquatic invertebrates (C-3), cotton (C-52), articles of apparel and clothing accessories, not knitted or crocheted (C-62), with precious metal and articles thereof; imitation jewellery; coin (C-71) and salt; sulphur; earths and stone; plastering materials, lime and cement (C-25). In 1990-91 the combined share of ores, slag and ash (C-26) and fish and crustaceans, mollusks and

other aquatic invertebrates (C-3) was 55.33 percent of India's total exports to Japan. The predominant products were other: (excluding AFD shrimp); shrimp frozen and floating structures; (03061319), prawns frozen (03061320), non-agglomerated iron ore lumps (60% fe and above) (26011110), non-agglomerated iron ore lumps

**Table 1. Merchandise Bilateral Trade
Between India and Japan**

(US \$ Million)		
Year	India's Export to Japan	India's Import from Japan
(1)	(2)	(3)
1990-91	1202.24	1687.42
1991-92	1134.04	1344.81
1992-93	1207.75	1314.56
1993-94	1463.92	1488.83
1994-95	2026.88	2036.71
1995-96	2217.51	2468.99
1996-97	2004.69	2188.89
1997-98	1898.29	2147.37
1998-99	1646.36	2458.50
1999-00	1683.90	2535.02
2000-01	1794.85	1841.72
2001-02	1511.37	2149.05
2002-03	1863.50	1835.71
2003-04	1710.46	2669.51
2004-05	2127.03	3233.80
2005-06	2480.89	4060.50
2006-07	2860.78	4592.51
2007-08	3855.76	6326.49
2008-09	3006.91	7803.32
2009-10	3615.10	6725.82
2010-11	5086.47	8626.14
2011-12	6363.16	12125.73
2012-13	6099.94	12405.36
2013-14	6819.13	9456.48
2014-15	5369.99	10137.43
2015-16	4662.60	9852.30
CAGR (%)	6.77	9.61

(below 60% fe, including black iron ore containing up to 10 percent mn) (26011120), non-agglomerated iron ore fines (62% fe and above) (26011130), non-agglomerated iron ore fines (below 62% fe) and other aquatic invertebrates (C-3) has been gradually abbreviated and replaced by mineral fuels, mineral oils and products or their distillation; bituminous substances; mineral waxes (C-27). In the year 2015-16, mineral fuels, mineral oils and products or their distillation; bituminous substances; mineral waxes (C-27) contributed nearly 25.22 percent of India's exports to Japan. Apart from mineral fuels, mineral oils and products or their distillation; bituminous substances; mineral waxes (C-27), organic chemicals (C-29), miscellaneous chemical products (C-38), articles of apparel and clothing accessories, not knitted or crocheted (C-62), natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation jewellery; coin (C-71), nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (C-84), vehicles other than railway or tramway rolling stock, and parts and accessories thereof (C-87), aircraft, spacecraft, and parts thereof (C-88), ships, boats and floating structures (C-89) also contributed reasonably in India's exports basket to Japan.

As per UNCTAD's technology-based classification, primary products invariably dominated India's export to Japan. Its share ranges from 50 to 75 percent during 1990-91 to 2015-16 in India's total exports to Japan (Table 2). The share of manufacturing products ranges from 20 to 30 percent with a few exceptions. One can note that there has been a structural change within manufacturing products in the India's export to Japan.

Table 2. Composition of India's Export to Japan: UNCTAD Classification

(Percent)

Year	Primary	Manufacturing	Manufacturing				
			LIR	LTS	MTS	HTS	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1990-91	78.31	21.69	13.05	5.12	0.14	2.04	1.34
1991-92	66.92	33.08	19.40	8.38	0.25	3.40	1.65
1992-93	73.97	26.03	15.97	4.34	0.40	2.67	2.64
1993-94	73.84	26.16	16.51	3.99	0.39	2.60	2.67
1994-95	76.18	23.82	15.90	2.74	0.36	2.83	2.00
1995-96	77.55	22.45	14.35	2.00	0.65	3.03	2.43
1996-97	75.40	24.60	14.43	3.88	0.77	4.22	1.31
1997-98	75.49	24.51	15.90	1.82	1.01	4.51	1.28
1998-99	78.60	21.40	12.77	0.79	1.15	5.09	1.60
1999-00	78.05	21.95	13.69	0.87	1.41	4.69	1.29
2000-01	73.22	26.78	17.00	1.13	1.63	5.29	1.72
2001-02	70.58	29.42	16.74	1.39	2.07	6.83	2.39
2002-03	73.77	26.23	13.07	1.15	3.54	6.45	2.01
2003-04	67.29	32.71	14.88	1.43	4.71	8.79	2.89
2004-05	72.76	27.24	11.69	1.10	2.88	8.66	2.90
2005-06	72.21	27.79	12.00	0.82	3.27	9.14	2.56
2006-07	71.18	28.82	11.55	1.06	4.37	9.01	2.83
2007-08	77.49	22.51	7.81	1.26	3.40	8.21	1.83
2008-09	65.95	34.05	11.23	3.52	4.60	12.20	2.50
2009-10	74.72	25.28	7.90	0.81	3.21	9.76	3.60
2010-11	76.68	23.32	7.34	3.24	2.88	8.33	1.54
2011-12	77.85	22.15	7.69	1.24	2.61	9.34	1.28
2012-13	74.29	25.71	7.85	1.49	3.33	11.59	1.44
2013-14	73.83	26.17	7.93	1.48	2.87	11.24	2.65
2014-15	60.14	39.86	9.26	6.60	9.18	12.46	2.36
2015-16	49.19	50.81	10.04	11.59	10.99	15.42	2.77

Note: LIR= Labour-intensive Resource-based manufacturing products, LTS = Low-technology Skill-based Manufacturing Products, MTS = Medium-technology Skill-based Manufacturing Products, HTS = High technology Skill-based Manufacturing Products.

Previously, India was exporting labour-intensive resource-based (LIR) and low-technology and skill-based (LTS) manufacturing products to Japan. However, over the years, their share has declined in favour of medium technology skill-based (MTS) and high-technology skill-based (HTS) manufacturing products.

As far as imports are concerned, in 1990-91, imports from Japan to India were largely contributed by nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (C-84),

electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of articles (C-85), vehicles other than railway or tramway rolling stock, and parts and accessories thereof (C-87), iron and steel (C-72) and project goods (C-98). These chapters together contributed almost 62 percent of India's import basket from Japan. The predominance of iron and steel (C-72), nuclear reactors, boilers, machinery and mechanical appliances, parts thereof (C-84) and electrical

Table 3. Composition of India's Import from Japan: UNCTAD Classification

(Percent)

Year	Primary	Manufacturing	Manufacturing				
			LIR	LTS	MTS	HTS	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1990-91	9.43	90.57	28.24	14.65	21.00	18.04	8.64
1991-92	4.03	95.97	6.20	18.05	30.77	20.10	20.85
1992-93	3.03	96.97	4.75	10.57	29.89	18.03	33.72
1993-94	4.30	95.70	4.01	10.87	35.21	22.34	23.26
1994-95	4.46	95.54	4.57	6.80	30.70	24.06	29.42
1995-96	3.96	96.04	3.14	7.27	27.73	22.69	35.20
1996-97	4.77	95.23	2.34	8.92	32.97	23.46	27.54
1997-98	6.03	93.97	2.09	13.74	39.03	23.44	15.66
1998-99	4.91	95.09	2.27	12.45	34.12	27.84	18.40
1999-00	6.50	93.50	2.22	10.57	28.89	22.24	29.58
2000-01	5.79	94.21	1.70	15.10	30.59	23.91	22.90
2001-02	6.34	93.66	2.57	12.91	40.20	28.37	9.60
2002-03	7.29	92.71	5.39	13.73	30.89	30.94	11.77
2003-04	7.48	92.52	3.75	11.42	36.35	34.50	6.49
2004-05	7.24	92.76	2.64	17.15	36.72	30.69	5.57
2005-06	6.74	93.26	2.48	15.19	38.99	30.53	6.06
2006-07	3.36	96.64	2.43	19.26	40.49	28.48	5.99
2007-08	5.15	94.85	2.38	16.65	40.63	28.63	6.56
2008-09	6.24	93.76	2.21	15.39	42.87	29.00	4.29
2009-10	10.51	89.49	2.17	17.67	40.55	24.88	4.22
2010-11	5.51	94.49	2.77	18.88	37.80	28.17	6.87
2011-12	5.25	94.75	2.61	20.10	42.51	23.76	5.77
2012-13	7.32	92.68	2.30	17.49	41.42	21.05	10.43
2013-14	5.87	94.13	2.09	22.87	43.14	19.98	6.05
2014-15	5.48	94.52	2.06	29.80	36.80	22.21	3.65
2015-16	5.72	94.28	2.05	25.28	36.72	26.92	3.31

Note: LIR = Labour-intensive Resource-based manufacturing products, LTS = Low-technology Skill-based Manufacturing Products, MTS = Medium-technology Skill-based Manufacturing Products, HTS = High-technology Skill-based Manufacturing Products.

machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of articles (C-85), etc., have been persistent throughout the period. Ships, boats and floating structures (C-89) also recorded impressive share in India's imports from Japan. However, in 1990-91, the combined share of vehicles other than railway or tramway rolling

stock, and parts and accessories thereof (C-87), surgical instruments and apparatus, parts and accessories thereof (C-90) and project goods (C-98) was 30 percent of total imports from Japan which dramatically reduced to 12.86 percent in 2012-13. In 2013-14, iron and steel (C-72), nuclear reactors, boilers, machinery and mechanical appliances, parts thereof (C-84) and electrical machinery and equipment and parts

thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of articles (C-85) contributed 52.15 percent of India's import from Japan. Thus, it can be inferred that India's imports from Japan have always been dominated by manufacturing products and thinly comprised of primary products. The share of manufacturing products was always more than 90 percent of total imports from Japan (Table 3). The share of medium and high-technology and skill-based manufacturing products (MTS) accelerated over the years. LIR and LTS manufacturing products showed fluctuating trend over the period of time. With the process of economic reforms (including reform of the country's exchange rate policy) and continuous integration with the global economy after 1991, India also was not an exception to experience of economic development which brings structural change in the country's production pattern. Thus, share of MTS and HTS in India's exports showed a modest increase. However, Indian import of manufacturing products from Japan still linger on LTS and MTS based manufacturing products because of low level of R&D, lack of skilled personnel, relatively low level of FDI and competitiveness [Nayak et al., 2013] of Indian industry. Thus, one can notice that there has been increase in the share of medium and high technology and skill-based manufacturing products in the export to and import from Japan. It suggests that there is a potential of intra-industry trade between India and Japan because being engaged in IIT, a country can reduce the number of similar products it produces and benefit from scale economies and specialisation. A higher IIT level of IIT value indicates that the adjustment cost would be lower when compared to inter-industry trade in the process of trade expansion. IIT is analysed in the next sub-section.

Table 4. Trends in India's Export to Japan at the HS-08 Digit Level

Year	QI	UVI
(1)	(2)	(3)
1990-91	93.10	28.26
1991-92	159.96	21.06
1992-93	151.36	29.93
1993-94	137.41	41.04
1994-95	164.18	47.28
1995-96	172.57	52.80
1996-97	94.79	92.38
1997-98	94.10	92.41
1998-99	91.23	93.77
1999-00	93.12	96.43
2000-01	100.00	100.00
2001-02	86.80	100.91
2002-03	116.02	94.94
2003-04	80.94	121.49
2004-05	80.70	148.17
2005-06	90.55	151.95
2006-07	86.77	186.03
2007-08	84.36	230.21
2008-09	110.27	155.90
2009-10	131.80	159.69
2010-11	582.33	49.81
2011-12	586.62	65.21
2012-13	328.69	126.50
2013-14	242.28	210.63
2014-15	156.09	259.83
2015-16	173.48	215.62
CAGR (%)	2.95	7.24

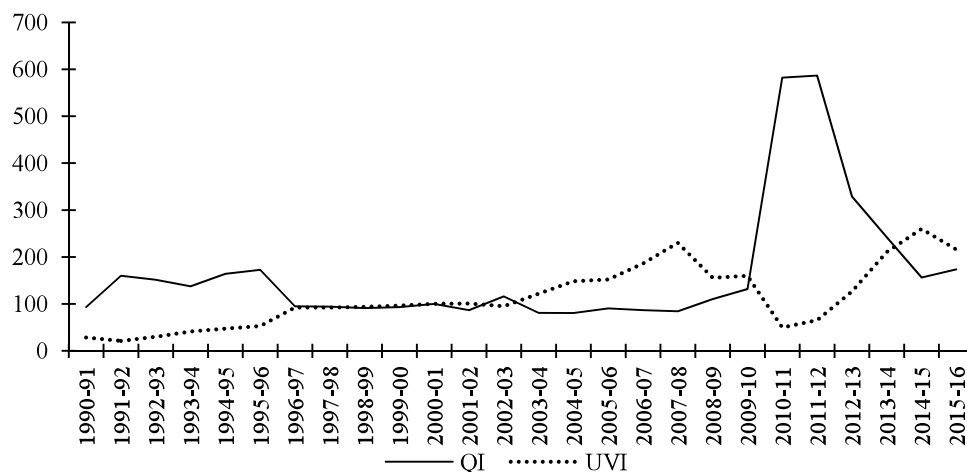
4.2 Trends in the QI and UVI between India and Japan

India's export to Japan registered CAGR of 2.95 percent per annum in terms of quantity over the period from 1990-91 to 2015-16. The growth in unit value of export increased at CAGR of 7.24 percent per annum. It implies that compared to physical volume, the average price of Indian exports to Japan increased at a faster rate over the period which has resulted in an increase in value of India's total export to Japan during 1990-91 to

2015-16. Table 4 confirms that the QI is exhibiting a fluctuating trend during 1990-91 to 2005-06. The adverse impact of Asian crisis on export of India to Japan is perceptible from 1996-97. Afterwards, the negative effect of India's nuclear test is evident in the year 1998-99. Japan's extreme reaction and inability to understand India's motives behind advancement in atomic energy sector resulted in a fall in the export of India to Japan. Exports of India to Japan in terms of quantity witnessed an increasing trend from 2008-09 to 2012-13 (Figure 1). QI of India's export to Japan showcased a dip for the two years, 2013-14 and 2014-15. Nevertheless, in 2015-16 there has been a surge in QI of India. The UVI for export has also displayed fluctuations over the period of 26 years. Nevertheless, it shows a

positive trend from 2003-04 to 2007-08 (Figure 1). Thereafter, UVI for India's export to Japan experiences a wavering trend. After 2011-12, it witnessed a positive march. Table 4 reveals that during 1990-91 to 1997-98, the value of QI is greater than UVI, hence, the value of export increased over this period due to an increase in quantity and not in price. This implies that the quantum effect was more powerful over this period than the price effect whereas, from 2003-04 to 2009-10, the value of export increased due to an increase in price by a higher percentage than the quantum effect. Table 4 confirms that the Quantum effect was more powerful from 2010-11 to 2013-14. However, UVI empowered export growth during last two years of the study.

Figure 1: QI and UVI of India's Export to Japan at the HS-08 Digit Level



In terms of quantity, India's import from Japan recorded a CAGR of 5.60 percent per annum over the period from 1990-91 to 2015-16. However, the unit value of imports increased at the CAGR of 10.34 percent per annum. Figure 2 confirms the strengthening of trade ties between India and Japan during the period. Over the period, the UVI

for imports also exhibited a similar trend of fluctuations (Figure 2). It can be seen from Table 5 that during the period of 26 years from 1990-91 to 2015-16, the QI for imports was always greater than the UVI for imports. This implies that the quantum effect was more powerful than the price effect. Thus, it could be inferred that the increase

in value of India's import from Japan was due to an increase in the quantity imported rather than the price. Hence, during a period from 1990-91 to 2015-16, India's import from Japan increased in real terms as well as in absolute terms. However, the rate of growth of QI is less than that of growth in UVI for India's imports from Japan.

4.3. International and Bilateral Revealed Comparative Advantage of India and Japan

In this sub-section we try to assess and compare IRCA of India and Japan and BRCA of them

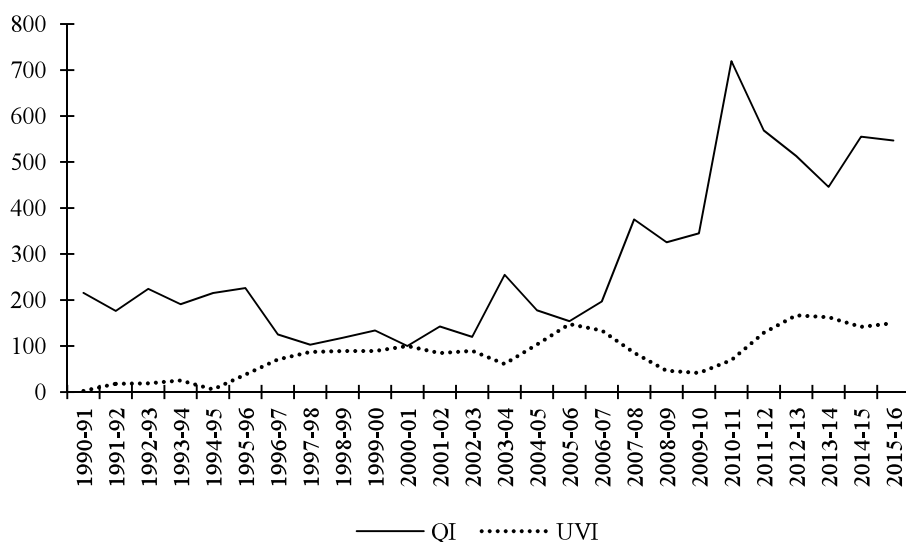
with each other.

4.3.1 Comparison of India's IRCA and BRCA with Japan

Section-wise IRCA of India suggested that mineral products (S-5) and base metals (S-15) gained IRCA during 1996 to 2016. On the contrary, animal and vegetable fats and oils and their cleavage products (S-3) and prepared foodstuff, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes (S-4) lost IRCA

Table 5. Trends in India's Import from Japan at the HS-08 Digit Level

Year	QI	UVI
(1)	(2)	(3)
1990-91	215.47	2.16
1991-92	176.37	17.89
1992-93	224.19	18.95
1993-94	190.89	25.08
1994-95	215.10	5.60
1995-96	225.98	37.82
1996-97	125.15	70.49
1997-98	102.83	87.00
1998-99	117.62	88.99
1999-00	133.84	88.98
2000-01	100.00	100.00
2001-02	142.51	84.53
2002-03	119.92	89.55
2003-04	254.87	60.83
2004-05	177.56	103.51
2005-06	154.01	147.54
2006-07	196.87	133.54
2007-08	375.40	85.16
2008-09	325.43	46.44
2009-10	344.81	41.30
2010-11	719.47	69.14
2011-12	568.70	128.57
2012-13	513.06	166.83
2013-14	445.73	162.49
2014-15	555.15	141.51
2015-16	546.62	149.56
CAGR (%)	5.60	10.34

Figure 2: QI of India's Import from Japan at the HS-08 Digit Level**Table 6. Comparison of India's IRCA and BRCA with Japan During 1996 to 2015**

International Revealed Comparative Advantage of India (IRCA)	Bilateral Revealed Comparative Advantage of India with Japan (BRCA)
(1)	(2)
Section-wise	Section-wise
No. of Sections with IRCA in 1996: 9; (S-1), (S-2), (S-3), (S-4), (S-6), (S-8), (S-11), (S-12), (S-14)	No. of Sections with BRCA in 1996: 5; (S-1), (S-3), (S-5), (S-13), (S-14)
No. of Sections with IRCA in 2015: 9 ; (S-1), (S-2), (S-5), (S-6), (S-8), (S-11), (S-12), (S-14), (S-15)	No. of Sections with BRCA in 2015: 6; (S-1), (S-3), (S-5), (S-6), (S-17), (S-18)
No. of Sections which Maintained IRCA Throughout the Period: 5; (S-2), (S-8), (S-11), (S-12), (S-14)	No. of Sections which Maintained BRCA Throughout the Period: 3; (S-1), (S-3), (S-5)
No. of Sections which Gained IRCA during Period: 2; (S-5), (S-15)	No. of Sections which Gained BRCA during Period: 3; (S-4), (S-6), (S-18)
No. of Sections which lost IRCA during Period: 2; (S-3), (S-4)	No. of Sections which lost BRCA during Period: 2; (S-13), (S-14)

(Contd.)

Table 6. (Concl.)

No. of Sections with IRCA but No BRCA: 3 ; (S-8), (S-11), (S-12)
No. of Sections with BRCA but No IRCA: 1; (S-18)

Chapter-wise	Chapter-wise
No. of Chapters with IRCA in 1996: 39; (C-3), (C-5), (C-7), (C-8), (C-9), (C-10), (C-11), (C-12), (C-13), (C-14), (C-15), (C-17), (C-13), (C-24), (C-25), (C-26), (C-28), (C-29), (C-30), (C-32), (C-36), (C-41), (C-42), (C-50), (C-52), (C-53), (C-54), (C-55), (C-57), (C-61), (C-62), (C-63), (C-64), (C-67), (C-68), (C-71), (C-72), (C-80), (C-96)	No. of Chapters with BRCA in 1996: 19; (C-3), (C-5), (C-6), (C-8), (C-14), (C-15), (C-16), (C-22), (C-25), (C-26), (C-33), (C-47), (C-51), (C-56), (C-68), (C-71), (C-72), (C-78), (C-81), (C-92),
No. of Chapters with IRCA in 2015: 42; (C-2), (C-3), (C-7), (C-9), (C-10), (C-12), (C-13), (C-14), (C-17), (C-24), (C-27), (C-29), (C-29), (C-30), (C-32), (C-36), (C-38), (C-41), (C-42), (C-50), (C-52), (C-53), (C-54), (C-55), (C-57), (C-58), (C-61), (C-62), (C-63), (C-64), (C-67), (C-68), (C-71), (C-72), (C-73), (C-74), (C-75), (C-78), (C-79) (C-88), (C-89)	No. of Chapters with BRCA in 2015: 28; (C-3), (C-4), (C-5), (C-6), (C-8), (C-13), (C-14), (C-16), (C-20), (C-23), (C-25), (C-26), (C-27), (C-28), (C-29), (C-32), (C-33), (C-35), (C-38), (C-51), (C-59), (C-71), (C-78), (C-81), (C-89), (C-90), (C-92)
No. of Chapters which Maintained IRCA Throughout the Period: 24; (C-3), (C-9), (C-10), (C-13), (C-14), (C-15), (C-24), (C-25), (C-29), (C-32), (C-41), (C-42), (C-50), (C-52), (C-53), (C-54), (C-55), (C-57), (C-61), (C-62), (C-63), (C-64), (C-67), (C-68), (C-71)	No. of Chapters which Maintained BRCA Throughout the Period: 8; (C-3), (C-5), (C-6), (C-14), (C-15), (C-16), (C-26), (C-92)
No. of Chapters which Gained IRCA during Period: 12; (C-2), (C-27), (C-38), (C-56), (C-58) (C-73), (C-74), (C-75), (C-78), (C-79) (C-88), (C-89)	No. of Chapters which Gained BRCA during Period: 12; (C-4), (C-8), (C-13) (C-20), (C-23), (C-27), (C-35) (C-38) (C-59), (C-89), (C-90)
No. of Chapters which lost IRCA during Period: 9; (C-5), (C-8), (C-11), (C-15), (C-23), (C-26), (C-28), (C-80), (C-96)	No. of Chapters which lost BRCA during Period: 5; (C-22), (C-47), (C-56), (C-68), (C-71)
Product-wise	Product-wise
No. of Products with IRCA in 1996: 1183	No. of Products with BRCA in 1996: 403
No. of Products with IRCA in 2015: 1351	No. of Products with BRCA in 2015: 679
No. of Products which Maintained IRCA Throughout the Period: 400	No. of Products which Maintained BRCA Throughout the Period: 32

during the period of time (Appendix A2, Table A2.1). Table 6 enlists sections which sustained their IRCA throughout the period, namely, vegetable products (S-2), raw hides and skins, leather fur skin and article thereof (S-8), textile and textile articles (S-11), footwear and umbrellas etc. (S-12) and natural and cultured pearls, precious and semi-precious stones (S-14). India's BRCA with Japan quite resembles its IRCA. The sections, namely, live animals; animal products (S-1), animal and vegetable fats and oils and their

cleavage products (S-3) and mineral products (S-5) successfully maintained their BRCA throughout the period of study. India showcased its IRCA for live animals, animal products (S-1) except for three intermediate years (Appendix A2, Table A2.3). The BRCA index for animal and vegetable fats and oils and their cleavage products (S-3) is different than IRCA. India lost its IRCA for animal and vegetable fats and oils and their coverage products (S-3) but maintained its BRCA with Japan for this section for all the years.

Similarly, for prepared foodstuff, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes (S-4), India recorded BRCA for most of the intermediate years but was unable to maintain its IRCA. In the case of mineral products (S-5), India initially did not have IRCA but successfully gained and maintained it from 2004. India experience continuous IRCA for products of chemicals and allied industries (S-6) except for 2009. As a result of fall in tariff from Japan as per CEPA, India mirrored BRCA for chemicals and allied industries (S-6) in the last two years of the study. Even so, there are sections such as raw hides and skins, leather fur skin and article thereof (S-8) and footwear and umbrellas etc. (S-12) in which India witnessed IRCA throughout the period but recorded no BRCA with Japan. This is because contribution of these sections in India's total exports to Japan has been very less. On the other hand, textile and textile articles (S-11) is one of the dominant sections in India's export to Japan but does not possess BRCA with Japan. India's export of textiles to Japan accounts only for 1 percent of Japan's total textiles import from world. This could be attributed to high tariff imposed by Japan. Indian textiles sector faced 15 percent tariff from Japan. Thus, India fails to register BRCA with Japan. In spite of concessions given as per CEPA, India failed to improve its share in the Japanese market due to low level of improvement in terms of range and variety of products [Seshadri, 2016]. India does not possess IRCA for Optical, musical, cinematographic, medical instruments (S-18) at all but represents BRCA with Japan in the intermediate period during 2000 to 2010 (Appendix A2, Table A2.3). Elderly population is growing in Japan as a result there is increasing demand for medical devices which treat age related diseases. Hence, Japan is the second largest medical device market in the world followed by US. On the other hand, Indian medical device sector is dominated

by multi-national companies and domestic players are very quick to adapt to changing environment which focuses on low cost devices which resulted in increasing India's export to Japan. [NDA, 2016].

Chapter-wise scenario of IRCA suggested that in 1996 there were 39 chapters that showed IRCA greater than one. The number rose to 42 in 2015. Table 6 represents list of 12 chapters which gained IRCA in 2015. Additionally, it shows chapters in which India lost her international competitiveness in 2015. India successfully maintained her IRCA in 24 chapters during 1996 to 2015 (Appendix A2, Table A2.2). On the other hand, analysis of BRCA suggested that the number of chapters with BRCA greater than one rose to 28 in 2015 from 19 in 1996. Further, 8 chapters sustained their BRCA throughout the period. Namely, fish and crustaceans, molluscs and other aquatic invertebrates (C-3), products of animal origin, not elsewhere specified or included (C-5), live trees and other plants, bulbs, roots etc. (C-6), vegetable plaiting materials, vegetable products not elsewhere specified (C-14), animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes (C-15), preparation of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates (C-16), ores, slag and ash (C-26) and musical instruments, parts and accessories of such articles (C-92) (Appendix A2, Table A2.4). Out of this, fish and crustaceans, molluscs and other aquatic invertebrates (C-3), vegetable plaiting materials; vegetable products not elsewhere specified (C-14) and animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes (C-15) show both international as well as bilateral competitiveness. On the other hand, live trees and other plants, bulbs, roots etc. (C-6), preparation of meat, of fish or of crustaceans, molluscs or other aquatic

invertebrates (C-16) and musical instruments, parts and accessories of such articles (C-92) possess no IRCA but exhibit BRCA. Products of animal origin not elsewhere specified or included (C-5) and ores, slag and ash (C-26) were initially internationally competitive but lost IRCA over a period of time (Appendix A2, Table A2.3). Even so, these chapters have bilateral competitiveness throughout the period (Appendix A2, Table A2.4).

Table 7. India's IRCA and BRCA with Japan: UNCTAD Classification

Year	International Revealed Comparative Advantage of India (IRCA)							Bilateral Revealed Comparative Advantage of India with Japan (BRCA)						
	Pri- mary	Manu- factu- ring	Manufacturing					Pri- mary	Manu- factu- ring	Manufacturing				
			LIR	LTS	MTS	HTS	Un- speci- fied			LIR	LTS	MTS	HTS	Un- speci- fied
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1996	1.98	0.72	2.48	0.86	0.23	0.42	1.05	1.86	0.43	0.44	0.89	0.14	0.43	0.37
1997	1.80	0.75	2.59	0.95	0.26	0.42	1.27	1.93	0.43	0.48	0.66	0.27	0.39	0.22
1998	1.95	0.72	2.68	0.83	0.24	0.37	1.71	2.00	0.38	0.38	0.32	0.49	0.49	0.27
1999	1.90	0.73	2.68	1.01	0.23	0.39	1.49	1.99	0.39	0.43	0.33	0.41	0.42	0.20
2000	1.65	0.77	2.80	1.11	0.26	0.39	1.61	1.91	0.44	0.49	0.42	0.44	0.46	0.22
2001	1.63	0.77	2.60	1.04	0.29	0.45	1.81	1.83	0.51	0.60	0.33	0.55	0.50	0.22
2002	1.71	0.74	2.40	1.10	0.29	0.45	1.78	1.85	0.45	0.51	0.21	0.59	0.52	0.24
2003	1.62	0.75	2.23	1.27	0.33	0.46	2.22	1.69	0.56	0.57	0.26	1.04	0.63	0.32
2004	1.60	0.73	2.12	1.30	0.34	0.47	2.88	1.77	0.49	0.58	0.33	0.60	0.62	0.33
2005	1.56	0.73	2.05	1.29	0.39	0.46	2.49	1.66	0.51	0.55	0.35	0.58	0.70	0.37
2006	1.52	0.73	1.95	1.25	0.41	0.47	2.71	1.62	0.52	0.58	0.32	0.61	0.69	0.33
2007	1.61	0.70	1.77	1.18	0.39	0.50	2.45	1.54	0.53	0.50	0.57	0.56	0.72	0.30
2008	1.43	0.75	1.70	1.31	0.46	0.56	1.86	1.43	0.63	0.55	0.88	0.51	0.78	0.25
2009	1.39	0.71	1.57	1.16	0.44	0.57	4.03	1.67	0.52	0.56	0.64	0.52	0.71	0.12
2010	1.52	0.70	1.51	1.26	0.46	0.52	2.43	1.53	0.52	0.44	0.93	0.38	0.62	0.17
2011	1.42	0.70	1.47	1.20	0.41	0.58	3.18	1.45	0.58	0.62	0.77	0.50	0.75	0.15
2012	1.54	0.67	1.44	1.12	0.43	0.56	3.41	1.55	0.54	0.56	0.62	0.52	0.75	0.11
2013	1.59	0.69	1.44	1.13	0.43	0.59	1.83	1.42	0.60	0.53	0.72	0.68	0.71	0.16
2014	1.50	0.72	1.49	1.21	0.47	0.57	2.11	1.40	0.67	0.61	0.72	0.83	0.78	0.12
2015	1.45	0.77	1.72	1.17	0.52	0.60	2.09	1.26	0.83	0.59	1.61	0.81	0.92	0.11

Product level comparison of IRCA and BRCA has been carried out by classifying products on the basis of UNCTAD classification. Table 7 shows India's IRCA and BRCA with Japan on the basis of UNCTAD classification. India recorded IRCA for primary products but it is not at all

globally competitive in exporting manufacturing products, thus showing no IRCA in manufacturing products for any year. However, UNCTAD classifies manufacturing products on the basis of skill and technology used in the process of their production. India has IRCA for Labour-intensive

resource-based manufacturing products and low-technology skilled-based manufacturing products. As far as India's BRCA is concerned, only primary products possess bilateral competitiveness with Japan throughout the period. Low-technology skill-based manufacturing products gained BRCA in 2015. This increase in BRCA can be due to increase in export from ships, boats and floating structures (C-89). Similarly, increase in export from nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (C-84) and electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of articles (C-85) in 2003 led to BRCA for Medium-technology skill-based manufacturing products in 2003. In short, it is very clear from the results that India failed to register BRCA for LTR and LTS manufacturing products. Thus, it can be inferred that it would be a long race for India to gain bilateral competitiveness in MTS and HTS manufacturing products.

4.3.2 Comparison of Japan's IRCA and BRCA with India

In 1996, Japan exhibited IRCA for 3 sections, namely, machinery and mechanical appliances (S-16), vehicles and aircraft, vessels and other transport equipment (S-17) and optical, musical, cinematographic, medical instruments (S-18). These sections successfully maintained their international competitiveness throughout the period (Appendix A2, Table A2.5). Over the period Japan gained IRCA for products of plastic and rubber and articles thereof (S-7) and base metals (S-15). Japan has been more competitive in Indian market in terms of number of competitive sections. Table 8 enlists 6 sections that recorded BRCA in 2015, viz., products of chemicals and allied industries (S-6), products of plastic and rubber and articles thereof (S-7), textile and textile articles (S-11), articles of stones, cement, plaster and ceramic products

(S-13), base metals (S-15), and machinery and mechanical appliances (S-16). Out of these, Japan does not hold international competitiveness in exporting products of chemicals and allied industries (S-6) and textile and textile articles (S-11) (Appendix A2, Table A2.5). International competitive machinery and mechanical appliances (S-16) became bilaterally competitive from 2005 and successfully maintained it till 2015 (Appendix A2, Table A2.7). Natural and cultured pearls, precious and semi-precious stones (S-14), optical, musical, cinematographic, medical instruments (S-18) and works of arts antiques and pieces (S-21) gained BRCA in the intermediate years but unable to maintain it persistently. Furthermore, international competitiveness of sections such as vehicles and aircraft, vessels and other transport equipment (S-17) and optical, musical, cinematographic, medical instruments (S-18) is not accompanied by BRCA at all (Appendix A2, Table A2.7).

Chapter-wise scenario of international competitiveness suggested that number of chapters with IRCA >1 increased from 15 in 1996 to 21 in 2015. Furthermore, 12 sections maintained their IRCA throughout the period of time (Appendix A2, Table A2.6). There has been 7 Chapters which gained and 1 chapter lost its IRCA during the period from 1996 to 2015. A detailed list is given in table 8. On the other hand, chapter-wise analysis of BRCA indicated that there has been a fall in the number of chapters with bilateral competitiveness. It was 29 in 1996 the number decreased to 23 in 2015. There are 7 chapters such as inorganic chemicals (C-28), soap organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations (C-34), articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware (C-68), iron and steel (C-72), articles of iron or steel (C-73), tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal (C-82) and

Table 8. Comparison of Japan's IRCA and BRCA with India During 1996 to 2015

International Revealed Comparative Advantage of Japan (IRCA)	Bilateral Revealed Comparative Advantage of Japan with India (BRCA)
(1)	(2)
Section-wise	Section-wise
No. of Sections with IRCA in 1996: 3; (S-16), (S-17), (S-18)	No. of Sections with BRCA in 1996: 6; (S-2), (S-5), (S-6), (S-7), (S-13), (S-15)
No. of Sections with IRCA in 2015: 5; (S-7), (S-15), (S-16), (S-17), (S-18)	No. of Sections with BRCA in 2015: 6; (S-7), (S-6), (S-15), (S-11), (S-13), (S-15), (S-16)
No. of Sections which Maintained IRCA Throughout the Period: 3; (S-16), (S-17), (S-18)	No. of Sections which Maintained BRCA Throughout the Period: 1; (S-15)
No. of Sections which Gained IRCA during Period: 2; (S-7), (S-15)	No. of Sections which Gained BRCA during Period: 2; (S-16), (S-11)
No. of Sections which lost IRCA during intermediate Period: --	No. of Sections which lost BRCA during intermediate Period: 2; (S-2) 3 (S-14), (S-18), (S-21)
No. of Sections with IRCA but No BRCA: 2; (S-18), (S-17) No. of Sections with BRCA but No IRCA: 2 (S-6)	
Chapter-wise	Chapter-wise
No. of Chapters with IRCA in 1996: 15; (C-29), (C-37), (C-40), (C-54), (C-72), (C-81), (C-82), (C-84), (C-85), (C-87), (C-89), (C-90), (C-91), (C-92), (C-96)	No. of Chapters with BRCA in 1996: 29; (C-1), (C-10), (C-12), (C-26), (C-27), (C-28), (C-29), (C-34), (C-35), (C-37), (C-39), (C-40), (C-45), (C-49), (C-55), (C-57), (C-59), (C-63), (C-68), (C-69), (C-70), (C-72), (C-73), (C-74), (C-75), (C-78), (C-82), (C-84),
No. of Chapters with IRCA in 2015: 21; (C-29), (C-32), (C-37), (C-38), (C-39), (C-40), (C-54), (C-55), (C-68), (C-70), (C-72), (C-74), (C-81), (C-82), (C-84), (C-85), (C-87), (C-89), (C-90), (C-92), (C-96)	No. of Chapters with BRCA in 2015: 23; (C-14), (C-25), (C-28), (C-29), (C-34), (C-38), (C-39), (C-40), (C-49), (C-54), (C-55), (C-57), (C-68), (C-72), (C-73), (C-74), (C-75), (C-78), (C-82), (C-83), (C-84), (C-94)
No. of Chapters which Maintained IRCA Throughout the Period: 12; (C-29), (C-37), (C-40), (C-72), (C-82), (C-84), (C-85), (C-87), (C-89), (C-90), (C-92), (C-96)	No. of Chapters which Maintained BRCA Throughout the Period: 7; (C-28), (C-34), (C-68), (C-72), (C-73), (C-82), (C-84)
No. of Chapters which Gained IRCA during Period: 7; (C-32), (C-38), (C-39), (C-55), (C-68), (C-70), (C-74)	No. of Chapters which Gained BRCA during Period: 7; (C-14), (C-25), (C-38), (C-54), (C-56), (C-83), (C-94)
No. of Chapters which lost IRCA during Period: 1; (C-91)	No. of Chapters which lost BRCA during Period: 11; (C-1), (C-10), (C-12), (C-27), (C-35), (C-37), (C-45), (C-59), (C-63), (C-69), (C-70)
Product-wise	Product-wise
No. of Products with IRCA in 1996: 1168	No. of Products with BRCA in 1996: 886
No. of Products with IRCA in 2015: 1134	No. of Products with BRCA in 2015: 929
No. of Products which Maintained IRCA Throughout the Period: 566	No. of Products which Maintained BRCA Throughout the Period: 144

Note: For description of sections and chapters please refer Appendix A1 Table A1.1

nuclear reactors, boilers, machinery and mechanical appliances, parts thereof (C-84) which maintained their BRCA during 1996 to 2015 (Appendix A2, Table A2.8). Out of this, inorganic chemicals (C-28) and soap, organic surface-active agents, washing preparations,

lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations (C-34) showed no international competitiveness. Articles of stone, plaster, cement, asbestos, mica or similar materials, ceramic products, glass and glassware (C-68) and articles of iron or steel (C-

Table 9. Japan's IRCA and BRCA with India: UNCTAD Classification

Year	International Revealed Comparative Advantage of Japan (IRCA)							Bilateral Revealed Comparative Advantage of Japan with India (BRCA)						
	Pri- mary	Manu- factu- ring	Manufacturing					Pri- mary	Manu- factu- ring	Manufacturing				
			LIR	LTS	MTS	HTS	Un- speci- fied			LIR	LTS	MTS	HTS	Un- speci- fied
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1996	0.13	1.19	0.32	1.30	1.51	1.36	0.75	2.22	0.96	0.64	1.30	1.16	0.71	0.41
1997	0.13	1.21	0.33	1.36	1.60	1.28	0.81	2.20	0.96	0.76	1.45	1.09	0.74	0.44
1998	0.14	1.18	0.33	1.35	1.57	1.23	0.77	2.26	0.95	0.62	1.30	1.17	0.67	0.62
1999	0.14	1.19	0.37	1.35	1.59	1.22	0.78	1.89	0.97	0.60	1.58	1.18	0.65	0.50
2000	0.12	1.24	0.35	1.35	1.71	1.24	0.69	1.53	0.97	0.83	1.67	1.19	0.62	0.82
2001	0.14	1.23	0.34	1.39	1.71	1.21	0.79	1.81	0.96	1.14	1.49	1.03	0.77	0.69
2002	0.14	1.23	0.33	1.43	1.76	1.17	0.66	2.07	0.95	0.99	1.43	1.00	0.80	0.85
2003	0.13	1.24	0.30	1.36	1.79	1.20	0.66	1.81	0.96	0.92	1.47	1.05	0.75	0.86
2004	0.14	1.25	0.31	1.31	1.80	1.19	0.67	1.45	0.97	0.93	1.39	1.11	0.72	0.77
2005	0.15	1.28	0.34	1.39	1.88	1.17	0.70	1.19	0.98	0.89	1.24	1.10	0.78	0.80
2006	0.18	1.30	0.33	1.37	1.96	1.14	0.73	0.95	0.99	0.82	1.44	1.09	0.77	0.62
2007	0.20	1.29	0.34	1.27	1.98	1.07	0.74	1.12	0.98	0.66	1.62	0.98	0.85	0.69
2008	0.22	1.34	0.36	1.36	2.08	1.07	0.77	1.40	0.96	0.69	1.35	0.99	0.81	0.81
2009	0.24	1.29	0.36	1.67	1.93	1.08	0.68	0.69	1.01	0.79	1.51	1.02	0.86	0.87
2010	0.22	1.33	0.37	1.57	2.06	1.04	0.64	0.67	1.02	0.74	1.62	1.08	0.72	0.64
2011	0.23	1.37	0.38	1.57	2.11	1.08	0.65	0.62	1.02	0.70	1.52	1.13	0.70	0.51
2012	0.24	1.30	0.36	1.51	2.01	1.01	0.50	0.97	0.99	0.79	1.66	1.06	0.67	0.62
2013	0.26	1.31	0.34	1.49	2.00	1.07	0.51	0.76	1.01	0.95	2.03	0.97	0.75	0.64
2014	0.26	1.30	0.32	1.47	2.08	1.04	0.51	0.83	1.01	0.98	2.08	0.92	0.81	0.56
2015	0.27	1.25	0.32	1.34	1.99	1.00	0.56	0.69	1.02	0.91	2.38	0.84	0.92	0.60

73) has gained international competitiveness from 2010 and 2011 respectively. Iron or steel (C-72), tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal (C-82) and nuclear reactors, boilers, machinery and mechanical appliances, parts thereof (C-84) recorded both international and bilateral competitiveness for all the years. Over the period of time, vegetable plaiting materials, vegetable products not elsewhere specified (C-14), salt,

sulphur, earths and stone, plastering materials (C-25), miscellaneous articles of base metal (C-83) and furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishing; lamps and lighting fittings, not elsewhere specified (C-94) gained BRCA but do not possess international competitiveness (Appendix A2, Table A2.8).

UNCTAD classification of products sug-

gested that Japan consistently exhibits IRCA for manufacturing products as a whole. Japan is globally competitive in exporting LTS, MTS and HTS manufacturing products. On the other hand, Japan does not hold international competitiveness for exporting primary products because of shortage of farmland, limited activity of raising livestock. In contrast, Japan showed BRCA in exporting primary products to India. Japan showed BRCA in vegetable products (S-2) and base metals (S-15). However, Japan lost its BRCA for Primary products since 2009. It is no more bilaterally competitive in exporting primary products. One can notice manufacturing sector gained bilateral competitiveness from 2009 onwards. Thus, Japan's bilateral competitiveness in exporting primary products has shifted to manufacturing products from 2009. Japan recorded increasing bilateral competitiveness for LTS manufacturing products over the years. Japan appears to have lost bilateral competitiveness for MTS manufacturing products after 2013.

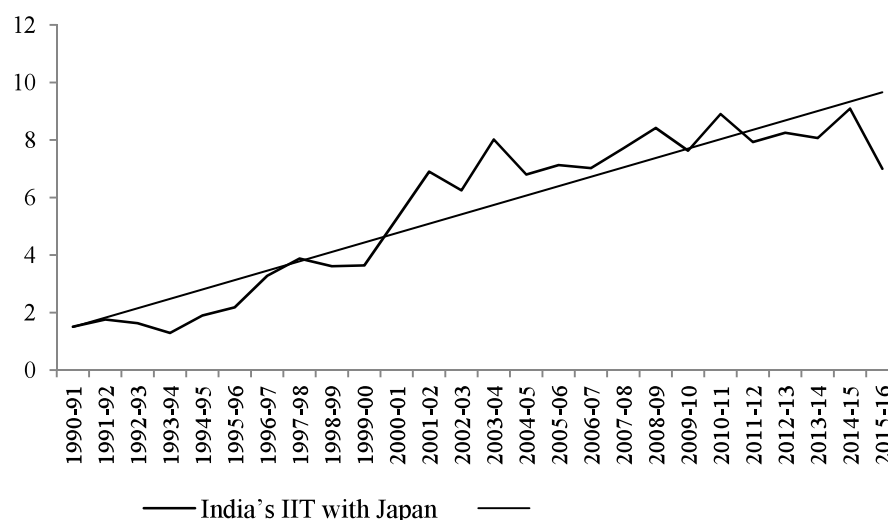
4.4 India's IIT with Japan

India's IIT with Japan has displayed an increase over the period of 26 years (Figure 3). India's IIT index with Japan was hovering around 1 to 2 percent during 1990-91 to 1994-95. It means that trade between India and Japan in this period was mostly dominated by inter-industry trade, wherein a country's exports and imports belong to different industries. Afterwards, it steadily increased to 6.90 percent in 2001-02. However, it stepped down marginally to 6.25 percent in 2002-03. Again it recorded a surge and reached to 8.02 percent in 2003-04. Later on, from 2004-05 to 2015-16, the level of IIT fluctuated within the range of 7 to 9 percent. It reached its peak in 2014-15. Over the years, India's IIT with Japan increased at CAGR of 7.92 percent. This increase in the IIT between India and Japan was mainly because of six sections, whose IIT increased at a rate which is greater than average growth of IIT namely, products of plastic and

rubber (S-7), natural and cultured pearls precious and semi-precious stones (S-14), machinery and mechanical appliances (S-16), vehicles and aircraft, vessels and other transport equipments (S-17) and optical musical, cinematographic, medical instruments (S-18) (Appendix A3, Table A3.1). India's IIT with Japan for spirits vinegar mineral products (S-5) exhibited an increasing trend. This upward movement in the level of IIT can be attributed to salt, sulphur, earths and stone, plastering materials, lime and cement (C-25). Products of plastic and rubber (S-7) exhibited growth in the level of IIT at CAGR of 9.87

Table 10. India's Intra-Industry Trade Index With Japan at the HS-08 Digit Level

Year	India's IIT with Japan
(1)	(2)
1990-91	1.51
1991-92	1.76
1992-93	1.63
1993-94	1.29
1994-95	1.90
1995-96	2.18
1996-97	3.28
1997-98	3.88
1998-99	3.61
1999-00	3.64
2000-01	5.26
2001-02	6.90
2002-03	6.25
2003-04	8.02
2004-05	6.80
2005-06	7.13
2006-07	7.02
2007-08	7.71
2008-09	8.42
2009-10	7.63
2010-11	8.90
2011-12	7.93
2012-13	8.25
2013-14	8.07
2014-15	9.09
2015-16	7.00
CAGR (%)	7.92

Figure 3: India's IIT with Japan at the HS-08 Digit Level

percent. This growth in the IIT has been contributed by India's increasing export of products under plastics and articles thereof (C-39) and rubber and articles thereof (C-40). The growth in the IIT has been generated at the product level mainly due to an increase in bilateral trade in the products such as articles for conveyance/packing of goods (39239090), other article of plastic (39269099), other pneumatic tyres of rubber (40119900) and others articles of vulcanised rubber excluding mats/gaskets and other inflatable articles (40169990), etc. India's IIT with Japan for natural and cultured pearls, precious and semi-precious stones (S-14) exhibited a positive trend. It increased at a formidable compound annual rate of 23.87 percent per annum. This upward contribution in the level of IIT is attributed to an increase in import for cultured pearls (worked) (71012200), diamond (other than industrial diamond) cut or otherwise worked but

not mounted or set (71023910), jewellery of gold unset (71131910) and jewellery of gold set with diamond (71131930), etc., from Japan.

The IIT for Machinery and mechanical appliances (S-16) managed a growth rate of 8.77 percent per annum. Export of India to Japan for the products such as parts of other engines and motors (84129090), turbo charger (84148030), other parts of filtering/purifying machinery (84219900), other moulds for rubber/plastics (84807900), industrial valves (excluding pressure-reducing valves and thermostatically controlled valves) (84818030), head lamps, tail lamps, stop lamps, side lamps, blinkers (85122010) and ignition wiring sets and other wiring sets of a kind used in vehicles aircraft/ships (85443000), etc., increased remarkably in the last decade. This resulted in an increasing level of IIT in the nuclear reactors, boilers, machinery and mechanical appliances, parts thereof (C-84) and

electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of articles (C-85). The contribution of IIT in these chapters increased at annual rate of 8.95 and 8.02 percent per annum, respectively.

One of the other sections with an impressive contribution in the IIT with Japan is vehicles and aircraft, vessels and other transport equipments (S-17). Its IIT increased from merely 0.17 percent in 1990-91 percent to 15.89 percent in 2015-16 (Appendix A3, Table A3.1). In this section, vehicles other than railway or tramway rolling stock, and parts and accessories thereof (C-87) recorded 17.16 percent annual growth in the level of IIT. Growth of Indian economy, low level of penetration of vehicles, inflow of foreign direct investment, development in infrastructure, stable government policies are important reasons behind growth in automobile industry in India. Moreover, Indian government has well established regulatory framework and also encourages 100 percent foreign investment in the automobile sector. This new capacity and flow of capital accelerated growth in production thereby, increase in export [India Brand Equity Foundation, 2014]. Export of India to Japan for products such as motor car with cylinder capacity more than 1500cc but lesser than or equal to 2500cc with compression ignition (87033291), bumpers, etc., for other vehicles (87081090), mounted brake linings (87083000), gear boxes (87084000), road wheels and parts and accessories thereof (87087000), radiators (87089100), steering wheels, steering columns and steering

boxes (87089400) and other parts and accessories motor cycles (including mopeds) (87141900), etc., depicted an increase during the last decade.

The optical, musical, cinematographic, medical instruments (S-18) inspired growth in level of the IIT between India and Japan. The IIT for optional musical, cinematographic, medical instruments (S-18) registered CAGR of 10.15 percent during the period of 1990-91 to 2015-16. This is due to contribution of surgical instruments and apparatus, parts and accessories thereof (C-90) and musical instruments, parts and accessories of such articles (C-92). The level of IIT in surgical instruments and apparatus, parts and accessories thereof (C-90) and musical instruments, parts and accessories of such articles (C-92) displayed annual growth of 10.28 percent and 6.55 percent, respectively. This surge in IIT is due to increase in the contribution of products such as other x-ray machines for medical uses (90221490), other optical instruments and appliances, other instruments, appliances and machines (90318000), electronic automatic regulators (controllers) (90328910) and parts and accessories for machines, appliances, instruments/apparatus (90330000) etc. Initially, the share of surgical instruments and apparatus, parts and accessories thereof (C-90) in India's total import from Japan was remarkable. However, export of India was negligible for the same. Due to increased health care expenditure, improved standards of living and longer life expectations, technological improvement, preferences for minimally invasive surgeries are major drivers of growth in surgical equipments. Further, private sector emerged as an important player in health care industry in India. This resulted in a boost in India's export and the level

of IIT for surgical instruments and apparatus, parts and accessories thereof (C-90). IIT index for surgical instruments and apparatus, parts and accessories thereof (C-90) was merely 0.47 percent in 1990-91 increased to 11.45 percent in 2015-16. Conversely, in the case of musical instruments, parts and accessories of such articles (C-92), more inter-industry trade was visible in India's export to Japan, but over the period of time, their increasing contribution in import of India from Japan converted inter-industry to intra-industry trade.

Other sections such as prepared food stuff, beverages, spirits vinegar and tobacco and manufactured tobacco substitutes (S-4), chemicals and allied products (S-6), raw hides and skins, textile and textile articles (S-11), articles of stones, cement, plaster and ceramic products (S-13) and miscellaneous manufacturing articles (S-20) have registered a positive growth but, below the average growth rate in IIT. India's level of IIT for prepared food stuff, beverages, spirits vinegar and tobacco and manufactured tobacco substitutes (S-4) displayed a growth of about 3.67 percent. India's IIT for chemicals and allied products (S-6) exhibited annual growth of about 4.09 percent. This is due to discrepant export and import of products covered under pharmaceutical products (C-30) resulted into negative growth of (-) 3.31 percent in the IIT index. Textile and textile articles (S-11) exhibited growth of 4.34 percent in the level of IIT which is mainly motivated by cotton (C-52), filaments man-made (C-54), man-made staple fibres (C-55) and impregnated, coated, covered or laminated textile fabrics, textile articles of a kind suitable for industrial use

(C-59) and other made up textile articles, sets, worn clothing and worn textile articles; rags (C-63), etc. (Appendix A3, Table A3.2).

An increase in the contribution of glass and glassware (C-70) in the two-way trade between India and Japan led to growth in IIT for articles of stones, cement, plaster and ceramic products (S-13) at annual rate of 4.22 percent. The negative growth of (-) 5.21 percent in the IIT for toys, games and sports requisites, parts and accessories thereof (C-95) has reflected in the IIT for miscellaneous manufacturing articles (S-20) at 3.96 percent per annum. In 1990-91, the IIT index for toys, games and sports requisites, parts and accessories thereof (C-95) was 41.08 percent which dropped to mere 4.41 percent in 2015-16. Lack of innovations, inadequate institutional back up and gap in quality and price are the important hindrances for the growth of toy industry in India. This fact is reflected in India's descended export of toys to Japan [United Nations Industrial Development Organization, 2005]. At the same time, import of toys from Japan is reduced due to cheaper toys from China flooding the Indian market.

The IIT index for pulp base metals (S-15) displayed a sluggish growth of 0.30 percent per annum. This is due to negative growth in IIT for iron and steel (C-72) which registered a negative growth of (-) 10.49 percent per annum whereas copper and articles thereof (C-74) and aluminum and articles thereof (C-76) recorded their contribution in the IIT with positive annual growth of 17.93 and 18.76 percent per annum respectively. This growth could be attributed to industrial development, increase in construction, power, telecommunication and development in automobile sector in India [Research and Markets, 2013].

In short, over the years there has been growth in the IIT. This implies relatively lower adjustment cost in the IIT compared to that of inter-industry. However, it is evident that the IIT is more dominant in the manufacturing sections such as products of plastic and rubber (S-7), natural and cultured pearls, precious and semi-precious stones (S-14), vehicles and aircraft, vessels and other transport equipments (S-17) and optical musical, cinematographic, medical instruments (S-18) rather than the sections which include primary products. It is mainly because product differentiation is more common in the manufacturing sector. Economic growth, industrial development, reduction in tariff rates and liberalised FDI policy caused boost in the IIT for manufacturing sector. However, mismatch in the export and import of primary products resulted in more of inter-industry trade.

4.4 Decomposing IIT into HIIT and VIIT

On the basis of unit value, IIT can be segregated into HIIT and VIIT to explore which type of products are being traded from the same industry more on the basis of quality between these two countries. The products within the same industry with the small price difference have been classified as HIIT. These products, essentially, differ on the basis of outer dimensions, whereas products with the large price difference in their export and import price are categorised as the VIIT. Furthermore, VIIT has been segregated into two types. If the unit value for exports is greater than that of imports then it is called as high quality VIIT (HVIIT). On the other hand, if import unit value is higher than that of export then it is regarded as the low-quality VIIT (LVIIT).

It is apparent from Table 11 that over the period of time, the contribution of HIIT as well as VIIT has been increasing with dominant share of HIIT in India's intra industry two-way trade with Japan. The growth rate of the IIT index for horizontally differentiated products is greater than that of growth in the total IIT index with Japan. The IIT index for HIIT augmented over time at CAGR of 9.03 percent. This suggests contribution of horizontally differentiated products accelerated the growth of IIT between India and Japan. Likewise, growth in the contribution of vertically differentiated products in the IIT showed an increase and recorded CAGR of 6.52 percent per annum which is below the growth rate of total IIT. Even so, high quality differentiated products ignited growth of IIT with CAGR of 10.53 percent during 1990-91 to 2015-16. For products, whose quantity traded was unavailable but traded value was available, IIT is computable but product-wise segregation of IIT into HIIT and VIIT was not possible. Such products are not included in the analysis of HIIT and VIIT. However, the IIT index for these, (i.e., not included) products increased at annual rate of 3.66 percent. Table 12 shows that the number of IIT products in 1990-91 was merely 361 (12.15 percent) out of 2970 total products traded at HS-08 digit level. Over the period, the share of IIT products in the total bilateral merchandise products traded increased gradually from 12.15 in 1990-91 to 21.81 percent in 1996-97. From 1997-98, the level of IIT in total bilateral trade between India and Japan increased rapidly. In 2011-12, the share of IIT products in total number of products being traded was higher than inter-industry products. However, over the last three years, number of IIT traded products showed a fall and reached to 37.55 percent of total two-way trade between India and Japan in 2015-16.

Table 11. India's HIIT and VIIT with Japan at the HS-8 Digit Level

Year	IIT	IIT		VIIT		Not included
		HIIT	VIIT	LVIIIT	HVIIT	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990-91	1.51	0.65	0.83	0.72	0.11	0.02
1991-92	1.76	0.86	0.86	0.61	0.25	0.03
1992-93	1.63	0.80	0.75	0.59	0.17	0.08
1993-94	1.29	0.68	0.54	0.43	0.12	0.07
1994-95	1.90	1.20	0.64	0.49	0.15	0.05
1995-96	2.18	1.36	0.76	0.62	0.14	0.06
1996-97	3.28	2.18	1.01	0.78	0.23	0.09
1997-98	3.88	2.45	1.31	0.96	0.35	0.12
1998-99	3.61	2.37	1.13	0.86	0.28	0.11
1999-00	3.64	2.46	1.00	0.75	0.26	0.17
2000-01	5.26	3.63	1.32	1.01	0.31	0.32
2001-02	6.90	4.50	1.93	1.12	0.81	0.47
2002-03	6.25	3.23	2.67	1.02	1.65	0.35
2003-04	8.02	4.96	2.83	1.54	1.30	0.22
2004-05	6.80	4.44	2.10	1.50	0.59	0.27
2005-06	7.13	3.80	2.92	1.51	1.41	0.41
2006-07	7.02	4.80	1.97	1.51	0.46	0.25
2007-08	7.71	4.43	2.84	1.22	1.61	0.44
2008-09	8.42	5.70	2.67	1.45	1.22	0.05
2009-10	7.63	5.12	2.19	0.91	1.28	0.32
2010-11	8.90	5.78	2.94	1.60	1.34	0.18
2011-12	7.93	5.38	2.30	1.46	0.84	0.24
2012-13	8.25	5.51	2.56	1.45	1.11	0.18
2013-14	8.07	5.27	2.65	1.55	1.10	0.15
2014-15	9.09	6.32	2.70	1.75	0.96	0.07
2015-16	7.00	4.69	2.29	1.31	0.98	0.02
CAGR (%)	7.92	9.03	6.52	4.68	10.53	3.66

Decomposing IIT into HIIT and VIIT revealed that horizontally differentiated products dominated IIT between India and Japan. In 1990-91, the number of horizontally differentiated products was 181 which accelerated and reached to 1202 in 2015-16. In 2011-12, number of IIT products overshadowed inter-industry products. In 2011-12, count of IIT increased to 2764 (51.10 percent) out of which 1522 (28.13 percent) were horizontally differentiated products. Nonethe-

less, from Table 12 it can be seen that the share of low quality vertically differentiated products dominated India's VIIT with Japan. Its share in the value of total bilateral merchandise trade was 3.30 in 1990-91 which increased to 16.09 percent in 2012-13. In addition to this, high quality vertically differentiated products was just 40 (11.08 per cent) out of 361 IIT products. Its count reached to 412 (17.72 per cent) out of 2325 IIT products in 2015-16.

**Table 12. Number and value of products of India's HIIT and VIIT with Japan
(HS-08 Digit Level)**

Year	Items	Total Traded Products	One way Traded Products	IIT Products	Total IIT Products					% of IIT Products in the Total number of Traded products
					HIIT	TVIIT	LVIIT	HVIIT	Not included	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1990-91	Number of products	2970	2609	361	181	162	122	40	18	12.15
	Merchandise trade value in US \$ million	2889.66	2205.51	684.15	526.44	156.11	95.34	60.77	1.6	
	Percentage in total merchandise trade Value	100	76.32	23.68	18.22	5.4	3.3	2.1	0.06	
1991-92	Number of products	3075	2669	406	200	179	143	36	27	13.2
	Merchandise trade value in US \$ million	2478.85	1834.4	644.45	365.23	200.37	169.67	30.7	78.85	
	Percentage in total merchandise trade Value	100	74	26	14.73	8.08	6.84	1.24	3.18	
1992-93	Number of products	3160	2685	475	217	234	177	57	24	15.03
	Merchandise trade value in US \$ million	2522.31	2127.15	395.16	230.13	149.3	110.38	38.92	15.73	
	Percentage in total merchandise trade Value	100	84.33	15.67	9.12	5.92	4.38	1.54	0.62	
1993-94	Number of products	3270	2768	502	242	235	184	51	25	15.35
	Merchandise trade value in US \$ million	2952.75	1791.91	1160.84	309.08	847.2	178.86	668.34	4.56	
	Percentage in total merchandise trade Value	100	60.69	39.31	10.47	28.69	6.06	22.63	0.15	
1994-95	Number of products	3504	2815	689	328	331	246	85	30	19.66
	Merchandise trade value in US \$ million	4063.59	2166.89	1896.7	1586.53	307.28	219.4	87.88	2.88	
	Percentage in total merchandise trade Value	100	53.32	46.68	39.04	7.56	5.4	2.16	0.07	
1995-96	Number of products	3611	2839	772	386	357	283	74	29	21.38
	Merchandise trade value in US \$ million	4686.5	2753.26	1933.24	1451.65	456.45	292.89	163.56	25.14	
	Percentage in total merchandise trade Value	100	58.75	41.25	30.98	9.74	6.25	3.49	0.54	
1996-97	Number of products	3791	2964	827	455	344	243	101	28	21.81
	Merchandise trade value in US \$ million	4193.58	2468.3	1725.28	1203.04	353.84	251.58	102.26	168.41	
	Percentage in total merchandise trade Value	100	58.86	41.14	28.69	8.44	6	2.44	4.02	

(Contd.)

Table 12. (Contd.)

Year	Items	Total Traded Products	One way Traded Products	IIT Products	Total IIT Products					% of IIT Products in the Total number of Traded products
					HIIT	TVIIT	LVIIT	HVIIT	Not included	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1997-98	Number of products	3986	2966	1020	527	445	316	129	48	25.59
	Merchandise trade value in US \$ million	4045.66	2439.26	1606.4	1068.56	405.46	315.42	90.03	132.38	
	Percentage in total merchandise trade Value	100	60.29	39.71	26.41	10.02	7.8	2.23	3.27	
1998-99	Number of products	4084	3063	1021	551	435	319	116	35	25
	Merchandise trade value in US \$ million	4104.86	2227.65	1877.21	1061.76	411.59	320.14	91.45	403.86	
	Percentage in total merchandise trade Value	100	54.27	45.73	25.87	10.03	7.8	2.23	9.84	
1999-00	Number of products	3980	2986	994	540	409	279	130	45	24.97
	Merchandise trade value in US \$ million	4218.92	2183.99	2034.93	1325.43	314.51	182.56	131.95	394.99	
	Percentage in total merchandise trade Value	100	51.77	48.23	31.42	7.45	4.33	3.13	9.36	
2000-01	Number of products	4284	3011	1273	672	553	400	153	48	29.72
	Merchandise trade value in US \$ million	3636.57	1929.53	1707.04	1192.93	412.17	296.75	115.42	101.94	
	Percentage in total merchandise trade Value	100	53.06	46.94	32.8	11.33	8.16	3.17	2.8	
2001-02	Number of products	4276	2886	1390	774	551	381	170	65	32.51
	Merchandise trade value in US \$ million	3660.42	1647.1	2013.32	1415.44	438.72	293.25	145.47	159.16	
	Percentage in total merchandise trade Value	100	45	55	38.67	11.99	8.01	3.97	4.35	
2002-03	Number of products	4361	2939	1422	756	594	411	183	72	32.61
	Merchandise trade value in US \$ million	3699.21	1766.26	1932.95	1407.16	486.23	295.78	190.45	39.55	
	Percentage in total merchandise trade Value	100	47.75	52.25	38.04	13.14	8	5.15	1.07	

(Contd.)

Table 12. (Contd.)

Year	Items	Total Traded Products	One way Traded Products	IIT Products	Total IIT Products					% of IIT Products in the Total number of Traded products
					HIIT	TVIIT	LVIIT	HVIIT	Not included	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2003-04	Number of products	5042	3323	1719	932	774	537	237	13	34.09
	Merchandise trade value in US \$ million	4379.97	1970.54	2409.43	1205.25	1196.31	446.01	750.3	7.87	
	Percentage in total merchandise trade Value	100	44.99	55.01	27.52	27.31	10.18	17.13	0.18	
2004-05	Number of products	4953	3194	1759	992	760	523	237	7	35.51
	Merchandise trade value in US \$ million	5360.83	2504.16	2856.67	1755.95	1091.92	822.8	269.13	8.79	
	Percentage in total merchandise trade Value	100	46.71	53.29	32.76	20.37	15.35	5.02	0.16	
2005-06	Number of products	4981	3183	1798	1030	760	531	229	8	36.1
	Merchandise trade value in US \$ million	6541.39	3279.56	3261.83	2184.45	1071.2	733.56	337.64	6.18	
	Percentage in total merchandise trade Value	100	50.14	49.86	33.39	16.38	11.21	5.16	0.09	
2006-07	Number of products	4889	3090	1799	1073	719	519	200	7	36.8
	Merchandise trade value in US \$ million	7453.29	3682.88	3770.41	2573	1169.34	910.44	258.9	28.07	
	Percentage in total merchandise trade Value	100	49.41	50.59	34.52	15.69	12.22	3.47	0.38	
2007-08	Number of products	5034	3084	1950	1154	790	518	272	6	38.74
	Merchandise trade value in US \$ million	10182.2	4429.93	5752.32	3903.59	1797.23	1012.94	784.29	51.49	
	Percentage in total merchandise trade Value	100	43.51	56.49	38.34	17.65	9.95	7.7	0.51	
2008-09	Number of products	4934	2902	2032	1129	899	584	315	4	41.18
	Merchandise trade value in US \$ million	10810.2	4789.49	6020.74	3275.28	2722.58	1813.02	909.56	22.88	
	Percentage in total merchandise trade Value	100	44.31	55.69	30.3	25.19	16.77	8.41	0.21	
2009-10	Number of products	4896	3003	1893	1047	843	598	245	3	38.66
	Merchandise trade value in US \$ million	10340.9	4250.27	6090.65	3593.08	2405.33	1279.87	1125.46	92.24	
	Percentage in total merchandise trade Value	100	41.1	58.9	34.75	23.26	12.38	10.88	0.89	

(Contd.)

Table 12. (Concl.)

Year	Items	Total Traded Products	One way Traded Products	IIT Products	Total IIT Products					% of IIT Products in the Total number of Traded products
					HIIT	TVIIT	LVIIT	HVIIT	Not included	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2010-11	Number of products	5082	2830	2252	1191	1059	655	404	2	44.31
	Merchandise trade value in US \$ million	13712.6	5165.88	8546.73	5776.15	2753.96	1399.48	1354.48	16.61	
	Percentage in total merchandise trade Value	100	37.67	62.33	42.12	20.08	10.21	9.88	0.12	
2011-12	Number of products	5409	2645	2764	1522	1237	724	513	5	51.1
	Merchandise trade value in US \$ million	18488.8	7355.61	11133.2	7052.17	3983.41	2453.2	1530.21	97.7	
	Percentage in total merchandise trade Value	100	39.78	60.22	38.14	21.54	13.27	8.28	0.53	
2012-13	Number of products	5044	2666	2378	1267	1106	714	392	5	47.15
	Merchandise trade value in US \$ million	18505.3	6222.93	12282.3	7635.99	4622	2977.4	1644.6	24.38	
	Percentage in total merchandise trade Value	100	33.63	66.37	41.26	24.98	16.09	8.89	0.13	
2013-14	Number of products	6243	3866	2377	1260	1114	706	408	3	38.07
	Merchandise trade value in US \$ million	16275.6	6322.22	9953.39	6621.14	3231.22	2049.77	1181.45	101.03	
	Percentage in total merchandise trade Value	100	38.84	61.16	40.68	19.85	12.59	7.26	0.62	
2014-15	Number of products	6253	3903	2350	1183	1158	734	424	9	37.58
	Merchandise trade value in US \$ million	15505.5	6124.79	9380.72	6046.4	3230.98	1797.29	1433.69	103.33	
	Percentage in total merchandise trade Value	100	39.5	60.5	39	20.84	11.59	9.25	0.67	
2015-16	Number of products	6192	3867	2325	1202	1115	703	412	8	37.55
	Merchandise trade value in US \$ million	9852.3	5638.72	4213.58	2536.36	1620.85	817.44	803.42	56.37	
	Percentage in total merchandise trade Value	100	57.23	42.77	25.74	16.45	8.3	8.15	0.57	

Appendix 3.1 covered PQI index at section level, it is computed on the basis of weighted average unit values of HS-08 digit products in IIT. Initially, there was no IIT registered for live animals (S-1) with an exception of 1994-95. The continuous two-way trade for live animals (S-1) can be seen from 1999-2000 onwards. The IIT for live animals (S-1) was horizontal differentiated products till 2003-04. Afterwards, from 2004-05, it is observed that IIT for live animals (S-1) shifted to low quality differentiated products. This is because more IIT is visible for products with lesser unit value of exports compared to its imports which include lobsters (*Homarus* spp.), other (03061290), AFD shrimp (03061311) and scallops, including queen scallops, of the genera pecten, chlamys or placopecten: other (03072900), etc. The PQI index for vegetable products (S-2) suggests IIT for low quality vertically differentiated product is perceptible for most of the years. However, 2002-03 and 2007-08 marked HIIT rather than LVIIT. Moreover, the year 2007-08 reveals IIT for horizontal differentiated due to the high unit value of exported products such as vegetable seeds, of tomato (12099160), seaweeds (12122010) and gum resins, other (13019039), etc. The IIT for animal and vegetable fats and oils and their cleavage products (S-3) has always been vertical especially low quality vertically differentiated, except for four years, namely, 1993-94, 1997-98 and 1999-2000 (Appendix A4, Table A4.1). In 1993-94, India's two-way trade in animal and vegetable fats and oils and their cleavage products (S-3) recorded high quality VIIT. Due to export unit value for products of animal origin, not elsewhere specified or included (C-15), this chapter displayed higher price during these specified years (Appendix A4, Table A4.2). However, in 1997-98 and 1999-2000, IIT for animal and vegetable fats and oils and their cleavage products (S-3) has been dominated by horizontally differentiated products. The IIT for prepared food stuff, beverages, spirits vinegar and tobacco and manufactured tobacco substitutes (S-4) was motivated by low

quality vertically differentiated products. Even so, prepared food stuff, beverages, spirits vinegar and tobacco and manufactured tobacco substitutes (S-4) registered horizontal IIT for the few years covered under the study, especially during 1990-91, 1993-94, 1996-97 and for 2013-14. The PQI index for mineral products (S-5) always confirms low quality VIIT.

The IIT for products of chemicals and allied industries (S-6) is in between low quality VIIT for most of the time. However, it shifted to Horizontally differentiated products for a few years. This shift in chemicals and allied industries (S-6) is because a large number of traded products recorded HIIT. This section experienced increase in the number of products being registered with HIIT. In 2001-02 it was 73 products whereas it was 102 products in 2013-14. Products from organic chemicals (C-29), pharmaceutical products (C-30), essential oils and resinoids, perfumery, cosmetic or toilet preparations (C-33), soap, organic surface-active agents, washing and lubricating preparations, artificial and prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, 'dental waxes' unit (C-34), photographic or cinematographic goods (C-37) and miscellaneous chemical products (C-38) exhibited similar unit value for exports and imports and thus, recorded HIIT for the products of chemicals and allied industries (S-6). Products of plastic and rubber and articles thereof (S-7) always experienced low quality VIIT, with the exception of 1996-97. During this year, plastics and articles thereof (C-39) and rubber and articles thereof (C-40) registered HIIT.

Over the years, raw hides and skins, leather fur skin and article thereof (S-8) showed either low quality VIIT or HIIT on the basis of PQI. In case of wood and articles thereof (S-9), the PQI index exhibited low quality VIIT for most of the years. However, it can be seen that wood and articles thereof (S-9) shifted to horizontal IIT during

1993-94, 1995-96, 2001-02, 2008-09, 2011-12, 2013-14 and 2015-16 (Appendix A4, Table A4.1). This is basically driven by wood and articles of wood, wood charcoal (C-44) whose products revealed similarity in export and import unit prices. In 2007-08, this section reflected high quality VIIT due to sal (*chorea robusta*), sandal wood (*santalum albur*), semul (*bombax ceiba*), walnut wood (*juglans binata*) anjam (*hardwickia binata*) birch (*betula* spp.), sissoo (*dalbergia sisso*) and white cedar (*dysozylum*) and the like: other (44039929) and tableware and of wood (44190010). The PQI index for pulp of wood and fibrous cellulosic material (S-10) is wavered and exhibited either HIIT or low quality VIIT.

It is evident from Appendix A4, Table A4.1 that initially, textile and textile articles (S-11) witnessed HIIT. After 2001-02, IIT turned into low quality VIIT for the all the accounted years. Most of the chapters from this section showed low quality for export compared to imports. Some of them are cotton (C-52), knitted or crocheted fabrics (C-60), articles of apparel and clothing accessories, knitted or crocheted (C-61), articles of apparel and clothing accessories, not knitted or crocheted (C-62) and other made up textile articles, sets, worn clothing and worn textile articles, rags (C-63). The PQI index for footwear and umbrellas, etc., (S-12) reflected HIIT for most of the years. However, during 2008-09 and 2009-10 footwear and umbrellas, etc., (S-12) shifted to low quality VIIT. This could be due to a fall in export unit value especially for footwear, gaiters and the like, parts of such articles (C-64). The products such as leather footwear of other sole (64039190), footwear made on a base/platform of wood not having an inner sole/a protective metal toe-cap (64039990), rubber sole with canvas upper (640411100), footwear with outer soles of leather or composition of leather and with upper of textile materials (64042000), other footwear with uppers of textile materials

(64052000), all other footwear (64059000) and leather uppers (prepared) (64061020) dominated low quality VIIT during 2012-13 to 2015-16.

The articles of stones, cement, plaster and ceramic products (S-13) witnessed HIIT for most of the years. However, the level of PQI suggests that in 1995-96, bilateral IIT dominated by high quality VIIT. During these specified years, products under ceramic products (C-69) fetched high export unit price. The analysis IIT for base metals (S-15) confirms that previously it was categorised as low quality VIIT. However, from 1996-97 onwards showed component of IIT is of HIIT in nature. Interestingly, PQI index for this section for 2001-02 indicated high quality VIIT. Iron and steel (C-72), articles of iron or steel (C-73) and copper and articles thereof (C-74) always exhibited HIIT with the exception of few years whereas, the PQI index for tin and articles thereof (C-80), other base metals, cermet, articles thereof (C-81) and tools, implements, cutlery, spoons and forks, of base metal, parts thereof of base metal (C-82) recorded to high quality VIIT for later years.

Nuclear reactors, boilers, machinery and mechanical appliances, parts thereof (C-84) showed either low quality VIIT to HIIT except for three years. It can be seen from Appendix A4, Table A4.2 that IIT for electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of articles (C-85) also showed low quality VIIT except for initial few years; afterwards, it shifted to HIIT with the exception of 2015-16. It recorded HIIT due to products such as other alarm (85311090), other electric sound/visual signalling apparatus (85318000), printed circuits (85340000), switch fuses units of switch rating up to 15 amps re-wireable (85351010), other apparatus for protecting electrical circuits (85363000), relays for a voltage not exceeding dg 60 v (85364100), other relays (85364900),

boards, panels, consoles, etc., for other use (85381090), other halogen lamps for automobiles (85392120), other tungsten halogen filament lamp (85392190), other automobile lamps (85392940), other transistor, other than photo-sensitive transistors (85412900), electric fence energizers (85437019), other amplifier (85437069), audio video stereo encoders (85437094), other winding wire of copper (85441190) and plastic insulated wire (85441920), etc., registered high export unit value compared to imports.

Vehicles and aircraft, vessels and other transport equipments (S-17) displayed variations of being in between low quality VIIT and horizontally differentiated products. Over the years, the IIT for optional musical, cinematographic, medical instruments (S-18) exhibited IIT for horizontally differentiated products for most of the years. Miscellaneous manufacturing articles (S-20) recorded a consistent fall in the terms of quality of the products. Initially, it recorded a fall from horizontally differentiated products then to low quality products. This is essentially due to fall in export unit value for the toys, games and sports requisites, parts and accessories thereof (C-95) and miscellaneous manufactured articles (C-96). Initially, products under toys, games and sports requisites, parts and accessories thereof (C-95) were under the category of high quality; however, afterwards the number of products with high quality started to fall which resulted in low quality VIIT for this particular section. During 1990-91 to 1997-98 there was no IIT; it was registered for works of arts antiques and pieces (S-21). The PQI index recorded HIIT for most years. In 2015-16 it reflected in high quality rather than HIIT. This is because, during these specified years, some products such as spare parts and raw materials for maintenance (98010030), laboratory chemicals (98020000) and dutiable passenger's/crew's baggage (98030000) have moved to high quality VIIT.

In a nutshell, economic development and trade liberalisation enhanced India's two-way trade with Japan in similar type of product. However, the IIT has been dominated by horizontally differentiated products. This has also been reflected in section and chapterwise scenarios. However, increase in per capita income, economic development backed by liberalisation and globalisation, inward Foreign Direct Investment (FDI) with advanced technological knowledge combined with local endowment to produce goods of similar and with higher quality.

5. CONCLUSIONS

India's export to Japan has been dominated by primary products; conversely, import from Japan is over whelmingly of manufactured products. However, UNCTAD classification displayed structural change in the bilateral trade of manufacturing products. In the case of export of India to Japan, the proportion of labour-intensive resource-based and low-technology and skill-based manufacturing products have been substituted by medium and high-technology skill-based manufacturing products in the exports of India. At the same time, the share of medium and high-technology skill-based manufacturing products increased in the India's imports from Japan. The study finds that at section and chapter levels India's international competitiveness resembles bilateral competitiveness with Japan. It suggests that bilateral incentives given to India under CEPA do not have the desired impact on exports of India to Japan. Product level comparison of IRCA of India and bilateral competitiveness of India with Japan suggest that India has scope to increase its export of LIR and LTS manufacturing products because India enjoys global competitiveness in exporting these products. On the other hand, Japan's IRCA and its BRCA with India portray a different picture. Japan shows BRCA in such sections and chapters in which it does not possess IRCA. Similarly, according to UNCTAD classification, initially, in

contrast with the IRCA of Japan, it was bilaterally competitive in exporting primary products to India. Eventually, BRCA of Japan in primary products shifted to manufacturing products. Japan enjoyed IRCA for LTS, MTS and HTS manufacturing products during 1996 to 2015. However, Japan represented BRCA with India for LTS and lost it MTS manufacturing products.

The study finds an increase in India's IIT with Japan. Initially, trade between India and Japan was more of inter-industry type. India's protectionist policy to safeguard small and medium scale industries was the reason behind sluggish growth in IIT. Over the years, with liberalisation, increase in economic growth and gradual shift in policy towards welcoming FDI especially after 1995-96. India's IIT with Japan has boosted especially for manufacturing products. The process of trade liberalisation enables resource reallocation within the industry rather than between the industries. However, mismatch in the export and import of primary products resulted in inter-industry trade. It is also found that HIIT dominates India's IIT with Japan. HVIIT seems to be visible with significant growth. Initially, India's HVIIT with Japan seems to be less because India being a developing country, demand for low vertically differentiated products has been more than high quality differentiated. However, high economic growth and increase in per capita income and liberalisation in trade caused higher demand for horizontally differentiated products. Hence, increase in demand for different varieties of same products is evident in the increasing the number of horizontally differentiated products. There has been increase in share of HTS manufacturing products in Indian basket of export to Japan; similarly increase in number of products with high quality VIIT after 1994-95 is attributed to liberalised FDI policy, technological upgradation and industrial development in India. Although there is growth in the IIT between India

and Japan, the contribution of Japan in India's exports basket has stagnated over the period. It would have been very interesting if we could combine the discussion of HIIT and VIIT with the UNCTAD Classification (Labour-intensive resource-based manufacturing products, Low-technology skilled-based manufacturing products, Medium-technology skill-based manufacturing products and High-technology skill-based manufacturing products). However, this is not possible here because UNCTAD classifies products at HS-06 digit level and we have calculated LVIIT and HVIIT at HS-08 digit level of classification.

The aftermath of CEPA between India and Japan has not been so impressive in increasing bilateral trade because it has not resulted into strengthening position of Japan in the list of India's top trading partners by increasing share of Japan in India's total trade. Thus, some more effort in implementation of pact from both the governments is needed to boost bilateral trade between the two. The expectations of increasing bilateral trade under CEPA are yet to materialise.

During Indian Prime Minister's visit to Japan in 2014, the two countries upgraded their partnership to Special Strategic Global Partnership by signing defence treaty for regional stability and doubling FDI from Japan to India. Simultaneously, India promised favourable environment by easing regulations. Japan will be providing finance, technical and operational assistance to India in building bullet trains. Japan also promised to raise funds through public and private funding for developmental projects, including building up of smart cities and to clean river Ganges. In short, Japan will be assisting India to reduce infrastructural bottlenecks which is one of the causes of low efficiency and productivity in the Indian manufacturing sector. These measures are likely to promote IIT also and thereby and otherwise promote bilateral trade between India and Japan.

NOTES

1. Improved skilled labour in India has influenced trade in services, which is outside the scope of this paper as it concentrates on merchandise bilateral trade between India and Japan.

2. It may be argued that when one uses highly disaggregated data (such as 8-digit) it is highly likely that one may separate products which are good substitutes in production, consumption or both and therefore we may underestimate the true magnitude of IIT. However, Our interest is to find IIT products. The data at HS-08 digit codes are consistent for exports and imports, which allows us to compare the unit price of exports and imports of particular products. The higher level of technical specification ensures products that are exported and imported are of comparable quality and it also minimise illusions resulting from the nomenclature. Thus, unit values of export and import are comparable with quality (Abd-el-Rahman, 1991).

REFERENCES

- Abd-el-Rahman, Kamal, 1984; Exchanges intra-sectorielset échanges de specialisation dans l'analyse du commerce international: le cas du commerce intra- C.E.E de biens manufacturés. Thise de doctorat d'Etat, Université de Paris X - Nanterre.
- Abd-el-Rahman, Kamal, 1986; Riexamen de la définition et de la mesure des échanges croisés du produit similaires entre les nations, *Review Economique*, Vol. 37, No. 1.
- Abd-el-Rahman, Kamal, 1991; Firms Competitive and National Comparative Advantages as Joint Determinants of Trade Competition. *Weltwirtschaftliches Archiv, Review of World Economics*, Vol. 127, No. 1.
- Ando, Mitsuyo, 2006; Fragmentation and Vertical Intra-industry trade in East Asia, *North American Journal of Economics and Finance*, Vol. 17, No. 3.
- Azhar, Abdul K. M. and Robert J. R. Elliott, 2006; On the Measurement of Product Quality in Intra-Industry Trade, *Review of World Economics*, Vol. 142, No. 3.
- Balassa, Bela, 1965; Trade Liberalisation and Revealed Comparative Advantage, *Manchester School of Economic and Social Studies*, Vol. 33, No. 2.
- Balassa, Bela, 1966; Tariff Reductions and Trade in Manufactures among the Industrial Countries, *American Economic Review*, Vol. 56, No. 3.
- Balassa, Bela, 1977; Revealed comparative advantage revisited: an analysis of relative export shares of the industrial countries 1953-1971, *The Manchester School*, Vol. 45, No. 4.
- Balassa, Bela, 1989; *Comparative Advantage, Trade Policy and Economic Development*, Harvester Wheatsheaf, New York.
- Ballance, Robert H., Helmut Forstner and W. Charles Sawyer, 1992; An Empirical Examination of the Role of Vertical Product Differentiation in North-South Trade, *Weltwirtschaftliches Archiv*, Vol. 128, No. 2.
- Batra, Amita and Zeba Khan, 2005; Revealed comparative advantage: An analysis for India and China, *Working Paper*, No. 168. Indian Council for Research on International Economic Relations, New Delhi.
- Bhattacharyay, Biswa Nath and Kakali Mukhopadhyay, 2013; Economy Wide Impact of the Trade Integration between Japan and India a Computable General Equilibrium Analysis, *CESifo Working Paper* No. 4557, Center of Economic Studies and the IFO Institute (CESifo).
- Bowen, Harry P., 1983; On the theoretical interpretation of indices of trade intensity and revealed comparative advantage. *Weltwirtschaftliches Archiv*, Vol. 119, No. 3.
- Brown, A. J., 1947; *Applied Economics: Aspects of world Economy in War and Peace*, London.
- Brühlhart, Marius, 2008; An Account of Global Intra-Industry Trade, 1962-2006, retrieved on 15th June, 2015 from http://siteresources.worldbank.org/INTWDRS/Resources/477365_1327525347307/8392086-1327527757537/Brulhart.pdf
- Burange, L. G. and Hemangi K. Kelkar, 2018a; Product quality index: A new way to classify Intra-industry trade, ISFIRE Working Paper Series, WP-34, retrieved on 1st May <http://iire.in/ojs/index.php/isfirewps/issue/view/66>.
- Burange, L. G. and Hemangi K. Kelkar, 2018b; An Examination of Determinants of India's Intra-Industry Trade, *Journal of Indian School of Political Economy*, Vol. 30, Nos. 1&2.
- Burange, L. G. and Sheetal J. Chaddha, 2008; India's revealed comparative advantage in merchandise trade. *ArthaVijana*, Vol. 50, No. 4.
- Burange, L. G. and Sheetal J. Chaddha, 2007; Growth in India's Intra-Industry Trade, *Journal of Indian School of Political Economy*, Vol. 19, Nos. 1&2.
- Caves, Richard E., 1981; Intra-Industry Trade and Market Structure in the Industrial Countries, *Oxford Economic Papers*, Vol. 33, No. 2.
- Centre for Monitoring Indian Economy (CMIE). Data retrieved from India trades published by India's Directorate General of Commercial Intelligence and Statistics (DGCI&S) in Monthly Statistics of Foreign Trade data.
- Clark, Don P., 1993; Recent Evidence on Determinants of Intra-Industry Trade. *Weltwirtschaftliches Archiv*, Vol. 129, No. 2.
- Colley, Lisandra Patrice, 2015; An analysis of trade potential between CARICOM and China: What opportunities exist for increased cooperation?, *International Review of Business Research Papers*, Vol. 11, No. 2.
- Das, Gouranga G., 2007; Intra-industry trade and development: Revisiting theory, measurement and new evidences, *Munich Personal RePEc Archive*, MPRA Paper No. 37260, retrieved on 11th January 2016, from <http://mpa.ub.unimuenchen.de/37260/>

- Donges, Juergen B. and James Riedel, 1976; The expansion of manufactured exports in developing countries: an empirical assessment of supply and demand issues. *Kiel Working Papers*, No. 49, Kiel Institute of World Economics.
- Ekanayake, E. M., 2001; Determinants of intra-industry trade: the case of Mexico, *The International Trade Journal*, Vol. 15, No. 1.
- Fontagné, Lionel and Micheal Freudenberg, 1997; Intra-Industry Trade: Methodological Issues Reconsidered, CEPII Working Paper No. 02, Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), Paris.
- Globerman, Steven, and James W. Dean, 1990; Recent Trends in Intra-Industry Trade and Their Implications for Future Trade Liberalization. *Weltwirtschaftliches Archiv*, Vol. 126, No. 1.
- Government of India, 2003; *Press Releases*, Department of Commerce, Ministry of Commerce and Industry, India.
- Government of India, 2006; *Report of the India-Japan Joint Study Group*, Department of Economic Affairs, Ministry of Finance, India.
- Greenaway, David, Robert C. Hine, and Chris R. Milner, 1994; Country Specific Factors and the Pattern of Horizontal and Vertical Intra-Industry Trade in the UK, *Review of World Economics*, Vol. 130, No. 1.
- Grubel, Herbert G. and Peter J. Lloyd, 1971; The Empirical Measurement of Intra-Industry Trade, *Economic Record*, Vol. 47, No. 4.
- Grubel, Herbert G. and Peter J. Lloyd, 1975; *Intra Industry Trade: The Theory and Measurement of Trade in Differentiated Products*, London: MacMillan.
- Hamilton, Clive, and Paul Kniest, 1991; Trade Liberalisation, Structural Adjustment and Intra-Industry Trade: A Note. *Weltwirtschaftliches Archiv*, Vol. 127, No. 2.
- Helpman, Elhanan, 1987; Imperfect Competition and International Trade: Evidence from Fourteen Industrial Countries, *Journal of the Japanese and International Economies*, 1.
- Hoen, Alex R. and Jan Oosterhaven, 2006; On the measurement of comparative advantage, *Annals of Regional Science*, Vol. 40, No. 3.
- Hudson, Peter Joy, 2013; Rising and Shining: The Coming Boom in Indo-Japanese Economic Relations, *Institute of Chinese Studies*, Analysis No. 9, Delhi.
- India Brand Equity Foundation, 2014; *Sectoral Report on Automobile Industry*, retrieved on 15th June, 2014 from <http://www.ibef.org/industry/india-automobiles.aspx>
- Joshi, P. R., 1997; *Trends and Structural Behaviour of Indian Exports*, Discovery Publication House, New Delhi.
- Khan, Mostafa Abid, 2015; The revised generalized system of preference scheme of European Union: Implications for Bangladesh, *Working Paper*, retrieved on 11th January 2016, from www.freit.org/WorkingPapers/Papers/TradePolicyMultilateral/FREIT962.pdf
- Kojima, Kiyoshi, 1964; The Pattern of International Trade among Advanced Countries, *Hitotsubashi Journal of Economics*, Vol. 5, No. 1.
- Kojima, Makoto, 2011; Prospects and Challenges for Expanding India-Japan Economic Relations, Institute of Defense Studies and Analysis (IDSA), Issue Brief, New Delhi, India.
- Kondo, Masanori, 2012; Japan-India Economic Relationship: Trends and Prospects, RIETI Policy Discussion Paper Series No. 16, Research Institute of Economy and Trade and Industry (RIETI).
- Lafay, G., 1992; *The Measurement of Revealed Comparative Advantages*, In: Dagenais, M. G. and Muet, P. A. (eds.) *International Trade Modelling*. London: Chapman & Hall.
- Leishman, David, Dale J. Menkhous and Glen D. Whipple, 1999; Revealed comparative advantage and the measurement of international competitiveness for agricultural commodities: an empirical analysis of wool exporters. Selected Paper of the 1999 Annual Meeting, July 11-14, 1999, Fargo, North Dakota.
- Liesner, H. H., 1958; The European common market and British industry, *Economic Journal*, Vol. 68, No. 270.
- Lundberg, Lars, 1982; Intra-Industry Trade: The Case of Sweden, *Weltwirtschaftliches Archiv*, Vol. 118.
- Lundberg, Lars, 1992; The Structure of Swedish International Trade and Specialisation: 'Old' and 'New' Explanations, *Weltwirtschaftliches Archiv*, Vol. 128, No. 2.
- Manzano, George N., 2014; An analysis of the Philippine offensive and defensive interests in the non-agricultural sector: inputs to the Philippine-European Union Free Trade Agreement, *Discussion Paper*, Discussion Paper Series No. 2014-04, Philippine Institute for Development Studies, Philippines.
- Mathur, Arpita, 2012; India-Japan Relations Drivers, Trends and Prospects, S. Rajaratnam School of International Studies, RSIS Monograph No. 23, Singapore.
- Mehta, Rajesh, 2001; Indo-Japanese Trade Recent Trends, Discussion Paper No. 12, Research and Information System for the Non-Aligned and Other Developing Countries (RIS), New Delhi.
- Michael, Michael, 1962; *Concentration in International Trade*, Amsterdam: North-Holland Publishing Company.
- Michael, Michael, 1967; *Concentration in International Trade, Contributions to Economic Analysis*, Amsterdam, North-Holland Publishing Company.
- Nataraj, Geethanjali, 2010; India-Japan Investment Relations: Trends and Prospects, *ICRIER Working Paper*, No. 245, Indian Council for Research on International Economic Relations (ICRIER).
- Nataraj, Geethanjali and Ashwani, 2014; India-Japan Economic Partnership Agreement: Gains and Future Prospects, ORF Occasional Paper No. 50. Observer Research Foundation (ORF).

- Nishith Desai Associates (NDA), 2016; The Indian medical device industry: Rugelatory, legal and tax overview. Research Paper, Nishith Desai Associates (NDA) retrieved on 11th December, 2016 from http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research%20Papers/The_Indian_Medical_Device_Industry.pdf
- Nayak, Shibnanda, Vani aggarwal and Preeti Mann, 2013; India's manufacturing export dynamics: An analysis of technology intensity transition. Working Paper, No. CWS/WP/200/6, Centre for WTO studies, Indian Institute of Foreign Trade, New Delhi.
- Pagoulatos, Emilio, and Robert Sorensen, 1975; Two-Way International Trade: An Econometric Analysis, *WeltwirtschaftlichesArchiv*, Vol. 111, No. 3.
- Panda, Rajaram, 2012; India-Japan Defence Partnership, *Indian Foreign Affairs Journal*, Vol. 7, No. 3.
- Pascha, Werner, 2002; Economic relations between Germany and Japan-An analysis of recent data, *Working Paper*, Working Paper No. 61, Duisburg Working Papers on East Asian Economic Studies, Germany.
- Phan, Thanh Hoan and Ji Young Jeong, 2012; An analysis of Korea-Vietnam bilateral trade relation, *Munich Personal RePEc Archive*, MPRA Paper No. 48312, retrieved on 12th June, 2014 from <http://mpra.ub.uni-muenchen.de/48312>
- Proudman, James and Stephen Redding, 2000; Evolving patterns of international trade, *Review of International Economics*, Vol. 8, No. 3.
- Rajamohan, P. G., DilBahadur Rahut and Jabin T. Jacob, 2008; Changing Paradigm of Indo-Japan Relations: Opportunities and Challenges, *ICRIER Working Paper* No. 212, Indian Council for Research on International Economic Relations (ICRIER).
- Ray, Edward John, 1991; U.S. Protection and Intra-industry Trade: The Message to Developing Countries, *Economic Development and Cultural Change*, Vol. 40, No. 1.
- Research and Markets, 2013; Analysing Indian Copper Industry, retrieved on 15th June, 2014 from http://www.researchandmarkets.com/reports/546310/analyzing_the_indian_copper_industry
- Riaz, Khalid and Hans G. P. Jansen, 2012; Spatial patterns of revealed comparative advantage of Pakistan's agricultural exports, *Pakistan Economic and Social Review*, Vol. 50, No. 2.
- Sahoo, Pravakar, 2012; The economic relations of China and India with Pakistan: A comparative analysis, *Asia-Pacific Development Journal*, Vol. 19, No. 1.
- Seshadri, V. S., 2016; India Japan CEPA: An appraisal, ASEAN India Centre, Research and Information for Developing Countries, New Delhi, India.
- Sharma, Kishor, 2004; Horizontal and Vertical intra-industry trade in Australian manufacturing: Does trade liberalization have an impact?. *Applied Economics*, Vol. 36, No. 15.
- Sharma, Sachin Kumar and Kavita Bugalya, 2013; Competitiveness of Indian agriculture sector: A case study of cotton crop, *Procedia-Social and Behavioral Sciences*, Vol. 133.
- Silver, Mick, 2007; Do Unit Value Export, Import, and Terms of Trade Indices Represent or Misrepresent Price Indices?, IMF Working Paper No. 121, International Monetary Fund (IMF).
- Srivastava, Amit and Yaj Medury, 2011; An Overview of India's Intra-Industry Trade, *Asia Pacific Business Review*, Vol. 7, No. 1.
- Stiglitz, Joseph E., 1987; The Causes and Consequences of the Dependence of Quality on Price, *Journal of Economic Literature*, Vol. 25, No. 1.
- Stone, Joe A., and Hyun-Hoon Lee, 1995; Determinants of Intra-Industry Trade: A Longitudinal, Cross-Country Analysis, *WeltwirtschaftlichesArchiv*, Vol. 131, No. 1.
- Sundar, Raj, P. and B. Ambrose, 2014; A Brief Analysis of India-Japan Bilateral Trade: A Trade Intensity Approach, *International Journal of Economics, Commerce and Management*, Vol. 2, No. 2.
- Tandon, Anjali, 2012; China-India merchandise trade: Retrospect and prospects, *Working Paper*, No. 104, National Council for Applied Economic Research, New Delhi.
- Toh, Kiertisak, 1982; A Cross-Section Analysis of Intra-Industry Trade in U.S. Manufacturing Industries, *WeltwirtschaftlichesArchiv*, Vol. 118, No. 2.
- UN-COMTRADE Database, 2016; *World Integrated Trade Solutions*, Retrieved on 15th October.
- United Nations Industrial Development Organization, 2005; Technology Transfer and Trade: The Toy Industry in India, Technology Paper Series, Industrial Promotion and Technology Branch, India.
- Utkulu, Utku and Dilek Seymen, 2004; Revealed comparative advantage and competitiveness: evidence for Turkey vis-à-vis the EU/15. Paper prepared for the European Trade Group 6th Annual Conference, ETSG 2004, Nottingham.
- Veeramani, Choorikkad, 2002; Intra-Industry Trade of India: Trends and Country-Specific Factors, *WeltwirtschaftlichesArchiv*, Vol. 138, No. 3.
- Verdoorn, P. J., 1960; The Intra-Bloc Trade of Benelux, in E. A. G. Robinson (ed.), *Economic Consequences of the Size of Nation*, London: Macmillan.
- Vollrath, Thomas L., 1991; A theoretical evaluation of alternative trade intensity measures of revealed comparative advantage. *WeltwirtschaftlichesArchiv*, Vol. 127, No. 2.
- Wolter, Frank, 1977; Factor proportions technology and West German industry's international, *WeltwirtschaftlichesArchiv*, Vol. 113, No. 2.
- World Bank, 2014; Country Overview: India, retrieved on 15th June, 2015 from <http://www.world-bank.org/en/country/india/overview>
- World Custom Organisation, 2016; *Overview: Harmonized System*, retrieved on 18th October 2016 from <http://www.wcoomd.org/en/topics/nomenclature/overview.aspx>.
- Yu, Run, Junning Cai and Ping Sun Leung, 2009; The normalized revealed comparative advantage index, *Annals of Regional Science*, Vol. 43, No. 1.

Appendix A1 Table A1.1.
Trade Classification (Two Digit HS Classification)

Section	Chapter	Description
(1)	(2)	(3)
S-01	(01-05)	Live Animals; Animal Products
	C-01	Live animals
	C-02	Meat and edible meat offal
	C-03	Fish and crustaceans, molluscs and other aquatic invertebrates
	C-04	Dairy produce; bird's eggs; natural honey; edible products of animal origin
	C-05	Products of animal origin, not elsewhere specified or included
S-02	(06-14)	Vegetable Products
	C-06	Live trees and other plants; bulbs, roots and the like
	C-07	Edible vegetables and certain roots and tubers
	C-08	Edible fruit and nuts; peel of citrus fruit or melons
	C-09	Coffee, tea, mate and spices
	C-10	Cereals
	C-11	Products of the milling industry; malt; starches
	C-12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants;
	C-13	Lac; gums, resins and other vegetable saps and extracts
	C-14	Vegetable plaiting materials; vegetable products not elsewhere specified
S-03		Animal and Vegetable Fats and Oils and their Coverage Products
	C-15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes
S-04	(16-24)	Prepared Foodstuff, Beverages, Spirits Vinegar. Tobacco and Manufactured Tobacco Substitutes
	C-16	Preparation of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates
	C-17	Sugars and sugar confectionery
	C-18	Cocoa and cocoa preparations
	C-19	Preparations of cereals, flour, starch or milk; pastry cooks' products
	C-20	Preparations of vegetables, fruit, nuts or other parts of plants
	C-21	Miscellaneous edible preparations
	C-22	Beverages, spirits and vinegar
	C-23	Residues and waste from the food industries; prepared animal fodder
	C-24	Tobacco and manufactured tobacco substitutes
S-05	(25-27)	Mineral Products
	C-25	Salt; sulphur; earths and stone; plastering materials
	C-26	Ores, slag and ash
	C-27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes

(Contd.)

Appendix A1 Table A1.1. (Contd.)

Section	Chapter	Description
(1)	(2)	(3)
S-06	(28-38)	Products of Chemicals and allied Industries
	C-28	Inorganic chemicals
	C-29	Organic chemicals
	C-30	Pharmaceutical products
	C-31	Fertilisers
	C-32	Tanning or dyeing extracts; tannins and their derivatives;
	C-33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations
	C-34	Soap organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations,
	C-35	Albuminoidal substances; modified starches; glues; enzymes
	C-36	Explosives; pyrotechnic products; matches; pyrotechnic alloys; certain combustible preparations
	C-37	Photographic or cinematographic goods
	C-38	Miscellaneous chemical products
S-07	(39-40)	Products of Plastic and Rubber and articles thereof
	C-39	Plastics and articles thereof
	C-40	Rubber and articles thereof
S-08	(41-43)	Raw Hides and Skins, Leather Fur skin and article thereof
	C-41	Raw hides and skins (other than fur skins) and leather
	C-42	Articles of leather; saddlery and harness, travel goods, handbags and similar containers
	C-43	Fur skins and artificial fur, manufactures thereof
S-09	(44-46)	Wood and articles thereof
	C-44	Wood and articles of wood; wood charcoal
	C-45	Cork and articles of cork
	C-46	Manufactures of straw, of esparto or of other plaiting materials;
S-10	(47-49)	Pulp of Wood and Fibrous Cellulosic Material
	C-47	Pulp of wood or of other fibrous cellulosic material; recovered
	C-48	Paper and paperboard; articles of paper pulp, of paper or of paperboard
	C-49	Printed books, newspaper, pictures and other products of the printing industry; manuscripts, typescripts and plans
S-11	(50-63)	Textile and Textile Articles
	C-50	Silk
	C-51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric
	C-52	Cotton
	C-53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn

(Contd.)

Appendix A1 Table A1.1. (Contd.)

Section	Chapter	Description
(1)	(2)	(3)
S-12	C-54	Filaments man-made
	C-55	Man-made staple fibres
	C-56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof
	C-57	Carpets and other textile floor coverings
	C-58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery
	C-59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use
	C-60	Knitted or crocheted fabrics
	C-61	Articles of apparel and clothing accessories, knitted or crocheted
	C-62	Articles of apparel and clothing accessories, not knitted or crocheted
	C-63	Other made up textile articles; sets; worn clothing and worn textile articles; rags
	(64-67)	Footwear and Umbrellas, etc.
	C-64	Footwear, gaiters and the like; parts of such articles
	C-65	Headgear and parts thereof
	C-66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding crops and parts thereof
S-13	C-67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair
	(68-70)	Articles of Stones, Cement, Plaster and Ceramic Products
	C-68	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware
	C-69	Ceramic products
S-14	C-70	Glass and glassware
		Natural and Cultured Pearls, Precious and Semi-Precious Stones
S-15	C-71	Natural or cultured pearls, precious or semi-precious stones, precious metal, metals clad with precious metal and articles thereof; imitation jewellery; coin
	(72-83)	Base Metals
	C-72	Iron and steel
	C-73	Articles of iron or steel
	C-74	Copper and articles thereof
	C-75	Nickel and articles thereof
	C-76	Aluminium and articles thereof
	C-78	Lead and articles thereof
	C-79	Zinc and articles thereof
	C-80	Tin and articles thereof
	C-81	Other base metals; cermet; articles thereof

(Contd.)

Appendix A1 Table A1.1. (Concl.)

Section	Chapter	Description
(1)	(2)	(3)
S-16	C-82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal
	C-83	Miscellaneous articles of base metal
	(84-85)	Machinery and Mechanical Appliances
	C-84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
	C-85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers
S-17	(86-89)	Vehicles and Aircraft, Vessels and Other Transport Equipment
	C-86	Railway or tramway locomotives, rolling-stock and parts thereof
	C-87	Vehicles other than railway or tramway rolling - stock
	C-88	Aircraft, spacecraft and parts thereof
	C-89	Ships, boats and floating structures
S-18	(90-92)	Optical, musical, Cinematographic, Medical Instruments
	C-90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.
	C-91	Clocks and watches and parts thereof.
	C-92	Musical instruments; parts and accessories of such articles.
S-19	C-93	Arms and ammunition; parts and accessories thereof Arms and ammunition; parts and accessories thereof
S-20	(94-96)	Miscellaneous Manufacturing Articles
	C-94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishing; lamps and lighting fittings, not elsewhere specified
	C-95	Toys, games and sports requisites; parts and accessories thereof
	C-96	Miscellaneous manufactured articles
S-21	(97-98)	Works of Arts Antiques and Pieces
	C-97	Works of art, collectors' pieces and antiques
	C-98	Project Goods

Table A1.2. Categories of Products on the Basis of UNCTAD Classification

PRIMARY PRODUCTS			MANUFACTURING PRODUCTS					
			LIR	LTS	MTS	HTS	OTHERS	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	
001	222	345	611	671	621	511	871	891
011	223	351	612	672	625	512	872	892
012	231	411	613	673	629	513	873	895
016	232	421	633	674	711	514	874	896
017	244	422	634	675	712	515	881	897
022	245	431	635	676	713	516	882	898
023	246	681	641	677	714	522	883	899
024	247	682	642	678	716	523	884	--
025	248	683	651	679	718	524	885	--
034	251	684	652	691	721	525	--	--
035	261	685	653	692	722	531	--	--
036	263	686	654	693	723	532	--	--
037	264	687	655	694	724	533	--	--
041	265	689	656	695	725	541	--	--
042	266	--	657	696	726	542	--	--
043	267	--	658	697	727	551	--	--
044	268	--	659	699	728	553	--	--
045	269	--	661	785	731	554	--	--
046	272	--	662	786	733	562	--	--
047	273	--	663	791	735	571	--	--
048	274	--	664	793	737	572	--	--
054	277	--	665	812	741	573	--	--
056	278	--	666	--	742	574	--	--
057	281	--	821	--	743	575	--	--
058	282	--	831	--	744	579	--	--
059	283	--	841	--	745	581	--	--
061	284	--	844	--	746	582	--	--
062	285	--	843	--	747	583	--	--
071	286	--	845	--	748	591	--	--
072	287	--	846	--	749	592	--	--
073	288	--	848	--	771	593	--	--
074	289	--	851	--	772	597	--	--
075	291	--	894	--	773	598	--	--
081	292	--	--	--	774	751	--	--
091	321	--	--	--	775	752	--	--
098	322	--	--	--	778	759	--	--
111	325	--	--	--	781	761	--	--
112	333	--	--	--	782	762	--	--
121	334	--	--	--	783	763	--	--
122	335	--	--	--	784	764	--	--
211	342	--	--	--	811	776	--	--
212	343	--	--	--	813	792	--	--

Note: Labour-intensive Resource-Based Products, LTS = Low-Technology Skill-based Products, MTS = Medium-Technology Skill-Based products and HTS = High-Technology Skill-based Products.

Appendix A2
Table A2.1. Section-wise IRCA of India

Section	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
S-01	1.62	1.94	1.68	1.73	2.03	1.73	1.68	1.40	1.16	1.22	1.13	1.05	0.92	0.79	1.00	1.12	1.25	1.43	1.61	1.70
S-02	3.25	3.47	4.15	3.42	3.13	3.13	3.18	3.18	2.76	2.49	2.18	2.23	2.10	1.59	1.60	1.98	2.75	2.26	2.31	2.04
S-03	1.45	0.96	0.94	1.53	1.74	1.34	0.75	0.67	0.94	0.79	0.66	0.60	0.53	0.54	0.56	0.55	0.48	0.47	0.51	0.78
S-04	1.45	1.27	0.78	0.70	0.83	0.95	0.78	0.77	0.76	0.64	0.93	0.97	1.20	0.63	0.77	0.81	0.81	0.70	0.62	0.62
S-05	0.90	0.58	0.54	0.36	0.55	0.76	0.80	0.87	1.13	1.17	1.30	1.45	1.22	1.23	1.30	1.19	1.43	1.50	1.39	1.06
S-06	1.01	1.16	1.07	1.13	1.22	1.15	1.13	1.11	1.08	1.11	1.18	1.13	1.17	0.98	1.06	1.01	1.11	1.09	1.16	1.27
S-07	0.50	0.50	0.45	0.47	0.55	0.65	0.70	0.70	0.79	0.72	0.73	0.60	0.59	0.48	0.53	0.59	0.56	0.60	0.58	0.60
S-08	3.82	4.30	4.81	4.33	4.51	4.11	3.67	3.21	3.38	2.97	2.78	2.63	2.70	2.17	1.77	1.78	1.91	1.66	1.71	1.91
S-09	0.10	0.07	0.06	0.06	0.07	0.06	0.08	0.08	0.10	0.10	0.10	0.11	0.13	0.11	0.10	0.11	0.12	0.13	0.14	0.20
S-10	0.14	0.12	0.13	0.16	0.21	0.22	0.26	0.23	0.24	0.27	0.26	0.25	0.25	0.22	0.25	0.25	0.26	0.26	0.28	0.33
S-11	4.37	4.33	4.51	4.65	4.70	4.35	3.98	3.69	3.52	3.47	3.40	3.19	3.13	2.86	2.93	2.75	2.73	2.74	2.67	3.08
S-12	1.95	1.85	2.21	2.13	2.05	1.95	1.71	1.65	1.69	1.64	1.65	1.65	1.54	1.29	1.15	1.07	1.08	1.08	1.12	1.31
S-13	0.69	0.74	0.71	0.84	0.99	1.03	1.02	1.01	0.84	0.88	0.95	0.94	0.89	0.78	0.77	0.71	0.75	0.75	0.86	0.96
S-14	7.54	7.97	9.19	11.16	10.38	9.28	9.92	9.99	9.44	9.14	6.92	6.67	5.54	7.96	5.86	5.83	4.62	3.90	3.58	4.48
S-15	0.82	0.87	0.75	0.96	1.06	1.01	1.14	1.30	1.27	1.26	1.30	1.19	1.22	0.98	1.28	0.92	0.99	1.04	1.12	1.12
S-16	0.20	0.20	0.18	0.17	0.18	0.23	0.22	0.24	0.23	0.25	0.27	0.28	0.33	0.39	0.31	0.33	0.30	0.30	0.28	0.31
S-17	0.21	0.20	0.16	0.16	0.19	0.19	0.18	0.23	0.28	0.34	0.33	0.34	0.52	0.62	0.68	0.68	0.57	0.60	0.79	0.73
S-18	0.12	0.13	0.14	0.19	0.20	0.24	0.24	0.25	0.23	0.22	0.20	0.20	0.21	0.21	0.19	0.19	0.19	0.19	0.20	0.23
S-19	0.02	0.10	0.01	0.02	0.03	0.19	0.07	0.08	0.05	0.02	0.07	0.04	0.11	0.12	0.07	0.18	0.21	0.28	0.34	0.55
S-20	0.24	0.24	0.24	0.23	0.25	0.26	0.23	0.28	0.30	0.30	0.31	0.30	0.27	0.26	0.29	0.28	0.29	0.28	0.30	0.34
S-21	0.04	0.05	0.04	0.05	0.03	0.06	0.08	5.02	4.41	3.61	2.85	2.59	1.50	1.04	1.01	1.00	0.79	0.70	0.62	0.40
Total No. of Sections with IRCA >1	9	8	7	8	9	10	9	10	10	10	10	10	10	7	9	9	8	9	9	9

Note: For description of sections please refer Appendix A1, Table A1.1.

Table A2.2. Chapter-wise IRCA of India

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-01	0.03	0.01	0.02	0.02	0.02	0.03	0.01	0.05	0.06	0.04	0.06	0.05	0.05	0.07	0.04	0.04	0.02	0.03	0.03	0.03
C-02	0.64	0.80	0.72	0.67	0.97	0.88	0.85	0.76	0.83	0.87	0.94	0.94	1.00	0.89	1.17	1.32	1.47	1.81	2.07	2.13
C-03	5.12	5.60	4.77	4.55	4.86	4.02	3.86	3.22	2.45	2.48	2.22	2.06	1.55	1.36	1.72	1.98	2.37	2.37	2.66	2.87
C-04	0.14	0.15	0.11	0.13	0.17	0.32	0.28	0.29	0.33	0.51	0.37	0.38	0.48	0.20	0.21	0.15	0.22	0.38	0.27	0.26
C-05	2.04	2.07	1.67	1.72	1.73	1.63	1.52	1.03	0.94	0.77	0.71	0.75	0.47	0.53	0.66	1.25	0.72	0.64	0.59	0.51
C-06	0.27	0.43	0.44	0.42	0.40	0.45	0.45	0.43	0.48	0.47	0.53	0.72	0.35	0.26	0.22	0.20	0.24	0.17	0.19	0.21
C-07	1.09	1.60	1.16	1.46	1.80	1.42	1.33	1.28	1.35	1.59	1.50	1.28	1.17	1.12	1.09	0.97	0.85	1.05	0.95	1.02
C-08	2.65	2.58	2.55	3.56	3.12	2.55	2.34	1.69	1.84	1.74	1.54	1.32	1.38	1.07	0.94	1.00	0.95	0.88	0.90	0.89
C-09	12.79	9.78	10.13	9.03	7.70	9.06	7.18	6.04	5.78	4.63	4.73	4.65	4.54	3.36	3.56	3.54	4.23	3.69	3.18	4.18
C-10	3.30	3.37	6.40	3.05	2.68	3.48	5.28	4.24	4.54	4.14	2.94	3.35	3.05	2.53	2.20	2.61	3.78	4.20	4.52	3.75
C-11	3.08	0.34	0.23	0.16	0.53	1.15	1.42	1.64	1.06	0.39	0.35	0.38	0.31	0.27	0.35	0.44	0.69	0.85	0.86	0.98
C-12	1.90	2.24	1.51	1.95	2.20	2.05	1.38	1.39	1.75	1.30	1.40	1.54	1.25	0.78	1.01	1.28	0.98	0.81	1.16	1.09
C-13	15.19	19.36	22.04	21.19	18.81	15.37	12.18	11.30	11.10	11.87	10.48	9.27	8.50	5.39	8.19	17.77	28.03	17.16	16.35	9.77
C-14	7.50	6.19	7.64	7.04	7.05	6.12	5.64	3.86	5.81	5.21	4.51	4.52	4.76	3.52	4.87	4.17	5.29	4.27	3.45	4.50
C-15	1.45	0.96	0.94	1.53	1.74	1.34	0.75	0.67	0.94	0.79	0.66	0.60	0.53	0.54	0.56	0.55	0.48	0.47	0.51	0.78
C-16	0.09	0.03	0.03	0.09	0.05	0.04	0.14	0.42	0.55	0.59	0.66	0.51	0.53	0.38	0.49	0.22	0.11	0.12	0.16	0.27
C-17	3.29	0.71	0.12	0.16	0.81	2.99	2.43	2.82	0.44	0.33	2.24	3.29	4.11	0.19	1.57	2.32	2.37	1.14	1.60	2.07
C-18	0.03	0.03	0.03	0.04	0.03	0.04	0.02	0.02	0.04	0.03	0.03	0.03	0.05	0.03	0.05	0.04	0.08	0.10	0.15	0.24
C-19	0.26	0.28	0.24	0.26	0.31	0.34	0.35	0.30	0.32	0.37	0.35	0.35	0.42	0.31	0.33	0.38	0.40	0.37	0.39	0.44
C-20	0.24	0.27	0.29	0.28	0.38	0.48	0.32	0.34	0.36	0.42	0.50	0.39	0.44	0.39	0.37	0.36	0.39	0.37	0.45	0.48
C-21	0.85	1.15	1.14	0.87	1.05	1.05	0.75	0.69	0.54	0.55	0.53	0.50	0.49	0.42	0.43	0.45	0.50	0.44	0.48	0.51
C-22	0.22	0.08	0.07	0.06	0.12	0.11	0.07	0.06	0.06	0.08	0.09	0.08	0.10	0.10	0.12	0.15	0.19	0.19	0.18	0.19
C-23	6.94	5.90	3.51	2.93	3.45	2.78	2.23	2.13	3.56	2.65	3.63	3.52	4.26	2.19	2.32	2.40	1.95	2.15	1.33	0.83

(Contd.)

Table A2.2. Chapter-wise IRCA of India

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-24	1.30	1.71	1.20	1.55	1.20	1.14	1.25	1.26	1.27	1.17	1.30	1.36	1.69	1.78	1.66	1.18	1.30	1.31	1.29	1.43
C-25	2.72	2.14	2.12	3.06	3.75	3.78	3.62	3.69	3.66	3.49	3.42	3.28	2.25	2.25	1.96	2.18	2.38	2.43	2.48	2.56
C-26	5.52	3.49	3.01	2.39	2.67	2.80	4.45	4.09	6.12	6.64	4.51	4.37	3.84	3.40	2.35	1.12	0.80	0.48	0.34	0.25
C-27	0.38	0.22	0.11	0.05	0.37	0.57	0.54	0.65	0.80	0.81	1.07	1.22	1.06	1.05	1.19	1.18	1.48	1.60	1.46	1.10
C-28	1.00	0.84	0.69	0.67	0.84	0.83	1.26	0.99	1.21	1.10	1.03	0.72	0.86	0.71	1.43	0.66	0.83	0.65	0.71	0.72
C-29	1.13	1.39	1.37	1.47	1.55	1.48	1.50	1.55	1.54	1.61	1.83	1.71	1.82	1.57	1.52	1.47	1.57	1.54	1.63	1.78
C-30	1.34	1.57	1.32	1.30	1.32	1.16	1.01	1.01	0.94	0.90	0.95	0.98	1.06	0.82	0.91	1.03	1.14	1.15	1.25	1.42
C-31	0.25	0.07	0.07	0.03	0.08	0.21	0.02	0.05	0.05	0.06	0.04	0.04	0.05	0.23	0.05	0.06	0.08	0.06	0.07	0.09
C-32	1.89	2.11	1.73	1.85	2.01	1.95	1.89	1.80	1.57	1.55	1.58	1.66	1.80	1.39	1.49	1.37	1.41	1.56	1.92	1.92
C-33	0.73	0.78	0.80	0.78	0.93	0.83	0.74	0.69	0.64	0.63	0.75	0.71	0.75	0.73	0.66	0.70	0.78	0.71	0.68	0.75
C-34	0.30	0.28	0.23	0.25	0.29	0.32	0.42	0.31	0.26	0.32	0.36	0.35	0.50	0.38	0.44	0.47	0.70	0.45	0.50	0.51
C-35	0.28	0.21	0.33	0.47	0.57	0.71	0.63	0.65	0.67	0.86	0.71	0.98	0.90	0.64	0.69	0.49	0.58	0.61	0.63	0.55
C-36	1.71	1.52	0.86	0.98	1.02	1.23	1.02	1.01	1.15	1.29	1.18	1.46	1.70	1.38	1.35	1.07	1.10	0.98	0.74	1.13
C-37	0.14	0.27	0.35	0.36	0.34	0.24	0.18	0.14	0.15	0.14	0.14	0.12	0.15	0.10	0.13	0.10	0.08	0.07	0.09	0.07
C-38	0.70	0.94	0.90	1.01	1.09	1.05	0.96	0.93	0.88	1.12	0.97	0.96	1.02	0.89	0.88	0.79	0.83	0.89	0.90	1.02
C-39	0.36	0.35	0.31	0.37	0.46	0.58	0.60	0.59	0.75	0.65	0.66	0.55	0.50	0.41	0.49	0.57	0.51	0.56	0.51	0.53
C-40	0.94	0.94	0.85	0.77	0.82	0.91	1.02	1.03	0.91	0.95	0.94	0.78	0.89	0.67	0.63	0.64	0.70	0.71	0.78	0.84
C-41	2.29	2.22	2.39	2.17	2.46	2.91	3.08	2.48	2.86	2.66	2.59	2.50	2.63	1.99	1.81	1.96	2.54	2.13	2.07	2.28
C-42	6.64	7.81	8.55	7.12	7.30	6.07	4.91	4.46	4.54	3.85	3.46	3.08	3.09	2.53	2.02	1.96	1.95	1.78	1.82	2.05
C-43	0.00	0.00	0.01	0.00	0.00	0.01	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.02
C-44	0.10	0.07	0.06	0.06	0.06	0.06	0.08	0.08	0.10	0.10	0.10	0.11	0.13	0.11	0.10	0.11	0.12	0.14	0.14	0.21
C-45	0.02	0.03	0.02	0.19	0.17	0.05	0.04	0.04	0.06	0.05	0.08	0.06	0.07	0.06	0.08	0.10	0.07	0.07	0.06	0.07

(Contd.)

Table A2.2. Chapter-wise IRCA of India

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-46	0.10	0.36	0.33	0.25	0.14	0.20	0.35	0.17	0.17	0.15	0.19	0.29	0.15	0.12	0.06	0.03	0.04	0.05	0.08	0.16
C-47	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
C-48	0.14	0.12	0.12	0.16	0.23	0.24	0.29	0.24	0.26	0.30	0.27	0.24	0.27	0.24	0.30	0.28	0.29	0.30	0.32	0.38
C-49	0.23	0.21	0.27	0.29	0.32	0.30	0.31	0.34	0.35	0.38	0.41	0.48	0.38	0.34	0.32	0.40	0.45	0.39	0.38	0.44
C-50	6.58	9.50	12.08	15.02	16.03	16.40	16.75	16.29	16.03	12.70	11.07	9.85	8.88	6.83	6.82	4.56	3.13	2.55	2.65	2.73
C-51	0.94	1.06	0.93	0.58	0.60	0.56	0.59	0.55	0.56	0.63	0.62	0.62	0.78	0.75	0.74	0.79	0.84	0.54	0.67	0.79
C-52	13.15	13.08	10.82	11.54	11.24	9.73	8.75	6.95	6.66	6.17	7.35	8.56	7.89	5.57	8.31	6.81	7.54	8.42	7.74	8.31
C-53	8.56	10.36	7.58	5.84	4.73	8.60	5.19	4.88	5.37	5.02	4.24	4.38	5.55	5.15	7.58	6.33	6.00	4.61	4.69	5.13
C-54	1.78	1.92	1.72	2.09	2.27	2.54	2.82	3.12	3.04	2.65	2.55	2.74	3.24	3.62	3.53	3.19	2.70	2.89	2.73	2.85
C-55	1.85	2.33	2.35	2.60	2.80	2.94	3.16	3.61	3.46	3.09	3.30	3.73	3.76	3.18	3.25	3.26	2.92	2.86	2.98	3.54
C-56	0.42	0.48	0.66	0.85	0.79	0.66	0.62	0.57	0.46	0.54	0.56	0.61	0.65	0.64	0.76	0.74	0.79	0.72	0.74	1.02
C-57	10.02	8.36	10.44	11.01	10.91	9.81	9.02	8.49	8.42	8.91	9.13	8.13	6.98	5.66	6.05	4.77	4.96	5.29	6.12	6.62
C-58	0.92	2.65	2.75	3.28	3.74	3.68	2.44	1.31	1.26	1.28	1.36	1.30	1.45	1.30	1.42	1.16	1.18	1.62	1.62	1.78
C-59	0.76	0.56	0.59	0.55	0.42	0.46	0.45	0.46	0.53	0.49	0.41	0.45	0.40	0.35	0.43	0.36	0.41	0.49	0.81	0.55
C-60	0.90	0.61	0.54	0.40	0.31	0.33	0.25	0.32	0.31	0.25	0.35	0.33	0.42	0.37	0.38	0.51	0.40	0.43	0.41	0.43
C-61	2.65	2.24	2.97	3.29	3.31	3.30	3.38	3.23	2.79	2.63	2.46	2.27	2.24	2.44	1.83	1.79	1.67	1.69	1.87	2.35
C-62	4.76	4.88	5.57	5.29	5.60	4.67	3.91	3.42	3.29	3.59	3.42	2.92	2.95	2.90	2.54	2.58	2.63	2.39	2.30	2.88
C-63	7.52	8.48	7.87	8.17	9.15	8.53	7.76	7.14	7.14	6.92	6.01	5.15	4.53	3.73	3.90	4.05	3.84	3.70	3.86	4.41
C-64	2.09	1.97	2.34	2.25	2.17	2.02	1.76	1.67	1.74	1.67	1.65	1.63	1.53	1.29	1.16	1.10	1.10	1.09	1.16	1.38
C-65	0.18	0.24	0.35	0.24	0.24	0.27	0.26	0.25	0.18	0.18	0.30	0.25	0.32	0.25	0.21	0.22	0.32	0.26	0.28	0.26
C-66	0.08	0.17	0.13	0.03	0.04	0.09	0.06	0.11	0.12	0.12	0.11	0.05	0.04	0.04	0.03	0.02	0.02	0.03	0.03	0.27
C-67	1.77	1.62	3.06	3.06	3.53	4.16	3.71	4.77	4.56	4.72	5.42	5.47	4.95	3.77	3.05	2.23	2.13	2.28	1.74	1.95

(Contd.)

Table A2.2. Chapter-wise IRCA of India

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-68	1.83	2.04	1.88	2.11	2.60	2.29	2.28	2.32	1.87	2.07	2.21	2.11	1.81	1.73	1.69	1.34	1.45	1.38	1.47	1.49
C-69	0.26	0.26	0.30	0.31	0.35	0.61	0.56	0.50	0.40	0.38	0.39	0.43	0.43	0.40	0.49	0.46	0.54	0.52	0.75	0.88
C-70	0.31	0.31	0.29	0.45	0.54	0.60	0.64	0.63	0.54	0.48	0.53	0.51	0.56	0.42	0.40	0.47	0.45	0.48	0.52	0.61
C-71	7.54	7.97	9.19	11.16	10.38	9.28	9.92	9.99	9.44	9.14	6.92	6.67	5.54	7.96	5.86	5.83	4.62	3.90	3.58	4.48
C-72	1.11	1.19	0.86	1.24	1.37	1.08	1.45	1.76	1.57	1.49	1.46	1.25	1.30	1.06	1.16	0.95	0.97	1.27	1.20	1.09
C-73	0.88	1.02	1.10	1.30	1.48	1.53	1.37	1.52	1.59	1.55	1.44	1.54	1.66	1.28	1.68	1.25	1.44	1.17	1.30	1.33
C-74	0.34	0.29	0.37	0.38	0.54	0.71	1.12	1.51	1.54	1.67	1.94	1.74	1.32	0.98	2.23	0.94	0.96	0.95	1.27	1.27
C-75	0.10	0.09	0.08	0.07	0.04	0.09	0.04	0.07	0.05	0.09	0.08	0.06	0.08	0.06	0.08	0.07	0.62	0.91	1.33	1.73
C-76	0.58	0.64	0.37	0.60	0.65	0.67	0.79	0.57	0.50	0.61	0.53	0.59	0.63	0.59	0.59	0.48	0.60	0.66	0.86	0.97
C-78	0.25	0.24	0.07	0.07	0.07	0.16	0.08	0.15	0.31	0.50	0.39	0.59	0.55	0.97	1.20	1.34	0.83	1.40	1.40	1.53
C-79	0.16	0.21	0.17	0.03	0.14	0.08	0.22	0.34	0.64	0.42	3.00	1.82	2.80	2.48	3.20	2.98	2.10	1.89	1.68	2.84
C-80	2.59	1.19	0.66	0.93	1.00	0.94	0.77	0.84	0.29	0.29	0.77	0.29	0.39	0.25	0.10	0.05	0.05	0.59	0.25	0.73
C-81	0.15	0.18	0.23	0.13	0.12	0.12	0.13	0.11	0.16	0.18	0.24	0.17	0.16	0.21	0.15	0.24	0.24	0.23	0.20	0.18
C-82	0.99	1.01	0.99	1.08	1.14	1.13	1.06	1.11	1.12	1.21	1.19	0.92	0.90	0.70	0.74	0.81	0.75	0.72	0.74	0.74
C-83	0.59	0.64	0.62	0.82	0.75	0.73	0.67	0.63	0.65	0.55	0.57	0.56	0.58	0.47	0.48	0.45	0.43	0.41	0.44	0.45
C-84	0.20	0.21	0.18	0.17	0.19	0.24	0.23	0.26	0.27	0.29	0.31	0.31	0.35	0.33	0.30	0.31	0.31	0.32	0.36	0.41
C-85	0.20	0.19	0.18	0.17	0.17	0.21	0.20	0.22	0.19	0.20	0.23	0.26	0.30	0.45	0.32	0.35	0.30	0.28	0.21	0.22
C-86	0.21	0.18	0.09	0.06	0.11	0.35	0.12	0.13	0.13	0.11	0.23	0.18	0.16	0.11	0.11	0.18	0.16	0.23	0.17	0.12
C-87	0.24	0.23	0.19	0.18	0.21	0.20	0.20	0.25	0.30	0.34	0.34	0.31	0.40	0.45	0.55	0.46	0.49	0.49	0.57	0.60
C-88	0.01	0.07	0.02	0.04	0.07	0.09	0.10	0.08	0.05	0.05	0.03	0.18	0.63	0.57	0.72	0.86	0.54	1.06	1.78	1.00
C-89	0.15	0.25	0.20	0.27	0.16	0.15	0.15	0.26	0.61	0.91	0.85	1.09	1.50	1.74	1.57	2.18	1.43	1.25	1.84	1.76
C-90	0.10	0.11	0.13	0.17	0.18	0.21	0.23	0.23	0.22	0.21	0.20	0.20	0.21	0.22	0.20	0.20	0.19	0.20	0.21	0.24

(Contd.)

Table A2.2. Chapter-wise IRCA of India

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-91	0.27	0.23	0.25	0.34	0.41	0.50	0.42	0.48	0.41	0.29	0.20	0.16	0.14	0.11	0.10	0.11	0.10	0.10	0.09	0.12
C-92	0.39	0.35	0.39	0.30	0.27	0.24	0.21	0.19	0.21	0.20	0.17	0.16	0.15	0.18	0.15	0.14	0.20	0.13	0.14	0.20
C-93	0.02	0.10	0.01	0.02	0.03	0.19	0.07	0.08	0.05	0.02	0.07	0.04	0.11	0.12	0.07	0.18	0.21	0.28	0.34	0.55
C-94	0.04	0.05	0.05	0.07	0.10	0.10	0.11	0.16	0.23	0.23	0.26	0.29	0.25	0.24	0.27	0.27	0.27	0.25	0.27	0.31
C-95	0.34	0.34	0.33	0.25	0.23	0.26	0.23	0.25	0.25	0.24	0.23	0.16	0.14	0.13	0.14	0.15	0.15	0.17	0.18	0.19
C-96	1.00	0.93	1.00	1.11	1.16	1.20	1.03	1.13	0.93	0.92	0.90	0.83	0.80	0.79	0.80	0.75	0.80	0.79	0.82	0.96
C-97	0.04	0.05	0.04	0.05	0.03	0.06	0.08	5.02	4.41	3.61	2.85	2.59	1.50	1.04	1.01	1.00	0.79	0.70	0.62	0.40
Total No. of Chapters with IRCA >1	39	39	35	38	41	42	42	42	38	38	40	39	42	36	41	40	34	37	39	42

Note: for description of chapters please refer Appendix A1, Table A1.1.

Table A2.3. Section-wise BRCA of India with Japan

Section	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
S-01	5.93	7.14	7.87	7.66	7.18	6.92	5.36	5.05	5.44	4.92	4.66	4.33	3.93	3.86	3.35	3.36	2.36	1.98	2.36	2.61
S-02	0.42	0.57	0.53	0.60	0.67	0.72	0.60	0.72	0.86	1.00	1.00	0.93	0.70	0.74	0.61	0.52	0.35	0.47	0.59	0.76
S-03	2.00	1.63	1.55	1.69	2.37	2.87	2.98	2.54	3.27	2.99	2.94	3.41	3.99	3.81	2.33	3.11	2.13	1.53	2.48	2.96
S-04	0.72	0.52	1.11	1.26	1.27	0.48	0.58	1.02	2.36	3.22	2.40	2.47	3.37	3.37	3.13	3.96	2.17	1.83	0.59	0.68
S-05	3.36	4.06	5.27	3.56	1.76	1.01	2.83	2.00	1.54	1.53	1.59	1.63	1.27	2.21	2.21	1.80	2.38	2.18	2.04	1.97
S-06	0.43	0.42	0.50	0.43	0.49	0.59	0.55	0.73	0.75	0.84	0.78	0.83	0.93	0.87	0.75	0.96	0.88	0.89	1.07	1.16
S-07	0.06	0.07	0.13	0.16	0.27	0.16	0.08	0.12	0.19	0.12	0.26	0.13	0.14	0.15	0.17	0.27	0.23	0.28	0.33	0.40
S-08	0.15	0.20	0.12	0.17	0.21	0.31	0.29	0.30	0.24	0.24	0.24	0.27	0.30	0.41	0.34	0.38	0.43	0.44	0.54	0.59
S-09	0.81	0.62	0.59	0.41	0.35	0.67	0.37	0.70	0.58	0.57	0.41	0.38	0.56	0.44	0.36	0.41	0.42	0.45	0.44	0.27
S-10	0.21	0.34	0.26	0.19	0.15	0.15	0.12	0.25	0.13	0.09	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.04	0.06
S-11	0.51	0.54	0.43	0.49	0.55	0.68	0.57	0.66	0.66	0.63	0.66	0.54	0.61	0.60	0.44	0.63	0.55	0.51	0.62	0.59
S-12	0.14	0.08	0.07	0.06	0.09	0.12	0.11	0.10	0.08	0.13	0.11	0.12	0.17	0.24	0.15	0.26	0.37	0.35	0.50	0.73
S-13	1.48	1.06	0.88	0.73	0.69	0.76	0.57	0.57	0.69	0.48	0.35	0.40	0.41	0.46	0.39	0.39	0.33	0.36	0.36	0.30
S-14	1.61	1.15	1.15	1.28	1.23	1.50	1.30	1.26	1.39	1.22	1.23	1.07	0.97	0.46	0.38	0.37	0.37	0.38	0.42	0.38
S-15	0.94	0.70	0.33	0.39	0.42	0.42	0.23	0.28	0.37	0.36	0.36	0.55	1.04	0.66	0.98	0.85	0.65	0.77	0.79	0.80
S-16	0.22	0.32	0.67	0.47	0.40	0.46	0.53	0.93	0.62	0.63	0.63	0.57	0.51	0.45	0.42	0.48	0.52	0.73	0.95	0.90
S-17	0.05	0.07	0.17	0.16	0.11	0.13	0.16	0.23	0.16	0.16	0.15	0.24	0.19	0.52	0.14	0.58	0.45	0.36	0.34	1.36
S-18	0.38	0.41	0.42	0.84	1.43	2.00	2.51	3.25	1.71	1.70	2.31	1.90	2.20	1.58	1.20	0.76	0.97	0.88	0.93	1.09
S-19	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.06	0.02	0.05	0.04	0.01
S-20	0.19	0.15	0.23	0.16	0.15	0.22	0.20	0.32	0.36	0.41	0.34	0.25	0.32	0.33	0.27	0.32	0.40	0.42	0.43	0.42
S-21	0.34	3.07	3.16	0.43	0.56	2.16	3.12	0.69	0.98	1.01	0.85	1.12	0.90	1.10	0.55	0.43	0.71	0.10	0.23	0.16
Total No. of Sections with BRCA > 1	5	6	6	5	6	6	6	6	6	7	7	7	6	6	5	4	4	4	4	5

Note: For description of sections please refer Appendix A1, Table A1.1.

Table A2.4. Chapter-wise BRCA of India with Japan

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.35	0.11	0.02	0.00	0.00	0.01	0.00	0.00	0.11	0.00	0.00	0.00
C-02	0.00	0.01	0.04	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C-03	7.02	8.43	9.35	8.93	8.61	8.60	6.50	6.23	7.37	7.10	6.89	6.95	7.97	7.16	6.29	6.32	4.66	4.10	4.52	5.00
C-04	0.95	1.31	0.89	0.73	0.77	1.78	2.63	2.07	3.30	1.56	1.66	1.59	1.25	1.12	0.48	0.93	0.58	0.96	1.71	2.12
C-05	8.19	10.34	10.04	11.02	11.78	12.33	9.69	14.30	15.04	16.97	18.15	11.48	15.11	12.39	7.27	3.86	5.77	5.44	8.60	10.11
C-06	2.38	1.75	2.82	2.06	2.64	1.65	4.14	3.96	3.04	7.41	11.80	19.16	1.90	3.11	2.25	1.86	1.86	1.58	1.87	1.79
C-07	0.05	0.06	0.08	0.07	0.17	0.24	0.13	0.07	0.14	0.09	0.04	0.05	0.04	0.03	0.03	0.05	0.07	0.04	0.08	0.08
C-08	1.00	0.98	1.07	0.97	1.08	1.07	1.13	1.15	1.57	1.50	1.21	1.69	1.80	1.91	1.64	1.89	1.72	1.75	2.06	2.68
C-09	0.67	0.76	0.67	0.68	0.72	1.01	0.86	1.34	1.42	1.44	1.29	0.86	0.93	1.09	0.98	0.88	0.74	0.69	0.86	0.87
C-10	0.00	0.02	0.06	0.03	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.27	0.03	0.03	0.03	0.01	0.02	0.03	0.05
C-11	0.01	0.47	0.26	0.32	0.14	0.10	0.20	0.05	0.64	1.48	1.19	0.36	0.68	0.51	0.31	0.43	0.24	0.14	0.17	0.36
C-12	0.29	0.32	0.44	0.56	0.84	0.81	1.16	0.78	0.78	0.83	0.67	0.32	0.31	0.88	0.23	0.24	0.23	1.21	1.22	0.93
C-13	0.90	1.55	1.50	1.03	1.24	1.96	1.96	2.49	3.44	3.77	2.99	1.65	1.54	2.37	1.49	0.68	0.37	0.89	1.23	2.32
C-14	1.16	1.66	2.02	1.94	1.86	1.71	1.67	2.03	2.90	3.49	3.91	5.61	11.39	3.40	3.02	3.60	2.04	3.74	7.00	9.02
C-15	2.00	1.63	1.55	1.69	2.37	2.87	2.98	2.54	3.27	2.99	2.94	3.41	3.99	3.81	2.33	3.11	2.13	1.53	2.48	2.96
C-16	4.31	2.43	2.08	11.46	8.60	1.54	7.75	5.24	7.65	9.14	7.56	5.54	7.18	3.89	4.81	8.44	4.09	2.53	1.67	1.21
C-17	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
C-18	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.61	0.07	0.00	0.00	0.55	0.00	0.03	0.01	0.00	0.00	0.00
C-19	0.04	0.02	0.12	0.10	0.40	0.35	0.40	0.29	0.18	0.14	0.16	0.09	0.10	0.09	0.05	0.05	0.07	0.07	0.07	0.07
C-20	0.25	0.43	0.43	0.40	0.32	0.28	0.41	0.31	0.43	1.10	0.79	1.16	0.83	0.57	0.41	0.86	1.29	1.41	1.69	1.47
C-21	0.33	0.27	0.27	0.34	0.33	0.55	0.76	0.61	2.35	1.22	0.59	0.58	0.98	1.13	0.74	0.94	1.04	1.18	1.18	0.91
C-22	3.99	3.99	2.56	1.45	0.35	0.97	1.31	2.69	0.30	0.20	1.03	0.25	0.29	0.14	0.14	0.09	0.12	0.09	0.12	0.19
C-23	0.95	0.68	1.79	2.21	2.27	0.93	0.85	2.01	3.02	5.00	4.35	5.18	6.63	6.70	7.18	9.64	5.65	3.54	0.98	2.14

(contd.)

Table A2.4. Chapter-wise BRCA of India with Japan

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-24	0.04	0.08	0.10	0.07	0.18	0.24	0.10	0.06	0.22	0.02	0.03	0.00	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00
C-25	1.14	1.43	1.05	1.20	1.07	1.13	0.86	0.75	0.84	0.69	0.78	0.74	0.87	1.13	1.23	1.13	0.94	0.84	1.06	1.21
C-26	7.57	8.01	8.94	6.79	7.59	5.13	9.58	6.74	4.49	3.21	3.60	2.67	2.40	3.48	1.64	2.25	4.05	6.15	10.98	6.75
C-27	0.00	0.00	0.00	0.01	0.13	0.00	0.61	0.88	0.43	0.82	1.13	1.41	1.07	1.95	2.34	1.78	2.33	2.08	1.88	1.91
C-28	0.37	0.31	1.34	0.25	0.62	0.88	0.35	0.50	1.24	1.39	0.92	0.95	1.49	1.27	0.79	2.41	2.32	1.69	1.65	2.18
C-29	0.70	0.66	0.59	0.57	0.60	0.74	0.76	0.98	0.85	0.96	0.86	0.99	1.05	1.12	0.93	1.11	1.04	1.17	1.57	1.92
C-30	0.11	0.11	0.22	0.20	0.20	0.15	0.12	0.20	0.23	0.19	0.13	0.10	0.09	0.08	0.10	0.23	0.29	0.27	0.18	0.13
C-31	0.00	0.09	0.02	0.11	0.03	0.03	0.12	0.28	0.02	0.03	0.05	1.12	0.01	0.01	0.03	0.01	0.03	0.02	0.04	0.06
C-32	0.29	0.35	0.41	0.43	0.48	0.59	0.78	0.79	0.85	0.88	0.95	1.11	1.43	1.10	1.14	1.37	1.11	1.11	1.28	1.38
C-33	1.09	0.66	0.69	0.67	0.58	0.85	0.97	1.15	1.24	1.45	1.75	1.93	1.64	1.06	1.21	1.47	1.02	0.88	0.96	1.02
C-34	0.07	0.01	0.14	0.07	0.04	0.11	0.04	0.04	0.24	0.08	0.04	0.07	0.12	0.14	0.05	0.06	0.02	0.06	0.04	0.05
C-35	0.25	1.16	0.30	0.98	1.89	2.10	1.20	1.72	1.95	1.68	1.81	1.55	3.41	4.57	2.64	4.25	3.44	3.68	5.15	6.58
C-36	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
C-37	0.08	0.08	0.09	0.09	0.14	1.46	0.13	0.19	0.06	0.25	0.26	0.02	0.05	0.03	0.02	0.03	0.01	0.05	0.01	0.00
C-38	0.31	0.39	0.53	0.44	0.49	0.62	0.54	1.01	0.99	1.18	1.37	1.33	1.43	1.52	1.37	1.27	1.05	1.38	1.80	1.79
C-39	0.08	0.10	0.21	0.25	0.38	0.20	0.11	0.14	0.22	0.15	0.33	0.15	0.14	0.11	0.11	0.27	0.22	0.30	0.34	0.38
C-40	0.03	0.05	0.05	0.03	0.06	0.08	0.03	0.08	0.11	0.06	0.09	0.09	0.15	0.23	0.29	0.27	0.27	0.24	0.33	0.44
C-41	0.22	0.53	0.26	0.29	0.31	0.40	0.38	0.35	0.30	0.34	0.34	0.32	0.35	0.45	0.29	0.31	0.27	0.26	0.31	0.30
C-42	0.12	0.08	0.07	0.13	0.18	0.26	0.24	0.28	0.20	0.19	0.19	0.24	0.27	0.40	0.37	0.41	0.51	0.53	0.66	0.72
C-43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.30	0.00	0.96
C-44	0.81	0.64	0.61	0.35	0.37	0.65	0.39	0.73	0.61	0.58	0.40	0.39	0.58	0.45	0.37	0.42	0.43	0.45	0.45	0.28
C-45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	0.02	0.01	0.00	0.00	0.00	0.00
C-46	0.86	0.27	0.37	2.09	0.59	1.26	0.20	0.23	0.04	0.32	0.85	0.17	0.12	0.01	0.00	0.01	0.00	0.11	0.01	0.27

(contd.)

Table A2.4. Chapter-wise BRCA of India with Japan

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-47	12.21	11.78	1.09	12.39	0.31	2.33	0.06	0.06	0.00	0.41	0.07	0.21	0.37	0.03	0.01	0.03	0.00	0.00	0.00	0.00
C-48	0.19	0.33	0.34	0.18	0.17	0.15	0.12	0.27	0.10	0.08	0.03	0.05	0.03	0.03	0.04	0.05	0.04	0.04	0.03	0.05
C-49	0.05	0.09	0.11	0.09	0.10	0.08	0.10	0.16	0.19	0.12	0.10	0.06	0.07	0.07	0.07	0.04	0.08	0.14	0.07	0.09
C-50	0.25	0.20	0.21	0.40	0.42	0.37	0.26	0.26	0.27	0.29	0.32	0.25	0.35	0.38	0.30	0.62	0.69	0.39	0.37	0.50
C-51	1.93	2.53	2.18	1.25	1.23	1.11	1.09	1.32	1.50	0.90	0.98	1.40	0.70	0.81	1.08	2.14	2.39	2.43	2.40	5.62
C-52	0.66	0.75	0.55	0.76	0.71	0.61	0.61	1.32	1.12	1.06	1.00	0.72	0.78	0.60	0.40	0.62	0.29	0.29	0.46	0.44
C-53	0.70	0.80	0.85	1.21	0.61	1.53	1.05	1.52	1.44	1.46	1.00	0.97	1.43	0.77	0.61	0.69	0.77	0.68	0.80	0.60
C-54	0.07	0.11	0.13	0.10	0.14	0.20	0.16	0.34	0.26	0.43	0.32	0.16	0.10	0.08	0.05	0.10	0.09	0.12	0.35	0.35
C-55	0.11	0.08	0.09	0.07	0.12	0.14	0.18	0.26	0.21	0.15	0.14	0.11	0.18	0.16	0.11	0.27	0.18	0.24	0.29	0.32
C-56	2.63	2.37	1.78	2.19	2.88	3.70	3.90	5.09	4.43	3.30	1.76	1.52	1.12	1.01	0.55	0.75	0.61	0.92	0.83	0.50
C-57	0.54	0.67	0.53	0.55	0.74	0.85	0.77	0.84	0.75	0.77	0.74	0.72	0.72	0.81	0.60	0.76	0.85	0.85	0.81	0.76
C-58	0.26	0.19	0.12	0.23	0.25	0.25	0.23	0.33	0.42	0.26	0.24	0.16	0.16	0.33	0.23	0.27	0.24	0.23	0.19	0.23
C-59	0.03	0.03	0.04	0.05	0.05	0.61	1.39	2.40	1.57	2.30	4.01	3.43	5.90	5.05	2.92	3.04	0.88	1.91	1.08	1.95
C-60	0.04	0.02	0.16	0.02	0.02	0.04	0.07	0.06	2.38	0.24	0.19	0.19	0.04	0.05	0.01	0.02	0.01	0.03	0.00	0.04
C-61	0.25	0.26	0.21	0.18	0.23	0.22	0.14	0.14	0.16	0.17	0.18	0.11	0.11	0.11	0.13	0.15	0.17	0.20	0.24	0.25
C-62	0.44	0.40	0.38	0.43	0.59	0.66	0.49	0.60	0.77	0.75	0.91	0.79	0.97	1.11	0.83	1.17	1.22	1.05	1.11	0.96
C-63	0.80	0.83	0.77	0.79	0.85	1.04	0.78	0.77	0.73	0.60	0.58	0.58	0.64	0.71	0.44	0.68	0.63	0.58	0.71	0.65
C-64	0.14	0.08	0.06	0.06	0.09	0.13	0.11	0.10	0.09	0.13	0.12	0.13	0.19	0.27	0.17	0.29	0.43	0.40	0.55	0.82
C-65	0.04	0.36	0.82	0.57	0.32	0.08	0.47	0.36	0.66	0.64	0.24	0.18	0.26	0.20	0.12	0.26	0.15	0.12	0.15	0.24
C-66	0.29	0.00	1.16	0.40	0.00	0.08	0.00	0.01	0.16	1.39	0.12	0.15	0.12	0.24	0.02	0.14	0.03	0.09	0.01	0.00
C-67	0.08	0.19	0.07	0.05	0.02	0.01	0.00	0.02	0.00	0.01	0.02	0.03	0.02	0.04	0.01	0.03	0.01	0.02	0.02	0.02
C-68	2.10	1.42	1.21	1.05	1.00	1.06	0.76	0.72	0.84	0.62	0.43	0.50	0.56	0.55	0.39	0.55	0.43	0.48	0.58	0.51
C-69	0.26	0.28	0.16	0.08	0.05	0.03	0.06	0.18	0.23	0.16	0.11	0.13	0.15	0.34	0.51	0.10	0.12	0.20	0.10	0.12
C-70	0.01	0.07	0.09	0.14	0.14	0.62	0.49	0.45	0.64	0.27	0.28	0.29	0.22	0.29	0.27	0.31	0.29	0.24	0.23	0.15
C-71	1.61	1.15	1.15	1.28	1.23	1.50	1.30	1.26	1.39	1.22	1.23	1.07	0.97	0.46	0.38	0.37	0.37	0.38	0.42	0.38
C-72	1.89	1.26	0.62	0.67	0.83	0.68	0.26	0.30	0.48	0.58	0.49	1.07	1.88	1.36	2.49	1.46	1.46	1.38	1.60	1.60

(contd.)

Table A2.4. Chapter-wise BRCA of India with Japan

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-73	0.21	0.24	0.15	0.17	0.18	0.29	0.24	0.30	0.22	0.19	0.25	0.25	0.23	0.23	0.18	0.36	0.30	0.46	0.41	0.40
C-74	0.06	0.08	0.12	0.02	0.11	1.02	0.37	0.28	0.51	0.22	0.31	0.14	0.68	0.27	0.03	0.42	0.07	0.23	0.07	0.13
C-75	0.00	0.00	0.00	0.08	0.18	0.16	0.02	0.00	0.61	0.45	2.19	3.39	5.30	2.51	1.84	3.19	0.16	0.17	0.48	0.14
C-76	0.18	0.37	0.25	0.51	0.03	0.05	0.09	0.26	0.13	0.11	0.47	0.29	1.03	0.56	1.83	1.31	0.12	0.27	0.28	0.83
C-78	1.71	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.19	0.20	0.09	0.14	0.18	0.40	1.40	1.90
C-79	0.00	0.00	0.04	0.00	0.01	0.08	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.04	0.60	1.07	0.85
C-80	0.00	0.01	1.07	0.21	0.00	0.01	0.01	0.00	0.01	0.02	0.00	0.04	0.01	0.90	0.00	0.05	0.06	0.01	0.03	0.00
C-81	1.09	0.11	0.11	0.01	0.02	0.61	0.17	1.02	0.59	3.29	1.36	4.26	2.83	0.45	1.38	2.24	1.75	2.75	3.20	2.82
C-82	0.16	0.23	0.10	0.20	0.15	0.17	0.27	0.15	0.20	0.17	0.16	0.26	0.16	0.25	0.21	0.32	0.28	0.29	0.39	0.58
C-83	0.01	0.04	0.07	0.01	0.02	0.09	0.01	0.09	0.11	0.09	0.06	0.07	0.35	0.07	0.08	0.07	0.07	0.10	0.09	0.09
C-84	0.14	0.34	0.77	0.35	0.32	0.54	0.57	0.68	0.67	0.70	0.71	0.66	0.64	0.65	0.55	0.61	0.59	0.82	1.02	0.96
C-85	0.31	0.29	0.54	0.60	0.48	0.36	0.49	1.26	0.55	0.52	0.52	0.45	0.34	0.31	0.29	0.36	0.45	0.63	0.83	0.79
C-86	0.33	0.11	0.04	0.00	0.00	0.01	0.69	0.35	0.56	0.08	0.00	0.26	0.05	0.60	0.37	0.09	0.27	0.15	0.25	0.09
C-87	0.04	0.08	0.12	0.18	0.11	0.13	0.14	0.25	0.18	0.19	0.19	0.19	0.21	0.22	0.15	0.26	0.40	0.46	0.60	0.60
C-88	0.09	0.11	0.07	0.00	0.16	0.20	0.36	0.12	0.00	0.02	0.00	1.60	0.45	2.03	0.42	1.57	1.90	0.36	0.01	0.06
C-89	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.55	0.00	0.73	0.00	0.00	0.00	5.23
C-90	0.27	0.35	0.40	0.96	1.67	2.36	2.88	3.74	1.91	1.82	2.41	1.98	2.28	1.60	1.22	0.77	0.98	0.88	0.94	1.11
C-91	0.14	0.02	0.02	0.03	0.05	0.02	0.00	0.06	0.05	0.13	0.13	0.04	0.02	0.62	0.12	0.10	0.13	0.16	0.09	0.04
C-92	2.33	2.31	2.01	1.61	1.48	1.65	2.20	1.91	2.51	2.66	3.80	3.26	3.90	2.86	2.70	2.13	2.88	5.56	3.96	3.97
C-93	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.06	0.02	0.05	0.04	0.01
C-94	0.14	0.13	0.12	0.08	0.21	0.17	0.14	0.11	0.12	0.11	0.11	0.13	0.16	0.23	0.22	0.27	0.40	0.45	0.44	0.41
C-95	0.22	0.17	0.25	0.30	0.22	0.31	0.20	0.23	0.27	0.28	0.36	0.25	0.35	0.44	0.23	0.48	0.47	0.35	0.32	0.33
C-96	0.18	0.14	0.23	0.11	0.09	0.19	0.23	0.56	0.82	1.01	0.77	0.56	0.64	0.46	0.41	0.35	0.35	0.39	0.49	0.47
C-97	0.34	3.07	3.16	0.43	0.56	2.16	3.12	0.69	0.98	1.01	0.85	1.12	0.90	1.10	0.55	0.43	0.71	0.10	0.23	0.16
Total No. of Chapters with BRCA > 1	20	20	22	19	18	27	22	26	25	30	27	29	27	30	24	26	24	24	29	28

Note: for description of chapters please refer Appendix A1, Table A1.1.

Table A2.5. Section-wise IRCA of Japan

Section	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
S-01	0.04	0.07	0.06	0.05	0.06	0.07	0.07	0.07	0.07	0.08	0.10	0.10	0.10	0.11	0.10	0.09	0.09	0.10	0.11	0.13
S-02	0.03	0.03	0.04	0.03	0.03	0.13	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04
S-03	0.04	0.03	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	0.03	0.03	0.03	0.04	0.05	0.05
S-04	0.09	0.10	0.09	0.10	0.10	0.11	0.11	0.10	0.10	0.11	0.11	0.11	0.11	0.13	0.12	0.12	0.11	0.11	0.13	0.14
S-05	0.14	0.10	0.09	0.06	0.04	0.05	0.05	0.04	0.05	0.06	0.07	0.10	0.14	0.14	0.12	0.12	0.13	0.17	0.17	0.17
S-06	0.72	0.75	0.72	0.75	0.81	0.79	0.76	0.76	0.77	0.81	0.83	0.82	0.78	0.81	0.80	0.85	0.78	0.87	0.90	0.81
S-07	0.85	0.87	0.87	0.91	0.91	0.92	0.97	0.97	0.97	1.03	1.06	1.06	1.13	1.29	1.25	1.22	1.20	1.25	1.26	1.19
S-08	0.09	0.09	0.08	0.08	0.07	0.08	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.08	0.07	0.06	0.06
S-09	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.04
S-10	0.20	0.23	0.22	0.25	0.26	0.25	0.28	0.28	0.29	0.31	0.31	0.32	0.36	0.38	0.40	0.38	0.38	0.41	0.46	0.53
S-11	0.32	0.31	0.31	0.32	0.31	0.33	0.31	0.29	0.29	0.29	0.28	0.27	0.29	0.30	0.28	0.30	0.30	0.29	0.28	0.29
S-12	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03
S-13	0.80	0.80	0.78	0.79	0.94	0.93	0.86	0.88	0.93	1.03	1.04	1.03	1.07	1.24	1.40	1.43	1.32	1.18	1.10	0.97
S-14	0.17	0.19	0.22	0.22	0.23	0.25	0.22	0.26	0.26	0.30	0.47	0.50	0.65	0.61	0.63	0.74	0.53	0.46	0.43	0.52
S-15	0.89	0.89	0.90	0.89	0.88	0.95	1.00	0.99	0.94	1.03	0.99	0.96	1.07	1.30	1.22	1.22	1.27	1.33	1.35	1.26
S-16	1.69	1.59	1.53	1.50	1.52	1.50	1.50	1.55	1.55	1.55	1.52	1.53	1.59	1.49	1.53	1.63	1.44	1.43	1.37	1.36
S-17	1.50	1.66	1.66	1.67	1.77	1.84	1.97	1.97	1.95	2.08	2.23	2.24	2.40	2.32	2.33	2.26	2.25	2.29	2.39	2.23
S-18	1.85	1.95	1.89	1.97	2.17	2.10	1.79	1.85	1.96	1.87	1.74	1.56	1.56	1.52	1.59	1.80	1.84	1.90	1.98	1.84
S-19	0.15	0.13	0.18	0.33	0.69	0.43	0.53	0.26	0.26	0.27	0.24	0.23	0.23	0.63	0.16	0.20	0.23	0.49	0.66	0.19
S-20	0.50	0.59	0.62	0.78	0.60	0.55	0.53	0.42	0.41	0.53	0.46	0.50	0.48	0.45	0.41	0.44	0.37	0.35	0.33	0.30
S-21	0.06	0.06	0.08	0.08	0.11	0.19	0.10	0.07	0.10	0.08	0.11	0.13	0.19	0.18	0.19	0.22	0.21	0.32	0.25	0.34
Total No. of Sections with IRCA >1	3	3	3	3	3	3	4	3	3	6	5	5	6	6	6	6	6	6	6	5

Note: for description of chapters please refer Appendix A1, Table A1.1.

Table A2.6. Chapter-wise IRCA of Japan

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-01	0.01	0.01	0.01	0.02	0.01	0.03	0.04	0.01	0.01	0.01	0.01	0.02	0.03	0.01	0.03	0.02	0.01	0.01	0.02	0.03
C-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
C-03	0.16	0.22	0.19	0.16	0.17	0.19	0.19	0.21	0.23	0.26	0.29	0.33	0.32	0.32	0.30	0.27	0.32	0.34	0.31	0.38
C-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.01	0.01
C-05	0.07	0.07	0.06	0.06	0.07	0.07	0.07	0.07	0.05	0.06	0.11	0.09	0.08	0.11	0.15	0.14	0.14	0.15	0.16	0.21
C-06	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.05	0.06	0.06	0.08	0.09	0.13	0.11	0.10	0.09
C-07	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02
C-08	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.04
C-09	0.02	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.06	0.05	0.07
C-10	0.00	0.00	0.05	0.03	0.01	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.01
C-11	0.14	0.15	0.18	0.21	0.22	0.24	0.23	0.19	0.17	0.17	0.16	0.12	0.11	0.10	0.10	0.10	0.09	0.10	0.10	0.10
C-12	0.06	0.06	0.06	0.08	0.08	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.04	0.05	0.04	0.04	0.03	0.03	0.04	0.05
C-13	0.22	0.20	0.14	0.16	0.15	0.14	0.17	0.13	0.17	0.16	0.17	0.17	0.16	0.18	0.13	0.12	0.06	0.09	0.10	0.13
C-14	0.08	0.06	0.05	0.04	0.06	0.04	0.04	0.03	0.04	0.05	0.04	0.03	0.04	0.04	0.03	0.05	0.06	0.06	0.06	0.05
C-15	0.04	0.03	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	0.03	0.03	0.03	0.04	0.05	0.05
C-16	0.24	0.30	0.24	0.21	0.22	0.21	0.21	0.21	0.21	0.25	0.25	0.28	0.24	0.30	0.33	0.31	0.29	0.30	0.30	0.33
C-17	0.05	0.05	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.03	0.03	0.04	0.05	0.06
C-18	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.04
C-19	0.10	0.11	0.11	0.12	0.13	0.13	0.12	0.11	0.11	0.11	0.12	0.12	0.14	0.18	0.18	0.14	0.13	0.14	0.17	0.21
C-20	0.03	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.04
C-21	0.20	0.23	0.22	0.25	0.31	0.32	0.32	0.28	0.29	0.29	0.28	0.27	0.30	0.35	0.33	0.32	0.30	0.28	0.31	0.35
C-22	0.05	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.08	0.08	0.08	0.09	0.09	0.11	0.12
C-23	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03
C-24	0.13	0.14	0.11	0.15	0.10	0.17	0.17	0.16	0.17	0.17	0.16	0.16	0.16	0.18	0.17	0.18	0.17	0.14	0.12	0.13

(Contd.)

Table A2.6. (Contd.)

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-25	0.50	0.49	0.29	0.24	0.25	0.26	0.27	0.30	0.30	0.32	0.34	0.32	0.37	0.41	0.37	0.41	0.43	0.42	0.46	0.49
C-26	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02
C-27	0.12	0.09	0.09	0.06	0.04	0.04	0.04	0.04	0.04	0.06	0.07	0.10	0.15	0.14	0.12	0.12	0.14	0.19	0.18	0.18
C-28	0.60	0.58	0.59	0.68	0.70	0.69	0.76	0.81	0.79	0.78	0.83	0.85	0.85	0.92	0.82	0.85	0.79	0.86	0.92	0.89
C-29	1.04	1.05	1.07	1.03	1.03	1.09	1.06	1.07	1.07	1.13	1.15	1.16	1.13	1.32	1.16	1.20	1.10	1.49	1.53	1.26
C-30	0.15	0.18	0.16	0.21	0.25	0.24	0.19	0.20	0.19	0.17	0.15	0.13	0.15	0.17	0.16	0.17	0.15	0.16	0.15	0.17
C-31	0.11	0.09	0.07	0.08	0.10	0.10	0.10	0.08	0.08	0.08	0.08	0.07	0.06	0.05	0.05	0.06	0.06	0.06	0.05	0.05
C-32	0.69	0.83	0.78	0.86	0.89	0.83	0.83	0.88	0.96	1.02	1.07	1.06	1.17	1.32	1.32	1.38	1.33	1.28	1.39	1.36
C-33	0.21	0.23	0.22	0.25	0.28	0.29	0.28	0.25	0.26	0.28	0.28	0.27	0.31	0.38	0.38	0.41	0.37	0.36	0.39	0.46
C-34	0.47	0.53	0.47	0.51	0.61	0.58	0.59	0.60	0.64	0.65	0.68	0.68	0.68	0.74	0.81	0.87	0.86	0.87	0.98	0.99
C-35	0.49	0.52	0.44	0.49	0.52	0.52	0.58	0.65	0.68	0.75	0.78	0.74	0.77	0.88	0.93	0.94	0.96	0.88	0.94	0.87
C-36	0.11	0.11	0.12	0.13	0.13	0.10	0.09	0.07	0.08	0.10	0.09	0.11	0.17	0.15	0.19	0.17	0.21	0.15	0.11	0.12
C-37	2.40	2.44	2.55	2.68	2.70	3.21	3.29	3.31	3.56	4.04	4.35	4.59	4.86	4.84	5.01	5.60	5.27	6.29	7.07	6.75
C-38	0.76	0.86	0.82	0.93	1.15	1.12	1.19	1.19	1.30	1.49	1.66	1.72	1.51	1.42	1.53	1.52	1.38	1.30	1.38	1.37
C-39	0.67	0.71	0.69	0.75	0.77	0.75	0.81	0.82	0.84	0.90	0.95	0.95	1.01	1.19	1.18	1.16	1.10	1.12	1.13	1.06
C-40	1.39	1.35	1.39	1.39	1.38	1.45	1.51	1.47	1.39	1.45	1.41	1.42	1.49	1.62	1.44	1.36	1.43	1.57	1.68	1.63
C-41	0.15	0.15	0.15	0.13	0.12	0.13	0.13	0.13	0.13	0.16	0.15	0.15	0.19	0.22	0.15	0.20	0.26	0.21	0.18	0.17
C-42	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
C-43	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
C-44	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.04
C-45	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.04	0.06	0.05	0.05
C-46	0.02	0.02	0.03	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
C-47	0.03	0.03	0.04	0.04	0.06	0.10	0.16	0.21	0.26	0.34	0.35	0.37	0.40	0.51	0.49	0.53	0.49	0.57	0.60	0.58

(Contd.)

Table A2.6. (Contd.)

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-48	0.23	0.27	0.27	0.30	0.32	0.29	0.33	0.31	0.32	0.31	0.31	0.31	0.35	0.35	0.38	0.36	0.36	0.40	0.48	0.56
C-49	0.19	0.19	0.18	0.20	0.21	0.20	0.19	0.21	0.22	0.27	0.29	0.32	0.38	0.39	0.36	0.32	0.32	0.28	0.27	0.30
C-50	0.35	0.37	0.46	0.57	0.62	0.71	0.73	0.83	0.83	0.75	0.67	0.67	0.66	0.78	0.63	0.72	0.81	0.72	0.75	0.65
C-51	0.29	0.33	0.34	0.44	0.46	0.55	0.53	0.52	0.49	0.50	0.48	0.43	0.49	0.54	0.41	0.41	0.49	0.38	0.41	0.41
C-52	0.32	0.34	0.34	0.41	0.43	0.47	0.49	0.42	0.44	0.44	0.41	0.39	0.36	0.36	0.24	0.25	0.24	0.23	0.25	0.28
C-53	0.11	0.12	0.10	0.10	0.12	0.14	0.13	0.14	0.14	0.18	0.20	0.16	0.20	0.21	0.16	0.16	0.18	0.16	0.14	0.13
C-54	1.14	1.10	1.13	1.26	1.07	1.20	1.09	1.03	0.97	1.00	1.05	1.03	1.12	1.16	1.05	1.13	1.13	1.17	1.15	1.18
C-55	0.86	0.85	0.87	0.85	0.84	0.96	0.94	0.92	0.85	0.92	0.95	0.99	1.05	1.16	1.04	1.10	1.11	1.27	1.31	1.37
C-56	0.86	0.88	0.88	0.93	0.93	0.94	0.90	0.85	0.92	0.96	0.98	0.99	0.98	1.01	0.95	0.97	1.00	0.97	1.01	0.94
C-57	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.05	0.04	0.05	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06
C-58	0.60	0.51	0.47	0.53	0.52	0.51	0.46	0.47	0.47	0.47	0.45	0.39	0.40	0.48	0.43	0.51	0.47	0.46	0.40	0.39
C-59	0.52	0.58	0.58	0.62	0.59	0.60	0.60	0.66	0.69	0.75	0.79	0.82	0.86	0.90	0.84	0.91	0.92	0.91	0.92	0.93
C-60	0.54	0.53	0.49	0.52	0.40	0.42	0.44	0.48	0.53	0.59	0.61	0.58	0.62	0.64	0.54	0.60	0.55	0.50	0.46	0.44
C-61	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
C-62	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
C-63	0.10	0.11	0.09	0.10	0.10	0.10	0.09	0.08	0.08	0.08	0.08	0.08	0.10	0.13	0.10	0.10	0.09	0.09	0.10	0.10
C-64	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
C-65	0.46	0.53	0.61	0.64	0.60	0.55	0.44	0.48	0.44	0.48	0.48	0.53	0.57	0.49	0.42	0.36	0.34	0.34	0.36	0.32
C-66	0.05	0.05	0.03	0.03	0.03	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01
C-67	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
C-68	0.59	0.64	0.63	0.62	0.72	0.72	0.72	0.76	0.79	0.83	0.85	0.87	0.90	1.00	1.14	1.26	1.20	1.08	1.20	1.12
C-69	0.77	0.80	0.81	0.74	0.85	0.82	0.61	0.58	0.60	0.68	0.72	0.77	0.67	0.63	0.68	0.70	0.63	0.65	0.74	0.67
C-70	0.95	0.90	0.86	0.92	1.12	1.11	1.10	1.14	1.21	1.37	1.38	1.31	1.44	1.76	2.00	2.02	1.84	1.63	1.30	1.12
C-71	0.17	0.19	0.22	0.22	0.23	0.25	0.22	0.26	0.26	0.30	0.47	0.50	0.65	0.61	0.63	0.74	0.53	0.46	0.43	0.52
C-72	1.30	1.28	1.34	1.40	1.36	1.44	1.57	1.49	1.32	1.46	1.42	1.34	1.49	2.13	1.91	1.86	1.88	2.15	2.14	2.12

(Contd.)

Table A2.6. (Concl'd.)

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-73	0.85	0.92	0.90	0.83	0.79	0.92	0.91	0.86	0.83	0.93	0.96	0.89	0.89	0.98	0.96	1.00	1.09	1.05	1.09	0.93
C-74	0.87	0.69	0.81	0.89	0.82	0.92	0.98	0.93	0.81	0.85	0.87	1.02	1.11	1.28	1.10	1.08	1.18	1.32	1.42	1.41
C-75	0.35	0.33	0.36	0.36	0.52	0.53	0.53	0.66	0.71	0.78	0.39	0.35	0.47	0.60	0.52	0.59	0.68	0.67	0.80	0.84
C-76	0.31	0.31	0.33	0.35	0.32	0.31	0.33	0.35	0.33	0.33	0.31	0.31	0.34	0.41	0.39	0.35	0.35	0.36	0.38	0.36
C-78	0.09	0.11	0.11	0.09	0.10	0.08	0.18	0.17	0.16	0.13	0.12	0.24	0.29	0.55	0.41	0.39	0.25	0.20	0.12	0.11
C-79	0.13	0.12	0.21	0.26	0.19	0.25	0.32	0.25	0.25	0.25	0.33	0.34	0.43	0.67	0.43	0.39	0.55	0.56	0.48	0.64
C-80	0.19	0.14	0.14	0.20	0.34	0.46	0.54	0.50	0.42	0.47	0.58	0.34	0.32	0.33	0.29	0.30	0.27	0.32	0.35	0.47
C-81	1.04	1.00	1.00	1.07	1.26	1.45	1.47	1.53	1.37	1.66	1.81	1.61	1.65	2.29	1.84	1.89	1.90	1.71	1.78	1.65
C-82	1.16	1.33	1.13	1.13	1.12	1.22	1.20	1.23	1.32	1.30	1.32	1.22	1.28	1.27	1.28	1.41	1.42	1.50	1.50	1.55
C-83	0.46	0.45	0.37	0.39	0.42	0.42	0.40	0.41	0.42	0.44	0.45	0.44	0.46	0.44	0.47	0.46	0.46	0.41	0.37	0.32
C-84	1.56	1.51	1.41	1.36	1.41	1.39	1.40	1.42	1.47	1.50	1.50	1.50	1.58	1.45	1.64	1.82	1.58	1.54	1.59	1.54
C-85	1.86	1.69	1.68	1.66	1.63	1.61	1.60	1.68	1.65	1.60	1.54	1.57	1.61	1.55	1.42	1.43	1.30	1.32	1.18	1.20
C-86	0.27	0.28	0.23	0.40	0.41	0.66	0.52	0.32	0.49	1.00	0.63	0.38	0.53	0.83	0.41	0.36	0.34	0.46	0.41	0.58
C-87	1.65	1.86	1.91	1.90	1.98	2.11	2.24	2.21	2.16	2.31	2.53	2.55	2.76	2.50	2.56	2.44	2.47	2.56	2.69	2.54
C-88	0.12	0.17	0.19	0.20	0.18	0.23	0.18	0.21	0.15	0.19	0.23	0.28	0.27	0.41	0.36	0.46	0.45	0.55	0.69	0.61
C-89	2.89	3.14	3.05	3.03	3.19	2.76	2.93	2.81	3.02	2.90	2.96	2.78	2.73	3.17	2.87	2.95	2.91	2.60	2.52	2.21
C-90	1.90	2.00	1.91	2.01	2.24	2.17	1.84	1.90	2.03	1.93	1.79	1.60	1.61	1.56	1.64	1.88	1.93	2.00	2.11	1.94
C-91	1.25	1.29	1.32	1.23	1.19	1.08	1.00	0.98	0.89	0.83	0.81	0.69	0.67	0.66	0.70	0.68	0.63	0.56	0.51	0.55
C-92	2.77	2.89	3.52	3.34	2.85	2.72	2.60	2.48	2.37	2.35	2.31	2.26	2.60	2.47	2.41	2.58	2.19	2.36	2.45	2.58
C-93	0.15	0.13	0.18	0.33	0.69	0.43	0.53	0.26	0.26	0.27	0.24	0.23	0.23	0.63	0.16	0.20	0.23	0.49	0.66	0.19
C-94	0.09	0.10	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.13	0.14	0.14	0.16	0.16	0.18	0.17	0.15	0.12	0.12	0.10
C-95	0.90	1.13	1.34	1.90	1.22	1.12	1.06	0.72	0.72	1.14	0.90	1.07	0.89	0.75	0.61	0.69	0.55	0.61	0.53	0.44
C-96	1.56	1.69	1.72	1.87	1.91	1.82	1.69	1.61	1.53	1.49	1.46	1.38	1.41	1.43	1.34	1.50	1.35	1.35	1.40	1.41
C-97	0.06	0.06	0.08	0.08	0.11	0.19	0.10	0.07	0.10	0.08	0.11	0.13	0.19	0.18	0.19	0.22	0.21	0.32	0.25	0.34
Total No. of Chapters with IRCA >1	15	15	15	16	18	18	18	16	15	19	17	19	20	21	21	22	23	22	23	22

Note: for description of chapters please refer Appendix A1, Table A1.1.

Table A2.7. Section-wise BRCA of Japan with India

Section	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
S-01	0.05	0.00	0.00	0.00	0.02	0.02	0.03	0.09	0.04	0.03	0.03	0.03	0.04	0.04	0.02	0.04	0.03	0.04	0.03	0.03
S-02	1.04	1.33	1.13	1.08	1.42	0.43	1.69	1.41	0.79	0.92	0.87	0.78	0.55	0.36	0.24	0.14	0.14	0.20	0.13	0.17
S-03	0.46	0.00	0.21	0.13	0.35	0.18	0.01	0.10	0.09	0.02	0.15	0.42	0.46	0.13	0.16	0.22	0.44	0.32	0.34	0.58
S-04	0.07	0.10	0.13	0.15	0.14	0.20	0.26	0.17	0.16	0.34	0.11	0.12	0.11	0.09	0.09	0.09	0.10	0.12	0.09	0.09
S-05	2.06	1.90	5.04	4.24	2.82	3.39	6.28	5.75	4.18	2.70	1.84	2.86	3.04	1.33	1.21	0.92	2.23	1.15	0.92	0.44
S-06	2.20	2.35	2.06	1.87	2.09	2.37	2.23	1.95	1.72	1.71	1.48	1.24	1.10	1.16	1.06	0.91	0.91	0.99	1.11	1.22
S-07	1.91	1.77	1.58	1.65	1.46	1.65	1.66	1.31	1.24	1.23	1.11	1.09	0.88	1.09	1.09	1.00	1.14	1.23	1.40	1.72
S-08	0.07	0.24	0.24	0.56	0.32	0.11	0.14	0.20	0.12	0.09	0.21	0.31	0.17	0.07	0.06	0.11	0.07	0.09	0.06	0.06
S-09	0.07	0.08	0.12	0.05	0.18	0.14	0.22	0.55	0.19	0.35	0.49	0.10	0.17	0.08	0.08	0.16	0.14	0.28	0.28	0.10
S-10	0.81	0.72	0.79	0.72	0.78	0.68	0.95	0.74	0.73	0.81	0.67	0.75	0.93	0.76	0.74	0.80	1.04	0.88	0.62	0.55
S-11	0.76	1.17	1.22	0.82	1.19	1.32	1.38	1.31	1.47	1.46	1.33	0.98	0.92	1.03	1.01	0.82	0.95	1.23	1.33	1.17
S-12	0.04	0.03	0.06	0.04	0.02	0.02	0.00	0.01	0.03	0.01	0.02	0.02	0.02	0.02	0.03	0.04	0.02	0.04	0.03	0.03
S-13	1.38	1.56	1.11	1.15	1.18	2.03	1.21	0.88	0.78	0.64	0.62	0.62	0.68	0.69	0.60	0.61	0.65	0.77	0.93	1.01
S-14	0.52	0.35	0.29	0.36	0.22	1.60	0.17	0.25	0.25	0.13	0.59	0.29	0.11	0.08	0.12	0.17	0.17	0.13	0.13	0.20
S-15	2.11	2.27	2.01	2.22	2.36	2.07	1.96	2.02	1.77	1.57	1.84	1.94	1.63	1.94	2.01	1.86	1.92	2.25	2.38	2.77
S-16	0.97	0.97	1.07	1.02	0.95	0.90	0.91	0.98	1.00	1.03	1.13	1.17	1.25	1.17	1.20	1.29	1.29	1.22	1.17	1.10
S-17	0.35	0.30	0.28	0.42	0.48	0.37	0.36	0.39	0.49	0.49	0.38	0.33	0.28	0.36	0.37	0.36	0.29	0.28	0.26	0.23
S-18	0.74	0.68	0.77	0.81	0.67	0.89	1.13	0.96	0.93	0.98	0.94	1.00	1.07	1.03	0.96	0.93	0.80	0.85	0.78	0.78
S-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00
S-20	0.37	0.46	0.39	0.33	0.81	0.91	0.92	1.10	1.23	0.80	0.70	0.48	0.52	0.46	0.64	0.53	0.54	0.65	0.76	0.74
S-21	0.00	0.00	0.01	0.00	0.00	0.08	0.10	1.00	0.00	0.00	0.01	0.04	0.02	0.03	0.03	0.00	0.03	0.00	0.02	0.01
Total No. of Sections with BRCA >1	6	7	8	7	7	7	8	8	7	6	6	6	5	7	6	3	5	5	5	6

Note: for description of chapters please refer Appendix A1, Table A1.1.

Table A2.8 Chapter-wise BRCA of Japan with India

Chapter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-01	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.06	0.12	0.00	0.00
C-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.32	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
C-03	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.02
C-04	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.25	0.34	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00
C-05	0.04	0.00	0.00	0.08	0.37	0.63	0.86	1.04	1.57	1.13	0.45	0.64	0.93	0.47	0.22	0.23	0.14	0.30	0.34	0.22
C-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.00
C-07	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.01	0.05	0.02	0.00	0.00	0.00
C-08	0.00	0.00	0.00	0.17	0.00	0.19	0.00	0.08	0.02	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
C-09	0.00	0.00	1.51	0.16	0.00	0.00	0.84	0.00	0.20	0.00	0.00	0.07	0.00	0.08	0.01	0.01	0.02	0.01	0.02	0.04
C-10	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04	0.05	0.03	0.08	0.01	0.00	0.06	0.15	0.03	0.00
C-11	0.00	0.00	0.09	0.16	0.11	0.06	0.24	0.12	0.13	0.18	0.08	0.28	0.10	0.08	0.09	0.01	0.01	0.02	0.02	0.13
C-12	3.05	3.81	4.17	3.32	3.53	4.93	4.78	3.99	2.12	2.74	2.69	2.55	2.02	1.04	0.66	0.35	0.35	0.51	0.37	0.55
C-13	0.04	0.37	0.98	0.18	0.51	0.24	0.13	0.20	0.13	0.40	0.72	0.20	0.18	0.29	0.86	0.67	0.82	1.09	0.29	0.20
C-14	0.00	0.00	0.69	1.67	3.94	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	2.61	4.02	3.17
C-15	0.46	0.00	0.21	0.13	0.35	0.18	0.01	0.10	0.09	0.02	0.15	0.42	0.46	0.13	0.16	0.22	0.44	0.32	0.34	0.58
C-16	0.02	0.00	0.02	0.03	0.06	0.02	0.06	0.03	0.00	0.09	0.01	0.02	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.07
C-17	0.20	1.26	0.69	0.91	0.94	1.73	1.12	0.68	0.75	0.75	0.63	0.54	0.22	0.13	0.10	0.07	0.24	0.28	0.44	0.16
C-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.17	0.15	0.27
C-19	0.00	0.00	0.04	0.01	0.04	0.02	0.01	0.02	0.02	0.06	0.05	0.06	0.05	0.03	0.03	0.02	0.03	0.03	0.02	0.02
C-20	0.01	0.00	0.00	0.02	0.06	0.01	0.00	0.06	0.11	0.07	0.25	0.09	0.07	0.06	0.06	0.06	0.10	0.06	0.25	0.03
C-21	0.06	0.05	0.04	0.04	0.05	0.05	0.21	0.12	0.19	0.32	0.14	0.23	0.21	0.22	0.25	0.23	0.25	0.28	0.20	0.16
C-22	0.12	0.00	0.00	0.00	0.05	0.02	0.08	0.02	0.07	1.23	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.10	0.03	0.03
C-23	0.39	0.64	1.40	1.56	1.06	1.87	2.38	1.78	1.39	1.87	0.70	0.45	0.58	0.27	0.23	0.26	0.26	0.35	0.19	0.24
C-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C-25	0.79	0.84	1.43	1.97	1.75	2.41	2.37	2.89	2.37	2.46	2.02	1.79	3.46	3.08	1.49	0.65	0.58	0.90	1.19	1.40

(Contd.)

Table A2.8. (Contd.)

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-26	2.22	0.13	1.54	0.65	0.00	0.03	0.48	0.07	0.12	0.24	0.07	0.17	0.70	0.63	2.33	0.13	2.51	2.23	1.92	0.14
C-27	2.52	2.29	6.10	4.87	3.10	3.64	7.24	6.58	4.64	2.77	1.85	2.97	3.04	1.24	1.18	0.94	2.33	1.15	0.89	0.38
C-28	1.70	2.43	2.09	2.11	2.09	2.09	1.89	1.31	1.24	1.14	1.12	1.17	1.08	1.30	1.00	1.07	1.12	1.45	1.37	1.92
C-29	2.92	2.96	2.44	1.96	2.36	2.66	2.33	2.09	1.90	2.01	1.70	1.28	1.28	1.24	1.33	0.99	0.96	1.05	1.26	1.49
C-30	0.29	0.28	0.19	0.13	0.17	0.21	0.27	0.26	0.21	0.19	0.13	0.13	0.21	0.21	0.27	0.35	0.50	0.39	0.52	0.33
C-31	0.44	0.29	0.92	0.49	0.77	0.11	0.24	0.20	0.25	0.19	0.34	0.49	0.28	0.27	0.17	0.10	0.13	0.41	0.31	0.32
C-32	0.97	1.27	1.21	1.35	1.32	1.50	2.09	2.21	1.88	2.00	1.60	1.16	0.94	1.09	0.92	0.85	0.87	0.92	0.94	0.86
C-33	0.19	0.17	0.12	0.16	0.08	0.12	0.16	0.21	0.14	0.08	0.07	0.10	0.15	0.08	0.13	0.11	0.07	0.07	0.06	0.07
C-34	2.83	3.65	3.19	3.13	2.83	3.52	3.86	2.91	2.47	2.70	2.63	2.39	2.44	2.80	2.21	1.96	2.00	2.21	2.41	2.26
C-35	1.44	1.36	1.26	1.26	1.22	2.87	1.69	1.37	1.64	1.81	1.47	1.16	1.21	1.06	0.74	0.54	0.54	0.65	0.63	0.88
C-36	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.08	0.26	0.38	0.47	0.40
C-37	3.04	3.64	3.34	3.75	3.75	4.43	4.36	3.29	2.75	2.65	2.48	2.43	1.67	1.77	1.16	0.88	1.11	0.73	0.73	0.79
C-38	0.68	0.74	0.85	0.90	1.49	1.57	1.40	1.68	1.45	1.14	1.01	0.93	0.79	0.96	0.81	0.87	0.73	0.94	1.00	1.17
C-39	1.92	1.60	1.42	1.19	1.02	1.28	1.33	1.09	1.10	1.19	1.09	1.06	0.84	0.93	0.86	0.78	0.93	1.09	1.36	1.87
C-40	1.90	2.06	1.82	2.37	2.26	2.27	2.22	1.71	1.51	1.30	1.17	1.15	0.96	1.45	1.62	1.47	1.54	1.48	1.47	1.38
C-41	0.07	0.26	0.25	0.69	0.40	0.13	0.16	0.22	0.14	0.08	0.26	0.39	0.20	0.08	0.05	0.13	0.06	0.10	0.05	0.07
C-42	0.04	0.10	0.16	0.12	0.09	0.04	0.04	0.06	0.05	0.14	0.03	0.03	0.03	0.04	0.06	0.04	0.10	0.02	0.07	0.02
C-43	0.00	0.90	0.00	0.00	0.00	0.00	0.00	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C-44	0.06	0.07	0.11	0.04	0.19	0.14	0.21	0.57	0.19	0.34	0.47	0.10	0.16	0.07	0.07	0.15	0.14	0.29	0.28	0.10
C-45	2.32	0.00	1.29	0.00	0.00	0.00	0.00	0.00	0.00	1.18	1.30	0.00	0.34	0.96	0.53	0.39	0.19	0.14	0.23	0.13
C-46	0.00	0.82	0.00	0.16	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.12	0.20
C-47	0.01	0.00	0.00	0.02	0.00	0.01	0.18	0.05	0.06	0.11	0.04	0.03	0.01	0.08	0.05	0.05	0.02	0.02	0.04	0.04
C-48	0.79	0.69	0.71	0.61	0.59	0.63	0.90	0.69	0.73	0.90	0.81	0.78	0.83	0.78	0.93	1.07	1.06	1.14	0.80	0.54
C-49	1.01	1.02	1.42	1.49	2.25	1.28	1.81	1.60	1.30	1.08	0.67	1.37	2.12	1.32	0.88	0.88	2.82	1.21	0.56	1.77
C-50	0.00	0.01	0.34	0.00	0.06	0.01	0.00	1.59	9.45	2.10	0.02	0.04	0.03	0.00	0.01	0.00	0.04	0.00	0.00	0.01
C-51	0.00	0.04	0.01	0.01	0.03	0.35	0.02	0.05	0.18	0.79	0.72	0.57	0.61	0.87	0.71	0.38	0.46	0.35	0.04	0.03

(Contd.)

Table A2.8. (Contd.)

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-52	0.25	0.60	0.41	0.76	0.98	0.96	1.84	2.41	2.47	2.09	1.47	0.46	0.30	0.15	0.30	0.18	0.13	0.19	0.15	0.22
C-53	0.04	0.05	0.05	0.28	0.00	0.29	0.06	0.28	0.14	0.25	0.28	0.04	0.03	0.13	0.13	0.04	0.06	0.22	0.14	0.15
C-54	0.41	0.68	0.69	0.77	1.26	1.56	1.68	1.46	1.46	2.10	2.00	1.83	1.80	2.45	2.25	1.83	2.26	2.86	3.04	2.60
C-55	1.99	3.08	3.44	1.48	2.41	2.50	2.06	1.54	1.73	1.40	1.28	0.79	0.90	0.78	0.88	0.69	0.72	0.84	1.16	1.01
C-56	0.66	0.97	0.69	0.61	0.58	0.71	0.70	0.97	0.69	1.27	1.61	1.16	0.93	1.20	1.10	0.87	0.90	1.29	1.14	1.21
C-57	2.24	0.00	0.03	0.02	0.00	0.27	0.10	0.53	2.14	3.49	2.15	1.01	0.72	0.19	0.24	0.38	0.32	1.21	2.11	3.19
C-58	0.32	0.31	0.46	0.71	0.99	0.68	0.85	0.58	0.50	0.98	1.18	0.78	0.79	0.49	0.45	0.43	0.30	0.30	0.26	0.21
C-59	1.29	1.91	1.71	1.08	1.03	1.16	0.70	0.55	0.57	0.71	0.59	0.47	0.49	0.49	0.41	0.45	0.42	0.65	0.67	0.65
C-60	0.11	0.30	0.46	0.49	0.71	0.63	0.82	0.49	0.51	0.35	0.39	0.42	0.23	0.08	0.06	0.04	0.05	0.07	0.08	0.07
C-61	0.00	0.03	0.01	0.23	0.10	0.03	0.01	0.00	0.00	0.00	0.01	0.04	0.02	0.02	0.01	0.03	0.00	0.02	0.05	0.01
C-62	0.00	0.03	0.21	0.04	0.00	0.04	0.05	0.03	0.04	0.09	0.06	0.13	0.08	0.07	0.07	0.06	0.04	0.03	0.03	0.02
C-63	1.10	1.17	1.08	1.44	1.72	1.83	4.27	5.42	5.61	2.91	3.21	2.39	1.36	0.35	0.41	0.55	0.47	1.30	1.25	0.29
C-64	0.08	0.06	0.17	0.14	0.06	0.05	0.01	0.03	0.10	0.03	0.04	0.05	0.05	0.03	0.08	0.08	0.04	0.12	0.07	0.08
C-65	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01
C-66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C-67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.08	0.06	0.00	0.10	0.03
C-68	1.62	1.55	1.59	1.84	1.50	1.65	1.69	1.87	1.87	1.63	1.41	1.32	1.44	1.48	1.51	1.37	1.57	1.57	1.59	1.46
C-69	1.28	0.66	0.55	0.42	0.76	1.19	0.53	0.53	0.81	0.44	0.47	0.39	0.51	0.44	0.50	0.66	0.58	0.73	0.77	0.78
C-70	1.35	2.15	1.27	1.29	1.29	2.57	1.29	0.63	0.38	0.34	0.36	0.40	0.41	0.47	0.31	0.30	0.30	0.42	0.56	0.78
C-71	0.52	0.35	0.29	0.36	0.22	1.60	0.17	0.25	0.25	0.13	0.59	0.29	0.11	0.08	0.12	0.17	0.17	0.13	0.13	0.20
C-72	2.47	2.26	2.15	2.36	2.24	2.44	2.40	2.18	2.00	1.68	2.12	2.06	1.82	2.21	2.38	2.28	2.60	3.10	3.15	3.89
C-73	2.35	2.91	2.64	2.24	2.48	2.21	2.21	2.01	2.11	2.03	2.44	3.16	1.95	2.44	2.38	2.06	1.48	1.75	1.79	1.63
C-74	2.23	1.99	1.00	0.58	0.81	0.52	0.50	1.02	0.52	0.41	0.33	0.26	0.27	0.27	0.28	0.33	0.32	0.52	1.28	1.14
C-75	1.19	0.82	0.48	0.38	0.17	0.47	0.67	0.54	0.43	0.36	0.58	0.74	0.65	0.98	0.69	2.04	2.71	2.31	3.24	4.61
C-76	0.68	0.89	0.80	0.74	1.04	1.02	1.43	2.03	1.72	1.84	1.77	1.00	0.46	0.83	0.73	0.67	1.03	0.50	0.55	0.52
C-78	12.94	32.33	3.78	3.52	2.31	1.18	1.53	0.83	0.27	0.24	0.91	1.18	1.43	0.88	0.60	0.62	0.43	1.44	0.91	1.82

(Contd.)

Table A2.8. (Concl.)

Chapters	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
C-79	0.24	1.54	1.76	1.51	2.39	1.34	1.12	1.80	1.27	0.03	1.87	1.02	1.72	0.84	1.22	0.81	0.24	0.05	0.11	0.13
C-80	0.07	0.00	0.28	0.54	0.75	0.02	0.54	0.00	0.19	0.16	0.03	0.01	0.43	0.40	0.13	0.11	0.25	0.27	0.31	0.45
C-81	0.74	0.39	0.59	0.84	0.34	0.84	0.54	1.27	0.29	0.25	0.13	0.22	0.23	2.39	1.27	0.57	0.58	0.85	0.51	0.47
C-82	1.15	2.50	2.09	5.26	6.90	3.04	1.32	2.79	1.69	1.82	1.83	2.60	3.65	2.63	2.99	2.02	2.02	2.29	1.96	2.76
C-83	0.45	0.50	0.65	0.66	0.96	0.81	1.17	0.99	1.11	0.96	1.06	1.25	0.91	1.17	1.61	1.12	1.11	1.00	1.11	1.35
C-84	1.41	1.26	1.65	1.58	1.47	1.22	1.33	1.52	1.52	1.53	1.62	1.61	1.69	1.49	1.55	1.67	1.77	1.59	1.58	1.41
C-85	0.50	0.65	0.47	0.51	0.50	0.60	0.52	0.50	0.51	0.55	0.66	0.71	0.76	0.86	0.79	0.79	0.72	0.78	0.67	0.73
C-86	0.02	0.01	0.70	0.30	0.07	0.00	0.14	0.04	0.02	0.24	0.06	0.01	1.04	0.65	0.30	0.03	0.10	0.14	0.04	0.18
C-87	0.39	0.34	0.30	0.41	0.54	0.41	0.40	0.43	0.53	0.54	0.43	0.36	0.30	0.41	0.43	0.41	0.32	0.30	0.29	0.26
C-88	0.23	0.01	0.02	0.08	0.13	0.08	0.00	0.09	0.01	0.00	0.08	0.02	0.16	0.07	0.17	0.28	0.34	0.37	0.07	0.02
C-89	0.00	0.00	0.15	0.53	0.03	0.04	0.02	0.07	0.11	0.05	0.02	0.14	0.04	0.12	0.07	0.07	0.13	0.01	0.00	0.00
C-90	0.80	0.73	0.83	0.84	0.69	0.92	1.18	0.99	0.95	1.00	0.96	1.03	1.11	1.06	0.99	0.96	0.83	0.88	0.80	0.80
C-91	0.38	0.29	0.37	0.67	0.44	0.47	0.49	0.53	0.57	0.49	0.49	0.39	0.38	0.48	0.45	0.34	0.14	0.12	0.11	0.14
C-92	0.05	0.05	0.07	0.08	0.15	0.33	0.26	0.26	0.24	0.36	0.32	0.29	0.28	0.24	0.11	0.10	0.08	0.04	0.05	0.06
C-93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00
C-94	1.00	0.93	1.00	1.97	3.34	3.10	3.20	3.17	3.61	2.54	1.58	1.07	1.08	0.54	0.77	0.76	0.74	0.94	1.12	1.17
C-95	0.04	0.11	0.09	0.02	0.02	0.04	0.05	0.09	0.09	0.07	0.15	0.07	0.07	0.07	0.14	0.11	0.16	0.15	0.23	0.22
C-96	0.61	0.87	0.79	0.70	1.29	1.53	1.54	1.36	1.34	1.31	1.11	1.02	0.98	1.02	1.17	0.89	0.80	1.01	1.07	0.95
C-97	0.00	0.00	0.01	0.00	0.00	0.08	0.10	1.00	0.00	0.00	0.01	0.04	0.02	0.03	0.03	0.00	0.03	0.00	0.02	0.01
Total No. of Chapters with BRCA > 1	29	24	29	26	30	33	32	33	31	33	30	28	21	22	19	12	17	24	24	23

Note: for description of chapters please refer Appendix A1, Table A1.1.

Table A3.1. Index of India's IIT with Japan and its CAGR for Sections (Weighted Average of the HS-08 Digit)

Sec- tion	1990 -91	1991 -92	1992 -93	1993 -94	1994 -95	1995 -96	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	2001 -02	2002 -03	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
S-01	--	--	--	--	0.04	--	--	--	--	--	--	--	--	0.07	0.04	0.37	0.05	0.71	0.06	0.11	0.08	0.14	0.15	0.02	0.01	--	--
S-02	1.19	1.68	2.32	4.69	5.55	5.89	5.23	4.72	4.61	6.12	4.90	13.59	8.12	3.37	3.79	2.42	1.90	8.11	6.18	5.14	2.80	4.15	1.05	0.63	0.45	1.77	-3.39
S-03	--	--	--	2.34	0.03	--	0.40	--	--	0.52	0.04	0.20	0.06	0.50	0.01	0.13	0.01	0.04	1.77	0.17	1.03	8.73	0.05	0.09	0.09	0.18	--
S-04	0.81	0.54	0.67	0.52	2.28	6.31	2.38	4.03	13.54	2.52	17.18	3.94	4.33	2.02	0.79	1.93	2.97	2.27	3.17	3.46	4.24	8.12	5.87	0.90	2.49	2.84	3.67
S-05	0.19	0.18	0.15	0.17	0.17	0.21	0.96	0.08	0.08	0.21	0.21	0.16	0.11	2.59	0.10	0.12	0.81	6.56	1.72	2.92	0.84	0.43	0.27	0.18	0.34	0.46	6.36
S-06	9.90	11.64	8.96	6.08	10.28	8.93	12.17	11.17	9.75	10.24	14.48	14.49	15.54	19.95	20.61	20.51	19.74	17.77	19.03	23.94	19.85	21.26	16.62	19.35	20.07	19.95	4.09
S-07	0.51	0.59	0.54	1.42	0.89	1.44	2.12	2.90	2.16	3.24	8.10	4.37	4.89	7.75	5.23	3.37	6.97	5.60	6.21	3.25	5.36	5.18	6.17	7.61	7.00	5.85	9.87
S-08	2.65	0.99	0.98	2.63	1.28	3.08	1.82	2.13	3.87	3.25	1.41	0.36	1.15	3.40	3.80	2.84	2.59	4.74	3.66	1.09	4.71	13.93	0.82	0.55	0.82	0.81	-0.35
S-09	--	--	0.19	0.79	10.15	12.79	5.20	4.20	16.68	0.92	6.12	1.90	16.24	1.02	3.69	6.27	3.47	7.28	12.87	4.66	8.72	22.30	50.04	14.05	26.43	13.19	--
S-10	1.05	1.00	0.961	2.36	12.77	4.02	5.28	6.38	3.79	7.17	5.23	1.92	7.33	9.83	7.99	7.49	4.09	3.58	3.05	4.11	4.30	2.40	3.02	3.90	2.76	2.89	-0.08
S-11	0.87	0.93	0.72	0.75	1.00	1.73	1.00	1.01	1.27	0.96	2.21	3.23	2.56	2.86	1.81	1.81	2.10	2.73	2.29	2.12	3.14	3.62	2.45	1.44	1.56	1.64	4.34
S-12	0.01	0.42	3.26	--	0.05	0.51	0.70	0.01	0.06	1.61	0.86	1.22	0.87	0.92	1.17	1.73	1.37	2.44	1.31	4.53	15.04	13.49	0.73	0.77	0.74	1.23	--
S-13	6.31	4.49	5.42	3.12	4.82	2.28	2.85	4.46	5.37	5.30	3.79	2.33	6.43	6.44	8.23	9.53	10.28	7.53	6.77	10.71	7.51	11.43	7.53	7.66	9.84	8.83	4.22
S-14	0.45	0.55	0.08	0.09	0.17	0.27	0.28	0.35	1.65	2.71	4.31	4.52	1.52	2.24	3.94	4.31	3.67	3.57	19.37	14.52	27.21	24.57	14.53	12.92	17.45	14.08	23.87
S-15	3.78	2.59	3.36	3.04	7.37	4.27	8.68	11.57	2.15	4.91	4.21	8.21	5.16	5.14	4.25	4.44	3.13	3.44	4.51	3.76	3.58	6.21	5.29	5.56	4.59	4.10	0.30
S-16	0.75	1.00	1.77	0.97	1.68	3.17	4.06	5.55	7.03	5.47	6.56	9.39	9.26	8.30	8.17	7.75	8.10	6.41	6.32	7.07	5.82	6.02	8.32	10.23	12.44	11.77	8.77
S-17	0.17	1.16	1.24	2.12	1.07	1.71	1.13	2.55	8.21	3.12	5.84	13.43	10.84	7.29	6.01	6.73	8.78	14.14	17.12	7.70	34.25	18.39	17.78	22.86	17.94	18.27	15.89
S-18	0.44	1.64	1.11	1.84	2.19	3.78	3.35	3.43	3.70	4.14	6.14	10.45	10.07	13.46	6.01	6.97	10.28	10.52	10.27	8.70	10.22	9.36	11.57	10.00	9.99	11.36	10.15
S-19	--	--	--	--	--	--	--	--	--	4.02	--	--	--	--	--	--	--	--	--	3.17	3.52	0.17	--	--	--	--	--
S-20	8.75	8.07	8.69	10.36	3.75	5.28	7.92	2.45	3.84	3.26	4.71	5.99	6.19	13.33	16.59	17.77	12.94	8.93	13.85	12.74	12.38	11.98	6.30	14.99	14.47	14.58	3.96
S-21	0.14	0.11	0.20	0.21	0.08	0.22	0.64	0.62	0.31	0.93	6.49	6.17	7.41	23.23	7.48	12.36	7.54	28.28	7.72	6.28	5.40	4.96	3.36	9.89	3.02	1.67	19.00

Note: For description of sections please refer Appendix I.1.

Table A3.2. Index of India's IIT with Japan and its CAGR for Chapters (Weighted Average of the HS-08 Digit)

Chap- ter	1990 -91	1991 -92	1992 -93	1993 -94	1994 -95	1995 -96	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	2001 -02	2002 -03	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
C-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.12	-	-	-	-	-	-	-
C-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-03	-	-	-	-	0.04	-	-	-	-	-	-	-	-	0.07	0.04	0.38	0.05	0.71	0.06	0.11	0.07	0.13	0.14	0.02	0.01	0.01	-
C-04	-	-	-	-	-	-	-	-	-	-	-	0.01	0.04	-	-	0.01	-	0.10	-	-	1.72	0.55	0.97	0.03	-	-	-
C-05	-	-	-	-	0.69	-	-	-	-	44.89	-	-	-	-	4.27	-	-	-	-	-	-	1.28	-	0.01	-	-	-
C-06	-	-	-	-	-	-	0.02	0.07	0.03	0.09	0.45	0.01	0.02	-	0.03	0.01	-	0.03	0.08	0.08	0.23	1.18	0.57	0.96	0.62	0.61	-
C-07	-	-	-	-	-	-	-	-	11.22	1.12	0.07	0.42	0.61	-	0.05	2.46	-	35.56	2.47	1.77	8.32	5.44	0.39	0.59	0.35	0.48	-
C-08	-	-	-	-	-	-	-	-	-	-	-	-	-	3.14	0.02	0.12	-	0.01	0.01	-	0.03	0.19	-	-	-	-	-
C-09	-	-	-	-	-	-	-	-	-	1.69	-	2.44	0.01	0.02	0.06	0.19	0.35	0.10	0.04	0.07	0.28	2.01	0.47	0.15	0.05	0.20	-
C-10	-	-	-	-	-	-	-	-	-	-	-	1.89	-	-	-	-	-	-	1.77	5.70	-	60.95	49.73	0.98	0.37	-	-
C-11	-	-	-	-	-	-	-	-	-	-	1.43	12.10	21.92	-	1.12	1.32	0.37	0.63	0.75	23.06	35.22	11.59	1.22	1.42	2.01	2.20	-
C-12	5.81	8.14	12.47	21.56	26.88	21.02	29.23	22.43	18.68	23.25	15.37	43.23	25.73	17.13	23.59	13.90	35.11	46.93	36.61	16.69	16.60	12.93	1.36	1.88	0.74	7.77	-4.98
C-13	1.78	3.21	0.03	-	0.55	29.75	0.68	6.10	15.41	0.06	1.68	0.66	6.44	1.78	3.35	1.65	0.19	2.13	3.42	6.21	5.93	5.68	1.49	0.64	1.17	3.45	-
C-14	-	-	-	-	-	-	38.84	-	-	-	-	-	-	-	0.03	0.04	-	-	-	0.01	0.07	3.84	-	-	-	-	-
C-15	-	-	-	-	2.34	0.03	-	0.40	-	0.52	0.04	0.20	0.06	0.50	0.01	0.13	0.01	0.04	1.77	0.17	1.03	8.73	0.05	0.09	0.09	0.18	-
C-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.52	0.31	0.54	-	-	-	-	0.37	-	-	0.01	-	-
C-17	-	-	-	-	-	-	-	4.19	-	13.84	-	0.76	10.51	-	6.40	64.66	-	4.96	1.09	1.56	30.01	9.69	0.31	4.75	2.63	5.47	-
C-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.43	-	20.10	-	-	-
C-19	25.38	-	-	19.72	5.27	-	4.43	3.48	28.18	0.57	3.24	0.54	3.87	0.63	10.71	5.87	8.75	10.91	20.62	26.56	20.85	24.95	21.48	23.47	20.35	6.97	-
C-20	-	-	-	-	-	-	-	-	0.02	0.17	2.50	1.46	1.62	0.57	7.25	8.43	9.30	16.91	20.93	29.25	35.04	15.06	13.39	3.00	1.85	3.78	-
C-21	1.37	2.49	1.24	0.48	4.52	6.74	11.80	10.84	14.49	11.76	47.87	4.92	3.20	3.65	2.18	3.39	13.31	9.36	7.09	10.99	12.61	13.26	9.14	4.64	8.30	7.47	5.52

(Contd.)

Table A3.2. (contd.)

Chap- ter	1990 -91	1991 -92	1992 -93	1993 -94	1994 -95	1995 -96	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	2001 -02	2002 -03	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
C-22	0.33	0.01	0.32	--	0.08	0.06	--	0.11	0.25	0.28	0.65	0.62	0.89	0.15	1.68	0.86	1.29	19.87	29.70	22.11	26.49	15.47	33.41	25.86	25.61	11.61	-
C-23	--	22.18	--	1.66	3.54	21.82	57.43	18.85	63.13	7.30	10.03	9.51	26.32	4.84	0.01	4.31	6.68	6.58	10.05	7.68	1.92	13.80	0.41	0.02	0.36	0.83	-
C-24	--	--	--	--	--	--	--	--	--	--	--	0.80	--	0.73	--	--	--	--	--	--	--	3.77	--	--	--	--	-
C-25	0.98	0.98	1.02	1.12	0.71	2.14	0.41	0.78	1.05	1.03	1.20	1.18	2.54	0.88	1.90	1.12	1.04	1.18	1.98	1.10	1.85	2.92	2.77	1.46	0.92	1.52	2.79
C-26	0.05	0.07	0.04	--	--	--	1.13	--	--	--	--	--	--	5.30	--	--	0.01	--	--	0.52	5.81	0.91	0.07	--	0.07	--	-
C-27	--	--	--	--	0.20	--	--	--	--	--	--	--	--	0.04	--	0.14	1.13	7.56	2.37	3.63	0.40	0.30	0.24	0.18	0.36	0.44	-
C-28	5.26	4.33	7.89	5.50	5.79	6.03	11.07	8.40	9.28	6.29	5.50	13.16	5.77	9.30	8.98	8.51	7.83	9.58	7.33	12.09	11.52	9.54	7.39	13.00	14.76	8.65	2.70
C-29	10.97	13.71	11.62	7.60	14.41	9.60	17.78	15.22	14.32	16.65	26.66	21.92	24.10	30.65	29.95	25.84	26.66	25.45	24.10	25.69	22.14	27.66	22.73	20.01	18.42	18.50	3.30
C-30	47.95	63.90	29.88	20.89	37.95	22.33	7.60	7.82	11.50	1.26	0.71	2.33	20.30	10.15	11.59	9.58	14.79	8.70	3.03	4.60	3.89	9.30	5.79	11.44	39.91	35.10	-3.31
C-31	--	--	--	--	--	--	--	--	8.97	--	--	--	--	--	--	--	0.56	1.47	5.84	30.75	--	0.73	--	39.05	54.52	36.95	-
C-32	11.84	8.92	10.72	10.41	16.12	24.42	9.79	15.65	9.65	10.80	11.11	11.62	22.73	11.22	17.41	15.57	10.38	13.53	10.00	13.44	8.66	8.41	8.66	6.67	6.44	6.31	-2.00
C-33	1.17	7.21	1.64	0.21	1.27	3.83	0.39	1.83	2.51	3.89	3.44	7.39	5.34	5.27	4.59	4.31	1.14	1.46	1.63	3.93	10.76	8.13	2.76	3.60	4.71	9.15	5.94
C-34	--	4.87	0.43	1.60	0.18	0.09	1.55	0.06	0.43	0.29	1.65	1.30	0.53	0.63	2.78	1.05	1.48	1.71	3.04	3.52	0.61	1.02	0.81	1.38	0.92	0.76	-
C-35	--	--	--	0.49	--	6.17	1.59	3.52	1.11	2.93	3.71	1.39	2.55	0.10	0.09	8.47	2.78	2.28	1.05	4.28	6.95	12.54	5.15	5.75	6.52	11.35	-
C-36	--	--	--	--	--	--	--	--	29.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-
C-37	0.01	0.16	--	0.02	0.08	0.01	0.13	0.24	0.03	0.15	0.56	3.67	0.53	0.14	0.01	0.47	0.33	0.01	0.09	0.04	0.06	0.13	--	0.07	--	--	-
C-38	5.98	19.90	13.40	10.05	17.48	22.43	16.07	12.70	14.47	12.47	15.71	18.88	15.54	18.87	24.74	34.28	30.90	20.47	30.63	45.46	35.41	31.23	23.19	38.67	41.33	43.02	5.57
C-39	0.21	0.98	1.01	2.57	0.73	2.14	3.25	4.89	3.77	5.77	14.07	5.88	7.45	9.99	6.55	3.62	7.80	5.86	5.07	2.37	3.81	3.77	6.38	9.52	8.81	6.21	8.27
C-40	0.78	0.29	0.15	0.84	1.06	0.52	0.59	0.88	0.49	0.85	2.70	2.26	1.80	5.17	3.38	2.96	5.34	5.09	8.04	4.32	7.00	6.66	5.92	4.93	3.88	4.93	13.62
C-41	3.13	1.88	2.10	5.47	1.25	3.25	1.74	2.50	7.08	7.05	3.21	0.55	1.58	7.67	7.00	3.70	2.73	7.53	3.56	1.26	1.64	6.84	0.53	1.10	0.62	0.05	-5.53
C-42	1.41	0.25	0.16	0.09	1.33	2.86	1.88	1.43	0.20	0.67	0.41	0.23	0.75	0.74	0.84	2.05	2.46	2.41	3.72	1.01	6.11	17.45	0.89	0.38	0.86	0.96	6.46

(Contd.)

Table A3.2. (contd.)

Chap- ter	1990 -91	1991 -92	1992 -93	1993 -94	1994 -95	1995 -96	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	2001 -02	2002 -03	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
C-43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C-44	--	--	0.19	0.79	10.53	13.14	5.33	4.34	17.34	1.21	4.24	2.03	16.49	1.02	3.68	6.38	3.86	7.63	13.14	4.61	8.89	22.44	50.22	14.07	26.59	13.29	--
C-45	--	--	--	--	--	27.68	--	--	--	--	--	--	--	--	--	--	1.47	--	--	7.06	--	--	--	--	--	--	--
C-46	--	--	--	--	--	--	--	--	--	--	14.85	--	12.53	--	6.75	4.11	--	--	--	--	--	--	14.71	17.87	--	10.87	--
C-47	--	--	--	--	--	--	0.95	--	15.04	--	--	0.65	--	--	0.04	0.10	--	7.66	11.56	0.30	0.17	0.01	--	--	--	--	--
C-48	0.15	0.10	4.29	2.07	13.34	3.29	4.38	9.62	4.28	7.37	10.96	1.74	8.84	4.00	6.29	4.36	2.01	1.98	1.60	1.65	3.29	1.47	1.76	3.12	1.40	1.69	0.81
C-49	3.66	7.57	26.44	3.63	10.15	9.45	8.21	1.49	3.36	7.50	1.09	3.52	4.54	26.47	13.76	17.89	12.53	8.00	13.88	25.52	13.04	8.65	10.23	5.10	13.61	7.79	3.13
C-50	0.41	7.11	0.65	1.14	5.87	8.01	0.36	0.03	6.22	0.10	2.45	0.22	1.57	1.41	1.70	0.62	0.92	1.08	4.28	23.74	2.93	17.31	4.92	1.09	0.86	0.16	2.69
C-51	5.99	--	--	--	--	--	0.37	0.28	0.01	0.11	3.68	0.03	0.58	0.92	2.38	2.17	0.06	0.36	0.35	0.08	0.12	1.93	0.27	0.17	0.20	0.53	--
C-52	0.84	0.22	1.81	0.62	0.36	2.01	0.70	0.69	0.96	0.44	0.79	0.15	3.08	4.13	2.79	1.73	3.24	6.66	5.85	3.14	4.21	5.69	6.06	1.62	1.72	2.54	9.37
C-53	--	--	--	--	--	0.11	0.28	1.70	--	--	--	0.03	0.85	0.28	0.19	0.55	0.32	1.85	0.22	0.77	0.99	2.48	0.75	0.97	1.41	1.80	--
C-54	1.05	3.03	0.50	3.63	6.38	8.37	9.90	9.56	6.91	7.76	12.27	12.73	2.07	7.85	1.87	4.77	4.42	6.22	5.07	4.34	7.62	5.44	6.91	3.97	4.73	3.47	2.07
C-55	0.01	4.47	0.97	1.84	1.65	3.57	1.44	0.50	1.29	1.68	5.55	6.59	4.51	12.65	7.96	5.81	8.66	6.74	7.79	6.87	3.75	2.50	1.31	1.58	0.32	0.92	4.87
C-56	0.48	0.26	0.13	0.88	0.10	--	--	2.47	0.65	0.66	1.89	1.26	0.90	1.68	0.13	0.34	0.33	0.65	0.66	3.30	15.30	18.46	25.02	3.58	2.75	3.19	--
C-57	--	--	--	--	--	0.02	0.21	0.06	0.01	0.21	0.77	0.22	1.09	2.22	2.94	3.10	2.77	1.05	1.71	0.14	1.76	2.22	1.65	0.82	0.71	2.90	--
C-58	18.54	25.06	19.09	9.81	12.18	12.52	1.33	4.48	6.68	5.04	1.64	0.45	5.24	3.72	4.02	8.27	5.07	3.55	6.00	5.16	11.02	18.05	21.53	22.33	22.70	21.33	1.85
C-59	0.47	0.02	0.65	0.46	0.16	7.78	7.82	3.93	2.82	0.53	21.00	9.68	12.67	4.77	10.79	12.18	5.40	10.55	4.72	10.50	7.49	1.34	1.81	0.69	1.27	0.99	7.54
C-60	10.61	--	--	--	--	--	--	0.45	5.86	--	3.67	6.79	0.73	--	0.65	5.79	0.51	0.13	6.52	3.10	1.02	8.58	3.12	7.00	4.80	18.71	--
C-61	--	--	--	--	0.01	--	--	0.25	0.03	1.18	0.11	0.17	0.72	0.22	0.26	0.47	0.50	0.59	0.67	1.16	4.63	11.32	0.47	0.99	0.40	0.63	--
C-62	--	0.01	--	0.01	0.01	--	--	0.05	0.24	0.04	0.87	0.80	0.45	0.48	0.25	0.19	0.34	0.50	0.21	0.10	0.39	1.49	0.18	0.17	0.13	0.14	--
C-63	0.33	1.61	1.20	0.32	0.65	0.03	0.33	0.33	1.38	0.96	1.40	3.93	2.15	0.55	1.24	0.67	0.83	0.35	2.38	1.91	4.34	4.76	2.49	1.18	1.53	1.91	7.58

(Contd.)

Table A3.2. (contd.)

Chap- ter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
C-64	0.01	0.43	3.32	--	0.05	0.51	0.71	0.01	--	1.00	0.85	1.17	0.90	0.66	1.20	1.77	0.64	2.02	1.07	4.15	15.23	13.13	0.45	0.65	0.50	1.17	-
C-65	--	--	--	--	--	--	--	--	0.65	2.48	--	1.06	--	--	0.84	1.05	35.06	30.26	16.51	30.61	9.50	41.40	29.07	15.79	32.28	12.32	-
C-66	--	--	--	--	--	--	--	--	--	78.64	--	11.76	--	13.07	--	--	--	21.51	18.19	1.08	9.38	3.14	--	31.22	49.01	52.15	-
C-67	--	--	--	--	--	--	--	--	--	--	17.85	--	--	24.77	--	--	--	1.15	--	3.44	--	2.01	--	8.41	12.02	1.32	-
C-68	10.68	3.92	3.38	2.40	2.60	1.78	2.22	3.54	5.47	3.45	2.15	2.10	2.45	3.41	4.03	5.32	5.87	6.50	4.04	3.20	5.18	7.37	4.62	5.44	8.68	8.98	3.07
C-69	1.35	10.06	10.98	3.47	6.10	5.27	15.76	7.34	2.56	9.01	1.85	4.16	6.55	4.70	6.12	5.64	17.13	5.90	3.13	21.28	6.22	6.96	8.45	14.35	10.44	5.67	2.66
C-70	1.53	0.63	22.17	11.01	22.38	4.28	1.79	7.94	7.98	10.35	9.85	2.35	13.48	13.59	22.23	26.56	17.79	11.19	14.90	15.81	11.07	21.67	14.80	8.42	12.89	10.77	6.02
C-71	0.45	0.55	0.08	0.09	0.17	0.27	0.28	0.35	1.65	2.71	4.31	4.52	1.52	2.24	3.94	4.31	3.67	3.57	19.37	14.52	27.21	24.57	14.53	12.92	17.45	14.08	23.87
C-72	7.58	2.42	3.68	2.33	9.54	3.80	12.42	14.00	0.77	7.18	3.74	6.45	4.97	3.69	2.26	1.25	0.94	1.05	2.30	0.86	0.56	0.66	0.84	0.50	0.49	0.37	-10.44
C-73	0.59	3.75	3.63	3.11	2.14	5.34	2.29	8.59	4.96	5.09	4.75	11.55	3.48	5.30	5.66	5.44	3.99	4.58	7.08	10.00	13.92	17.43	17.89	20.59	17.79	18.10	9.09
C-74	0.12	1.27	0.30	0.08	0.23	0.05	0.52	0.18	2.38	0.48	8.29	2.39	2.41	3.62	9.54	9.92	7.42	3.71	4.90	9.60	5.64	9.48	6.62	4.99	2.73	3.25	17.93
C-75	--	--	--	--	--	--	--	--	--	3.33	--	0.55	--	--	0.59	0.25	43.00	12.36	9.92	6.59	1.56	2.53	3.09	10.63	19.00	0.75	-
C-76	1.04	0.13	0.49	0.07	0.51	0.31	8.02	2.57	0.97	1.50	2.74	8.49	8.54	14.84	8.59	11.57	8.90	13.17	17.43	20.31	4.90	16.38	13.80	19.39	10.40	6.92	18.76
C-78	--	3.59	4.45	--	--	2.05	2.12	2.71	--	--	--	--	--	--	--	--	0.12	7.28	7.21	14.52	23.19	5.06	41.10	53.15	11.66	18.25	-
C-79	--	--	--	--	--	1.76	--	--	2.04	--	5.04	--	--	0.18	--	59.61	--	--	0.01	0.25	0.01	33.95	25.07	26.85	0.04	0.03	-
C-80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.39	--	0.07	5.24	3.34	0.52	0.06	0.01	6.34	9.11	8.24	5.01	-
C-81	--	--	5.39	17.82	13.39	23.12	36.20	0.36	3.47	0.19	1.36	1.71	6.52	4.28	15.84	47.02	23.61	23.70	14.64	1.80	6.07	3.90	2.77	4.87	15.98	17.78	-
C-82	4.77	5.43	5.94	13.68	19.10	9.61	2.04	17.85	2.99	2.15	5.09	15.43	16.39	6.61	5.92	7.14	5.30	6.35	3.15	4.40	3.41	5.36	3.50	3.85	6.07	5.85	-2.12
C-83	0.01	6.74	0.33	1.68	7.58	7.92	0.86	0.63	4.99	0.13	1.46	15.51	3.60	7.91	2.81	3.70	8.12	13.23	27.86	1.92	2.58	2.39	3.32	7.09	6.22	5.62	10.38
C-84	0.70	1.41	1.99	0.90	1.30	2.45	2.74	4.31	5.82	4.56	7.12	11.88	10.25	7.87	8.75	8.21	8.09	6.73	7.10	6.60	5.46	6.09	7.75	9.72	10.81	11.31	8.95
C-85	0.82	0.57	1.42	1.11	2.37	4.63	7.89	8.73	9.97	7.55	5.46	5.73	7.61	9.26	6.84	6.56	8.13	5.63	4.62	7.93	6.66	5.86	9.82	11.40	16.48	12.74	8.62

(Contd.)

Table A3.2. (concd.)

Chap- ter	1990 -91	1991 -92	1992 -93	1993 -94	1994 -95	1995 -96	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	2001 -02	2002 -03	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
C-86	0.02	--	--	0.47	0.77	0.75	12.25	50.18	5.98	--	--	86.96	14.90	1.79	8.55	2.03	--	15.97	0.54	2.94	3.21	4.57	4.52	11.92	2.33	2.22	-
C-87	0.16	1.23	1.26	2.17	1.12	1.62	1.10	2.53	5.24	3.91	5.40	13.65	18.95	16.23	10.41	14.46	14.57	10.53	7.75	6.54	11.49	18.02	31.40	34.94	32.82	37.20	17.16
C-88	22.10	--	50.01	--	1.65	3.30	20.72	8.13	27.89	--	94.22	17.85	3.85	14.64	0.28	--	--	64.96	54.96	26.56	19.12	49.57	44.04	58.50	41.51	90.95	-
C-89	--	--	--	--	--	--	--	--	35.21	--	--	0.16	--	0.01	0.08	--	0.07	4.87	45.39	0.47	82.33	2.49	0.01	0.01	7.37	--	--
C-90	0.47	1.73	1.11	1.63	2.08	3.71	2.99	3.30	3.70	4.03	6.25	10.58	10.24	13.71	6.12	7.08	10.55	10.67	10.35	8.65	10.15	9.38	11.59	10.07	10.06	11.45	10.28
C-91	--	0.26	--	9.22	2.30	0.58	9.83	0.35	1.15	0.69	0.91	1.40	0.85	3.62	0.86	1.40	0.36	0.72	0.51	0.71	2.64	2.78	7.54	2.25	2.66	1.25	-
C-92	0.39	1.60	5.14	5.85	17.87	23.87	9.45	17.81	9.84	36.91	17.56	6.08	12.65	11.27	9.63	9.52	11.76	17.05	20.51	30.94	37.14	21.86	15.24	10.01	10.22	13.51	6.55
C-93	--	--	--	--	--	--	--	--	--	4.02	--	--	--	--	--	--	--	--	--	3.17	3.52	0.17	--	--	--	--	--
C-94	14.18	--	1.58	0.06	0.02	0.29	5.33	0.90	3.63	1.25	3.59	1.41	8.24	3.15	6.92	11.94	10.98	10.91	10.60	14.41	20.40	17.66	8.26	48.32	30.48	33.06	-
C-95	41.08	30.43	24.49	28.65	6.57	25.78	22.93	4.97	5.95	3.65	3.81	6.45	1.12	2.48	3.17	7.03	2.00	2.93	11.66	19.87	13.79	15.72	5.31	6.87	4.12	4.41	-5.21
C-96	0.42	3.10	2.98	1.61	3.18	2.41	3.58	2.65	3.24	3.79	5.28	7.06	6.79	16.31	19.91	20.33	16.34	9.31	15.06	11.02	9.67	8.54	5.51	3.00	6.44	4.37	7.09
C-97	--	--	--	--	--	--	--	--	1.59	0.55	--	--	10.40	0.01	0.25	1.75	2.97	3.17	0.57	2.30	1.60	37.52	3.76	12.13	5.18	2.10	-
C-98	0.05	--	--	--	--	0.10	0.34	--	0.12	0.66	0.34	3.26	4.82	23.85	0.92	2.41	0.74	8.45	0.57	0.53	0.87	0.01	0.09	1.22	0.22	0.19	-
C-99	6.31	6.39	11.09	12.45	11.03	4.37	12.19	27.03	16.59	17.47	31.67	26.84	17.84	43.91	43.81	74.33	40.03	89.16	37.78	17.59	32.41	29.25	40.32	19.65	10.71	4.90	4.28

Note: For description of chapters please refer Appendix A1. Table A1.1.

Appendix A4
Table A4.1. PQI of HIIT and VIIT at Section Level for India's Bilateral Trade with Japan
(Weighted Average of the HS-08 Digit Intra-Industry Traded Products)

Sec- tion	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
S-01	--	--	--	--	-1.03	--	--	--	--	0.85	0.08	0.60	0.37	0.95	-1.22	-1.10	-1.76	-1.15	-1.29	-1.64	-1.68	-1.58	-1.51	-1.09	-0.73	-1.76
S-02	-1.10	-1.75	-0.22	-1.36	-1.01	-0.85	-0.61	-0.98	-1.77	-0.74	-0.58	-1.46	0.11	-1.02	-1.76	-0.71	-0.55	0.39	-0.50	-0.54	-1.44	-1.02	-0.65	-1.04	-1.47	-1.63
S-03	--	--	--	1.23	-0.27	--	-0.82	0.61	--	0.08	-1.55	-1.49	-0.24	-1.38	-1.25	-1.07	-1.35	-0.71	-1.23	-1.51	-1.37	-1.25	-1.41	-1.15	-1.17	-1.24
S-04	0.24	-0.92	-0.47	0.26	-0.84	-0.80	0.10	-1.12	-0.91	-1.05	-0.89	-0.47	-1.32	-1.32	-0.73	-1.04	-0.94	-0.92	-0.81	-0.53	-0.31	-0.66	-0.58	0.19	-0.33	-0.37
S-05	-1.02	-1.20	-0.04	-1.23	-0.74	-1.07	--	-1.72	-1.48	-0.90	-1.43	-1.70	-1.93	-1.05	-1.05	-1.86	-1.00	-0.12	-0.54	-0.36	-0.42	-0.89	-0.63	-0.16	-0.50	-0.46
S-06	-0.29	-0.48	0.08	-0.66	-0.37	-1.10	-0.07	0.16	-1.07	-0.97	0.16	0.44	-0.25	-1.38	-0.07	-0.02	-1.13	-0.98	-1.05	0.39	-0.47	-0.58	0.03	0.04	-1.15	-0.31
S-07	-1.51	-1.46	-0.12	-1.06	-0.55	-1.27	0.18	-0.94	-0.62	-1.05	-1.42	-1.51	-1.69	-1.22	-0.34	-1.17	-1.53	-1.48	-1.35	-1.31	-1.05	-1.75	-1.46	-1.49	-1.46	-1.52
S-08	0.12	-1.80	-1.44	-1.02	0.08	-0.34	-0.11	0.39	-0.25	-0.27	0.26	0.05	0.40	-0.11	0.08	-0.38	0.32	0.41	-0.26	-0.44	-1.07	-0.49	-0.28	-0.71	-0.85	-0.74
S-09	--	--	-0.21	0.71	-0.18	0.32	-0.89	-0.71	-1.23	-0.29	-1.23	0.51	-0.36	-0.98	-0.56	-0.93	-0.99	1.12	0.36	-1.32	-0.11	0.48	-0.76	0.46	-0.63	0.18
S-10	0.21	-1.67	0.21	0.21	0.34	-0.23	0.12	0.01	-1.50	-0.04	-0.85	0.06	-0.53	-1.11	-0.01	-1.08	-1.57	-0.13	-1.96	-0.95	-1.85	-0.81	0.19	-0.92	0.25	-0.68
S-11	0.35	0.28	0.29	-0.11	0.44	0.73	0.18	0.21	0.26	0.22	-0.24	0.04	-0.53	-0.18	-0.04	-0.20	-0.31	-0.18	-1.24	-0.16	-0.27	-0.78	-0.42	-0.72	-0.07	-0.46
S-12	0.32	1.47	0.84	--	0.66	0.91	0.44	0.43	0.11	-0.34	0.33	-0.29	-0.51	-0.20	-0.43	-0.76	-0.22	0.43	-1.87	-1.06	-0.47	-0.83	-0.67	-0.54	-0.50	-0.58
S-13	-0.45	-1.13	-1.26	-0.59	-1.02	1.81	-0.63	-1.52	-0.79	-0.54	-1.75	-1.39	-0.16	-0.80	-0.73	-0.76	-0.55	0.41	0.14	-0.34	-0.80	-1.61	-1.73	-0.06	0.20	-0.35
S-14	-0.15	-0.40	-0.42	0.04	-1.05	0.78	0.45	0.30	0.24	-0.49	-0.99	1.56	0.24	0.66	0.56	0.92	0.10	0.09	-0.07	0.62	0.98	0.01	0.52	-0.13	-0.25	0.25
S-15	-1.09	-1.64	-1.39	-1.21	-0.84	-1.16	0.10	-0.03	-0.39	-0.48	-0.19	-0.27	0.12	-0.46	-0.35	-0.02	0.23	0.05	-0.15	0.38	0.91	0.61	0.72	0.38	0.63	0.50
S-16	-1.40	-1.28	-1.44	-1.05	-1.04	-1.51	-1.27	-1.29	-0.69	-1.42	-1.40	-1.42	-1.03	-0.73	-1.53	-1.38	-0.89	-1.43	-1.42	-0.98	-0.34	-1.07	-0.90	-1.23	-0.96	0.10
S-17	-1.43	-0.55	-0.47	-0.41	-0.71	-0.30	-0.60	-0.27	-0.40	-0.54	0.33	-1.45	-0.45	-1.37	-1.96	-0.26	-1.70	-1.08	-0.58	-1.05	0.38	-1.82	-1.74	-1.65	0.25	0.14
S-18	-0.63	-1.96	-0.87	-0.31	-0.68	-1.50	-1.21	-1.00	-1.48	-0.67	-0.79	-0.76	-0.99	-0.82	-1.18	-0.59	-1.03	-1.22	-0.90	-0.50	-1.03	0.03	-0.87	-1.12	-0.36	0.07
S-19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.70	0.81	-0.35	--	--	--	--
S-20	0.66	0.40	1.37	0.11	-0.04	-0.35	-0.55	-0.56	-0.45	-0.53	-1.53	-1.13	-1.58	-1.57	-1.16	-1.04	-1.54	-1.87	-1.86	-0.96	-1.39	-1.69	-1.79	-1.42	-1.54	-0.68
S-21	--	--	--	--	--	--	--	--	-0.47	-1.76	--	--	-0.53	1.64	0.15	-1.96	-1.66	1.45	1.38	-1.18	1.58	-1.81	-0.30	-1.69	-0.43	1.38

Note: For description of sections please refer Appendix A1, Table A1.1.

Table A4.2. PQI Index of HIIT and VIIT at Chapter Level for India's Bilateral Trade with Japan
(Weighted Average of the HS-08 Digit Intra-Industry Traded Products)

Chap- ter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	-91	-92	-93	-94	-95	-96	-97	-98	-99	-00	-01	-02	-03	-04	-05	-06	-07	-08	-09	-10	-11	-12	-13	-14	-15	-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
C-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.57	--	--	--	--	--	--
C-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C-03	--	--	--	--	-0.68	--	--	--	--	--	0.08	0.80	0.57	0.95	--	-1.19	-1.76	-1.21	-1.29	-1.64	-1.72	-1.52	-1.31	-0.61	-0.73	-1.76
C-04	--	--	--	--	--	--	--	--	--	--	--	0.28	0.25	--	--	0.45	--	--	--	--	0.22	-1.18	-1.86	-1.88	--	--
C-05	--	--	--	--	-1.20	--	--	--	--	0.85	--	--	--	--	--	--	--	--	--	--	--	-1.94	--	1.51	--	--
C-06	--	--	--	--	--	--	0.87	0.86	0.37	-0.11	1.60	1.27	1.20	--	-0.13	0.90	1.77	1.39	1.62	1.50	1.61	0.93	1.30	1.30	1.07	1.31
C-07	--	--	--	--	--	--	--	--	0.40	-0.38	1.92	-1.69	1.79	--	--	-1.89	--	-1.08	0.36	-1.06	-0.88	0.28	-1.66	-0.98	1.66	0.32
C-08	--	--	--	--	--	--	--	--	--	--	--	--	--	0.23	--	-0.71	--	-1.40	-0.32	--	-1.11	0.30	--	--	--	--
C-09	--	--	--	--	--	--	--	--	0.55	-1.28	--	-0.85	-0.90	1.24	--	-0.34	-1.09	-1.06	0.05	-0.71	-1.54	-1.67	-0.26	-0.91	-0.61	-0.08
C-10	--	--	--	--	--	--	--	--	--	--	--	2.00	--	--	--	--	--	--	-1.20	-1.80	--	-1.22	-1.59	-1.67	-1.59	--
C-11	--	--	--	--	--	--	--	--	--	--	-1.04	-0.83	-1.14	--	--	-1.32	-0.84	-0.21	-0.94	-0.93	-1.05	-0.83	-0.76	-1.54	-0.99	-1.50
C-12	-1.72	-1.98	-0.18	-1.36	-1.37	-0.81	-0.52	-1.40	-1.88	-0.95	-1.52	-1.65	-1.06	-1.16	1.83	-1.06	-0.91	0.67	-0.68	-0.57	-1.76	-1.14	-1.07	-1.34	-1.65	-1.95
C-13	-0.44	-0.42	0.05	--	0.50	-1.07	-0.99	-1.07	-1.38	0.38	-0.82	0.66	0.12	-0.22	-0.38	-0.17	-0.50	-0.61	-0.84	-0.57	-0.76	-0.63	0.30	-0.75	-0.12	0.87
C-14	--	--	-1.88	--	--	--	-1.81	--	--	--	--	--	--	--	--	-1.14	--	--	--	-0.26	-0.15	1.04	--	--	--	--
C-15	--	--	--	1.23	-0.27	--	-0.82	0.61	--	0.08	-1.55	-1.49	-0.24	-1.38	-0.10	-1.07	-1.35	-0.71	-1.23	-1.51	-1.37	-1.25	-1.41	-1.15	-1.17	-1.24
C-16	--	--	--	--	--	--	--	--	--	--	--	--	--	-1.10	--	-1.05	-1.62	-0.85	--	--	-1.12	-0.76	--	--	-1.64	--
C-17	--	--	--	--	--	--	--	-0.41	--	0.94	--	0.29	-0.87	--	--	-1.43	--	-1.04	-1.48	-1.10	-1.21	0.10	-1.38	1.65	0.38	-0.23
C-18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-0.47	--	0.56	--	--
C-19	1.12	--	--	0.02	-0.97	--	-0.07	-1.14	-0.56	-0.12	-0.71	-0.03	0.76	-1.29	1.79	-0.99	-0.80	-0.47	-0.55	-0.82	-0.85	-1.56	-0.90	-0.93	-0.65	-0.55
C-20	--	--	--	--	--	--	--	--	-1.31	-0.76	0.19	0.23	-1.74	-1.68	--	-1.40	-0.60	-0.90	-1.08	-1.33	-0.70	-0.79	-1.42	-1.50	-1.44	-1.16

(Contd.)

Table A4.2. (Contd.)

Chapter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	-91	-92	-93	-94	-95	-96	-97	-98	-99	-00	-01	-02	-03	-04	-05	-06	-07	-08	-09	-10	-11	-12	-13	-14	-15	-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
C-21	1.23	-0.05	-0.42	0.50	-0.03	-0.38	0.43	-1.41	-1.07	-0.28	-0.92	0.23	-1.35	-0.82	-0.66	-0.41	-0.59	-1.11	-0.51	-0.27	0.22	-0.93	-0.32	0.07	0.45	-0.22
C-22	-1.67	-1.68	-0.57	--	-0.88	-1.24	--	-0.44	-1.69	-1.20	-1.24	-0.48	-0.66	-1.78	--	-0.60	-0.54	-0.82	-0.97	0.41	0.64	-0.45	-0.15	-0.42	0.49	0.36
C-23	--	0.93	--	-1.51	-1.82	0.03	-0.67	0.17	-0.36	-1.97	-1.55	-1.84	-1.56	-1.66	2.93	-1.41	-1.23	0.09	-1.52	-0.42	-1.12	0.07	-1.62	-0.95	-0.88	-0.73
C-24	--	--	--	--	--	--	--	--	--	--	--	-0.90	--	-0.97	--	--	--	--	--	--	--	-0.41	--	--	--	--
C-25	-0.69	-1.11	-1.05	-1.23	-0.81	-1.07	-1.52	-1.72	-1.48	-0.90	-1.43	-1.70	-1.93	-1.31	0.59	-1.88	-1.24	-1.69	-1.47	-0.20	-0.39	-0.73	-1.30	-1.12	-1.62	-1.24
C-26	-1.94	-1.67	0.91	--	--	--	0.07	--	--	--	--	--	--	-0.97	--	--	0.10	--	--	0.73	0.28	-1.85	-0.93	--	0.90	--
C-27	--	--	--	--	0.55	--	0.02	--	--	--	--	--	-1.21	-0.87	--	-1.05	-1.00	-0.11	-0.54	-0.36	-0.42	-0.66	-0.62	-0.15	-0.50	-0.45
C-28	-1.49	-0.97	0.90	-0.35	-0.74	-1.07	-1.36	-1.23	-1.18	-0.98	-1.05	-1.30	-0.67	-1.27	0.72	-1.19	-0.89	-0.89	-0.58	-1.33	-1.57	-0.10	-1.01	-0.20	-0.87	0.29
C-29	-0.15	0.50	-0.07	-0.02	-0.28	-0.76	0.16	0.23	-0.86	-1.28	0.80	0.42	-0.19	1.29	-8.12	-0.13	-0.78	-0.54	-0.96	0.95	0.02	0.51	0.85	1.34	-0.08	1.08
C-30	-2.00	-2.00	--	--	--	--	-0.76	0.17	-1.95	-0.38	0.89	0.42	-1.58	-1.99	0.50	-1.52	-1.91	-1.89	-1.76	-1.58	-1.89	-1.53	-1.03	-1.83	-1.89	-1.86
C-31	--	--	--	--	--	--	--	--	-1.85	--	--	--	--	--	--	--	-1.60	-1.81	--	-1.90	--	-1.15	--	-1.15	-1.68	-1.87
C-32	-0.37	-0.64	-0.79	-0.83	-1.12	-0.86	-0.46	-0.93	-0.95	-0.85	-0.87	-0.93	-0.78	-0.96	1.85	0.69	-0.64	-0.59	-1.05	-0.60	-0.72	0.09	-0.07	-0.07	-0.58	-0.05
C-33	1.18	-0.64	0.63	1.81	1.36	0.86	-0.90	0.21	-0.15	0.91	-1.12	1.62	0.86	0.11	-1.01	-0.17	-0.53	-0.07	0.16	-0.02	-0.13	-0.11	0.17	-0.38	-0.86	-0.96
C-34	--	-0.21	-1.92	-0.78	0.44	-0.59	-0.30	0.29	-0.05	1.04	-0.56	0.37	0.03	-0.36	-3.47	-0.36	-0.78	-0.26	-0.19	-0.93	-0.53	-0.29	-0.46	-0.95	-0.86	-0.48
C-35	--	--	--	-1.92	--	-1.90	-1.74	-0.28	0.07	-1.00	-0.74	-0.36	-1.44	-0.65	0.57	-0.41	-1.14	-1.43	-0.81	-1.14	-0.76	-0.87	-0.55	-0.93	-1.47	-1.10
C-36	--	--	--	--	--	--	--	--	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C-37	0.07	-0.14	--	0.84	0.03	0.66	1.59	-1.06	0.02	0.29	0.43	0.61	-0.12	--	0.18	0.06	1.54	0.32	-1.19	1.18	1.35	0.94	-0.82	0.32	-0.59	--
C-38	-0.34	0.04	-0.44	-0.43	-0.51	-0.64	-0.19	1.27	-0.41	0.31	-0.69	0.02	0.65	0.69	-1.65	0.11	-0.68	0.20	0.08	1.49	0.78	0.84	-0.32	0.75	1.18	-0.35
C-39	-0.49	-0.60	-0.23	-1.20	0.05	-0.74	1.18	-0.49	-0.45	-0.70	-0.58	-0.53	-0.81	-0.34	-0.59	-0.67	-0.60	-0.54	-0.03	-0.62	-0.02	0.27	-0.16	-0.03	-0.38	0.12
C-40	-1.51	-1.51	-0.05	-1.03	-0.65	-1.36	-0.82	-1.06	-0.69	-1.08	-1.59	-1.61	-1.77	-1.39	1.32	-1.27	-1.61	-1.59	-1.47	-1.37	-1.25	-1.81	-1.54	-1.59	-1.54	-1.64

(Contd.)

Table A4.2. (Contd.)

Chap- ter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
C-41	0.29	-0.90	-0.61	-0.65	-0.51	-0.56	-0.21	0.47	-0.39	-0.70	0.41	1.78	0.28	0.01	3.29	-0.53	0.94	0.90	-0.14	0.17	0.45	-0.59	0.84	-0.73	-0.25	-0.15
C-42	-0.82	-1.80	-1.46	-1.03	0.09	-0.34	-0.03	0.32	0.42	0.06	0.14	-0.08	0.44	-0.19	-2.09	-0.26	0.16	0.16	-0.30	-0.50	-1.24	-0.46	-0.40	-0.71	-0.92	-0.80
C-43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-44	-	-	-0.21	0.71	-0.18	1.24	-0.89	-0.71	-1.23	-0.29	-1.27	0.51	-0.36	-0.98	0.33	-0.94	-0.97	1.12	0.36	-1.31	-0.11	0.48	-0.73	0.47	-0.63	0.35
C-45	-	-	-	-	-	-0.92	-	-	-	-	-	-	-	-	-	-	-1.38	-	-	-1.38	-	-	-	-	-	-
C-46	-	-	-	-	-	-	-	-	-	-	0.03	-	-1.01	-	-	-0.48	-	-	-	-	-	-	-1.54	-0.28	-	-1.01
C-47	-	-	-	-	-	-	-1.79	-	0.29	-	-	0.13	-	-	-	0.32	-	-0.23	-0.49	-1.03	1.68	1.32	-	-	-	-
C-48	0.91	-0.18	-0.01	0.11	0.16	-0.53	-0.40	0.02	0.04	-0.26	-0.22	0.07	-0.25	-0.28	0.65	-0.19	-0.06	-0.20	-0.23	-0.12	0.64	-0.88	0.11	0.24	0.53	0.53
C-49	-0.16	-1.76	0.30	0.28	0.68	0.11	0.33	-	-1.68	0.31	-0.96	0.05	-0.82	-1.53	0.95	-1.15	-1.70	-	-1.98	-1.35	-1.91	-0.48	0.38	-1.27	-0.41	-1.23
C-50	-	-0.26	0.84	0.79	1.38	1.26	1.46	-1.57	0.27	0.49	-0.02	1.53	0.12	-0.38	0.33	0.15	-0.80	-0.70	-0.44	1.11	0.92	0.03	0.54	1.08	0.65	1.12
C-51	0.80	-	-	-1.32	-	-	0.44	1.51	-0.12	0.54	-0.21	-0.94	-0.82	-0.26	1.23	0.48	0.97	0.05	0.96	0.61	0.88	-0.73	-0.03	0.03	0.56	1.36
C-52	-1.00	-0.43	-1.46	-1.17	-0.48	-0.73	-0.47	0.17	-0.57	-0.18	-0.38	0.29	-0.45	-0.66	0.38	-0.27	-0.48	-0.60	-0.63	-0.37	-0.28	-0.63	-0.50	-0.78	-0.65	-0.57
C-53	-	-	-	-	-	-	-	0.14	-	-	-	-	-1.23	-0.32	-	-0.10	-1.21	-0.50	-0.67	0.24	0.03	0.19	-1.21	-0.40	-0.05	0.01
C-54	0.04	0.52	-0.37	-0.29	-0.01	-0.24	-0.40	0.49	0.39	0.23	-0.35	-1.10	0.54	-0.30	-0.57	-0.51	-0.47	-0.68	-0.50	0.21	-1.44	0.22	0.46	-0.21	0.14	-0.58
C-55	-	0.08	-0.06	-0.27	-0.61	-0.01	0.32	-0.37	0.38	-0.44	-0.35	0.25	-0.89	-0.70	-1.38	-0.30	-0.56	-0.64	-0.78	-0.70	-0.17	-0.83	-1.07	-0.62	1.30	0.55
C-56	-1.31	1.45	-0.73	0.03	-0.35	-	-	-1.11	-0.99	-0.54	0.10	0.12	0.10	0.10	-	0.32	-0.52	-0.13	1.53	-0.60	1.61	-0.74	0.11	0.88	0.73	0.75
C-57	-	-	-	-	-	1.61	0.66	-0.73	0.15	1.60	0.80	-1.02	1.03	0.46	1.07	-1.09	-0.53	-0.72	0.24	-0.17	0.42	-0.65	0.72	0.49	-1.95	-0.62
C-58	0.69	0.99	0.77	0.12	0.92	0.47	1.05	0.81	1.45	0.66	1.33	0.89	0.73	0.14	0.63	1.26	1.07	0.43	0.07	0.30	1.26	0.83	0.19	0.78	-0.14	-0.87
C-59	-	-1.28	0.14	-0.44	-1.14	1.43	-0.44	-0.06	-	-0.50	-0.85	-0.14	-0.15	0.23	1.14	-0.12	0.68	-0.10	-0.37	0.31	0.28	1.04	-0.51	-0.43	0.17	-0.49
C-60	0.24	-	-	-	-	-	-	-0.21	1.16	-	0.02	0.66	0.28	-	-	0.80	-0.53	-1.00	-0.48	0.75	1.10	-0.20	0.57	-1.23	-0.56	-1.02

(Contd.)

Table A4.2. (Contd.)

Chap- ter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	-91	-92	-93	-94	-95	-96	-97	-98	-99	-00	-01	-02	-03	-04	-05	-06	-07	-08	-09	-10	-11	-12	-13	-14	-15	-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
C-61	--	--	--	--	-0.85	--	--	-0.23	1.31	1.35	-0.81	-0.41	-0.70	-0.22	--	-0.57	-0.54	-0.53	-0.28	-0.77	-1.05	-0.94	-1.15	-0.55	-0.83	-1.25
C-62	--	1.07	0.77	-0.82	1.38	--	1.23	0.16	-0.25	0.76	-0.61	-0.28	-1.42	-0.37	0.62	-1.14	-1.14	-0.48	-1.56	-0.59	-1.43	-1.30	-1.04	-0.99	-0.50	-0.98
C-63	0.44	0.57	0.60	0.30	-0.02	-0.14	0.67	0.55	0.20	0.68	0.03	0.30	-0.74	-0.29	1.02	-1.06	-0.60	-0.33	-1.93	-0.30	-0.58	-0.37	-0.97	-0.41	-0.81	-0.16
C-64	0.32	1.47	0.84	--	0.66	0.91	0.44	0.43	--	1.57	0.33	-0.43	-0.51	-0.66	3.61	-0.86	-0.12	0.24	-1.92	-0.90	-0.47	-1.01	-0.77	-0.85	-0.69	-0.60
C-65	--	--	--	--	--	--	--	--	0.11	-1.52	--	0.88	--	--	--	-0.24	-0.62	0.88	-0.56	-1.70	-0.77	-0.44	-0.44	0.47	-0.13	-0.54
C-66	--	--	--	--	--	--	--	--	--	-0.94	--	-0.60	--	-0.53	--	--	--	1.00	-1.53	0.71	-0.11	-0.30	--	-1.23	-1.20	-0.79
C-67	--	--	--	--	--	--	--	--	--	--	0.35	--	--	1.20	--	--	--	1.02	--	0.42	--	0.90	--	-0.19	-0.39	-0.52
C-68	-0.29	-0.08	-0.90	0.28	0.62	0.36	1.51	-0.31	-0.70	-0.20	--	-0.27	0.11	--	-0.13	0.13	1.08	0.70	0.11	-0.66	-0.29	0.70	-0.11	0.30	0.55	0.13
C-69	-1.13	-1.15	-1.31	-0.64	-1.05	1.81	-0.72	-1.54	-0.79	-0.55	-1.82	-1.40	-0.16	-0.78	0.77	-0.88	-0.72	0.43	0.19	-0.32	-0.81	-1.69	-1.75	-0.01	0.20	-0.35
C-70	-0.59	-0.07	0.10	-0.51	-0.45	-0.56	-0.01	-0.16	-0.72	0.30	-0.73	-0.35	-0.38	-1.61	-28.8	-0.45	-0.36	-0.47	-0.59	-0.81	-1.23	-0.53	-0.85	-1.18	-0.39	-0.75
1																										
C-71	-0.15	-0.40	-0.42	0.04	-1.05	0.78	0.45	0.30	0.24	-0.49	-0.99	1.56	0.24	0.66	-1.08	0.92	0.10	0.09	-0.07	0.62	0.98	0.01	0.52	-0.13	-0.25	0.25
C-72	-0.81	-1.38	-0.75	-1.02	-0.48	-0.95	-0.80	-0.69	-0.50	-0.33	-0.65	-0.44	-0.63	-1.77	0.41	-0.57	-0.52	-0.39	-0.62	-0.57	-0.31	0.22	-0.26	-0.29	0.01	-0.01
C-73	-1.56	-0.98	-0.91	-0.84	-0.46	-0.90	-0.24	-0.54	-0.50	-0.79	-0.78	-0.40	-0.64	-0.68	3.21	-0.62	-0.41	-0.61	-0.58	-0.27	-0.07	-0.19	-0.04	-1.29	-0.09	-0.32
C-74	-0.14	-0.13	-0.19	-0.41	0.14	-0.36	-0.06	-0.06	0.15	-0.38	-0.54	-0.86	-0.70	-0.63	6.87	-0.33	-0.50	-1.22	-0.68	-0.42	-0.46	-0.30	-0.28	-0.99	-0.02	-0.23
C-75	--	--	--	--	--	--	--	--	--	0.73	--	-1.72	--	--	--	-0.43	-1.01	0.27	-1.10	1.11	-0.46	-0.52	0.93	-0.42	-0.66	0.42
C-76	0.44	-0.93	-0.37	-0.88	-1.71	-0.76	-0.77	-0.73	0.02	-0.98	-0.71	-0.67	-0.44	-0.60	1.27	-0.52	-0.85	-0.57	-0.28	-0.17	-0.34	-0.62	-0.44	-0.09	0.30	0.75
C-78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C-79	--	--	-1.62	--	--	-1.86	-1.89	0.41	--	--	--	--	--	--	--	--	0.53	0.23	-0.85	-0.07	-0.92	0.11	0.07	0.77	-0.08	-0.08
C-80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-1.65	-0.05	-0.48	-1.64	-1.63	-1.42	-0.74	1.35	-0.16	0.54

(Contd.)

Table A4.2. (Contd.)

Chap- ter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
-91	-92	-93	-94	-95	-96	-97	-98	-99	-00	-01	-02	-03	-04	-05	-06	-07	-08	-09	-10	-11	-12	-13	-14	-15	-16		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	
C-81	-	-	-0.32	-0.80	-1.08	0.84	0.25	0.65	0.12	-1.64	1.45	-0.22	0.93	0.17	-6.62	0.84	0.85	1.06	-0.14	0.72	1.50	1.57	1.45	1.39	1.00	1.07	
C-82	-1.13	-1.75	-1.54	-1.64	-1.00	-1.66	0.37	0.13	-0.52	-0.25	-1.09	0.07	-0.10	0.19	-0.68	0.08	0.52	0.33	0.34	0.81	1.06	0.64	0.57	1.04	0.93	0.72	
C-83	-0.28	0.61	-0.40	1.21	0.52	0.68	0.60	-0.56	-0.49	0.81	-0.38	0.02	0.08	-0.74	1.37	-0.47	-0.44	0.10	0.26	-0.74	-0.50	-0.16	0.60	1.15	-0.41	0.05	
C-84	-1.58	-1.79	-1.50	-0.57	-1.49	-1.47	-1.42	-1.30	-0.52	-1.56	-1.15	-1.13	-1.12	-1.27	1.10	-1.43	-1.25	-1.63	-1.47	-0.99	-0.38	-1.20	-0.98	-1.28	-1.07	-0.95	
C-85	-0.50	0.67	-1.15	-1.61	-0.72	-1.69	-0.99	-1.26	-1.78	-0.81	-1.63	-1.67	-0.73	1.17	0.82	-1.23	0.90	0.44	-0.16	-0.61	0.20	-0.27	0.73	-0.28	-0.28	1.44	
C-86	-	-	-	-	-0.33	1.42	-1.55	-0.54	1.13	-	-	-1.22	0.72	1.09	-	1.04	-	-0.09	1.58	1.43	-0.05	-0.81	-1.11	0.70	1.16	0.64	
C-87	-1.50	-0.55	-0.48	-0.41	-0.77	-0.48	-0.43	-0.28	-0.21	-0.54	0.33	-0.77	-0.45	-0.66	1.25	-0.31	-0.69	-0.34	-0.56	-0.70	-0.99	-0.44	-1.12	-0.53	-0.70	0.12	
C-88	1.52	-	0.06	-	1.57	0.71	1.92	0.87	-1.45	-	0.51	1.50	-0.71	-0.42	-	-	-	-0.42	1.53	0.15	0.79	0.04	-0.39	0.34	-0.85	0.47	
C-89	-	-	-	-	-	-	-	-	-0.41	-	-	-1.98	-1.41	-1.93	-	-	-	-1.92	-1.89	-0.59	-1.84	0.40	-1.87	-1.99	-1.99	0.27	-
C-90	-0.62	-1.96	-0.85	-0.31	-0.68	-1.50	-1.25	-1.02	-1.49	-0.68	-0.78	-0.76	-0.99	-0.83	0.54	-0.58	-1.02	-1.22	-0.90	-0.51	-1.02	0.03	-0.87	-1.14	-0.37	0.07	
C-91	-	-0.81	-	-0.27	0.08	-1.02	0.92	1.47	0.39	0.57	-1.23	0.89	-1.98	0.80	0.62	-0.33	-0.59	-1.21	0.09	1.39	0.01	1.16	-0.21	1.64	1.65	0.81	
C-92	-0.96	0.36	-1.92	-1.13	-1.02	-0.15	-0.14	0.75	-0.49	0.05	-1.27	-0.27	-0.03	-0.49	-0.33	-1.37	-1.28	-0.54	-1.25	-1.66	-1.64	-1.68	-0.47	-1.39	-1.63	-1.47	
C-93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.70	0.81	-0.35	-	-	-	-	
C-94	-0.42	-	-	-0.65	-1.75	0.02	-1.30	-1.63	-0.40	-0.87	-1.61	-1.38	-1.59	-1.50	0.67	-1.01	-1.51	-1.92	-1.85	-1.46	-1.29	-1.03	-1.85	-1.58	-1.46	-0.38	
C-95	-	-0.05	0.51	0.29	-0.24	-1.04	0.46	0.93	-0.14	0.57	-1.63	-1.04	-1.93	-1.90	1.24	-1.44	-1.77	-1.82	-1.96	-0.75	-1.58	-1.28	-1.82	-1.53	-1.89	-1.62	
C-96	0.95	0.46	1.44	0.11	0.84	-0.20	-0.71	-0.83	-0.62	-0.76	-	-0.40	-0.10	-0.67	1.08	-0.75	-1.03	-0.31	0.21	-0.43	-0.93	-1.89	0.13	-0.15	-1.61	-0.33	
C-97	-	-	-	-	-	-	-	-	-0.47	-1.76	-	-	-0.53	-1.09	-	-1.99	-1.70	-0.59	1.47	-1.95	0.94	-1.99	-0.31	-1.89	-0.43	1.30	
C-98	-	-	-	-	-	-	-	-	-	-	-	-	-	1.72	-	-0.86	-0.39	1.97	1.35	0.34	1.71	0.42	0.96	-0.46	-0.39	1.65	
C-99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Note: For description of chapters please refer Appendix A1, Table A1.1.

DOCUMENTATION

The purpose of this section is to make available to the readers official documents such as reports of committees, commissions, working groups, task forces, etc., appointed by various ministries, departments, agencies of central and state governments and international organisations, which are not readily accessible either because they are old, or because of the usual problems of acquiring governmental publications, or because they were printed but not published, or because they were not printed and remained in mimeographed form. We also present in this section, official documents compiled from scattered electronic and/or other sources for ready reference of the readers. It will be difficult and probably not worthwhile to publish the documents entirely. We shall publish only such parts of them as we think will interest our readers. The readers are requested to send their suggestions regarding official documents or parts thereof for inclusion in this section.

We are also keen to publish Papers, Notes or Comments based on the material included in this section. We invite the readers to contribute the same to our journal, which we shall consider for publication in subsequent issues of the journal, after the usual refereeing process.

In the present section, we publish:

1. Report of the India-Japan Joint Study Group June 2006.
2. Comprehensive Economic Partnership Agreement Between Japan and The Republic of India.
3. Annex 1, Schedules in relation to Article 19. Part 2 and Part 3.

REPORT OF THE INDIA-JAPAN JOINT STUDY GROUP JUNE 2006

PREFACE

1. H.E. Dr. Manmohan Singh, Prime Minister of the Republic of India and H.E. Mr. Junichiro Koizumi, Prime Minister of Japan agreed in November 2004 to set up an India-Japan Joint Study Group to give its recommendations for strengthening economic relations between the two nations.

2. During the visit of the Prime Minister of Japan to India in April 2005, the two leaders directed the Joint Study Group to submit its report within a year of its launch, focusing on measures required for a comprehensive expansion of trade in goods, trade in services, investment flows and other areas of economic relations between the two countries. The Joint Study Group was also tasked to consider the feasibility of the two countries moving towards a liberalized and upgraded framework for economic engagement, including an India-Japan economic partnership agreement. *[3 - 5 not included here]*

CONTENTS

Chapter 1 Overview of India-Japan economic and commercial Relations
Chapter 2 Trade in goods
Chapter 3 Trade in services
Chapter 4 Investments
Chapter 5 Role of Japanese ODA in promoting economic Partnership
Chapter 6 Other areas of economic cooperation
Chapter 7 Framework for future economic partnership

CHAPTER 1: OVERVIEW OF INDIA-JAPAN ECONOMIC AND COMMERCIAL RELATIONS

Current status of domestic economies and foreign economic policies in Japan and India
[1.1 - 1.8 not included here]

Japan

Current status of the Japanese economy

1.9 The Japanese economy has been making a modest recovery after a long period of recession.

Considering that the current trend of recovery has been achieved by the private sector, driven by the progress of IT-related adjustments and the recovery of exports rather than by increasing public spending, and that the target for disposal of non-performing loans has now been reached, it can be said that Japan has already emerged from the long period of economic stagnation it suffered after the burst of the so-called bubble economy. According to government estimates, Japan will have a 1.9% real economic growth for FY 2006. Nevertheless, Japan's public finances have been worsening since the late 1990s and its outstanding domestic long-term debt is expected to reach approximately 151% of GDP (605 trillion yen, FY 2006 forecast). Fiscal structural reform is, therefore, a challenge.

1.10 Under the policies of "without reform there will be no growth," "leave to the private sector what it can do", and "leave to the localities what they can do", Koizumi Administration aims to promote structural reforms covering finance, taxation, regulation and public expenditure to bring out the vitality of the private sector and the motivation of regions, overcome deflation and revitalize the economy. During the vital period up to FY 2006, Japan will give priority to the following three challenges while accelerating structural reform: 1) to create a "small and efficient government"; 2) to create a strong foundation that will allow Japan to deal with the issues of declining birthrate, aging population and globalisation; and 3) to overcome deflation and to make sure that the private demand-led economic growth continues.

Foreign economic policies

1.11 Japan is promoting EPA negotiations in an effort to complement its multilateral free trade structure centered on the World Trade Organization (WTO). In this respect, while Japan is advancing negotiations with the aim of realizing EPAs which are consistent with WTO agreements, Japan aims to strengthen comprehensive economic partnerships by promoting EPAs which

include not only trade of goods and services but also investment, intellectual property, competition and development of business environment, with traditional bilateral FTAs consisting of tariff elimination and reduction at the core.

1.12 In particular, Japan intends to strengthen its economic partnerships with Asian countries with which it has deep interdependent relations, not only through the expansion of trade, investment, etc., but also through the creation of common rules in various fields and facilitation of the movement of people. Japan aims to develop and strengthen the competitiveness of the entire Asian region.

India

Current status of Indian economy

1.13 Indian economy has been posting an average 6% annual economic growth since its economic liberalization in 1991. There has been a further acceleration of the growth rates to over 8% during the past couple of years. In particular the IT industry has been expanding rapidly. For instance, its software and service exports grew by a factor of roughly 40 over the last ten years. Furthermore, the share of primary industries has been overtaken by the share of secondary industries, and an economic structure tailored to achieve stable economic growth is being established.

1.14 In view of the importance of agriculture, poverty reduction and employment initiatives, Indian Prime Minister has called for "economic growth accompanied by employment" and has announced the objective of achieving a 8-10% annual economic growth in a manner that generates employment. India has been steadily relaxing its regulations on foreign investment in various sectors while aiming at "economic reforms with a human face". Meanwhile, factors constraining economic growth are emerging, and

the Government of India has emphasized the fact that infrastructure sector will need US\$150 billion in foreign investment in the next few years. With the injection of public funds serving as the catalyst, the enormous infrastructure needs must be covered by private investment.

Foreign economic policies

1.15 India launched its "Look East Policy" in 1991 and is making efforts to strengthen its relations with Asian countries including members of ASEAN. India has signed an FTA framework agreement with Thailand and a Comprehensive Economic Cooperation Agreement (CECA) with Singapore, and is already implementing early harvest measures. With a view to protect foreign direct investment, India has also already concluded bilateral investment protection agreements with 48 countries and agreements are currently being negotiated with 30 additional countries.

Current status of economic relations

Trade

1.16 The total amount of trade between Japan and India has been rising since 2002, reaching approximately US\$6.8 billion in 2005. However, this figure is not commensurate with the two countries' economic power and potential. The trade share and its relative importance between Japan and India are diminishing: Japan ranks 10th among India's export destinations (share of 2.5%) and 10th among import sources (2.8%), and India ranks 26th among Japan's export destinations (0.6%) and 28th among import sources (0.6%). As for other comparable major economies in 2005, the trade value between Japan and China was US\$189.4 billion and between India and the US, US\$20 billion indicating a substantial potential for further expansion of trade between Japan and India.

1.17 India's exports of software to Japan have grown dramatically in recent years, marking a 60% increase in the year 2004 alone. At the same time, there have been no changes in the traditional structure in which major exports are comprised of commodities such as gems, marine products and iron ore, making diversification of the trade structure a challenge. Manufactured goods such as automobile components still constitute a large proportion of India's imports from Japan. Japan and India should study the sectors in which India has expanded its trade volume with other countries, and consider if there is any scope for increasing the trade value in, for instance, IT, textiles and fiber products, or pharmaceutical products. Hence, bearing in mind these circumstances, the challenge is to diversify the trade structure.

Investment

1.18 Since 1991, Japan's cumulative direct investment to India totalled approximately US\$2.01 billion, making Japan the third largest provider of direct investment to India. Nonetheless, considering India's potential as an investment destination and Japan's economic size, the current situation is not entirely satisfactory. Also, the current Japanese investment in India concentrates on machinery and transport equipment, and most of the future investment is likely to come from expansion of the companies already operating in India. Thus, it is desirable that investment structure is diversified to cover sectors such as electricity and electronics, steel, infrastructure, pharmaceutical products, and development of urban infrastructure. It is noteworthy that the number of Japanese companies operating in India has surged in the past several years, currently standing at around 300. According to a study conducted by the Japan External Trade Organization (JETRO), about 75% of Japanese companies operating in India had positive operating profit in 2004. As for the operating profit outlook for 2005, India is ranked first in Asia in the survey,

and nearly 70% of companies expect to see an "improvement" with the main reason being increased sales in India. A study conducted by Japan Bank for International Cooperation (JBIC) revealed that India ranked third after China and Thailand, as a promising country in which to expand business in the medium term, and second after China in the long term. Thus there are high expectations for the future.

1.19 Japan has requested India to develop an investment environment with the aim of further expanding and diversifying Japan's investment to India, and measures to this end include infrastructure development in India, further easing of restrictions on foreign investment in such areas as retailing, enhancing transparency of and simplifying investment approval procedures and reviewing the labour law. India has made steady progress in easing restrictions on foreign investment, and hopes that domestic and foreign companies will operate under similar conditions and take advantage of business opportunities in the future. In some cases, companies of other countries have made massive investments in India. Under these circumstances, it would be beneficial for Japan to locate sectors in which investment by Japanese companies hold promising potential.

1.20 Japan's Official Development Assistance (ODA) has played an important role in India's infrastructure development and technological enhancement. Japan is India's largest bilateral donor and India was the top recipient of yen loans from Japan between FY2003 and FY2005. Delhi Metro is a "best practice" project which was assessed highly for introduction of a system allowing smooth and safe implementation of the project. This project symbolizes Japan-India friendship. It is desirable that similar high visibility projects are implemented in the days to come. On the other hand, unlike in East Asian countries, there are few investments by Japanese companies to date in infrastructure development.

Thus, Japan could attach importance to improvement of the investment climate through infrastructure enhancement by ODA.

1.21 The situation of Indian companies operating in Japan and their business circumstances indicate that they are not making the most of their potential, although major IT companies are operating in Japan. Japan has identified promotion of investment in Japan as the basis for structural reform and is aiming to double the flow of investment to Japan in the five years beginning in 2001. Japan is implementing the Program for the Promotion of Foreign Direct Investment in Japan step by step, including the establishment of a one-stop consolidated business consultation service point (Invest Japan) and intends to support further investment from India to Japan.

Other areas of cooperation

1.22 Under the Science and Technology Initiative noted in the Eight-fold Initiative for Strengthening the Japan-India Global Partnership, the 7th meeting of the Japan-India Joint Committee on Science and Technology Cooperation was held in November 2005 and the two countries decided to seek possible cooperation in areas such as biotechnology, nanotechnology, alternative energy sources and robotics.

1.23 Japan and India are major energy consuming nations in Asia, and therefore, securing a stable supply of energy sources, promotion of energy-saving, and improvement of energy efficiency are critical policy agendas that are directly linked to the economic development of both countries. Minister of Economy, Trade and Industry of Japan and Minister of Petroleum and Natural Gas of India have already agreed to comprehensive energy cooperation, and signed the joint statement. It is expected that relations in the field of energy will be further strengthened on

the basis of the joint statement. Director-General (Petroleum) in METI and Petroleum Secretary met in end of September 2005.

1.24 The first Clean Development Mechanism (CDM) project that Japan registered with the United Nations (UN) as part of its efforts to reduce greenhouse gas emissions was a joint project conducted in India. It is hoped that India and Japan will initiate the second and third CDM joint projects.

1.25 The language barrier is an obstacle to strengthening economic relations between Japan and India. When Prime Minister Koizumi visited India in 2005, the Government of India announced a plan to increase the number of people learning Japanese to 30,000 in five years and decided to adopt Japanese as an additional foreign language elective in secondary education from the next fiscal year. The Government of Japan intends to strongly support this plan through the Japan Foundation programs and by dispatching Japan Overseas Cooperation Volunteers (JOCV) to teach Japanese. It is expected that this plan will contribute to increase in the activities carried out by Japanese companies operating in India and help Indian companies enter the Japanese market. It is also desirable to see an increase in the number of Japanese and Indian students studying in each other's countries. In this regard, it is observed that in 2004 there were 410 students from India and 80,592 students from China in Japan. The Government of Japan has substantially increased the number of Indian participants in the Japan Exchange and Teaching (JET) Programme with the aim of strengthening English language education in Japan and promoting internationalisation of the local communities. It is expected that India will cooperate by sending many high-quality Indian teachers of English to Japan.

1.26 As the birthplace of Buddhism, India is home to Buddhist ruins, with which Japanese people are familiar, and also many other famous

world heritage sites. For this reason, India's tourism development is a sector where the potential of Japan-India cooperation is high. Japan, through ODA, is providing cooperation in the conservation of the ruins and development of tourism sites in India. It is expected that this assistance will serve to promote tourism cooperation between Japan and India and lead to the revival of the tourism industry in both the countries.

Multilateral Trade System

1.27 Japan and India both benefit greatly from the multilateral trade system and both countries recognize that an early conclusion of the WTO Doha Trade Agenda negotiation will be beneficial to the whole world. They also recognize the importance of working towards a final agreement.

Future prospects

1.28 The Japan-India economic relations are already on an ascending curve. It is vital to ensure that these trends continue, develop and further accelerate. In particular, diversifying the trade and investment structure is a challenge and the JSG's task is to present measures to consider the potential fields and products, with a view to strengthening Japan-India economic relations, taking into account the existing ground realities in the two countries.

1.29 In order to strengthen economic relations between Japan and India, it is important to bolster comprehensive cooperative relations in a wide range of sectors that include not only trade and investment, but also IT, science and technology, energy, environment and people-to-people exchanges.

CHAPTER 2: TRADE IN GOODS

Japan's and India's Global Trade in Goods

2.1 Trade in goods is at the heart of economic co-operation between any two societies. Japan is one of the major trading powers of the world, while India's unilateral trade liberalisation has steadily increased the trade intensity of the Indian economy. Yet trade between the two countries has stagnated. The Joint Study Group (JSG) has spent considerable time trying to understand the reasons for this state of affairs, so as to come up with practical and feasible solutions and suggestions.

2.2 The general perspective was to look for measures that could result in the diversification of export baskets of both countries. Such diversification needs to take into account the dynamic factors shaping each country's trade with the other. In the case of Japan, its massive direct investment in other Asian countries, several of which are expected to conclude preferential trade agreements with India, will divert trade to exports by Japanese firms located in those markets and thereby erode potential or actual bilateral trade. Similarly, for India, preferential access by other countries to the Japanese market would tend to crowd out its potential or actual exports.

2.3 While there is no question that, over the long run, trade is stimulated by investment, it is unrealistic to believe that investment will flourish in the absence of a prior, vibrant trade relationship. The JSG accordingly felt that, in order to be responsive to the political mandate given to it by the two Prime Ministers, it was necessary to be bold in testing the limits in both economies so as to allow bilateral trade to realise its full potential.

2.4 With US\$ 565 billion of exports in 2004, Japan ranked 4th in world merchandise exports (Table 1). This follows upon a period of relative stagnation, until 2002. The United States, China, and the Republic of Korea, accounting for about

45 percent of Japan's exports and imports collectively, are Japan's most important trading partners. Table 1 also shows the sustained growth in India's trade. The EU, USA, China, UAE, Switzerland, and Korea are India's most important trading partners.

2.5 In general trade in both economies has taken place under multilateral disciplines and both countries remain committed to the strengthening of a rules-based multilateral trading system. However, as increased resort is being made by other trading blocs to preferential

bilateral agreements, India and Japan have both recently begun to conclude similar agreements to serve the goals of preserving market access and increasing competitive pressure in the domestic economy. There has also been a growing awareness of the significance of much greater economic integration within Asia, beginning with the financial crisis of 1997 and resulting in tentative steps such as the Asian Bond Market Initiative. India and Japan have also agreed to work together in building an East Asian community and have worked together in the East Asia Summit to foster regional economic integration in Asia.

Table 1. Global Merchandise Trade: India and Japan

Year	Japan			India		
	Export	Import	Total	Export	Import	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
US\$ billion						
1995	443	336	779	30	35	65
2000	478	380	858	43	50	93
2001	403	349	752	45	58	103
2002	417	337	754	51	65	116
2003	472	383	855	56	71	127
2004	565	455	1020	73	95	168

Sources: 1. *Direction of Trade Statistics Yearbook 2003*, IMF. 2. *UNCTAD Handbook of Statistics, 2004*, UNCTAD. 3. *World Trade Report, 2005*, WTO

Trends, Pattern and Potential for Bilateral Trade

2.6 India and Japan have enjoyed vibrant trading relations in the past. However, over the past decade, India-Japan trade has tended to stagnate and even decline, even as India's trade regime has become steadily more liberal. As is evident from Table 2, the turnover in bilateral trade declined to US\$ 3.7 billion in 2002/03 compared to \$ 4.04 billion in 1997/98. Over the past two years, however, this tendency toward stagnation was reversed, with total trade growing by 18% in 2003/04 and by 14% in 2004/05 to reach nearly \$ 5 billion. The balance of trade has generally been in Japan's favour and the surplus crossed the US\$1 billion mark in 2004/05.

2.7 Japan's share in total Indian exports has declined from 9.3 percent in 1990 to 2.5 percent in 2004 and in India's imports from 7.5 percent in 1990 to 2.8 percent in 2004. India's share in Japan's global trade accounts for less than 0.5 percent. Due to this decline in bilateral trade, Japan has slipped from the 3rd most important destination for exports for India until 1997 to 10th position in 2004. The stagnation of India-Japan trade is in sharp contrast with India's trade with other East Asian countries such as China, South Korea, and with the countries of ASEAN both of which have prospered. Underlying this buoyant growth in India's exports to these other Asian markets has been steady diversification of products.

Table 2 A. India's Trade with Japan*(Value in US \$ million and growth rates)*

	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05 ^p
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
India's exports to Japan	1898 - 5%	1652 -13%	1683 2%	1779 6%	1510 -15%	1864 23%	1709 -8%	1973 16%
India's imports from Japan	2144 - 2%	2466 15%	2536 3%	1833 -28%	2146 17%	1836 -14%	2668 45%	3006 13%
Total	4042 - 3%	4118 2%	4219 2%	3612 -14%	3656 1%	3700 1%	4377 18%	4984 14%
Balance of Trade	- 246	-814	-853	-54	- 636	28	-959	-1028

Source: Department of Commerce, Government of India, based on DGCIS.

*(P: Provisional)***Table 2 B. Japan's Trade with India***(Value in Japanese million yen and growth rates)*

	1998	1999	2000	2001	2002	2003	2004	2005
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Japan's exports to India	314405 17%	275572 -12%	267940 -3%	233717 -13%	233872 0%	276339 18%	329081 19%	388228 18%
Japan's imports from India	284798 -12%	255773 -10%	284200 11%	269299 -5%	261997 -3%	252132 -4%	282590 12%	352402 25%
Total	599203 2%	531345 -11%	552140 4%	503016 -9%	495869 -1%	528471 7%	611671 16%	740630 21%
Balance of Trade	29607	19799	-16260	-35582	-28125	24207	46491	35826

Source: Ministry of Finance of Japan.

2.8 India-Japan bilateral trade is highly concentrated in a narrow range of products with India's exports dominated by raw materials and minerals and Japan's exports dominated by highly capital- and knowledge-intensive manufactured goods. The top five exports from India to Japan constitute 60 percent of India's total exports to Japan and include gems & jewellery (25 percent share), marine products (13 percent),

iron ore (12 percent), cotton yarn, fabrics and made-ups (6 percent), and petroleum products (4 percent) (Table 3). Electronic goods, non-electrical machinery and transport equipment alone account for nearly half of India's imports from Japan. They have consistently ranked as the top imports from Japan in the last few years (Table 3).

Table 3. Major items of India's Exports to Japan (2004-05):

S.No.	Items	Value in US \$ Million	% Share in Total Exports to Japan
(1)	(2)	(3)	(4)
1.	Gems & Jewellery	500	25
2.	Marine Products	254	13
3.	Iron Ore	234	12
4.	Cotton yarn fabrics, made-ups, etc.	121	6
5.	Petroleum products	84	4

Major items of India's Imports from Japan (2004-05)

S.No.	Items	Value in US \$ Million	% Share in Total Imports from Japan
(1)	(2)	(3)	(4)
1.	Machinery	743	25
2.	Electronic Goods	397	13
3.	Transport equipment	269	9
4.	Iron & Steel	241	8
5.	Professional instruments	255	8
6.	Organic chemicals	174	6

Source: Department of Commerce, Government of India, based on DGCIS.

2.9 The stagnation of bilateral trade portrayed above, both as to quantity and as to composition is at least partly explained by the scale and type of Japanese foreign direct investment into India. Unlike Japan's investments in such Asian countries as China, South Korea, Thailand and Singapore, its investments in India seem to have focused primarily on supplying the Indian domestic market. The four countries named above accounted for substantial percentage of Japan's FDI in and its imports from Asia. While these issues are dealt with at length in the chapter on investment, it may be mentioned here that perceptions of Japanese investors are that, as far as supplying the Japanese market is concerned, India's relative labour costs are higher than those of its competitors, particularly when the greater distance and the relatively poor transportation

infrastructure of India are taken into account.

Opportunities for Enhancing Trade in Goods

2.10 The Indian and Japanese economies are highly complementary. Japan is relatively labour-scarce but capital-abundant. India's endowments are the reverse. Such complementarity should provide for vibrant and fruitful trading opportunities. An Indian study using a gravity model predicts potential for India-Japan trade of around US\$ 14 billion (compared to the current level of US\$ 5 billion) keeping in mind the size of the two economies and other pertinent factors.¹

1 A gravity model explains the volume of trade between a pair of countries as being a function of their economic mass and inversely of the distance between them among other factors.

2.11 As revealed by the country's export performance in other markets, India's production structure and export base have changed radically in the last decade. Opportunities should therefore now exist for a shift from the traditional "vertical" trade** (inter-industry trade) to "horizontal" trade (intraindustry trade). This would be greatly facilitated by a combination of enhanced Japanese investment and continued Indian trade liberalisation. This structural change could increase the volume of bilateral trade in capital goods, parts and related processed goods and value-added manufacturing goods such as pharmaceuticals, inorganic and organic chemicals, and auto components.

Commercial Policies

2.12 Indian average applied tariff rates in 2004 were 29.1 percent for all goods and 27.9 percent for non-agricultural goods. While these applied tariff rates have been decreasing they are still higher than those of other Asian developing countries such as China or Thailand. India is officially committed to further reductions in

applied rates, even as it negotiates reductions in bound rates within the Doha negotiating round. The Indian average bound tariff rates are 49.8 percent for all goods and 34.3 percent for non-agricultural goods. These bound rates are also much higher than those of China and Thailand (See Table 4 below). One consequence of these relatively high tariff rates, particularly on machinery and parts, has probably been to discourage Japanese FDI into India as against these other countries (see Table 5).

2.13 Japanese average applied tariff rates are 3.1 percent for all goods and 2.5 percent for non-agricultural goods in 2004. However these average tariff rates tend to mask high tariff peaks applicable to certain labour-intensive and other goods. Nearly 10 percent of the tariff lines in Japan are subject to peak tariffs of more than 15 percent. Indian side feels that commodities subject to high tariff rates in Japan include many products in which India has a comparative advantage. Table 6 shows some of the products which India could potentially export to Japan.

Table 4. Bound/applied tariff rates comparison of India, China, Thailand and Japan

	India All/ Agr/ Non-Agr	China All/ Agr/ Non-Agr	Thailand All/ Agr/ Non-Agr	Japan All/ Agr/ Non-Agr
(1)	(2)	(3)	(4)	(5)
Binding coverage	73.8/ 100.0/ 69.8	100.0/ 100.0/ 100.0	74.7/ 400.0/ 70.0	99.6/ 100.0/ 99.5
Simple Average (WTO final bound tariffs)	49.8/ 114.5/ 34.3	10.0/ 15.8/ 9.1	25.7/ N.A./ 24.2	2.9/ 6.9/ 2.3
Simple Average (MFN applied tariffs)	29.1/ 37.4/ 27.9 (2004)	10.4/ 16.2/ 9.5 (2004)	15.4/ 29.6/ 13.3 (2003)	3.1/ 7.3/ 2.5 (2004)

(WTO WTR2005)

Table 5. Indian tariffs on select items

Product Description	India (Applied / Bound)
(1)	(2)
Non-agricultural goods	
Machinery	15 / 40
Electrical Machinery	15 / 40
Vehicles (not railways) and parts	15 / 40 (50 / Unbound for CBU passenger cars and two wheelers)
Iron and steel	15 / 40
Optic	15 / 40 (15 / Unbound for some items)
Organic Chemicals	15 / 40
Plastic	15 / 40
Iron/steel products	15 / 40 (15 / Unbound for some items)
Photographic/Cinematographic	15 / 40
Rubber	15 / 40

Source: Customs Tariff (Arun Goyal: 2005-2006), ABS

Table. 6 Post-Uruguay Round Tariffs on Select Items

Product name	Tariff Rate	
	India	Japan
(1)	(2)	(3)
Agricultural products		
Milk (>3% fat)*1	30%	21.3%-21.3% + 114 yen/kg
Milk in powder, with or without sugar	60%	0%-29.8%+396 yen/kg
Yogurt and butter	30%	21.3%- 29.8%+1,159 yen/kg
Cereals and preparation	0-100%	0%-375 yen/kg
Groundnuts, shelled	100%	10%-617 yen/kg
Cane sugar, raw and white	100%	35.3-103.1 yen/kg
Grape juice	30%	19.1-29.8% or 23 yen/kg, Whichever is greater
Coffee preparations*2	100%	0-29.8%+1,159 yen/kg
Tea preparations, essences*2	100%	8.0-29.8%+1,159 yen/kg
Industrial products		
Babies garments, knitted or crocheted synthetic fibres	30%	5.3-10.7%
Waterproof footwear	30%	6.7-27%
Footwear with leather uppers	30%	21.6-30% or 4,300 yen Whichever is higher

Source: Web page of the Central Board of Excise and Customs (<http://www.cbec.gov.in/>)

"Customs Tariff Schedules of Japan 2004"

Note: *1 Tariff rate for Japan is the figure for milk with 1 - 6 % fat. *2 Products with higher percentages of dairy ingredients have higher tariff rates.

2.14 For a more rounded assessment of Japan's trade policies toward developing countries, it should also be noted that Japan grants concessions under the Generalised Scheme of Preferences (GSP) to India, (as also other developing countries) for selected agricultural and fishery products.² In particular Japan grants GSP rates to as much as 90% of the agricultural imports (HS Chapters 1 to 24) from India. Japan has also made continuous efforts to expand the GSP scheme. In 2003, for example, GSP was extended to include an additional 118 agricultural products. Preferences are granted for all industrial products (HS Chapter 25 to 97), including forestry and mining products, with the exception of selected products. As in the case of other GSP schemes, Japan has reserved the right to suspend preferential treatment for products included in the scheme under certain circumstances. For goods exported from a preference-receiving country to be eligible for preferential tariff treatment, they must be recognised as originating in that country under the origin criteria for the Japanese GSP Scheme, and transported to Japan in accordance with its rules for transportation. The detailed GSP-related information in English is found at www.mofa.go.jp/policy/economy/gsp/index.html

2.15 The JSG noted as follows:

- (1) Japan is a net importer of foodstuffs and agricultural products and such food products account for around 12% of Japan's imports. Japan is the largest net food importing country in the world. Its current self-sufficiency rate is only 40% which is the lowest among major industrialized countries. India is one of the world's largest producer of food. However, India's share in imports of agriculture, forestry and fisheries products by Japan is miniscule.

Except for marine products, there are no significant imports into Japan from India of any other agricultural product.

- (2) Expanded exports of such goods from developing countries such as India contribute to meeting the Millennium Development Goals to which Japan subscribes.
- (3) Recognising the importance of food security, which was underlined at the Rome Declaration on World Food Security, the Government of Japan has taken the decision to raise the self-efficiency ratio up to 45% by 2015.
- (4) The Government of Japan has been endeavoring to expand the exports of Japanese agricultural, forestry and fisheries products, and in 2005, the export increased by 12.1% from the previous year. Also the exports of these products to India are increasing, due to high economic growth and an increasing interest for Japanese foods and cuisines.

2.16 Japanese side stressed that it is essential to consider the following position regarding agriculture, forestry and fisheries industries and other industrial products with sensitivities. In particular, sensitivity of agriculture, forestry and fisheries products in terms of trade should be taken sufficiently into consideration.

- (1) It is important to secure the domestic agriculture, forestry and fisheries industries as a basis of food production, combined with appropriate trade in agriculture, forestry and fisheries. The importance of the multi-functionality of agriculture such as conservation of land,

2. Intergovernmental negotiations held under the auspices of UNCTAD resulted in the adoption of the Generalised System of Preferences (GSP) in 1971, whereby preferential tariff treatment is granted on a nonreciprocal and non-discriminatory basis by most developed countries to exports from developing countries, with most-favoured-nation (MFN) duties reduced or eliminated. The effective period for Japan's extension of GSP is 1 August 1971 to 31 March 2011.

fostering of water resources and development of favourable landscape is worth noting.

- (2) Regarding forestry, it is important to note that further activities to promote sustainable forest management should be discussed. Regarding fisheries, it is necessary to avoid the negative effect from the trade of fishery products upon the fishery resource management in order to secure sustainable utilization of fishery resources.
- (3) Japan expects further expansion of exports of Japanese agriculture and fisheries products to India in order to meet the demand of Indian consumers for Japan's food.
- (4) Some other industrial goods such as leather and foot wear are sensitive not just because of economic reasons but also for historical and social reasons.

2.17 The Indian side stressed that there is opportunity for Indian agricultural exports to Japan. India has a competitive edge in agricultural and food products and several items among Japan's agri imports are not produced locally but are imported from third countries. Accordingly, India is interested in expanding market access for such products.

2.18 The JSG noted that there is opportunity for Indian agricultural exports to Japan, and Japan's agricultural exports to India.

Suggestion:

2.19 Further tariff reduction and possible elimination, which is consistent with WTO provisions, will increase market access for both sides

in both agricultural and manufacturing sectors. It will cut the procurement costs for the manufacturing sector, which in turn would contribute to promoting Japanese investment in India, and will increase export of agricultural products to each other. Further economic cooperation between Japan and India should be mutually beneficial. A practical and flexible approach should be adopted, respecting sensitivities of both sides. Trade Rules, Disciplines and Procedures Customs Procedures

2.20 Both Japan and India have acceded to the World Customs Organisation's (WCO) revised Kyoto Convention,³ which aims at simplifying and harmonising customs procedures. It provides the core principles for modern, efficient and effective customs procedures in the 21st Century. In accordance with international standards, a uniform system of customs valuation, duties and documentation may be evolved across all ports of entry in both the countries.

2.21 India has made efforts over the past years to bring its customs procedures on par with best international practices backed by a computer based system. Since 1998, India has set up a Fast Track Scheme under which certain categories of importers have been allowed to pay duty and clear the imported goods on a self-assessment basis. India also operates a electronic data interchange (EDI) system under which qualified importers, identified on the basis of past performance, are given a waiver of inspection of imported cargo through a "green channel" facility. At present, about 75 percent of India's international trade is covered by 23 automated customs stations. Other initiatives, like the installation of the Interactive Voice Response System (IVRS) and touch screen

³ The Kyoto Convention, formally referred to as the International Convention on the Simplification and Harmonization of Customs Procedures, was revised by WCO in 1999 (Revised Kyoto Convention), which was entered into force in February 2006.

kiosks are designed to allow traders to ascertain the status of their documents. Yet, in the experience of Japanese shippers, some irritants remain, particularly in the area of documentation. The same point applies here as made before: such procedures apply to all imports, and have apparently not impeded significant growth in imports from other countries.

2.22 Japan also continues to make efforts to achieve the dual goals of proper Customs enforcement and prompt Customs clearance. These have included introduction of a single window system, updating the IT system and equipment, risk management system, pre-arrival examination system, and 24hours/7days office operation. With the single-window system, all the necessary import/export procedures and port-related procedures can now be completed in a single input and a single transmission. Drastic reductions in clearance time or dwell time of cargo are the results of such efforts.

2.23 Japan has also implemented various measures to enhance transparency of Customs procedures and make information system user-friendly. The website today, being consistently maintained and upgraded, contains the most updated information on the tariff rates, trade statistics, customs-related laws and regulations, customs procedures and administrative rules, etc. For specific inquiries such as product classification and origin criteria, traders can utilize inquiry points and advance ruling system set up in each regional customs office. An appeal system is also available as a relief measure against unfair administration of customs-related procedures.

2.24 Looking to the future, both countries face new challenges in customs administration and trade facilitation. These include reconciling greater security scanning with swift clearance of legitimate cargo, and enforcing complex rules of origin as the provisions of preferential trade agreements take effect. There is also always a risk

that customs procedures can be a cause of unnecessary delays and restrictions on trade. Every effort should be made to streamline customs procedures to minimize time required at borders.

Suggestions:

2.25 While improvement in customs administration is something that each country will pursue unilaterally, in conformity with international norms and codes, thought may be given to setting up a mechanism for facilitating to share experience of each side with the customs administration of the other, and developing a mechanism for resolving misunderstanding and disputes.

Inspection and Certification

2.26 Japan has a pre-certification system for imported products concerned with the Food Sanitation Law into Japan. Under this system the manufacturer/processor of the exporting country has to file an application through an official inspection agency of that country. In India the appropriate agency is the Export Inspection Council (EIC), the central inspection agency of the Government of India. EIC in turn transmits the applications to Japan's Ministry of Health, Labour and Welfare. In order to simplify and expedite the import procedures, the pre-certification system allows for confirmation and registration in advance of manufacturers and/or products of imported foods, etc., which are in compliance with the standards and specifications under the Food Sanitation Law. Registered products are exempted from inspections at the time of import for three years.

2.27 Also, Japan's MHLW has another system for simplifying and speeding up of the import procedures, where the inspection at the quarantine station for a cargo may be exempted, provided that the cargo is inspected by a public inspection

organization or laboratory in the exporting country prior to the export, and a report of the result from the inspection is attached to the cargo. Inspection results are accepted if they are carried out by designated public inspection organizations or laboratories which are recognized and registered in the list prepared by MHLW. India has 17 official agencies and laboratories already designated in the list, which includes regional Export Inspection Agencies (Mumbai, Kochi, Kolkata, Delhi, Chennai). Indian side stated that if EIC's system of export certification were to be similarly recognised by Japan, this would make the procedure even smoother. Indian side requested that the EIC be recognized as a public inspection organization by the Japanese authorities. The JSG recommends that India's requests for registration of EIC be considered favourably according to appropriate applications and procedures.

2.28 The JSG recommends that both the countries will exchange information and explore ways of increased cooperation on all inspection and precertification issues and procedures relating to export of food-products.

Non-Tariff Issues

2.29 The Indian exports to Japan are affected by a number of issues which include SPS/TBT measures, and high transaction costs due to cultural and language differences among others. The relatively low level of trade and insufficient publicity in Japan to the rapid changes in Indian capacity and competitiveness means that outdated impressions of the quality of Indian products and the reliability of Indian suppliers continue to persist. Poor air links and connectivity and visa problems have also been mentioned.

2.30 Large Japanese international companies have long experience in India's market and investment conditions. But there are a large number of SMEs in Japan who have the requisite

technology and financial strength, and are exploring opportunities to relocate to combat the rising cost of manufacturing at home and also to take advantage of the growing markets in neighboring countries. These SMEs do not have much knowledge about the Indian market conditions, manufacturing base, availability of technically qualified manpower in India at competitive rates, taxation laws, judicial system, success stories of Japanese companies like Suzuki, Sony, etc in India. As a result these Japanese SMEs have not so far considered investments and re-location of their manufacturing base to India.

Suggestion:

2.31 JSG recommends setting up of an India-Japan Business Forum within an agreed time frame by JETRO for providing such information to Japanese enterprises especially SMEs on investment climate and opportunities in India in local language. It can also facilitate mediation and formation of joint ventures and partnerships between Japanese and Indian enterprises and development of business contacts between the two countries.

In respect of Registration and Documentation in English, JSG also recommends that Japan endeavour to make available in English such documents and questionnaires relating to relevant laws, rules and regulations including SPS and TBT measures, specifically for registration, anti-dumping and other measures identified in this report as are not available presently in English. Standards should be improved especially in the compatibility of health standards and certification practices.

SPS and TBT

2.32 SPS and TBT are WTO-sanctioned agreements. Standards regarding SPS measures are to be set by international bodies such as Codex for foods, through a consultative process where

every member country and other interested parties get a chance to participate in the standard setting process. All WTO members are expected to accept such standards and shall base their SPS measures on international standards, guidelines or recommendations. However, in case a country wishes to set higher standards, it is permitted to do so if there is scientific justification.

Suggestion:

2.33 The JSG recommends that, while continuing cooperation through current mechanism, both countries explore the possibility of improving the current mechanism or replacing it with a new mechanism, as a way to promote further cooperation, including exchange of information and, if necessary, other measures on SPS related issues. For this purpose, the JSG also recommends that a joint consultation group of government officials will be set up within a reasonable time-frame.

Visa Facilities

2.34 Under the current Japanese system, APEC member nationals can get visa maximum for five years, and non-APEC member Asian nationals, including Indian nationals, can get visa maximum for three years with multiple entry. Furthermore an Indian company/individual traveling to Japan must get an invitation from Japanese counterpart except in some cases. No invitation is required if a Japanese has to come to India. Indian professionals and Indian businessmen, including employees of IT companies, usually get visas for a maximum of three years. By contrast, Indians get 10 year visas from the United States and five year visas from the UK. Indian side sought that issue of visas to Indian businessmen should be facilitated.

Constraints faced by Selected Indian Sectors

2.35 Japan is the world's second largest

pharmaceuticals market with a turnover of about US\$ 52 billion and imports amounting to US\$ 6.2 billion. The Indian exporters face a number of difficulties while exporting "Generic Formulations". The Indian manufacturers reported that they faced great difficulty in product registration in Japan largely because the product registration guidelines are available only in Japanese language. The Indian manufactures lose in terms of time and money to get the translation done in order to register their products. The Japanese side, however, noted that the requirements involved in product registration are applied not just to the Indian manufacturers, but equally to all domestic and other foreign applicants.

2.36 The Indian pharmaceutical companies generally comply with "Committee for Proprietary Medical Products" (CPMP) guidelines that are followed in other markets such as the EU. The CPMP guidelines require the manufacturers to provide the data on two batches of the pharmaceutical products in some cases, and three batches in others. Indian side stated that Japan asks the data to be provided for three batches - additional data on one more batch, which leads to extra investment and time. Japanese side, however, stated that it follows three batch requirement as part of the ICH Harmonised Tripartite Guideline, which was made by Japan, US, and EU, and that Japan would not apply stricter testing criteria for Indian product than from other countries.

2.37 Indian producers of essential oils and fragrances have reported strong resistance they have faced in the Japanese market due to strict approval requirements for chemical imports. Imports of cosmetics and beauty products into Japan require obtaining a license from the Ministry of Health and Welfare. The Ministry uses a pre-defined list of items that can be used as ingredients in the production of imported products. Given the large market for cosmetics in

Japan and India's strength in this area, efforts to access the market in Japan by Indian companies would be encouraged.

Constraints faced regarding Indian high-tech imports from Japan

2.38 The JSG notes that the present volume of high technology trade between India and Japan is rather miniscule, especially considering the core competence the two countries have in knowledge-based and technology-driven economy and their determination to develop a strategic relationship. The JSG suggests that the governments of India and Japan actively explore ways and means to utilize the potential and synergies, and boost high technology trade.

Trade Remedies

2.39 Both sides agreed on the importance of making efforts to prevent the abuse of anti-dumping measures and that they maintain mutual cooperation to achieve this goal in the WTO negotiations.

Rules of Origin

2.40 Preferential Rules of Origin is essential part of any PTA (Preferential Trade Agreement)/FTA/CECA between the Parties to these Agreements to facilitate trade between them and to prevent any possibility of trade circumvention from the Non-Parties. Such rules shall not impede trade. The Rules of Origin should be clear, transparent, user-friendly and easy to administer.

Other Issues

Exchange Rate Risk

2.41 Japanese companies prefer to have price quotes for imports in Japanese Yen rather than in US dollar or Euros. In order to alleviate the

possible impact from the volatilities in Yen-Rupee exchange rates on the Indian industries, both authorities shall encourage greater use of hedging measures in Yen-Rupee transactions.

IPR

2.42 The Japanese side requests improvement of insufficient protection of intellectual property rights in India. According to them, despite the introduction of the material patent system for pharmaceutical, food and chemical products in accordance with the TRIPs, there exist problems such as diffusion of infringing goods entering in India. Adequate and effective protection and enforcement of IPR are essential for fair economic activities by the industries of both countries.

Improved Infrastructure Links

2.43 JSG feels that increased frequency of direct shipping routes and reduced costs of transportation between the two countries need consideration. Direct banking links and bilateral confirmation of L/Cs by EXIM banks of India and Japan and other issues of cooperation in this field may be strengthened.

CHAPTER 3: INDIA AND JAPAN: TRADE AND INVESTMENT IN THE SERVICES SECTOR

Context

3.1 The services sector is an important part of both the Japanese and Indian economies. It contributes over 50 per cent of GDP in India and above two thirds in Japan. Trade in services confers benefits not only to the services sector itself, but to both the primary and secondary production sectors as well. Expanded services trade accordingly stands to improve the living standards and international competitiveness of both India and Japan.

3.2 There are severe data difficulties in documenting trade in services in a fashion that is consistent with the negotiating framework of the WTO. On the basis of presentations made by the two sides, though, it seems obvious that India is an increasingly successful provider of business services to a broad range of developed countries, while Japan is importing such services from other nations, notably China. Japan is a significant global exporter of services, often linked with overseas investment, yet the presence of Japanese services and firms in the Indian market is much less than in other parts of Asia. Demographic trends in India and Japan also suggest significant potential complementarities between the two services sectors well into the future.

3.3 Accordingly, the challenge facing the Joint Study Group is to identify the bilateral barriers that have prevented the two countries from expressing their respective comparative advantage in each other's markets, and to do so in an environment where the requisite data are presently unavailable. It could well be that the barriers have not only to do with market access and regulatory restrictions but broader cultural issues such as language and education. Such issues, covered elsewhere in this report, could, over time, make a major difference to growth of bilateral services trade. Equally, more intense interaction in the services area is more likely to deepen the human bonds between the two nations. For all these reasons, expanding trade in services deserves at least equivalent, and perhaps even greater, priority than enhanced trade in goods.

3.4 It is also the case that, despite the advances made within the GATS, multilateral liberalisation of trade in services has proven to be even more difficult than trade in goods. In addition the present Joint Study Group marks the first engagement of this kind between India and a major OECD economy. The attempt of the JSG has been to try to identify possible areas where improved bilateral market access on a "GATS-plus" basis could assist in improving the efficiency of the domestic sector in each country in a significant way.

Bilateral trade and investment in services

3.5 Japan has interests in both outward and inward foreign direct investment in services. While Japan is a major investor in many countries around the world, a growing chunk of its inward FDI has taken place in service sectors as against in manufacturing. The share of inward FDI in the manufacturing sector declined from 64 per cent in 1990 to 25 per cent in 2000.¹ The corresponding share of FDI in service-sectors has simultaneously been growing. Sectors like health-care, telecommunications and financial services are expected to attract larger inward FDI in Japan.

3.6 Complementarities in the two countries' GDP structures and the demographic profiles are immediately obvious. Japan needs services across a variety of sectors. India needs to be alive to this opportunity, being in a position to provide labour-intensive as well as skilled services to Japan. Not only that, it has the opportunity to assist Japan through its comparative advantage in the provision of high-quality, low-cost outsourcing options.

1 "Japan Warming to Inward FDI", Marubeni Economic Reports, 2002.

Table 1. Exports of Commercial Services

Year	\$ million			Share (percent)		Rank	
	Japan	India	World	Japan	India	Japan	India
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1997	68137	8926	132570	5.14	0.67	6	31
1998	61795	11067	134410	4.60	0.82	6	26
1999	60313	14006	139240	4.33	1.01	6	25
2000	68303	17521	147940	4.62	1.18	5	22
2001	63671	20820	148610	4.28	1.40	5	19
2002	64909	23300	158640	4.09	1.47	5	12
2003	70624	25043	179650	3.93	1.39	9	21

Source: WTO, International Trade Statistics (various years)

Table 2. Share of Services in Total Exports (percent)

Year	Japan	India	World
(1)	(2)	(3)	(4)
1997	13.9	20.3	19.2
1998	13.7	24.9	19.6
1999	12.6	28.2	19.6
2000	12.5	29.4	18.6
2001	13.6	32.6	19.3
2002	13.5	32.3	19.6
2003	13.6	30.4	19.5

Source: WTO, International Trade Statistics (various years)

Perceived Comparative Advantage in Trade in Services

3.7 One of the important tasks before the Joint Study Group (JSG) is to identify sectors / categories in which India and Japan visualise potential for trade, and the most essential steps to realise that potential. The fact that good past data on bilateral trade in services are not available makes the required analysis more difficult. Improving the data available according to international definitions indicated above is an important priority.

3.8 In the absence of reliable data the JSG referred to an examination of offers made by each country as part of the Doha round in order to

analyse bilateral "perceived comparative advantage" (PCA). Japan submitted its Revised Offer on services to the Council for Trade in Services of the WTO in June 2005 (TN/S/O/JPN/Rev.1). India submitted its Revised Offer in August 2005 (TN/S/O/IND/Rev.1). Both countries have liberalised their earlier offers conditional on other WTO Members making substantive and meaningful offers in return.

3.9 Apart from putting up revised offers for liberalising trade in services within the multilateral trade regime under GATS, India and Japan have also made bilateral requests to each other. These requests are indicators of areas in which the two countries propose to increase their bilateral exports.

Objectives, Opportunities and Linkages

3.10 Services provide the connections, coordination and support for the manufacturing process and often generate demand for new industrial products. Service exports in turn are often stimulated by FDI in services, although in general some initial trade is probably a precondition for investment. With Indian firms also increasingly investing overseas, both countries have an interest in ensuring national treatment and transparency and stability of regulations affecting trade and investment.

3.11 India's progress in this regard is indicated by the fact that India is rated among the top two countries with most positive investor outlook, likely first time investments, and most preferred offshore investment locations for business processing functions and IT services [A T Kearney, October 2004]. Compared to other large emerging markets, India is cited as one of the most attractive FDI destinations in the short-term (next three years) and well into the future, beating markets like Brazil, Mexico and Poland for medium-term attractiveness ten years out.

3.12 In the discussions of the JSG, the Japanese side indicated its strong interest in manufacturing-related services, consumer-related services, and other supporting services. These services include financial services (banking, insurance, venture capital, etc), infrastructure-linked services (construction, engineering, architecture, etc), legal and accounting services, telecommunication services, advertisement services, transport services, tourism services. The opportunities in these sectors are sketched in the discussion below.

3.13 Japan is especially interested in the current Indian discussion on the removal of restrictions in distribution services (wholesale and retail). Currently investment in the retail sector (sales company by manufactures, supermarkets,

convenience stores, etc), is found to be extremely difficult. Relaxation and/or removal of foreign capital regulations in the distribution sector will contribute to the increase of investment in that sector and therefore, will result in job creation and expansion of Indian export destinations through the development of domestic retailing system in India. In addition, the Japanese side stressed the importance of the elimination of the no-objection requirement (the so-called Press Note 18) which is one of the major barriers for Japanese service suppliers to operate in India. It was clarified by the Indian side that this requirement did not apply to new investments and that the recent amendment to the Press Note 18 had made it difficult for an Indian partner to oppose an investment by a Japanese partner.

3.14 Global investors view India as the world's business process and IT services provider with longer-term market potential. India leads in IT, business processing and R&D investments. Investors favour India for highly educated workforce, management talent, rule of law, transparency, cultural affinity, and regulatory environment as highly favourable factors.

3.15 The temporary movement of natural persons (including mode 4) enables business to have the highest productivity at a competitive cost. India, with its vast pool of skilled service providers would be ideally placed to provide services across a range of sectors. India would therefore like Japan to facilitate the movement of such service providers across borders. This can be done by removing barriers such as economic needs tests and disciplining domestic regulations, especially in the area of qualification requirements and procedures.

Principles for Expanding Services Trade

3.16 In view of the enormous potential in services trade between India and Japan both Governments need to take substantial measures

to remove barriers to trade in services. Keeping this in view, the JSG recommends that future discussions respect the following broad four principles:

- a) All services sectors and all modes of supply in GATS should be covered;
- b) Commitments by both countries should cover a wide range of service sectors (both horizontal and sectoral);
- c) Special emphasis shall be given to the areas listed below, such as software and IT-related services, financial services, telecommunication services, construction services and transportation services; and
- d) Services liberalisation should be designed to enhance the competitiveness of each economy.

Sectors of Interest and Suggestions

3.17 JSG considers the following sectors should be particularly explored as potential areas where India-Japan bilateral trade in services could be particularly strengthened through enhanced cooperation and improved market access. Freer movement and the mutual recognition of qualifications and experience of professionals (through mutual recognition agreements -MRAs) as well as exchanges of experts and provision of training and educational opportunities would supplement both Governments' efforts to improve access to the other country's market. In this regard, special care should be taken of the sensitivity involved in the public policy needs in immigration, employment and public health and safety.

Information Technology and Communication

3.18 Information technology (IT) and software services provide crucial linkages for trade in services. Both India and Japan have strong ICT sectors and India's software skills and Japan's hardware expertise constitute strong mutual

complements. India's exports of software services at above US\$ 17 billion in 2004-05 constituted 44 per cent of global outsourcing. India's offshore penetration of *Fortune 500* increased from 300 companies in 2003 to 400 in 2004. India has increasing expertise in more sophisticated applications such as financial institutions and stock exchanges which could assist Japan as its financial market recovers its international attractiveness. Japan has a strong comparative advantage in production and exports of computers and IT hardware. The current cooperation between Japan and India in the IT field, however, still remains at a low profile, relative to its great potential.

3.19 India permits upto 74 per cent foreign equity investment for basic, cellular, value-added services and global mobile personal communications by satellite. Foreign investment up to 100 per cent is allowed for the ISPs not providing gateways (74 per cent for ISPs providing gateways), infrastructure providers providing dark fibre, electronic mail and voice mail. There is little cooperation between Japan and India in ITES (back-office) services which is growing even more rapidly than IT.

3.20 Japan and India have made an arrangement for mutual recognition of Information Technology Engineers' Examinations. This enables smoother cross-border movement of both business and personnel and more active utilization of highly qualified technical personnel in both countries, since the arrangement makes it easier to assess the technical skill levels of the individual. Besides, the issue of multiple-entry visas valid for three years to Indian IT specialists also contributes to Indo-Japanese IT promotion and cooperation.

Suggestions:

3.21 Both countries need to deepen bilateral cooperation by using IT-enabled services in

sectors like banking and finance, research and development and creating new products with Japanese hardware and Indian software. Possibilities of business process outsourcing (BPO) to Indian service providers will help to make Japanese companies more competitive; effective use of information technology has been a significant element in the sustained growth of the U.S. economy for example. Further efforts for better cultural and linguistic understanding would facilitate such trade. The issue of movement of service providers needs to be eased through easy and business-friendly visa rules. The potential of bilateral trade in ICT can be exploited fully through different modes of transaction such as cross-border trade, commercial presence and TMNP. Exchanges among industries, academia and governments between Japan and India such as the recent ICT forum will be helpful to facilitate such transactions by creating mutual business opportunities.

Architectural, Engineering and Construction Services

3.22 India has first-rate manpower trained in architectural and engineering services. It includes architects and civil engineers required for construction work. Japan has world-leading technology and experience in construction and related engineering industry. Japan also has first-rate manpower trained in architectural, engineering and other related services. The two countries seem to have immense potential for bilateral partnership.

3.23 India has estimated that it needs foreign direct investment of the order of US\$ 150 billion to develop physical infrastructure over the next five years. Japanese service providers can contribute to the Indian market with their expertise. Under the current laws and regulations in India, up to 100 per cent FDI is permitted under the automatic route for building airports (though FDI

beyond 74 per cent requires government approval) and townships, housing, built-up infrastructure and construction development projects (subject to conditions and guidelines laid out in FDI Policy and Procedures, 2005).

3.24 Indian laws and regulations are not well-understood by Japanese firms service providers and consequently the Japanese presence in this field has been relatively limited although there remains considerable interest in the Indian market. In December 2005, the Ministry of Land, Infrastructure and Transport of the Japanese Government, in collaboration of CIDC of India, held "Japan-India Construction Industry Conference" for the first time in order to introduce world-leading Japanese construction companies and to establish collaboration between the industries of the two countries.

Suggestions:

3.25 Enhanced access by the Japanese service providers to the Indian market would allow India to benefit from the experience and capability that these firms possess. Therefore, the JSG suggests that India and Japan should keep and enhance collaborative relationships through the activities such as the conference mentioned above. Both sides agreed to exchange information of laws and regulations of construction, architectural, engineering and other related services and to examine the possibility of MRA in the future.

Audio-visual and Entertainment Services

3.26 India is the third largest TV market after China and the United States. The total revenue earned by the Indian entertainment industry was US\$ 4.3 billion in India in 2004. This is expected to grow by more than 21 per cent per annum during the next four years and touch US\$ 9.4 billion in 2008. Such growth is propelled mainly by a rapid change in technology from cable to direct-to-home (DTH) TV services, use of digital

technology for film distribution in semi urban and rural markets and the development of FM radio as a new medium.

3.27 India permits 100 per cent FDI through the automatic route with no entry-level conditions for film production, TV software production, exhibition and distribution. In the case of satellite broadcasting, all TV channels, irrespective of national or foreign ownership, are permitted to up-link from India provided they undertake to comply with the broadcast code.

Suggestions:

3.28 Despite language and cultural barriers, the two countries have much to gain from trade in audio-visual and entertainment services. India can learn from Japanese skills and technology and also use the audio-visual media to sell entertainment services to the Japanese as well as Indian audience in Japan. Screening of Indian cinema dubbed or subtitled in Japanese in Japan and Japanese cinema dubbed or subtitled in Hindi/English in India should be encouraged both through the trade route and through various channels including the Japan Foundation and the Indian Council of Cultural Relations.

Health-care Services

3.29 Health-care is an important sector for every economy. Health-care services may be divided into two broad categories, namely professional services provided by medical and paramedical staff including doctors, nurses, midwives and physiotherapists; and hospital services provided by the physical infrastructure for inpatient care. While the services of medical professional staff are mobile, the hospital services are immobile.

3.30 There is immense opportunity for private health care providers in India. Both India and Japan have mutually complementary health-care

endowments. India has moved forward on private entry into the health-care industry during the last two decades. It would need new private domestic and foreign investments in infrastructure as well as technology. Japan also has an advanced medical equipment manufacturing industry. The growing health-care sector provides substantial opportunity for absorbing Japanese investments. As a complement, India has a large number of well-trained medical and paramedical professionals who have established their professional expertise in India and many parts of the world.

Suggestions:

3.31 The JSG suggests that an expert committee from India and Japan look further into the potential of mutual cooperation in the area of health-care services. While Japan might be interested in commercial investments in health care infrastructure in India, India would look forward to TMNP opening up by Japan which would make efficient and cost-efficient medical and paramedical services available to Japan.

Financial Services

3.32 Enhanced bilateral interaction on financial services would facilitate comprehensive exploitation of trade potential between India and Japan. India has opened up many of its financial services to FDI. The Insurance Regulatory and Development Authority (IRDA) opened up the state monopoly of domestic insurance market to private companies, including foreign companies, in 1999. The IRDA issued insurance licenses to fifteen private insurance companies in joint ventures with foreign insurance companies in December 2001. A Japanese insurance company has already entered the Indian private insurance market through a joint venture with an Indian company.

3.33 Regulations on foreign and direct investment in the banking sector were liberalised in March 2001. Foreign investment of up to 74 per cent, including all sources, is now permitted in the private banking sector through the automatic route. FDI and portfolio investment in nationalised banks are subject to overall statutory limits of 20 per cent.

3.34 In respect of non-bank financial institution (NBFCs) in India, 19 activity areas have been opened for FDI. These include portfolio management services, stock broking, credit rating agencies, housing finance and rural credit among others. Up to 100 per cent investment is permitted although the minimum capitalisation is regulated depending on the equity ratio.

3.35 In the case of Japan, many foreign-owned financial institutions withdrew from the Japanese market after the 1997 financial crisis. In some instances, their Japanese offices were integrated following international mega-mergers. However, foreign-owned financial institutions have started entering again since the late nineties. This can be attributed to financial liberalisation and improved growth expectations.

3.36 Japanese banks based in India primarily focus on supporting Japanese companies present there. We see the following vicious circle; Japanese banks are not motivated to enter India without a critical mass of Japanese companies. On the other hand, Japanese companies including the manufacturing sector are discouraged from making investment in India due to the very small presence of the Japanese financial sector there.

3.37 In order to promote Japanese investment in India, an enlarged presence of the Japanese financial sector in India is crucial, and some suggestions to stimulate this process are detailed below. Japan notes the CECA between India and Singapore which became effective in August 2005. Under the CECA, three commercial banks

from Singapore now have free access through the expansion of branch networks or through the establishment of 100%-owned subsidiaries. Singapore banks are permitted to invest in private sector banks up to 74% through FDI. Through bilateral negotiations, India and Japan could explore a high level of liberalisation in financial services.

3.38 Other constraints in the financial services area which are currently perceived by Japanese institutions include the following:

- a. Japan attaches importance to commercial presence commitments, in particular, the abolition of limitations on foreign equity participation and forms of commercial presence, and the right of establishment.
- b. While the public monopoly in insurance has been eliminated, the limitation of 26% on foreign equity participation in insurance is felt to be restrictive compared to other Asian countries. Also, foreign insurance companies are not allowed to establish direct branches. Changes in both these regulations would facilitate a greater Japanese presence in the sector.
- c. In India, reinsurance risks in principle shall be retained by domestic re-insurers, and only risks which cannot be covered by domestic reinsurers may be ceded abroad. In addition, foreign insurers are not allowed to enter reinsurance market in India. Japanese insurance industry is interested in reinsurance services, Japan would like to request India to consider relaxing these restrictions.
- d. Foreign investment of up to 74% is currently permitted in the private banking sector. However, a Road map for Presence of Foreign Banks in India ("the Road map") was published by the RBI on 28 February 2005. According to the Road map, foreign

banks may operate a wholly-owned subsidiary. The Japanese side welcomed the clarification of policy that the Road map represents.

- e. Japanese banks operate their business in India through direct branches. There are some regulations which place burden on the operations of the Japanese banks, such as the lending limit for individual companies, discriminatory tax measures, restrictions on borrowing foreign banks from their head offices, and lending requirements for the priority sectors. Since the banking sector is the basis of the overall economy, the improvement of business environment in the banking sector would contribute to attracting foreign direct investment. Therefore, Japan is interested in not only the entry into the Indian market of Japanese financial institutions, but also the relaxation of the above restrictive measures in the post-entry operations.
- f. Japan is interested in the cross-border supply (mode 1 & 2) of reinsurance and MAT (Maritime Aviation Transportation) insurance.

Suggestions:

3.39 The JSG suggests that India and Japan engage themselves bilaterally to augment their financial markets interaction. Each country should make efforts to make adequate presence of service providers in other country's financial sector. The reciprocal presence of banking, non-banking and insurance services of India and Japan would be required by and for trade in goods and other services. Such services should also be encouraged concomitantly to subserve the interests of growing trade in goods and other services. In particular, both parties could collaborate in the field of financial services with a view to promoting regulatory co-operation and share related

experiences to facilitate the development of the financial market and improve the financial market infrastructure. Recognising that improving the efficiency and competitiveness of the financial markets of the two countries is of great significance in creating environment for mutual cooperation and economic development, it is also recommended that both countries give favourable consideration to the financial guarantee of the state run banks such as EXIM banks for business activities between the two countries, endeavour not to apply any restrictions for transfer of earnings; and work towards meaningful commitments for commercial presence in financial services. It is recommended that the Financial Services authorities of both sides enter into mutual consultations with a view to increasing cooperation in this area.

Tourism and Travel Related Services

3.40 Tourism in India is another area where both the need and the scope for Japanese investment are very large. Tourism and hospitality infrastructure is open to 100% FDI on the automatic route. Japanese investments can focus on such internationally renowned tourism circuits in India's as the Golden Triangle, the Golf circuits, the sub-Himalayan tourist circuits in North India and the sea beach circuits in South India. These can be value-added with optimal connections with places of Buddhist interests like Bodh Gaya, Sarnath, Sanchi, Ajanta and Ellora.

Secondly, total Japanese tourist arrival in India was about 68,000 in 2003, which was less than 3 per cent of the overall foreign tourist arrival in India. JSG is of the view that there is a tremendous scope for activities aimed at increase in tourist arrivals from Japan.

3.41 Japan also offers a number of tourist attractions for Indian tourists. The increasing disposable incomes of Indian citizens are propelling them out of their own country for spending

vacations as tourists. The figures for Indian outbound tourists have been growing exponentially and outnumber inbound tourists. However, even as a substantial share of Indian outbound market is for destinations in South East Asia, Japan has not yet become a popular or accessible destination due to a variety of reasons. Increased two-way visits by tourists would facilitate better understanding of each other's society and culture. This would also facilitate people-to-people contacts and the two-way tourism envisioned in the Joint Statement of the two Prime Ministers of April 2005. The Study Mission due from Government of Japan in 2005 to explore strengthening of tourism between India and Japan, as stated in the said Joint Statement, would throw up concrete, actionable steps in this direction.

Suggestions:

3.42 The JSG suggests that the two governments should encourage travel and tourism agencies of the two countries to interact more intensively. India and Japan should consider adopting a more facilitated regime in favour of granting more Visas to genuine tourists. Bilateral tourism, along with increasing business potential, would also accelerate demand for learning of the Japanese language in India and of English and other Indian languages in Japan.

Maritime Services

3.43 India and Japan were among a group of developed and developing WTO member countries, which submitted a *joint statement* on maritime transport services in March 2003 to the GATS Council of Trade in Services (TN/S/W11). Maritime transport is an important facilitator of world trade. Four-fifths of world trade by volume is carried by sea. Maritime trade is continuing to expand at about 9 per cent for containerised cargoes annually. More than purely a facilitator, maritime transport is also a significant exportable

service in many countries, making direct contributions to national GDP. In view of its importance, binding substantive liberalisation of the maritime transport service sector is crucial to ensuring the overall success of this current round of trade negotiations.

3.44 The *joint statement* noted that access to a global network of reliable, efficient and cost effective maritime transport services is beneficial to all Members, including developing and least developed Members whose trade in price-sensitive goods often comprises a significant component of their economies. Restrictions on maritime transport services can adversely affect a number of economic factors, including export and import prices, and the location of foreign direct investment. Liberalisation is the key to reducing maritime transport costs, providing greater choices to shippers, and ensuring fast and efficient deliveries. Liberalisation in this sector will also encourage foreign investment, which will not only enhance employment opportunities within the sector itself, but will also promote the growth of other related service sectors. The multiplier effect of the maritime transport service sector extends to ship repair/maintenance, ship classification, distribution, professional services, communications, banking and insurance services, etc.

3.45 The *joint statement* called for the active participation of all Members in the on-going negotiations with a view to achieving meaningful liberalisation of the maritime transport service sector, consistent with sustainable development, security and safety, and thereby securing broad coverage of this sector in the multilateral trading system and the GATS framework.

3.46 The liberalization of mode 1 is important for the overall liberalisation of Maritime Transport Services in particular. In mode 1, India has lots of regulations, therefore the Japanese side

requested India to review the reservation for national flag vessels, reservation of government owned / controlled cargo and restriction on LNG.

Suggestions:

3.47 The JSG recommends that India and Japan should make decisive use of their commitments stated in the Joint Statement of April 2005 after the visit of Japanese Prime Minister Koizumi to India, and move forward on a bilateral basis to increase each other's participation in maritime transport services.

Other Business Services

3.48 With increasing bilateral cooperation in trade and investment, other business services including accounting, R&D, management consulting, etc. would increasingly become tradable between India and Japan. Both countries have deep pools of qualified professionals in these services.

Suggestions:

3.49 The JSG suggests that India and Japan should discuss possibilities of freer trade in these services. Bilateral cooperation in these areas would facilitate bilateral trade and investment in many other sectors of mutual interest.

Temporary Movement of Natural persons

3.50 Japan and India acknowledge that enhancing the movement of natural persons is of great importance for the globalisation of economic activities, technology development and the promotion of services provided by highly skilled professionals and would contribute to strengthening economic ties between two countries. Japan is prepared to accept foreign workers in technical or professional fields including in IT and education, while India has interests in TMNP for such

categories as contractual service suppliers and independent professionals, delinked from commercial presence.

3.51 Population in Japan will reach its peak in 2006 and then start declining. Without further integrating aged persons, youth and women into workforce, this might lead to a sharp increase in the dependency ratio and a corresponding sharp decline in the working-age population. In contrast, India is a country that has a growing work-age population. It was therefore suggested that both sides may study appropriate ways and means to realize temporary movement of professionals in some sectors between Indian and Japan to facilitate growth in Japan's productivity.

3.52 As for mutual recognition of qualifications and certificates, there usually exist license schemes in professional services that deal with people's physical and mental health such as medical, welfare and health care services. It is recognised by both sides that licensing and regulatory regimes of the country where the service is practiced need to be respected.

Suggestions:

3.53 The JSG suggests that sector specific discussion would be needed when considering possibilities of TMNP, taking into account difficulties and sensitivities in each service sector.

Constraints and Impediments

3.54 Despite ongoing liberalisation of trade in goods and investment barriers by India and Japan during the last decade, the barriers to trade in services still exist in various forms. These include domestic laws and regulations, impediments to producers and consumers to interact across borders, movement of skilled persons, etc.

3.55 Language is a major barrier and restricts easy and fluent interaction between the business representatives of India and Japan.

3.56 There is a lack of knowledge, awareness and information about each other's markets. It is further complicated by the lack of knowledge of any existing data on bilateral trade in services.

3.57 Some other impediments include:

- a. burdensome registration and establishment procedures for companies in India and Japan;
- b. counter-guarantees required by the banks;
- c. restrictions on establishment of branches of foreign service providing companies;
- d. screen quotas in the entertainment industry in India;
- e. restrictions on the movement of natural persons through Visa restrictions, qualification recognition for professionals, licensing and certification requirements for intra-company transferees;
- f. restrictions on banks and foreign exchange regulations; and
- g. restrictions on foreign vessels

Early-Harvest Fast-Track Priority Steps

3.58 JSG recommends prioritizing on working out some of the facilitation steps so as to make the trade in services between India and Japan touch significant levels in the near future. Such steps could include:

- a. Establishing representative contact offices of Indo-Japan Coalition of Service Traders in New Delhi and Tokyo;
- b. Facilitating bilateral academic exchanges through short and medium-term language courses in India and induction of English medium Indian teachers in Japanese educational institutions;
- c. Facilitating Visa procedures on the movement of tourist, business, and student travellers;

- d. Enhancing cultural exchange to increase the profile and visibility of the two countries among their respective peoples through increased activities of the Japan Foundation in India and the ICCR in Japan; through Mixed Cultural Commissions; establishment of a Japan Cultural Centre in New Delhi and an Indian Cultural Centre in Tokyo. Reciprocal screening of cinema with socio-economic and cultural contents would also enhance appreciation of cultures by respective peoples.

CHAPTER 4: INVESTMENT

Introduction

4.1 Investment, particularly gross fixed capital formation, is critical for improving productivity and enhancing growth and employment in any economy. Traditionally, domestic savings fall short of the enormous need for capital formation in a developing economy. Foreign Direct Investment assists in bridging the gap between domestic savings and capital formation besides encouraging technology up-gradation and inducting international best practices. The investment climate globally has witnessed a huge resurgence with significant participation by Asian countries in the globalisation process.

Inward FDI Policy

India

4.2 The Government of India has put in place a liberal, transparent investment regime and an investor-friendly FDI policy wherein FDI up to 100 percent is allowed under automatic route for most of the sectors. FDI is prohibited for Retail trade, Atomic energy, Lottery business, Gambling and betting, Housing and real-estate business except construction development projects and development of integrated townships, and Agriculture plantations. Caps on foreign equity remain in a few sectors such as Domestic airlines,

Broadcasting, Telecommunication, Defence production, etc. Details of sectors prohibited and sectors attracting equity caps are at Annex-I.

4.3 Entry route for FDI - Most of the sectors are open to FDI under the automatic route which only requires notification to the Regional office concerned of the Reserve Bank of India (RBI) within thirty days of the receipt of inward remittance and file the required documents with that office within 30 days of issue of shares to foreign investors.

4.4 Under the FDI policy, prior Government approval for FDI is required in the following cases:

- i) manufacture of cigars & cigarettes; and defence items; and for FDI beyond 24% for manufacture of items reserved for small-scale industries
- ii) where the foreign collaborator had an existing venture or technology transfer/trademark agreement; and
- iii) where the sectoral policy governing the activities provide for either equity limit and/or prior Government approval or where FDI is prohibited

Proposals involving FDI requiring prior Government approval are considered by the Foreign Investment Promotion Board (FIPB) in a time-bound manner. FDI is subject to the applicable laws and regulations.

Services:

4.5 Services sectors where FDI is permitted up to 100% under the automatic route include Advertising and Films; Computer related Services; R&D services; Construction and related Engineering services; Health related services; Road transport services; Pollution Control & Management Services; Maritime transport services. Services sectors which attract either an equity cap or where prior Government approval

is required include Broadcasting; Establishment and operation of satellites; trading; telecommunication; Courier services; and domestic airlines.

Industry:

4.6 Most of the manufacturing activities are open to FDI up to 100% on the automatic route except those where an industrial license is required in terms of the Industries (Development & Regulation) Act, 1951.

Foreign Technology Collaboration Policy

4.7 India's policy on foreign technology transfer, included in the FDI policy, is liberal and freely permits technology collaborations. Lump-sum payments not exceeding US\$2 million and royalty at the rate of 5 percent on domestic sales and 8 percent on exports are allowed under the automatic route. There are no limits on the duration of royalty payments. Payment of royalty up to 2% on exports and 1% on domestic sales is also allowed under the automatic route for use of trademark and brand name of the foreign collaborator without technology transfer. Beyond the limits allowed under the automatic route, approval of the Government is required.

Japan

4.8 In Japan, by and large, all sectors are open to foreign investors. However, there are a few exceptional sectors which are open only to Japanese such as broadcasting industry. Prior notification to Finance Minister and Relevant Ministers through Bank of Japan is required for inward investment in some sectors at least three months ahead of contract or implementation. When prior notification is submitted, the documents will be circulated to relevant authorities in the Japanese Government. Unless there is any comment from the authorities concerned within 30 days after the submission of prior notification, the investment can proceed. If there is any

objection or a request for alternations in the relevant plans, reasons for them would be explained to the investor concerned, while the relevant procedures are not stipulated in the legislation. In the sectors where prior notification is not required, the investors are asked to submit ex post-facto reporting. Details of sectors which have restrictions and prior notification obligation are attached as Annex-II.

4.9 Japanese foreign technical collaboration policy is liberal with the exceptions of "designated technology" for aircraft, weapon, gunpowder, nuclear energy and space development. Prior notification to Finance Minister and Relevant Ministers through Bank of Japan is required for collaboration relating to these technologies at least three months ahead of conclusion or change of contract.

Outward Investment Policy

India

4.10 Policy on Indian investment overseas has been progressively liberalized since its initiation in 1992. Basic rationale for opening up the regime of Indian investments overseas has been the need to provide Indian industry access to new markets and technologies with a view to increasing their competitiveness globally and help the country's export efforts. The policy has been substantially liberalized over the past three years and investments are allowed on the automatic route as under:

- a. Automatic Route: Indian corporates/ registered partnership firms are allowed to invest in entities abroad up to 200% of their net worth in a year under automatic route, i.e., no approval is required and only post facto intimation to RBI is sufficient.
- b. RBI Approval Route: Proposals not covered under the automatic route are considered by the Special Committee on

Overseas investments in the RBI. Applications are required to be made to the Exchange Control Department of RBI.

Japan

4.11 Japanese outward FDI policy is also liberal with the exceptions of "designated industry" which are fishery (capture of fishery animals and plants) and manufacturing industry such as leather and leather products, weapon, facilities for weapon manufacturing and narcotics. Prior notification to Finance Minister through Bank of Japan is required for outward investment in these industries at least two months ahead of implementation of outward investment.

[4.12 - 4.20 not included here]

Technical collaborations between Indian and Japan

4.21 During the last fourteen years total (overall) technical collaborations entered into by Indian companies have been 7,736. Out of these, companies from Japan have been granted 837 technical collaborations (10.82% of the total) since, 1991. Top five sectors attracting technology transfer from Japan are - Transportation Industries (233 nos.), Electrical Equipments (including computer software & electronics) (195 nos.), Chemicals (other than fertilizer) (75 nos.), Misc. Mech. Engg. (52 nos.) & Industrial Machinery (47 nos.).

[4.22 - 4.33 not included here]

Impediments to Investments

4.34 JSG noted that the inclination of the Japanese to do business in the Indian market is increasing rapidly. The reasons for the strong interest of Japanese enterprises includes, the prospects of future development of local market, low labour costs and availability of skilled workforce. The JSG also took note of the fact that the Japanese businesses have cited high tariff

rates; lack of necessary infrastructure;; information on investment regulations and opportunities and transparency in the application of laws and administrative procedures; and regulations on labour and worker welfare as impediments to greater investment flows. It was also noted that other issues often raised by Japanese investors as factors of low levels of investments were regulations concerning the No-Objection Certificate (NOC); improvements required in the Intellectual property system; restrictions on foreign investment especially in the retail sector; regulations on remittances including transfer of royalties.

4.35 ... The Government of India has also introduced a novel scheme of Public Private Partnership wherein the Government would provide the viability gap funding to help infrastructure projects become financially viable. The JSG also noted that the new law on Special Economic Zones enacted in 2005 provides for a attractive set of incentives for both the developer of SEZs as also for the units to be set up in such SEZs. ...

4.36 Indian side stated that the Government of India had amended its Patents Act in 2005 and the Act is fully compliant with the international commitments. A major programme of modernisation of Patents Administration has been undertaken and fully computerised Intellectual Property Offices have been established at New Delhi, Kolkata and Chennai. The JSG also took note of the fact that the Government of India has recently undertaken a major review of its FDI policy and FDI up to 51% has now been allowed in the retail trade of 'Single Brand' products.
[4.37 - 4.38 not included here]

Investment Opportunities

4.39 The economies of India and Japan are highly complementary in terms of factor endowment, capabilities and specializations. JSG

suggests that working age population, cost-effective human resources; strengths in IT hardware and computer software services, vast investment opportunities available, technology strengths of Japanese companies; are factors which need to be utilized to their full potential for increasing investment flows between the two countries.

4.40 While expansion in trade and investment flows would be facilitated by the availability of infrastructure and socio economic services; growth in trade and investment would in turn offer tremendous opportunities for investment in infrastructure development and other related socio economic services.

4.41 Tremendous investment opportunities exist in India in almost all fields - Infrastructure, the Services sector and the Manufacturing sector. The infrastructure sectors, such as power, telecommunications, roads, ports, shipping, and civil aviation, are fast-growing capital-intensive sectors providing investment opportunities to foreign investors.. The Government of India has established a Special Purpose Vehicle for financing of Infrastructure Projects. An innovative scheme for encouraging Public Private Partnerships has been put in place. The total investment requirement for infrastructure sector is estimated at US\$150 billion over a period of 5 years. In the manufacturing sector, automobiles, textiles, pharmaceuticals, gems & jewellery and leather are some of the promising sectors for investment.

4.42 Indian companies are operating in Japan in the sectors of Gems & Jewelry, Marine imports, Tourism, Restaurants and IT. However, business circumstances indicate that these Indian companies operating in Japan are not making the most of their potential, although many major IT companies are expanding their businesses in Japan. It is desirable that Indian investment structure should be diversified to cover sectors

which India has comparative advantages, such as IT and business process outsourcing. In these sectors, there will be huge opportunities of investment in Japan for Indian companies.

Recommendations:

4.43 ... The fact that the bilateral investment is

steadily growing and yet the investment shares are rather small suggests that there is a huge potential for expansion of bilateral investment. The challenge is not only to exploit this potential but also to make investment more broad based and diversified in favour of the high technology manufactured goods. ...

Annex I

Sectoral Restrictions under the FDI Policy in India

*** Sectors prohibited for FDI:**

- i. Retail trading except for retail trade of 'Single Brand' products
- ii. Atomic energy
- iii. Lottery business
- iv. Gambling and betting sector

*** Sectors where equity cap apply:**

I. Sectors where FDI up to 26 % is allowed

- i. FM Broadcasting - FDI + FII investment up to 20% with prior Government approval
- ii. Print media: Publishing newspaper and periodicals dealing with news and current affairs - foreign investment up to 26% with prior Government approval
- iii. Defence industries - FDI up to 26% with prior Government approval
- iv. Insurance - Foreign equity (FDI+FII) up to 26% under the automatic route

II. Sectors where FDI up to 49 % is allowed

- i. Broadcasting
 - a. Setting up hardware facilities such as up-linking, HUB, etc.- FDI+FII equity up to 49% with prior Government approval
 - b. Cable network- Foreign equity (FDI+FII) up to 49% with prior Government approval
 - c. DTH - Foreign equity (FDI+FII) up to 49% with prior Government approval. FDI can not exceed 20%.
- ii. Investing companies in infrastructure/service sector - FDI up to 49% with prior Government approval
- iii. Domestic airlines - FDI up to 49% under the automatic route with no direct or indirect participation of foreign airlines

III. Sectors where FDI up to 51% is allowed

- i. FDI up to 51% with prior Government in retail trade of 'Single Brand' products

IV. Sectors where FDI up to 74% is allowed

- i. Telecommunication services: basic and cellular - Foreign investment up to 74% permitted. FDI beyond 49% requires prior Government approval.
- ii. ISP with gateways, radio-paging, end-to-end bandwidth - FDI up to 74% with FDI beyond 49% requiring prior Government approval
- iii. Establishment and operation of satellites - FDI up to 74% with prior Government approval
- iv. Atomic minerals - FDI up to 74% with prior Government approval
- v. Private sector banks - Foreign equity (FDI + FII) up to 74% under the automatic route

V. Sectors where FDI up to 100 % allowed subject to conditions

- i. Development of existing Airports - FDI beyond 74% requires Government approval
- ii. Petroleum sector: : Minimum 26% Indian equity within 5 years for actual trading and marketing.
- iii. Trading: Test marketing and/or sourcing of goods from the small scale sector : FDI up to 100% with prior Government approval
- iv. Courier services- prior Government approval
- v. Tea Sector, including tea plantation - prior Government approval subject to divestment of 26% equity within five years
- vi. ISP without gateway, infrastructure provider providing dark fibre, electronic mail and voice mail - FDI up to 100% allowed subject to divestment of 26% equity in 5 years if the investing companies are listed in other parts of the world.
- vii. Non Banking Finance Companies - FDI up to 100% under the automatic route subject to minimum capitalization norms
- viii. Domestic airlines - NRI investment up to 100% permitted under the automatic route with no direct or indirect participation of foreign airlines.

Annex-II

Sectoral Restrictions under the FDI Policy in Japan

I. Foreign Investment Restrictions

* Mining: Open only to Japanese national or company established under Japanese law

* Broadcasting : Open only to Japanese

* NTT : Foreigners are not allowed to own more than 33% of shares

* Ownership and operation of Japanese nationality vessels :

Japanese nationality is given to a ship whose owner is a Japanese national, or a company established under Japanese law, of which all representatives and not less than two-thirds of executives administering the affairs are Japanese national

(Note) Cabotage transport is permitted only to ships of Japanese nationality

* Ownership and operation of Japanese nationality aircraft:

Japanese nationality is given to an aircraft whose owner is a Japanese national, a company established under Japanese law, or a company of which all representatives and not less than two-thirds of executives administering

the affairs are Japanese national

(Note) Cabotage transport is permitted only to aircrafts of Japanese nationality

*** Air Transport

A permission of the Minister of Land, Infrastructure and Transport for conducting air transport businesses as a Japanese air carrier (or aerial work business) is not granted to following natural persons or entities applying for the permission:

- (a) a natural person who does not have Japanese nationality;
- (b) a foreign State, or a foreign public entity or its equivalent;
- (c) a legal person or other entity constituted under the laws of any foreign State; and
- (d) a legal person represented by natural persons or entities referred to in subparagraph (a), (b) or (c); a legal person of which more than one-third of the members of the board of directors are composed of natural persons or entities referred to in subparagraph (a), (b) or (c); or a legal person of which more than one-third of voting rights are held by natural persons or entities referred to in subparagraph (a), (b) or (c).

In the event an air carrier (or a person conducting aerial work business) becomes a natural person or an entity referred to in subparagraphs (a) through (d), the permission will lose its effect. The conditions for the permission also apply to companies, such as holding companies, which have substantial control over the air carriers (or a person conducting aerial work business).

Freight Forwarding Business (excluding freight forwarding business using air transportation)

The following natural persons or existing* entities are required to register with, or to obtain permission or approval of, the Minister of Land, Infrastructure and Transport for conducting freight forwarding businesses using. Such registration shall be permitted, or such permission or approval shall be granted, on the basis of reciprocity to:

- (a) a natural person who does not have Japanese* nationality;
- (b) a foreign State, or a foreign public entity or its equivalent;
- (c) a legal person or association constituted under the laws of any foreign State; and
- (d) a legal person represented by natural persons or entities referred to in subparagraph (a), (b) or (c); a legal person of which more than one-third of the members of the board of directors are composed of natural persons or entities referred to in subparagraph (a), (b) or (c); or a legal person of which more than one-third of voting shares are held by natural persons or entities referred to in subparagraph (a),(b) or (c).

* Freight Forwarding Business (only freight forwarding business using air transportation)

(1) The following natural persons or entities may not conduct freight forwarding businesses using air transportation between any points in Japan:

- (a) a natural person who does not have Japanese nationality;
- (b) a foreign State, or a foreign public entity or its equivalent;

- (c) a legal person or association constituted under the laws of any foreign State; and
- (d) a legal person represented by natural persons or entities referred to in subparagraph (a), (b) or (c); a legal person of which more than one-third of the members of the board of directors are composed of natural persons or entities referred to in subparagraph (a), (b) or (c); or a legal person of which more than one-third of voting shares are held by natural persons or entities referred to in subparagraph (a), (b) or (c).

(2) The natural persons or entities referred to in subparagraphs 1 (a) through (d) are required to register with, or to obtain permission or approval of, the Minister of Land, Infrastructure and Transport for conducting freight forwarding businesses using international air transportation. Such registration are shall be permitted, or such permission or approval are shall be granted, on the basis of reciprocity.

II. Prior Notification Obligations

- * Heat Supply
- * Telecommunications and Internet Based Services
- * Drugs and Medicines Manufacturing
- * Leather and Leather Products Manufacturing
- * Oil Industry
- * Agriculture, Forestry and Fisheries, and related services
- * Security Guard Services
- * Energy
- * Arms and Explosives Industry
- * Aerospace Industry
- * Broadcasting Industry
- * Transport
 - * Railway Transport
 - * Road Passenger Transport
 - * Water Transport
 - * Air Transport
- * Water Supply and Waterworks

CHAPTER 5: ROLE OF JAPAN'S ODA IN PROMOTING ECONOMIC PARTNERSHIP

Introduction

Overview of Japan's ODA to India

5.1 Japan has been extending bilateral economic assistance to India since 1958. Japan is at present the largest bilateral ODA partner of India. The cumulative ODA loan commitment from Government of Japan till March 2005 has reached 2,097 billion yen. The cumulative disbursement so far amounts to 1,575 billion yen. Japan has funded 165 projects through ODA loans till date, out of which 36 projects are currently ongoing.

5.2 Japan's assistance to accelerate economic development of India is highly appreciated. Japan's assistance has been particularly helpful in the infrastructure sectors such as power, urban transportation, urban water supply and sanitation, water management, seaports, and tourism. Japan has also supported India in health and the environment and forests sectors. ...

[5.3 - 5.16 not included here]

India's priorities for ODA

Overall priorities

5.17 It has been proposed to mobilize funds for creating urban infrastructure facilities through Public-Private Partnership and Special Purpose Vehicles. A scheme of financing viable infrastructure projects through a Special purpose Vehicle has been finalized for the following sectors:

- * Roads and bridges, railways, seaports, airports, inland waterways and other transportation projects
- * Urban transport, water supply, sewage, solid waste management and other physical infrastructure in urban areas

- * Gas pipelines
- * Infrastructure projects in Special Economic Zones
- * International convention centres and other tourism infrastructure projects.

[5.18 - 5.24 not included here]

5.25 While focus on existing sectors could continue with greater emphasis on expansion of metro rail network in Delhi and other metropolitan centres, the ODA would need recasting and fine tuning to play a more important role in infrastructure development. Some important sectors where ODA funding would be accorded higher priority by the Government of India are: Railways, Roadways, Urban Infrastructure (Transport, such as Metro Transport; Water Supply and Sanitation), Airports (apart from ODA, FDI also can play a role), Sea Ports and Power and Energy (specially LNG). Development of SEZs is one of the areas where Japanese ODA can be used to create economic infrastructure that can be subsequently utilized by Japanese direct investments. Through ODA, India can be developed as a manufacturing hub for the Indian market as well as for third-country exports operations of Japan's investments. Japan's ODA can be considered for widening the scope of cooperation in soft infrastructure sectors like software/intellectual property sector/Information Technology. Environment and Tourism also comprise promising sectors of development cooperation and there is a need to sharp-focus potential tourist circuits for development in north and south India. Concessional ODA should also be directed with precision for the environmental improvement of the fragile river basins and ecosystems.

[5.26 - 5.32 not included here]

CHAPTER 6: OTHER AREAS OF ECONOMIC COOPERATION

[6.1 - 6.3 not included here]

Areas of Economic Cooperation

Air Transportation Connectivity

6.4 Strengthening air connectivity between the two countries will have a significant effect on the trade and investment relationship. Five non-stop flights, (i.e., Delhi -Tokyo) and five indirect flights, (i.e., Mumbai-Delhi- Bangkok-Tokyo, Mumbai-Delhi-Hong Kong-Osaka) per week are being operated between the two countries. In view of the potentials of economic relations between the two countries, improvement of air linkage between the two countries is important. Air Services Agreement was signed between India and Japan in November 1955 and the air transportation between the two countries should be managed through consultation between the civil aviation/air transportation authorities of the two governments, in accordance with the Agreement. The last bilateral consultations were held in June 1993 in Tokyo. It is expected that holding the consultations at appropriate time would address various issues relating to air connectivity.

Suggestion:

6.5 The JSG suggests that relevant authorities in the two countries will work to strengthen the air connectivity between the two countries.

Infrastructure Development

6.6 There is substantial unmet demand in India's infrastructure sector where Japan with its superior technology and resources can play a major role. Due to growing demand, India has the potential to absorb over US\$ 150 billion of FDI in the next few years in the infrastructure sector alone. Opportunities include in (i) setting up

special economic zones (SEZs), (ii) modernization of existing airports and civil aviation facilities, (iii) development of new airports, (iv) expressways, (v) mass rapid transit systems, (vi) development and modernization of ports and shipping, (vii) high speed railway corridors, (viii) mega industrial complexes, etc. Major Japanese construction companies with overseas experience could participate in India's projects for building physical infrastructure and special economic zones. In Chapter 5, the JSG examined the possibility of utilization of Japanese ODA for Viability Gap Funding in infrastructure projects through Public - Private Partnership (PPP) mechanism.

Suggestion:

6.7 The JSG suggests that both the Governments would consider an appropriate mechanism to identify viable projects for development that could be undertaken within the framework of India-Japan cooperation.

Information and Communication Technology (ICT)

ICT Cooperation

6.8 Japan has strengths in manufacturing, product development, and marketing ICT hardware and service, while India has developed strong capabilities for software development, embedded software, R&D and related services. Together, both countries can achieve global leadership in product designing, involving integration of both hardware and software, for instance, chip design or embedded software and knowledge-based manufacturing given the abundance of low cost trained manpower in India. Transitional expansion of production in order to economize on domestic cost of production has become imperative for Japan in view of limitations of land, shortage of manpower and consequent increase in cost of wages. India appears to

be the logical choice, given the vast reservoir of technical personnel, huge demand for electronic goods, and relocation friendly policies of the Government of India. Japanese companies may be encouraged to invest in hardware manufacturing in India for exploiting the respective strengths for global sourcing.

6.9 The Electronics and Software Export Promotion Council of India (ESC) and Japan System House Association (JASA) signed an MOU in August 2000 for cooperation in IT sector for exchange of information, human resource development, technical cooperation and organization of IT seminars, etc.

6.10 The Japan-India ICT Forum was started in August 2005 to enhance the ICT cooperation and business tie-ups between the two countries. The Forum agreed to the establishment of Working Groups in six areas to discuss specific cooperation activities. These six areas consist of Broadband, Mobile Communications, e-Governance, Research and Development, Information Security and Ubiquitous Network. The Joint Task Force, which is to function as the steering body of the Forum, held its first meeting in January 2006, and decided to organize coordinators' meetings of all six Working Groups in 2006. The meetings will exchange information on interests in cooperative activities between both sides, and discuss how to find partners in business and other activities. It is expected that some of the members may be able to find partners in each group, and to create mutual chances for ICT business and cooperation. The 2nd meeting of the Forum is expected to be convened later in 2006.

6.11 For facilitating the production networking to exploit synergies of the two countries in the ICT, Indian side suggests that discussions are initiated for setting up a special economic zone exclusively for Japanese enterprises in India for ICT manufacture for global sourcing.

[6.12 - 6.18 not included here]

Sharing Quality and Management Techniques

6.19 Quality management has been an area of strength of the Japanese industry. India-Japan cooperation in the area of quality management has involved the CII, which has been taking missions of top CEOs and managers to the Union of Japanese Scientists & Engineers (JUSE) since 1989, following an agreement in 1988. It has facilitated adaptation of the Japanese management methods to Indian enterprises including such Japanese concepts in quality such as 5S, kaizen and poka-yoke. CII has been involved in developing competitiveness of Indian industry, especially SME units, through a unique cluster approach since 1998 under the guidance of Professor Y. Tsuda from Japan. The Japan Institute of Plant Maintenance has also supported the Total Productive Maintenance (TPM) Club India. These arrangements have helped 16 Indian companies winning the Deming Award till 2005.

[6.20 & 6.21 not included here]

Small and Medium Enterprises (SMEs)

6.22 The worldwide trend among large corporations to outsource their requirements to small and medium enterprises (SMEs) suggests vast scope for cooperation in the outsourcing business. Indian SMEs can find synergy with their Japanese counterparts by entering into subcontracting arrangements with large and highly successful automobile and electronic companies of Japan. The possibilities can also be explored for vertical integration between Indian SMEs and their Japanese counterparts.

6.23 The SMEs sector has played important roles for the development of Japan. As most of the Japanese companies operating in India are large enterprises, it is expected that more SMEs with expertise and experience to operate in India

are likely to expand business activities especially in manufacturing industry. The JSG appreciates that JETRO mission of 70 SMEs specializing in IT and auto components was dispatched to India in 2006 in order to familiarize with investment environment as well as for business talks with their counterparts. In view of rising Japanese interest in Indian SMEs sector, following missions also visited India very recently: (i) Tokyo Small and Medium Business Investment & Consultation Co., Ltd (SBIC) (ii) Organization for Small & Medium Enterprise and Regional Innovation, Japan (SMRJ), and (iii) Japan Finance Corporation for Small and Medium Enterprises (JASME) Investment Promotion mission. Since Government of Japan has implemented a variety of measures to support business activities of SMEs, exchange of related information and experiences with Indian counterparts will be useful.

Suggestion:

6.24 The JSG suggests that both Governments should play an active role in moving forward India-Japan cooperation and exchange in the area of SMEs, as strengthening cooperation, promotion and exchanges could be of great significance to the two countries.

6.25 In order to deepen cooperation in SMEs sector, the JSG makes the following suggestions: First, successful experiences in the development of SMEs should be shared, including government policies, management systems, laws and regulations. Second, the governments should create favorable conditions for SMEs of the two countries to cooperate with each other; for example, by holding exhibitions and disseminating information of the products of SMEs and encouraging the enterprises to communicate and cooperate with each other. Third, there is immense scope for Indian companies to improve productivity by forming alliances with their

Japanese counterparts towards establishing energy-efficient and environment-friendly projects.

6.26 The JSG recommends that the relevant institutions of the two countries should activate MOUs to contribute towards strengthening commercial relations by expanding and deepening economic, trade, and investment cooperation between SMEs of India and Japan.

Science and Technology (S&T)

6.27 There are ample opportunities for bilateral cooperation in the field of science and technology (S&T) sector between India and Japan. The synergy between the two countries can be maximized, if India's abundant resources are combined with Japanese know-how in the development of resources. Opportunities include (i) Nano Science & Technology, (ii) Biotechnology, and (iii) Information Technology. Cooperative activities would include, among others, (i) Mutual visits of technical missions; (ii) Holding academic meetings (seminars/workshops/forums, etc.), (iii) Joint Research and sharing of costs, (iv) R&D initiatives, and (v) holding a workshop on the new S&T Initiative to identify areas and projects to cooperate. All these efforts will not only encourage the enterprises to take advantage of improved S&T environment but will also facilitate strengthening of India - Japan economic ties.

6.28 Cooperation in S&T between India and Japan is presently being pursued through two mechanisms. One is India Japan Science Council (IJSC) under which Japan Society for the Promotion of Science and the Department of Science & Technology, India meet alternately in India and Japan once in two years. The 7th meeting of IJSC was held in New Delhi during 19-20 September, 2003 and the 8th meeting of this council was held in Tokyo during 26-29, January, 2005. There is

an Intergovernmental S&T programme of cooperation under the Joint Committee on India-Japan Cooperation in S&T. The "Eightfold Initiative" issued, during the Japan-India summit meeting in April 2005, stated that Japan and India would reinvigorate the Japan-India Joint Committee on Science and Technology Cooperation and discuss the modalities and implementation of the new Science and Technology Initiative. In November 2005, the 7th meeting of Japan-India Joint Committee on Science and Technology Cooperation was held in New Delhi for the first time in the last six years, where both sides reviewed the current situation of cooperation and discussed how to strengthen their collaboration. Besides, both sides agreed to have a workshop in Japan for materialization of new Science and Technology Initiative.

6.29 Given that the Japanese Government has also earmarked biotechnology as the next engine of growth, there is a great scope for bilateral cooperation in this area. A number of Indian institutions are engaged in promotion of biotechnology research such as Department of Science and Technology (DST), Council of Scientific and Industrial Research (CSIR) and Department of Biotechnology (DBT), etc.

6.30 Pharmaceutical industry is an area where both the countries could engage in mutually beneficial cooperation. India and Japan could explore joint ventures in the supply of generic drugs and anti-retroviral drugs.

6.31 Other potential areas of cooperation between the two countries include IT training, biotechnology and Research and Development in natural sciences.

Suggestion:

6.32 The JSG suggests that both governments should continue to encourage research communities to deepen mutual contacts and to explore

possibilities of cooperative activities in science and technology. Further, the JSG suggests that both sides should hold the first workshop in science and technology at the earliest, with participation of private sectors of Japan and India.

Energy

6.33 India has faced difficulties of shortage of energy in proportion to population growth and economic development. Quality and reliability of supply needs to be improved significantly for facilitating industrial development of India. As Japan and India are mass consumers of oil, securing stable supply of energy sources and improvement of energy efficiency are significant policy agendas, which are directly linked to the economic development of both countries.

6.34 Japan's Ministry of Economy, Trade and Industry and India's Ministry of Petroleum and Natural Gas have agreed to comprehensive energy cooperation, including petroleum and natural gas, energy conservation, and new energy. Mr. Nakagawa, then Minister of Economy, Trade and Industry and Mr. Aiyar, then Minister of Petroleum and Natural Gas signed a joint statement to this effect in September 2005. In particular, both sides agreed to enhance cooperation, based on the joint statement, in the following areas: oil stockpiling, exploration and production (E&P) in third countries, R&D in gas hydrates, joint research and study on developing an Asian crude oil and petroleum products market and measures to stabilize the Asian oil market, energy efficiency and conservation. The extant institutional arrangement for cooperation in the field of energy has been India-Japan Energy Dialogue, a mechanism between the India's Ministry of External Affairs and Japan's Ministry of Foreign Affairs. The first round of dialogue was held on March 7, 2000 in New Delhi and the second round of dialogue took place on May 10, 2002 in Tokyo.

Both the sides should meet more frequently to enhance the cooperation between the two countries in the field of energy.

6.35 India and Japan being two large energy consumers in Asia, cooperation in this sector is thus an important element to deepen economic engagement between the two countries. The two countries have several options towards broader regional cooperation in energy security involving development of an Asian Energy Market, management of energy resources and coordinate research in hydrogen fuel and gas hydrates.

6.36 Joint collaboration in the field of exploration of hydrocarbon resources between India and Japan would lead to a win-win situation for both sides. In this regard, the Indian government suggests that the existing collaboration for joint energy development and setting up of joint commercial enterprises in third countries should be encouraged.

6.37 The relevant Ministries of the two countries could consider establishing an institutional mechanism aimed at promoting joint efforts in sourcing energy supplies including petroleum and natural gas from third countries as also commercial exploitation of other energy resources in third countries. The two countries could enter into a comprehensive Hydrocarbon Agreement for closer cooperation in the Hydrocarbon sector. The Japanese side could assist the Indian side to set up strategic oil resources in India based on the Japanese experience and take part in exploration and production sectors through bidding in the New Exploration Licensing Policy (NELP) rounds. There exist opportunities of joint ventures between the energy companies of the two countries in exploration and production of energy resources.

6.38 The two countries can also cooperate in exchanging experiences in energy management.

Relevant Government departments should conduct research, formulate policy and take measures to encourage Indian and Japanese business enterprises to strengthen their investments and cooperation in mining of energy rich mineral resources like coal. Both the countries can encourage their respective institutions to exchange the information as part of cooperation in new and renewable energy resources, which is mentioned in the joint statement of September 2005.

6.39 Indian power sector would need investments of about US\$ 20 billion per year because of additional demand of power of around 12,000 MW per year over the next ten years. Japanese assistance would be useful for India to upgrade and modernize its distribution network for bringing down distribution losses and increasing reliability of supply and promoting Japanese FDI in Indian power sector.

Suggestion:

6.40 JSG suggests that cooperation in the field of energy should be strengthened. Upgradation and modernization of electricity distribution network for reducing losses and increasing reliability of supply, enhancing efficiency of thermal power generation, improving energy efficiency in end use would be the focus areas. The Joint Statement concluded in Sept. 2005 would be the basis for cooperation in the petroleum & natural gas sector.

Environment

6.41 Both the countries realize their responsibility in preserving and protecting global environment. The two countries can cooperate in sharing technologies for environment protection and promote renewable energy. Sharing experiences in environment management would pave the way for better understanding towards environmental risks and their mitigation. Each

Government should conduct research, formulate policy and take measures to promote environment friendly business activities.

6.42 Global warming is an issue which affects present and future generations. In this area, India and Japan are eagerly cooperating with each other, especially on the implementation of CDM projects. It should be noted that the first UN-registered CDM project for Japan was a joint project in India. At COP 11 and COP/MOP1 in Montreal, the Parties agreed to start a dialogue on long-term cooperative action to address climate change by enhancing implementation of the Convention. In addition, in London, November 2005, G8 countries and other interested countries with significant energy needs including India held the first Ministerial meeting of the Dialogue on Climate Change, Clean Energy and Sustainable Development, launched at the G8 Gleneagles Summit. Moreover, six Asia-Pacific countries, including India and Japan held the inaugural ministerial meeting on the Asia-Pacific Partnership on Clean Development and Climate in Sydney in January 2006, in order to meet increased energy demands and to address air pollution, energy security, and climate change through development, diffusion, development and transfer of existing and emerging cost-effective, cleaner technologies and practices. Progress of concrete cooperation is expected under public-private partnership.

6.43 Recycling is a sophisticated, globally competitive, high tech and specialized industry. It is governed by stringent quality standards, regulations and legal provisions. The Japanese Government has been promoting measures to create a sustainable society emphasizing 3 Rs (Reduce, Reuse and Recycle). It is understood that re-cycling is a trillion dollar Industry in Japan. It has been possible to develop recycling industry through policy and legislative support. Japan has revised Waste Management and Public Cleaning Law (2005), Utilization of Recycled

Resources (1991), Containers and Package Recycle Law (1995), Home Appliance Recycling Law (1998), Fundamental Law for Establishing Sound Material - Cycle Society, Law for Promotion of Effective Utilization of Resources, Construction Materials Recycling Law, Green Purchasing Law, Food Recycling Law (2000) and End-of-Life, Vehicles Recycling Law (2002). These efforts not only mitigate the environmental burden but also significantly contribute to competitiveness of Japanese industry. It would be of immense benefit to India if Japan could agree to share its experience and help India to evolve similar best practices.

Suggestion:

6.44 The JSG suggests that Japan and India should actively participate in international efforts to tackle climate change in accordance with the principles of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol. The two governments should maintain mutual cooperation to develop more CDM projects and to attain concrete achievements under the newly established Asia-Pacific Partnership and other fora.

6.45 The JSG also suggests that Japan and India cooperate in sharing experiences in environmental policies such as concerning recycling and air/water pollution.

[6.46 - 6.47 not included here]

CHAPTER 7: FRAMEWORK FOR FUTURE ECONOMIC PARTNERSHIP

Introduction

7.1 The JSG had detailed and meaningful discussions to assess the status of the bilateral economic relations between India and Japan and to evaluate its future potential. The study group has also studied the impediments which were noticed in the past and the possible remedies

which will help to create an upgraded architecture of bilateral economic engagement. This chapter now analyses the feasibility of an Economic Partnership Agreement (EPA)/ Comprehensive Economic Partnership Agreement (CEPA) between India and Japan and desirable constituents of such an agreement.

7.2 The total amount of trade between Japan and India has been rising since 2002, reaching approximately US\$6.8 billion in 2005. However, this figure is not commensurate with the two countries' economic size and potential. Japan ranks 10th among India's export destinations (share of 2.5%) and 10th among import sources (2.8%), and India ranks 26th among Japan's export destinations (0.6%) and 28th among import sources (0.6%). As for other comparable major economies in 2005, the trade value between Japan and China was US\$189.4 billion and between India and the US, US\$ 20 billion indicating a substantial potential for further expansion of trade between Japan and India.

7.3 Since 1991, Japan's cumulative direct investment to India is approximately US\$2.01 billion, making Japan the third largest provider of direct investment to India. Nonetheless, considering India's potential as an investment destination and Japan's economic size, this situation is also not entirely satisfactory.

7.4 During the deliberations of the JSG, it was noted that Japan and India have great potential for economic cooperation between the two countries deriving from their complementary endowments in agriculture, trade and industry; levels of economic development; a shared vision for Asian economic integration; cultural and historical links; etc. The economies of India and Japan are highly complementary in terms of factor endowments, capabilities, demographic profiles, convergences and specializations. India's cost-effective human resources may complement growing labour scarcity and rising wages in

Japan. Japan's strong capacity in IT hardware is complemented by India's software prowess. India's capabilities in pharmaceutical industry, biotechnology, and auto components usefully complement Japanese competence in heavy engineering, automobiles, machinery and chemical industry. While there is substantial unmet demand in India's infrastructure sector, Japan has cutting-edge technology and underutilized supply side capacity in infrastructure sector. India has made significant strides in the agricultural sector and now its trade surplus in agriculture is over US \$ 2.5 billion. Japan imports more than 50% of its food requirements. Thus there is natural complementarity between the two countries in this sector. India has potential to absorb more than US\$ 150 billion of foreign direct investment (FDI) in infrastructure development alone. Presence of vibrant entrepreneurial class in both countries is also the key to facilitating trade, investment and technology transfer between them. The huge size of the market and skilled manpower available in India can provide a fertile ground for FDI by the capital abundant economy of Japan.

7.5 Major findings of the JSG in the preceding chapters are summarized below.

Trade in goods

7.6 Bilateral trade in goods between India and Japan has stagnated in recent years despite unilateral trade liberalization in India and economic recovery in Japan. The JSG is convinced that, given the complimentary (sic) endowments of the two economies and the current heavy concentration of bilateral trade on a narrow range of products, there is a great deal of potential for expanding bilateral trade in goods.

7.7 On tariff issues, the JSG noted relatively high average tariff rates in India and comparatively high tariff peaks in Japan, and suggests that tariff reduction and possible elimination, which

is consistent with the WTO provisions, will increase market access opportunities for both countries, while a practical and flexible approach should be adopted, respecting sensitivities of both sides.

7.8 With regard to agricultural, forestry and fisheries products, the Japanese side referred to the need for consideration of food security, multi-functionality and sustainable resources management in those sectors. The Indian side expressed strong interest in the expansion of market access for the agricultural and food products in which India has competitive edge. The JSG noted that there is opportunity for agricultural exports in both directions.

7.9 The JSG is of the view that, in order to realize the potential mentioned above, both countries could do the following;

- (a) setting-up mechanism to facilitate customs cooperation
- (b) considering the possibility of more active use of the Export Inspection Council (EIC) of India
- (c) exploring ways to further expanding promotional activities
- (d) exploring the possibility of improving current mechanism or replacing it with a new mechanism on SPS-related issues in a joint consultation group to be set up within a reasonable time-frame.
- (e) finding solutions to some sector-specific issues.

Trade in Services

7.10 The services sector is an important part of both the Japanese and Indian economies. It contributes over 50 per cent of GDP in India and above two-thirds in Japan. Trade in services confers benefits not only to the services sector itself, but to both the primary and secondary production sectors as well. Expanded services

trade accordingly stands to improve the living standards and international competitiveness of both India and Japan.

7.11 In view of the enormous potential in services trade between India and Japan both governments need to take substantial measures to remove barriers to trade in services. Keeping this in view, the JSG recommends that future discussions respect the following four broad principles:

- (a) All services sectors and all modes of supply in GATS should be covered;
- (b) Commitments by both countries should cover a wide range of service sectors (both horizontal and sectoral);
- (c) Special emphasis shall be given to the areas, such as software and IT-related services, financial services, telecommunication services, construction services and transportation services; and
- (d) Services liberalisation should be designed to enhance the competitiveness of each economy.

7.12 The JSG specifically covered the issues relating to services in IT sector, architecture, engineering & construction services, entertainment & health care services, financial services, maritime services, tourism & travel related services and issues related to temporary movement of natural persons.

Investment

7.13 Investment is critical for improving productivity and enhancing growth and employment. FDI assists in bridging the gap between domestic savings and capital formation besides encouraging technology up-gradation and inducting international best practices. Economic cooperation resulting from bilateral investments between the two countries has begun to grow recently.

7.14 The JSG noted the presence of tremendous investment opportunities in India in almost all areas of economic activities, including infrastructure, manufacturing and services sectors. For example, infrastructure like power, telecommunications, roads, ports, etc. is fast growing and is capital intensive. Infrastructure alone is estimated to be able to absorb an investment of \$150 billion over a period of next five years.

7.15 To encourage and enhance bilateral investment between Japan and India, the JSG recommends the following measures: interaction between government, business and industry on an institutional basis; exchange of information on foreign investment laws and regulations; sector-specific cooperation measures for investment and technical collaboration in infrastructure sector and establishment of a Joint Investment Promotion mechanism. The JSG also recommends conclusion of an investment agreement to address a wide variety of issues including National Treatment, transparency, facilitation, investment promotion, protection and dispute settlement.

Role of Japan's ODA in Promoting Economic Partnership

7.16 Japan has been extending bilateral economic assistance to India for its sustainable economic development. Japan is at present the largest bilateral ODA partner of India. Japan's assistance to India is highly appreciated by India.

7.17 India requires enormous investment in physical and social infrastructure sector for its sustained growth. A new concept of PPP including Viability Gap Funding was suggested by India in order to meet massive demand of infrastructure.

7.18 For better development cooperation, the JSG suggests the following:

- (i) ODA can be utilized to encourage FDI through improvement of infrastructure.
- (ii) It is desirable for both Japan and India to be more accommodative in selection of projects whereby introduction of best practices in terms of management and technology from Japan to India is facilitated. Delhi Metro, funded by Japan's ODA, can be cited as an excellent example of the best practice.
- (iii) Expansion of human exchanges and improvement of mutual understanding is one of the areas to be promoted between the two countries.
- (iv) For effective and efficient implementation of projects, it is recommended that synergy of financial and technical cooperation be utilized wherever possible.

Other Areas of Economic Cooperation

7.19 Expansion of trade and investment could be further promoted by undertaking bilateral cooperation in the broadest possible areas. JSG noted that there exists complementarities and opportunities for cooperation between the two countries in many areas. That will include, for example, synergy between Japanese manufacturing technique and Indian software expertise in ICT sector; Japanese technology and resources and Indian huge infrastructure and energy needs. People-to-people exchanges should also be enhanced, as it will provide a basis for stronger bilateral economic ties.

7.20 In this context, the JSG recommends that the two governments examine every possible measure to strengthen bilateral cooperation across a broad spectrum of areas.

EPA/CEPA Framework and Scope Envisaged

7.21 In the light of these factors the JSG has come to the conclusion that proper architecture for the bilateral economic engagement of the two countries would be an EPA/CEPA. Liberalization of trade in goods under the EPA/CEPA would improve trade flow between the two economies and promote further intra-industry and inter-industry trade. Efficiency in the services sector is critical for the further economic growth of both Japan and India, which can be achieved through liberalization of trade in services. To accelerate further bilateral investment flows, the two countries are required to improve their investment environments by removing constraints to foreign investment on an institutional basis. An EPA/CEPA will also serve as a building block for an even larger regional economic integration.

7.22 The EPA/CEPA should be defined as a framework of institutional arrangements that focuses much deeper than a simple FTA, encompassing all aspects of bilateral economic relations by including the liberalization of trade in goods and services, investment, economic cooperation and other areas of cooperation for mutual benefit.

7.23 The case for a Japan-India EPA/CEPA essentially rests on complementarity of the partner economies. The differences in economic strengths, resources as well as the synergies in many areas offer enormous scope and hope for the two economies to complement each other. Recommendations

7.24 In view of the above considerations, the JSG recommends that the Governments of Japan and India launch an inter-governmental negotiation to develop an Economic Partnership Agreement (EPA)/ Comprehensive Economic Partnership Agreement (CEPA), within a reasonable period of time. The EPA/CEPA needs to be consistent with WTO provisions, while sensitive sectors should be treated with flexibility and practicality.

7.25 The JSG recommends that the negotiations for an India-Japan EPA/CEPA may cover, but may not be limited to:

- (a) Trade in goods
- (b) Trade in services
- (c) Measures for trade promotion
- (d) Promotion, facilitation and liberalization of investment flows
- (e) Measures for promoting economic cooperation in identified sectors; and
- (f) Other areas for a comprehensive economic partnership between India and Japan;

7.26 The JSG recommends that negotiations on the proposed EPA/CEPA be conducted in a specially-constituted Joint Task Force, or another mutually agreed suitable mechanism, consisting of government officials. The Joint Task Force may consult with the representatives of the business community whenever necessary. This Joint Task Force would bring specific recommendations on each of the constituent elements of the EPA/CEPA for adoption by the two governments.

COMPREHENSIVE ECONOMIC PARTNERSHIP AGREEMENT BETWEEN JAPAN AND THE REPUBLIC OF INDIA

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RESOLVED to promote trade and investment through the establishment of clear and mutually advantageous rules as well as regulatory cooperation;

SHARING the belief that the economic partnership would contribute to expanding trade and investment not only between the Parties but also in the region; and

DETERMINED to establish a legal framework for an economic partnership between the Parties;

HAVE AGREED as follows:

Chapter 1 General Provisions

Article 1 Objectives

The objectives of this Agreement are to:

- (a) liberalise and facilitate trade in goods and services between the Parties;
- (b) increase investment opportunities and strengthen protection for investments and investment activities in the Parties;
- (c) ensure protection of intellectual property and promote cooperation in the field thereof;
- (d) promote cooperation for the effective enforcement of competition laws in each Party;
- (e) improve business environment in each Party;
- (f) establish a framework to enhance closer cooperation in the fields agreed in this Agreement; and

- (g) create effective procedures for the implementation and application of this Agreement and for the resolution of disputes.

Article 3 General Definitions

For the purposes of this Agreement, unless otherwise specified:

- (a) the term "customs authority" means the authority that, according to the legislation of each Party or non-Parties, is responsible for the administration and enforcement of customs laws and regulations. In the case of Japan, the Ministry of Finance, and in the case of India, the Central Board of Excise and Customs in the Department of Revenue, Ministry of Finance;
- (b) the term "days" means calendar days, including weekends and holidays;
- (c) the term "enterprise" means any legal person or any other entity duly formed, constituted or organised under applicable law, whether for profit or otherwise, and whether privately-owned or controlled or governmentally-owned or controlled, including any corporation, trust, partnership, joint venture, sole proprietorship, association, organisation or company;
- (d) an enterprise is:
 - (i) "owned" by an investor if more than 50 percent of the equity interests in it is beneficially owned by the investor; and
 - (ii) "controlled" by an investor if the investor has the power to name a majority of its directors or otherwise to legally direct its actions;
- (e) the term "enterprise of a Party" means an enterprise formed, constituted or organised

under the law of a Party and carrying out substantial business activities in the Area of the Party;

- (f) the term "GATS" means the General Agreement on Trade in Services in Annex 1B to the WTO Agreement;
- (g) the term "GATT 1994" means the General Agreement on Tariffs and Trade 1994 in Annex 1A to the WTO Agreement. For the purposes of this Agreement, references to articles in the GATT 1994 include the interpretative notes;
- (h) the term "Harmonized System" or "HS" means the Harmonized Commodity Description and Coding System defined in paragraph (a) of Article 1 of the International Convention on the Harmonized Commodity Description and Coding System, and adopted and implemented by the Parties in their respective laws;
- (i) the term "investments" means every kind of asset owned or controlled by an investor, including:
 - (i) an enterprise and a branch of an enterprise;
 - (ii) shares, stocks or other forms of equity participation in an enterprise, including rights derived therefrom;
 - (iii) bonds, debentures, loans and other forms of debt, including rights derived therefrom;
 - (iv) rights under contracts, including turnkey, construction, management, production or revenue-sharing contracts;
 - (v) rights to claim money and claim any performance under contract having a financial value;
 - (vi) intellectual property;

Note: Intellectual property means that set out in paragraph 2 of Article 102.

- (vii) goodwill;
- (viii) rights conferred pursuant to laws and regulations or contracts such as concessions, licences, authorisations and permits; and
- (ix) any other movable or immovable property (including land), whether tangible or intangible, and any related property rights, such as leases, mortgages, liens and pledges;

Note 1: Investments also include amounts yielded by investments, in particular, profit, interest, capital gains, dividends, royalties and fees. A change in the form in which assets are invested does not affect their character as investments.

Note 2: Where an asset lacks the characteristics of an investment, that asset is not an investment regardless of the form it may take. The characteristics of an investment include the commitment of capital, the expectation of gain or profit through the commitment of the capital, or the assumption of risk.

- (j) the term "investment activities" means establishment, acquisition, expansion, management, conduct, operation, maintenance, use, enjoyment and sale or other disposition of investments;
- (k) the term "investor of a Party" means a natural person or an enterprise of a Party, that seeks to make, is making, or has made, investments;
- (l) the term "juridical person" means any legal entity duly constituted or otherwise organised under applicable law, whether for profit or otherwise, and whether privately-

owned or governmentally-owned, including any corporation, trust, partnership, joint venture, sole proprietorship, association or cooperative;

Note: A cooperative is a legal entity constituted under the relevant applicable laws in India.

(m) a juridical person is:

- (i) "owned" by persons of a Party if more than 50 percent of the equity interest in it is beneficially owned by such persons;
- (ii) "controlled" by persons of a Party if such persons have the power to name a majority of its directors or otherwise to legally direct its actions; and
- (iii) "affiliated" with another person when it controls, or is controlled by, that other person; or when it and the other person are both controlled by the same person;

(n) the term "juridical person of the other Party" means a juridical person which is either:

- (i) constituted or otherwise organised under the law of the other Party and engaged in substantive business operations in the Area of the other Party; or
- (ii) in the case of the supply of a service through commercial presence, owned or controlled by:

- (A) natural persons of the other Party; or
- (B) juridical persons of the other Party identified under subparagraph (i);

(o) the term "natural person of the other Party" means a natural person who under the law of the other Party:

- (i) in respect of India, is a citizen of India; and
- (ii) in respect of Japan, is a national of Japan;

(p) the term "originating good" means a good which qualifies as an originating good under the provisions of Chapter 3;

(q) the term "Parties" means Japan and India and the term "Party" means either Japan or India;

(r) the term "person" means a natural person or an enterprise/juridical person;

(s) the term "service" includes any service in any sector except a service supplied in the exercise of governmental authority;

(t) the term "service supplier" means any person that supplies a service; and

Note: Where the service is not supplied directly by a juridical person but through other forms of commercial presence such as a branch or a representative office, the service supplier (i.e. the juridical person) shall, nonetheless, through such presence be accorded the treatment provided for service suppliers under Chapter 6. Such treatment shall be extended to the presence through which the service is supplied and need not be extended to any other parts of the supplier located outside the Area of a Party where the service is supplied.

(u) the term "WTO Agreement" means the Marrakesh Agreement Establishing the World Trade Organization, done at Marrakesh, April 15, 1994.

Article 6

Review and Appeal

1. Each Party shall maintain judicial tribunals or procedures for the purpose of the prompt review and, where warranted, correction of actions taken by its Government relating to matters covered by this Agreement. Such tribunals or procedures shall be impartial and independent of the authorities entrusted with the administrative enforcement of such actions.
2. Each Party shall ensure that the parties in any such tribunals or procedures are provided with the right to:
 - (a) a reasonable opportunity to support or defend their respective positions; and
 - (b) a decision based on the evidence and submissions of record.
3. Each Party shall ensure, subject to appeal or further review as provided in its laws and regulations, that such decision is implemented by the relevant authorities with respect to the action at issue which is taken by its Government.

Article 7

Measures against Corruption

Each Party shall, in accordance with its laws and regulations, take appropriate measures to prevent and combat corruption of its public officials regarding matters covered by this Agreement.

Article 8

Environmental Protection

1. Each Party, acknowledging the importance of environmental protection and sustainable development and recognising the right of each Party to establish its own domestic environmental policies

and priorities, shall ensure that its laws and regulations provide for adequate levels of environmental protection and shall strive to continue to improve those laws and regulations.

2. Each Party shall take appropriate governmental action such as monitoring compliance with, and investigating suspected violations of, its environmental laws and regulations.
3. Each Party shall endeavour to:
 - (a) take necessary measures to enhance public awareness of environmental policy and related matters by way of, such as, promoting education in the field thereof; and
 - (b) encourage trade and dissemination of environmentally sound goods and services.
4. The Parties reaffirm their rights and obligations under any international agreements concerning the environment, to which both Parties are parties.

Article 10

Taxation

1. Unless otherwise provided for in this Agreement, the provisions of this Agreement shall not apply to any taxation measures.
2. Nothing in this Agreement shall affect the rights and obligations of either Party under any tax convention. In the event of any inconsistency between this Agreement and any such convention, that convention shall prevail to the extent of the inconsistency.

3. Articles 4, 6 and 9 shall apply to taxation measures, to the extent that the provisions of this Agreement are applicable to such taxation measures.

Article 11 **Exceptions**

1. For the purposes of this Agreement except Chapters 6 and 9, Articles XX and XXI of the GATT 1994 are incorporated into and form part of this Agreement, *mutatis mutandis*.

2. For the purposes of Chapters 6 and 8, Articles XIV and XIV bis of the GATS are incorporated into and form part of this Agreement, *mutatis mutandis*.

3. Nothing in this Agreement shall be construed to prevent a Party from taking any action which it considers necessary for the protection of its essential security interests to protect critical public infrastructure, including communications, power and water infrastructure, from deliberate attempts to disable or degrade such infrastructure.

Note: Nothing in this paragraph shall be construed so as to derogate from the rights and obligations of the Parties under the WTO Agreement.

4. Nothing in this Agreement shall be construed to require a Party to accord the benefits of this Agreement to the other Party, or to the goods or service suppliers of the other Party or investors that are enterprises of the other Party, where the Party adopts or maintains measures in any legislation or regulations which it considers necessary for the protection of its essential security interests with respect to a non-Party, or goods or service suppliers of a non-Party or investors that are enterprises of a non-Party, that would be violated or circumvented if the benefits of this Agreement were accorded to such goods or service suppliers or such enterprises of the other Party or to their investments.

5. For the purposes of Chapters 6 and 8, a Party may deny the benefits of this Agreement to an investor of the other Party that is an enterprise of

the other Party and to its investments, or to a service supplier of the other Party that is a juridical person of the other Party in the situation where the enterprise or the juridical person is owned or controlled by an investor or persons of a non-Party, and the denying Party:

- (a) does not maintain diplomatic relations with the non-Party; or
- (b) adopts or maintains measures with respect to the non-Party that prohibit transactions with the enterprise or that would be violated or circumvented if the benefit of this Agreement were accorded to the service supplier or the enterprise or to its investments.

6. For the purposes of Chapter 6, subject to prior notification to and consultation with the other Party, a Party may also deny the benefits of the Chapter to a service supplier of the other Party, where the denying Party establishes that:

- (a) the service supplier is a juridical person that is owned or controlled by persons of a non-Party and has no substantial business activities in the Area of the other Party;
- (b) the service is supplied from or in the Area of a non-Party;
- (c) in the case of the supply of a maritime transport service, the service is supplied:
 - (i) by a vessel registered under the laws of a non-Party; and
 - (ii) by a person which operates and/or uses the vessel in whole or in part but which is of a non-Party; or
- (d) the service supplier is not:
 - (i) in respect of a natural person, a natural person of the other Party as defined under this Agreement; or
 - (ii) in respect of a juridical person, a juridical person of the other Party as defined under this Agreement.

7. For the purposes of Chapter 8, subject to prior notification to and consultation with the other Party, a Party may also deny the benefits of the Chapter to an investor of the other Party that is an enterprise of the other Party and to its investments, where the denying Party establishes that:

- (a) the enterprise has no substantial business activities in the Area of the other Party; and
- (b) the enterprise is owned or controlled by an investor of a non-Party or of the denying Party.

Article 12 **Relation to Other Agreements**

1. The Parties reaffirm their rights and obligations under the WTO Agreement or any other agreements to which both Parties are parties.

2. In the event of any inconsistency between this Agreement and the WTO Agreement or any other agreements, to which both Parties are parties, the Parties shall immediately consult with each other with a view to finding a mutually satisfactory solution, taking into consideration general principles of international law.

Article 14 **Joint Committee**

1. A Joint Committee shall be established under this Agreement.

2. The functions of the Joint Committee shall be:

- (a) reviewing and monitoring the implementation and operation of this Agreement;
- (b) considering and recommending to the Parties any amendments to this Agreement;

(c) supervising and coordinating the work of all Sub-Committees established under this Agreement;

(d) adopting:
(i) the Implementing Procedures referred to in Section 11 of Annex 3; and
(ii) any necessary decisions; and

(e) carrying out other functions as the Parties may agree.

3. The Joint Committee:

- (a) shall be composed of representatives of the Governments of the Parties; and
- (b) may establish, and delegate its responsibilities to, Sub-Committees.

4. The Joint Committee shall establish its rules and procedures.

5. The Joint Committee shall meet:

- (a) once a year at the request of either Party or at such times as may be agreed by the Parties; and
- (b) at such venues as may be agreed by the Parties.

Chapter 2 **Trade in Goods**

Article 16 **Definitions**

For the purposes of this Chapter:

(a) the term "bilateral safeguard measure" means a bilateral safeguard measure provided for in paragraph 2 of Article 23;

(b) the term "customs duty" means any customs duty, import duty or a charge of any kind imposed in connection with the importation of a good, but does not include any:

- (i) charge equivalent to an internal tax imposed consistently with the provisions of paragraph 2 of Article II and paragraph 2 of Article III of the GATT 1994;
 - (ii) anti-dumping or countervailing duty applied pursuant to a Party's law and applied consistently with the provisions of Article VI of the GATT 1994, the Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 in Annex 1A to the WTO Agreement (hereinafter referred to as "the Agreement on Anti-Dumping"), and the Agreement on Subsidies and Countervailing Measures in Annex 1A to the WTO Agreement; or
 - (iii) fees or other charges that shall be limited in amount to the approximate cost of services rendered;
- Note 1: Customs duty for India refers to basic customs duty as specified in the First Schedule to the Customs Tariff Act, 1975 of India.
- Note 2: Nothing in this subparagraph, including its notes, shall be construed so as to derogate from any rights and obligations of each Party under the GATT 1994.
- (c) the term "domestic industry" means the producers as a whole of the like or directly competitive goods operating in a Party, or those whose collective output of the like or directly competitive goods constitutes a major proportion of the total domestic production of those goods;
 - (d) the term "provisional bilateral safeguard measure" means a provisional bilateral safeguard measure provided for in subparagraph 8(a) of Article 23;
 - (e) the term "serious injury" means a significant overall impairment in the position of a domestic industry; and
 - (f) the term "threat of serious injury" means serious injury that, on the basis of facts and not merely on allegation, conjecture or remote possibility, is clearly imminent.

Article 17 **Classification of Goods**

The classification of goods in trade between the Parties shall be in conformity with the Harmonized System.

Article 18 **National Treatment**

Each Party shall accord national treatment to the goods of the other Party in accordance with Article III of the GATT 1994.

Article 19 **Elimination of Customs Duties**

1. Except as otherwise provided for in this Agreement, each Party shall eliminate or reduce its customs duties on originating goods of the other Party designated for such purposes in its Schedule in Annex 1, in accordance with the terms and conditions set out in such Schedule.

2. In cases where its most-favoured-nation applied rate of customs duty on a particular good is lower than the rate of customs duty to be applied in accordance with paragraph 1 on the originating good which is classified under the same tariff line as that particular good, each Party shall apply the lower rate with respect to that originating good.

Article 20 **Customs Valuation**

For the purpose of determining the customs value of imported goods from a Party into the other Party, provisions of Part I of the Agreement on Implementation of Article VII of the General Agreement on Tariffs and Trade 1994 in Annex

1A to the WTO Agreement (hereinafter referred to as "the Agreement on Customs Valuation"), shall apply mutatis mutandis.

Article 21 **Export Subsidies and Domestic Support**

Neither Party shall introduce or maintain any export subsidies or domestic support, which are inconsistent with its obligations under the WTO Agreement, on any agricultural good which is listed in Annex 1 to the Agreement on Agriculture in Annex 1A to the WTO Agreement (hereinafter referred to as "the Agreement on Agriculture").

Article 22 **Import and Export Restrictions**

1. Each Party shall not introduce or maintain any prohibition or restriction other than customs duties on the importation of any good of the other Party or on the exportation or sale for export of any good destined to the other Party, which is inconsistent with its obligations under the relevant provisions of the WTO Agreement.

2. In the event that a Party introduces a prohibition or restriction otherwise justified under the relevant provisions of the WTO Agreement with respect to the exportation of a good to the other Party, the former Party shall, upon the request of the other Party, provide to the other Party, as soon as possible after the prohibition or restriction is introduced, relevant information, which shall include a description of the good involved and the introduced prohibition or restriction, the actual date of introduction of such prohibition or restriction, unless the sharing of such information is considered by the former Party as prejudicial to public interest.

Article 23 **Bilateral Safeguard Measures**

1. Notwithstanding any provisions of this

Chapter but subject to the provisions of this Article, each Party may apply a bilateral safeguard measure, to the extent necessary to prevent or remedy the serious injury to a domestic industry of that Party and to facilitate adjustment, if an originating good of the other Party, as a result of the elimination or reduction of a customs duty in accordance with Article 19, is being imported into the former Party in such increased quantities, in absolute terms or relative to domestic production, and under such conditions that the imports of that originating good constitute a substantial cause of serious injury, or threat thereof, to the domestic industry of the former Party.

2. A Party may, as a bilateral safeguard measure:

- (a) suspend the further reduction of any rate of customs duty on the originating good provided for in this Chapter; or
- (b) increase the rate of customs duty on the originating good to a level not to exceed the lesser of:
 - (i) the most-favoured-nation applied rate of customs duty in effect on the day when the bilateral safeguard measure is taken; and
 - (ii) the most-favoured-nation applied rate of customs duty in effect on the day immediately preceding the date of entry into force of this Agreement.

3. (a) A Party may apply a bilateral safeguard measure only after an investigation has been carried out by the competent authorities of that Party in accordance with the same procedures as those provided for in Article 3 and subparagraph 2(c) of Article 4 of the Agreement on Safeguards in Annex 1A to the WTO Agreement (hereinafter referred to as "the Agreement on Safeguards").

- (b) The investigation referred to in subparagraph (a) shall in all cases be completed as early as possible and in no case later than one year from the date of initiation.
 - (c) In the investigation referred to in subparagraph (a) to determine whether increased imports of an originating good have caused or are threatening to cause serious injury to a domestic industry under the terms of this Article, the competent authorities of the Party who carry out the investigation shall evaluate all relevant factors of an objective and quantifiable nature having a bearing on the situation of that domestic industry, in particular, the rate and amount of the increase in imports of the originating good in absolute and relative terms, the share of the domestic market taken by the increased imports of the originating good, and the changes in the level of sales, production, productivity, capacity utilisation, profits and losses, and employment.
 - (d) The determination that increased imports of an originating good have caused or are threatening to cause serious injury to a domestic industry shall not be made unless the investigation referred to in subparagraph (a) demonstrates, on the basis of objective evidence, the existence of the causal link between increased imports of the originating good and serious injury or threat thereof. When factors other than the increased imports of the originating good are causing injury to the domestic industry at the same time, such injury shall not be attributed to the increased imports of the originating good.
4. The following conditions and limitations shall apply with regard to a bilateral safeguard measure:
- (a) A Party shall immediately deliver a written notice to the other Party upon:
 - (i) initiating an investigation referred to in subparagraph 3(a) relating to serious injury, or threat thereof, and the reasons for it; and
 - (ii) taking a decision to apply or extend a bilateral safeguard measure.
 - (b) The Party making the written notice referred to in subparagraph (a) shall provide the other Party with all pertinent information, which shall include:
 - (i) in the written notice referred to in subparagraph (a) (i), the reason for the initiation of the investigation, a precise description of the originating good subject to the investigation and its subheading of the Harmonized System, the period subject to the investigation and the date of initiation of the investigation; and
 - (ii) in the written notice referred to in subparagraph (a) (ii), evidence of serious injury or threat thereof caused by the increased imports of the originating good, a precise description of the originating good subject to the proposed bilateral safeguard measure and its subheading of the Harmonized System, a precise description of the bilateral safeguard measure, and the proposed date of the introduction and expected duration of the bilateral safeguard measure.
 - (c) A Party proposing to apply or extend a bilateral safeguard measure shall provide adequate opportunity for prior consultations with the other Party with a view to reviewing the information arising from the investigation referred to in subparagraph 3(a), exchanging views on the bilateral

safeguard measure and reaching an agreement on compensation set out in paragraph 5.

equivalent to that of the additional customs duties expected to result from the bilateral safeguard measure.

- (d) No bilateral safeguard measure shall be maintained except to the extent and for such time as may be necessary to prevent or remedy serious injury and to facilitate adjustment, provided that such time shall not exceed a period of three years. However, in highly exceptional circumstances, a bilateral safeguard measure may be extended, provided that the total duration of the bilateral safeguard measure, including such extensions, shall not exceed five years. In order to facilitate adjustment in a situation where the expected duration of a bilateral safeguard measure is over one year, the Party maintaining the bilateral safeguard measure shall progressively liberalise the bilateral safeguard measure at regular intervals during the period of application.
 - (e) No bilateral safeguard measure shall be applied again to the import of a particular originating good which has been subject to such a bilateral safeguard measure, for a period of time equal to that during which such measure had been previously applied, provided that the period of non-application is at least one year.
 - (f) Upon the termination of a bilateral safeguard measure, the rate of customs duty for an originating good subject to the measure shall be the rate which would have been in effect but for the bilateral safeguard measure.
5. (a) A Party proposing to apply or extend a bilateral safeguard measure shall provide to the other Party mutually agreed adequate means of trade compensation in the form of concessions whose value is substantially
- (b) If the Parties are unable to agree on the compensation within 30 days after the commencement of the consultations pursuant to subparagraph 4(c), the Party against whose originating good the bilateral safeguard measure is applied shall be free to suspend the application of concessions under this Agreement, which are substantially equivalent to the bilateral safeguard measure. The Party exercising the right of suspension may suspend the application of concessions only for the minimum period necessary to achieve the substantially equivalent effects and only while the bilateral safeguard measure is maintained.
 - (c) (i) The right to claim the trade compensation which is agreed on by the Parties under subparagraph (a) and the right of suspension provided for in subparagraph (b) shall not be exercised for the first two years that a bilateral safeguard measure is in effect, provided that the bilateral safeguard measure has been taken as a result of an absolute increase in imports and that such bilateral safeguard measure conforms to the provisions of this Article.
 - (ii) The two years period mentioned in subparagraph (i) may be extended by one year, provided that the Party applying the bilateral safeguard measure provides to the other Party, evidence that the bilateral safeguard measure continues to be necessary to prevent or remedy serious injury caused by an absolute increase in imports and that the industry concerned is adjusting.

6. Nothing in this Chapter shall prevent a Party from applying safeguard measures to an originating good of the other Party in accordance with:

- (a) Article XIX of the GATT 1994 and the Agreement on Safeguards; or
- (b) Article 5 of the Agreement on Agriculture.

7. Each Party shall ensure the consistent, impartial and reasonable administration of its laws and regulations relating to bilateral safeguard measures.

8. (a) In critical circumstances, where delay would cause damage which it would be difficult to repair, a Party may take a provisional bilateral safeguard measure, which shall take the form of the measure set out in subparagraph 2(a) or (b), pursuant to a preliminary determination that there is clear evidence that increased imports of an originating good of the other Party have caused or are threatening to cause serious injury to a domestic industry.

(b) A Party shall deliver a written notice to the other Party prior to applying a provisional bilateral safeguard measure. Consultations between the Parties on the application of the provisional bilateral safeguard measure shall be initiated immediately after the provisional bilateral safeguard measure is taken.

(c) The duration of a provisional bilateral safeguard measure shall not exceed 200 days. During that period, the pertinent requirements of paragraph 3 shall be met. The duration of the provisional bilateral safeguard measure shall be counted as apart of the period referred to in subparagraph 4(d).

(d) Subparagraph 4(f) and paragraph 7 shall be applied *mutatis mutandis* to a provisional bilateral safeguard measure. The customs duty imposed as a result of the provisional bilateral safeguard measure shall be refunded if the subsequent investigation referred to in subparagraph 3(a) does not determine that increased imports of an originating good of the other Party have caused or threatened to cause serious injury to a domestic industry.

9. A written notice referred to in subparagraphs 4(a) and 8(b) and any other communication between the Parties shall be done in the English language.

10. The Parties shall review the provisions of this Article, after 10 years of the date of entry into force of this Agreement, or earlier as may be agreed by the Parties.

Article 24

Anti-Dumping Investigation

When the authority of a Party competent for initiating investigation under Article 5 of the Agreement on Anti-Dumping received a written application by or on behalf of its domestic industry for the initiation of the investigation in respect of a good from the other Party, the former Party shall, at least 10 working days in advance of the initiation of such investigation, notify the other Party, and provide it with the full text, of such application. The other Party may inform the exporters, foreign producers and relevant trade associations known to the other Party of that notification and of the information included in that application. Due regard shall be paid to the requirement for the protection of confidential information, as provided for in paragraph 5 of Article 6 of the Agreement on Anti-Dumping.

Article 25
Restrictions to Safeguard the
Balance of Payments

1. Nothing in this Chapter shall be construed to prevent a Party from taking any measure for balance-of-payments purposes. A Party taking such measure shall do so in accordance with the conditions established under Article XII of the GATT 1994 and the Understanding on the Balance- of-Payments Provisions of the General Agreement on Tariffs and Trade 1994 in Annex 1A to the WTO Agreement.

2. Nothing in this Chapter shall preclude the use by a Party of exchange controls or exchange restrictions in accordance with the Articles of Agreement of the International Monetary Fund.

Chapter 3
Rules of Origin

Article 26
Definitions

For the purposes of this Chapter:

- (a) the term "exporter" means a natural or juridical person located in an exporting Party who exports a good from the exporting Party;
- (b) the term "factory ships of the Party" or "vessels of the Party" respectively means factory ships or vessels:
 - (i) which are registered in the Party;
 - (ii) which sail under the flag of the Party;
 - (iii) which are owned to an extent of at least 50 percent by nationals of the Parties, or by a juridical person with its head office in either Party, of which the representatives, chairman of the board of directors, and the majority of the members of such board are nationals of the Parties, and

of which at least 50 percent of the equity interest is owned by nationals or juridical persons of the Parties;

- (iv) of which at least 50 percent of the total of the master and officers are nationals of the Parties; and
- (v) of which at least 25 percent of the crew are nationals of the Parties;
- (c) the term "fungible originating goods of a Party" or "fungible originating materials of a Party" respectively means originating goods or materials of a Party that are interchangeable for commercial purposes, whose properties are essentially identical;
- (d) the term "Generally Accepted Accounting Principles" means the recognised consensus or substantial authoritative support within a Party at a particular time as to which economic resources and obligations should be recorded as assets and liabilities, which changes in assets and liabilities should be recorded, how the assets and liabilities and changes in them should be measured, what information should be disclosed and how it should be disclosed, and which financial statements should be prepared. These standards may be broad guidelines of general application as well as detailed practices and procedures;
- (e) the term "good" means any merchandise, product, article or material;
- (f) the term "importer" means a natural or juridical person who imports a good into the importing Party;
- (g) the term "indirect materials" means goods used in the production, testing or inspection of another good but not physically incorporated into the good, or goods used

in the maintenance of buildings or the operation of equipment associated with the production of another good, including:

- (i) fuel and energy;
 - (ii) tools, dies and moulds;
 - (iii) spare parts and goods used in the maintenance of equipment and buildings;
 - (iv) lubricants, greases, compounding materials and other goods used in production or used to operate equipment and buildings;
 - (v) gloves, glasses, footwear, clothing, safety equipment and supplies;
 - (vi) equipment, devices and supplies used for testing or inspection;
 - (vii) catalysts and solvents; and
 - (viii) any other goods that are not incorporated into another good but whose use in the production of the good can reasonably be demonstrated to be a part of that production;
- (h) the term "materials" means any matter or substance consumed in the production of a good, physically incorporated into a good, or used in the production of another good;
- (i) the term "non-originating material" means any materials whose country of origin is other than the Parties (imported non-originating) and any material whose origin cannot be determined (undetermined origin) under this Chapter;
- (j) the term "originating material" means any material that qualifies as originating under this Chapter; and
- (k) the term "production" means a method of obtaining goods including manufacturing, assembling, processing, raising, growing, breeding, mining, extracting, harvesting, fishing, trapping, gathering, collecting, hunting and capturing.

Article 27

Originating Goods

Except as otherwise provided for in this Agreement, a good shall qualify as an originating good of a Party where:

- (a) the good is wholly obtained or produced entirely in the Party, as provided for in Article 28; or
- (b) the good is not wholly obtained or produced in the Party, provided that the good satisfies the requirements of Article 29.

Article 28

Wholly Obtained or Produced Goods

For the purposes of subparagraph (a) of Article 27, the following goods shall be considered as being wholly obtained or produced in a Party:

- (a) live animals born and raised in the Party;
- (b) animals obtained by hunting, trapping, fishing, gathering or capturing in the Party;
- (c) goods obtained from live animals in the Party;
- (d) plants and plant products harvested, picked or gathered in the Party;
Note: For the purposes of this subparagraph, the term "plant" refers to all plant life, including fruit, flowers, vegetables, trees, seaweed, fungi and live plants.
- (e) minerals and other naturally occurring substances, not included in subparagraphs (a) through (d), extracted or taken in the Party;
- (f) goods of sea-fishing and other goods taken by vessels of the Party from the sea outside the territorial seas of the Parties;

- (g) goods produced on board factory ships of the Party, outside the territorial seas of the Parties from the goods referred to in subparagraph (f);
 - (h) goods taken from the sea-bed or subsoil beneath the sea-bed outside the territorial sea of the Party, provided that the Party has rights to exploit such sea-bed or subsoil in accordance with the provisions of the United Nations Convention on the Law of the Sea, done at Montego Bay, December 10, 1982;
 - (i) articles collected in the Party which can no longer perform their original purpose in the Party nor are capable of being restored or repaired and which are fit only for disposal or for the recovery of parts or raw materials;
 - (j) scrap and waste derived from manufacturing or processing operations or from consumption in the Party and fit only for disposal or for the recovery of raw materials;
 - (k) parts or raw materials recovered in the Party from articles which can no longer perform their original purpose nor are capable of being restored or repaired; and
 - (l) goods obtained or produced in the Party exclusively from the goods referred to in subparagraphs (a) through (k).
 - (a) the good has a qualifying value content, calculated using the formula set out in Article 30, of not less than 35 percent; and
 - (b) all non-originating materials used in the production of the good have undergone in the Party a change in tariff classification at the six-digit level, (i.e., a change in tariff subheading) of the Harmonized System.
Note: For the purposes of this subparagraph, "Harmonized System" is that on which the product specific rules set out in Annex 2 are based.
2. Notwithstanding paragraph 1, a good subject to product specific rules shall qualify as an originating good of a Party if it satisfies the applicable product specific rules set out in Annex 2.
3. For the purposes of subparagraph 1(b) and the relevant product specific rules set out in Annex 2, the rule requiring that the materials used have undergone a change in tariff classification or a specific manufacturing or processing operation, shall apply only to non-originating materials.

Article 30

Calculation of Qualifying Value Content

1. For the purposes of calculating the qualifying value content of a good, one or the other of the following formulas shall be applied:

$$(a) \quad Q.V.C. = \frac{F.O.B. - V.N.M.}{F.O.B.} \times 100$$

Where:

Q.V.C. is the qualifying value content of a good, expressed as a percentage;

F.O.B. is, except as provided for in paragraph 2, the free-on-board value of a good payable by the buyer of the good to the seller of the good,

Article 29

Goods Produced Using Non-Originating Materials

1. For the purposes of subparagraph (b) of Article 27, a good shall qualify as an originating good of a Party if:

regardless of the mode of shipment, not including any internal excise taxes reduced, exempted, or repaid when the good is exported; and

V.N.M. is the value of non-originating materials used in the production of a good;

(b)

$$Q.V.C. = \frac{V.O.M. + \text{Direct Labour Cost} + \text{Direct Overhead Cost} + \text{Profit}}{F.O.B.} \times 100$$

Where:

V.O.M. is the value of originating material used in the production of the good.

Note: For the purpose of calculating the qualifying value content of a good, the Generally Accepted Accounting Principles in the exporting Party shall be applied.

2. F.O.B. referred to in paragraph 1 shall be the value:

- (a) adjusted to the first ascertainable price paid for a good from the buyer to the producer of the good, if there is free-on-board value of the good, but it is unknown and cannot be ascertained; or
- (b) determined in accordance with Articles 1 through 8 of the Agreement on Customs Valuation, if there is no free-on-board value of a good.

3. For the purposes of paragraph 1, the value of a material used in a production of a good in a Party:

- (a) shall be the CIF value; or
- (b) shall be the first ascertainable price paid for the material in the Party, but may exclude all the costs incurred in the Party in transporting the material from the warehouse of the supplier of the material to the place where the producer is located

such as freight, insurance and packing as well as any other known and ascertainable cost incurred in the Party.

Note: For the purposes of this paragraph, the term "CIF value" means the customs value of the imported good in accordance with the Agreement on Customs Valuation and includes freight and insurance where appropriate, packing and all other costs incurred in transporting the material to the importation port in the Party where the producer of the good is located.

4. For the purposes of subparagraph 2(b) or 3(a), in applying the Agreement on Customs Valuation to determine the value of a good or non-originating material, the Agreement on Customs Valuation shall apply mutatis mutandis to domestic transactions or to the cases where there is no domestic transaction of the good or non-originating material.

Article 31 Accumulation

For the purposes of determining whether a good qualifies as an originating good of a Party, an originating good of the other Party which is used as a material in the production of the good in the former Party may be considered as an originating material of the former Party, provided that such good has undergone its last production process in the former Party which goes beyond the operations provided for in Article 33.

Article 32 De Minimis

Non-originating materials used in the production of a good that do not satisfy an applicable rule for the good shall be disregarded, provided that the totality of such materials does not exceed specific percentages in value or weight of the good. Such percentages shall be:

- (a) in the case of a good classified under Chapters 15 through 24 (except 1604.20, 1605.20, 1605.90, 2101.11, 2101.20, 2106.10, 2106.90, 2207.10 and 2207.20), 2501.00, 2906.11, 2918.14, 2918.15, 2940.00, 3505.10, 3505.20, 3809.10 and 3824.60 of the Harmonized System, 7 percent in value of the good;
- (b) in the case of a good classified under Chapters 28 through 49 (except 2905.44, 2906.11, 2918.14, 2918.15, 2940.00, 3502.11, 3502.19, 3505.10, 3505.20, 3809.10, 3824.60, 4601.29, 4601.94 and 4602.19) and 64 through 97 of the Harmonized System, 10 percent in value of the good; and
- (c) in the case of a good classified under Chapters 50 through 63 (except 5001.00, 5003.00, heading 51.02, 51.03, 52.01 through 52.03, 53.01 and 53.02) of the Harmonized System, 7 percent in weight of the good.
- Note 1: For the purposes of this Article, the term "value of the good" means the free-on-board value of the good referred to in paragraph 1 of Article 30 or the value set out in paragraph 2 of that Article.
- Note 2: For the purposes of this Article, "Harmonized System" is that on which the product specific rules set out in Annex 2 are based.
- Note 3: This Article shall not be applied in calculating the qualifying value content set out in Article 30.
- Article 33**
Non-Qualifying Operations
- A good shall not be considered to be an originating good of the exporting Party merely by reason of having undergone the following:
- (a) operations to ensure the preservation of products in good condition during transport and storage (such as drying, freezing, keeping in brine, removal of damaged parts) and other similar operations;
 - (b) changes of packaging and breaking up and assembly of packages;
 - (c) disassembly;
 - (d) placing in bottles, cases, boxes and other simple packaging operations;
 - (e) collection of parts and components classified as a good pursuant to Rule 2(a) of the General Rules for the Interpretation of the Harmonized System;
 - (f) simple operations consisting of removal of dust, sifting or screening, sorting, classifying, matching (including the making-up of sets of articles), washing, painting;
 - (g) simple cutting, slicing and repacking or placing in bottles, flasks, bags or boxes, fixing on cards or boards, and all other simple packing operations;
 - (h) affixing or printing marks, labels and other like distinguishing signs on products or their packaging;
 - (i) simple mixing of products whether or not of different kinds;
 - (j) simple assembly of parts of goods to constitute a complete product;
 - (k) slaughter of animals;
 - (l) mere dilution with water or another substance that does not materially alter the characteristics of the goods; or

- (m) any combination of operations referred to in subparagraphs (a) through (l).

Note: For the purposes of this Article, an operation is described as "simple" if neither special skills nor machines, apparatus or equipment especially produced or installed for carrying it out are needed.

Article 34 Consignment Criteria

1. An originating good of the other Party shall be deemed to meet the consignment criteria when it is:

- (a) transported directly from the other Party; or
- (b) transported through one or more non-Parties for the purpose of transit or temporary storage in warehouses in such non-Parties, provided that it does not undergo operations other than unloading, reloading and any other operation to preserve it in good condition.

2. If an originating good of the other Party does not meet the consignment criteria referred to in paragraph 1, the good shall not be considered as an originating good of the other Party.

Article 35 Unassembled or Disassembled Goods

Where a good satisfies the requirements of the relevant provisions of Articles 27 through 33 and is imported into a Party from the other Party in an unassembled or disassembled form but is classified as an assembled good pursuant to Rule 2(a) of the General Rules for the Interpretation of the Harmonized System, such a good shall be considered as an originating good of the other Party.

Article 36 Fungible Goods and Materials

1. For the purposes of determining whether a

good qualifies as an originating good of a Party, where fungible originating materials of the Party and fungible non-originating materials that are mixed in an inventory are used in the production of the good, the origin of the materials may be determined pursuant to an inventory management method under the Generally Accepted Accounting Principles in the Party.

2. Where fungible originating goods of a Party and fungible non-originating goods are mixed in an inventory and, prior to exportation do not undergo any production process or any operation in the Party where they were mixed other than unloading, reloading or any other operation to preserve them in good condition, the origin of the good may be determined pursuant to an inventory management method under the Generally Accepted Accounting Principles in the Party.

Article 37 Indirect Materials

Indirect materials shall be, without regard to where they are produced, considered to be originating materials of a Party where the good is produced.

Article 38 Accessories, Spare Parts, Tools and Instructional or Other Information Materials

1. In determining whether all the non-originating materials used in the production of a good undergo the applicable change in tariff classification or a specific manufacturing or processing operation, accessories, spare parts, tools and instructional or other information materials delivered with the good that form part of the good's standard accessories, spare parts, tools and instructional or other information materials, shall be disregarded, provided that:

- (a) the accessories, spare parts, tools and instructional or other information materials are not invoiced separately from the good, without regard to whether they are separately described in the invoice; and
 - (b) the quantities and value of the accessories, spare parts, tools and instructional or other information materials are customary for the good.
2. If a good is subject to a qualifying value content requirement, the value of the accessories, spare parts, tools and instructional or other information materials shall be taken into account as the value of originating or non-originating materials, as the case may be, in calculating the qualifying value content of the good.

Article 39
Packing and Packaging
Materials and Containers

1. Packing materials and containers for shipment that are used to protect a good during transportation shall not be taken into account in determining whether the good qualifies as an originating good of a Party.
2. With respect to packaging materials and containers that are used for retail sale of a good:
 - (a) such packaging materials and containers shall be disregarded in determining whether the good qualifies as an originating good of a Party, if they are classified with the good pursuant to Rule 5 of the General Rules for the Interpretation of the Harmonized System; and
 - (b) if the good is subject to a qualifying value content requirement, the value of such packaging materials and containers shall be taken into account as the value of originating materials of a Party where the

good is produced or non- originating materials, as the case may be, in calculating the qualifying value content of the good.

Article 40
Operational Certification Procedures

The operational certification procedures set out in Annex 3 shall apply with respect to procedures regarding certificate of origin and related matters.

Article 41
Sub-Committee on Rules of Origin

1. For the purposes of the effective implementation and operation of this Chapter, a Sub-Committee on Rules of Origin (hereinafter referred to in this Article as "the Sub-Committee") shall be established on the date of entry into force of this Agreement.
2. The functions of the Sub-Committee shall be:
 - (a) reviewing and making appropriate recommendations, as necessary, to the Joint Committee on:
 - (i) the implementation and operation of this Chapter;
 - (ii) any amendments to Annex 2 proposed by either Party; and
 - (iii) the Implementing Procedures referred to in Section 11 of Annex 3;
 - (b) considering any other matter, including development of an electronic system for facilitating the issuance and verification of certificate of origin, as the Parties may agree related to this Chapter;
 - (c) reporting the findings of the Sub-Committee to the Joint Committee; and

- (d) carrying out other functions as may be delegated by the Joint Committee pursuant to Article 14.

Chapter 4

Customs Procedures

Article 42

Scope and Objectives

1. This Chapter shall apply to customs procedures required for the clearance of goods traded between the Parties.
2. This Chapter shall be implemented by the Parties in accordance with the laws and regulations of each Party and within the available resources of their respective customs authorities.
3. The objectives of this Chapter are to establish a framework to ensure transparency, consistency, fair and proper application of customs laws and prompt clearance of goods and to promote cooperation on customs matters, including the exchange of information, with a view to facilitating legitimate trade in goods between the Parties, preventing, investigating and repressing violation or attempted violation of customs laws, and meeting the needs of Governments of the Parties for the protection of society and revenue.

Article 43

Definition

For the purposes of this Chapter, the term "customs laws" means the statutory and regulatory provisions relating to the importation, exportation, movement or storage of goods, the administration and enforcement of which are specifically entrusted to the customs authority of each Party, and any regulations made by the customs authority of each Party under its statutory power.

Article 44

Transparency

1. Each Party shall ensure that all relevant information of general application pertaining to its customs laws is readily available to any interested person.
2. When information that has been made available must be revised due to changes in its customs laws, each Party shall make the revised information readily available sufficiently in advance of the entry into force of the changes to enable interested persons to take account of them, unless advance notice is precluded.
3. At the request of any interested person of the Parties, each Party shall provide, as quickly and accurately as possible, information relating to the specific customs matters raised by the interested person and pertaining to its customs laws. Each Party shall supply not only the information specifically requested but also any other pertinent information which it considers the interested person should be made aware of.

Article 45

Customs Clearance

1. Both Parties shall apply their respective customs procedures in a predictable, consistent, transparent and fair manner.
2. For prompt customs clearance of goods traded between the Parties, each Party shall:
 - (a) make use of information and communications technology;
 - (b) simplify its customs procedures;
 - (c) harmonise its customs procedures, to the extent possible, with relevant international standards and recommended practices such as those made under the auspices of the Customs Co-operation Council; and

- (d) promote cooperation, wherever appropriate, between its customs authority and:
 - (i) other national authorities of the Party; and
 - (ii) the trading communities of the Party.
 - (e) trade statistics data relating to customs clearance of goods and conveyances related to goods, exported from a Party to the other Party.
3. Each Party shall provide affected parties with easily accessible processes of administrative and judicial review in relation to the action concerning the customs matters taken by the Party.

Article 47

Advance Rulings

Where a written application is made in accordance with relevant laws or procedures adopted or maintained by the importing Party and the importing Party has no reasonable grounds to deny the issuance, the importing Party shall endeavour to, prior to the importation of the good, issue a written advance ruling concerning the tariff classification, the customs valuation and the origin of the good, as well as the qualification of the good as an originating good of the exporting Party under the provisions of Chapter 3.

Article 48

Cooperation and Exchange of Information

1. The Parties shall cooperate and exchange information with each other on customs matters, including specific cases, such as:
- (a) customs procedures;
 - (b) customs valuation within the meaning of the Agreement on Customs Valuation;
 - (c) enforcement against the trafficking of prohibited goods and the importation of goods suspected of infringing intellectual property rights;
 - (d) prevention, investigation and repression of violation or attempted violation of customs laws; and

2. Such cooperation and exchange of information shall be implemented as provided for in the Implementing Agreement.

3. Paragraph 4 of Article 9 shall not apply to the exchange of information under this Article.

Chapter 5

Technical Regulations, Standards and Conformity Assessment Procedures, and Sanitary and Phytosanitary Measures

Article 50

Scope

This Chapter shall apply to technical regulations, standards and conformity assessment procedures as defined in the Agreement on Technical Barriers to Trade in Annex 1A to the WTO Agreement (hereinafter referred to as "the TBT Agreement") and sanitary and phytosanitary (hereinafter referred to as "SPS") measures under the Agreement on the Application of Sanitary and Phytosanitary Measures in Annex 1A to the WTO Agreement (hereinafter referred to as "the SPS Agreement"), that may, directly or indirectly, affect trade in goods between the Parties.

Article 51

Reaffirmation of Rights and Obligations

The Parties reaffirm their rights and obligations relating to technical regulations, standards and conformity assessment procedures under the TBT Agreement, and their rights and obligations relating to SPS measures under the SPS Agreement.

Article 52

Enquiry Points

Each Party shall designate an enquiry point which is able to answer all reasonable enquiries from the other Party regarding technical regulations, standards and conformity assessment procedures, and SPS measures and, if appropriate, to provide their relevant information.

Article 54

Cooperation on Generic Medicine

1. The Parties shall exchange information on their respective regulatory measures concerning generic medicine, with a view to promoting cooperation between the Parties in the field of pharmaceuticals and building mutual confidence in the regulatory measures of each Party.

2. For the purposes of this Article, the term "generic medicine" means drugs approved by the competent authority of a Party under the laws and regulations of the Party as equivalent, in terms of active ingredients, dosages, usages and indications, to the drugs approved preceding the former drugs.

3. Applications by a person of a Party for registration and other approvals required for release of a generic medicine in the market of the other Party shall be considered by the relevant authorities of the other Party. Such applications shall be accorded, in the relevant procedure, treatment no less favourable than that accorded to like applications by its own person, where they fulfil all the requirements under the laws and regulations of the other Party. Such procedure shall be completed within a reasonable period of time from the date of such application.

Article 55

Mutual Recognition

1. The Parties shall, through the Sub-Committee,

discuss the feasibility of MRAs in such sectors as electrical products, telecommunications terminal equipment and radio equipment and other sectors as may be mutually agreed by the Parties. In elaborating MRAs, the Parties shall confirm the economic benefits of such arrangements and, where necessary, the equivalence of the technical regulations of both Parties.

2. The Sub-Committee shall meet within three months from the date of entry into force of this Agreement, in order to discuss the feasibility of MRAs in sectors referred to in paragraph 1, and shall endeavour to arrive at a conclusion about such feasibility within six months. The Parties shall endeavour to reach a conclusion of MRAs under paragraph 1 within a reasonable period of time, normally not exceeding three years, from the date of such conclusion about the feasibility.

Article 56

Non-Application of Chapter 14

The dispute settlement procedures provided for in Chapter 14 shall not apply to this Chapter, unless otherwise agreed by the Parties.

Chapter 6

Trade in Services

Article 57

Scope

1. This Chapter shall apply to measures by a Party affecting trade in services.

2. This Chapter shall not apply to:

- (a) in respect of air transport services, measures affecting traffic rights, however granted; or to measures affecting services directly related to the exercise of traffic rights, other than measures affecting:
 - (i) aircraft repair and maintenance services;

- (ii) the selling and marketing of air transport services; and
 - (iii) computer reservation system services;
 - (b) cabotage in maritime transport services; and
 - (c) measures affecting natural persons seeking access to the employment market of a Party, or measures regarding nationality or citizenship, or residence or employment on a permanent basis.
3. Articles 59 and 60 shall not apply to any measure by a Party with respect to government procurement.
4. This Chapter shall not prevent a Party from applying measures to regulate the entry of natural persons of the other Party into, or their temporary stay in the former Party, including those measures necessary to protect the integrity of, and to ensure the orderly movement of natural persons across, its borders, provided that such measures are not applied in such a manner as to nullify or impair the benefits accruing to the other Party under the terms of a specific commitment.
- Note: The sole fact of requiring a visa for natural persons of a certain nationality or citizenship and not for those of others shall not be regarded as nullifying or impairing benefits under a specific commitment.
5. Annex 4 provides supplementary provisions to this Chapter on financial services, including scope and definitions.
6. Annex 5 provides supplementary provisions to this Chapter on telecommunications services, including scope and definitions.
- Article 58**
Definitions
- For the purposes of this Chapter:
- (a) the term "aircraft repair and maintenance services" means such activities when undertaken on an aircraft or a part thereof while it is withdrawn from service and does not include so-called line maintenance;
 - (b) the term "commercial presence" means any type of business or professional establishment, including through:
 - (i) the constitution, acquisition or maintenance of a juridical person; or
 - (ii) the creation or maintenance of a branch or a representative office, within the Area of a Party for the purposes of supplying a service;
 - (c) the term "computer reservation system services" means services provided by computerised systems that contain information about air carriers' schedules, availability, fares and fare rules, through which reservations can be made or tickets may be issued;
 - (d) the term "measure" means any measure, whether in the form of a law, regulation, rule, procedure, decision, administrative action or any other form;

Note: The term "measure" shall include taxation measures to the extent covered by the GATS.
 - (e) the term "measure by a Party" means any measure taken by:
 - (i) the central, regional or local governments or authorities of a Party; and
 - (ii) non-governmental bodies in the exercise of powers delegated by the central, regional or local governments or authorities of a Party;

- (f) the term "measures by a Party affecting trade in services" includes measures by a Party in respect of:
 - (i) the purchase, payment or use of a service;
 - (ii) the access to and use of, in connection with the supply of a service, services which are required by the Party to be offered to the public generally; and
 - (iii) the presence, including commercial presence, of persons of the other Party for the supply of a service in the Area of the former Party;
- (g) the term "monopoly supplier of a service" means any person, public or private, which in the relevant market of the Area of a Party is authorised or established formally or in effect by that Party as the sole supplier of that service;
- (h) the term "selling and marketing of air transport services" means opportunities for the air carrier concerned to sell and market freely its air transport services including all aspects of marketing such as market research, advertising and distribution. These activities do not include the pricing of air transport services nor the applicable conditions;
- (i) the term "service consumer" means any person that receives or uses a service;
- (j) the term "service of the other Party" means a service which is supplied:
 - (i) from or in the Area of the other Party, or in the case of maritime transport service, by a vessel registered under the law of the other Party, or by a person of the other Party which supplies such service through the operation of a vessel or its use in whole or in part; or
 - (ii) in the case of the supply of a service through commercial presence or through the presence of natural persons, by a service supplier of the other Party;
- (k) the term "service supplied in the exercise of governmental authority" means any service which is supplied neither on a commercial basis nor in competition with one or more service suppliers;
- (l) the term "supply of a service" includes the production, distribution, marketing, sale and delivery of a service;
- (m) the term "trade in services" means the supply of a service:
 - (i) from the Area of a Party into the Area of the other Party ("cross-border supply");
 - (ii) in the Area of a Party to the service consumer of the other Party ("consumption abroad");
 - (iii) by a service supplier of a Party, through commercial presence in the Area of the other Party ("commercial presence"); and
 - (iv) by a service supplier of a Party, through presence of natural persons of that Party in the Area of the other Party ("presence of natural persons"); and
- (n) the term "traffic rights" means the rights for scheduled and non-scheduled services to operate and/or to carry passengers, cargo and mail for remuneration or hire from, to, within, or over a Party, including points to be served, routes to be operated, types of traffic to be carried, capacity to be provided, tariffs to be charged and their conditions, and criteria for designation of airlines, including such criteria as number, ownership and control.

Article 59 **Market Access**

1. With respect to market access through the modes of supply defined in subparagraph (m) of Article 58, each Party shall accord services and service suppliers of the other Party treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its Schedule of Specific Commitments in Annex 6.

Note: If a Party undertakes a market-access commitment in relation to the supply of a service through the mode of supply referred to in subparagraph (m) (i) of Article 58 and if the cross-border movement of capital is an essential part of the service itself, that Party is thereby committed to allow such movement of capital. If a Party undertakes a market-access commitment in relation to the supply of a service through the mode of supply referred to in subparagraph (m) (iii) of Article 58, it is thereby committed to allow related transfers of capital into its Area.

2. In sectors where market-access commitments are undertaken, the measures which a Party shall not maintain or adopt either on the basis of a regional subdivision or on the basis of its entire Area, unless otherwise specified in its Schedule of Specific Commitments in Annex 6, are defined as:

- (a) limitations on the number of service suppliers whether in the form of numerical quotas, monopolies, exclusive service suppliers or the requirements of an economic needs test;
- (b) limitations on the total value of service transactions or assets in the form of numerical quotas or the requirement of an economic needs test;

- (c) limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test;

Note: This subparagraph does not cover measures of a Party which limit inputs for the supply of services.

- (d) limitations on the total number of natural persons that may be employed in a particular service sector or that a service supplier may employ and who are necessary for, and directly related to, the supply of a specific service in the form of numerical quotas or the requirement of an economic needs test;
- (e) measures which restrict or require specific types of legal entity or joint venture through which a service supplier may supply a service; and
- (f) limitations on the participation of foreign capital in terms of maximum percentage limit on foreign share holding or the total value of individual or aggregate foreign investment.

3. Each Party shall endeavour to reduce the requirements for a service supplier of the other Party to establish or maintain a representative office or any form of enterprise or to be resident in its Area, as a condition for the cross-border supply of a service.

Article 60 **National Treatment**

1. In the sectors inscribed in its Schedule of Specific Commitments in Annex 6, and subject to any conditions and qualifications set out therein, each Party shall accord to services and

service suppliers of the other Party, in respect of all measures affecting the supply of services, treatment no less favourable than that it accords to its own like services and service suppliers.

Note: Specific commitments assumed under this Article shall not be construed to require either Party to compensate for any inherent competitive disadvantages which result from the foreign character of the relevant services or service suppliers.

2. A Party may meet the requirement of paragraph 1 by according to services and service suppliers of the other Party, either formally identical treatment or formally different treatment to that it accords to its own like services and service suppliers.

3. Formally identical or formally different treatment shall be considered to be less favourable if it modifies the conditions of competition in favour of services or service suppliers of a Party compared to like services or service suppliers of the other Party.

4. A Party shall not invoke the preceding paragraphs under Chapter 14 with respect to a measure of the other Party that falls within the scope of an international agreement between them relating to the avoidance of double taxation.

Article 61 Additional Commitments

The Parties may negotiate commitments with respect to measures affecting trade in services not subject to scheduling under Articles 59 and 60, including those regarding qualifications, standards or licensing matters. Such commitments shall be inscribed in a Party's Schedule of Specific Commitments in Annex 6.

Article 62 Schedule of Specific Commitments

1. With respect to sectors or sub-sectors where

specific commitments are undertaken by each Party, its Schedule of Specific Commitments in Annex 6 shall specify:

- (a) terms, limitations and conditions on market access;
- (b) conditions and qualifications on national treatment;
- (c) undertakings relating to additional commitments; and
- (d) where appropriate, the time-frame for implementation of such commitments.

2. Measures inconsistent with both Articles 59 and 60 shall be inscribed in the column relating to Article 59. This inscription will be considered to provide a condition or qualification to Article 60 as well.

Article 63 Most-Favoured-Nation Treatment

If, after this Agreement enters into force, a Party enters into any agreement on trade in services with a non-Party, it shall consider a request by the other Party for the incorporation in this Agreement of treatment no less favourable than that provided under the former agreement. Any such incorporation should maintain the overall balance of commitments undertaken by each Party under this Agreement.

Article 64 Domestic Regulation

1. In the sectors inscribed in its Schedule of Specific Commitments in Annex 6, each Party shall ensure that all measures of general application affecting trade in services are administered in a reasonable, objective and impartial manner.

2. Each Party shall maintain or institute as soon as practicable judicial, arbitral or administrative tribunals or procedures which provide, at the request of an affected service supplier of the other Party, for the prompt review of, and where justified, appropriate remedies for, administrative decisions affecting trade in services. Where such procedures are not independent of the agency entrusted with the administrative decision concerned, the Party shall ensure that the procedures in fact provide for an objective and impartial review.
 3. The provisions of paragraph 2 shall not be construed to require a Party to institute such tribunals or procedures where this would be inconsistent with its constitutional structure or the nature of its legal system.
 4. Where authorisation is required for the supply of a service on which a specific commitment has been made, the competent authorities of a Party shall, within a reasonable period of time after the submission of an application considered complete under domestic laws and regulations, inform the applicant of the decision concerning the application. At the request of the applicant, the competent authorities of the Party shall provide, without undue delay, information concerning the status of the application.
 5. The Parties shall jointly discuss disciplines on domestic regulation including measures relating to qualification requirements and procedures, technical standards and licensing requirements developed pursuant to paragraph 4 of Article VI of the GATS, with a view to incorporating such disciplines into this Chapter and thereby ensuring that such domestic regulation does not constitute unnecessary barriers to trade in services. The Parties note that such disciplines aim to ensure that such requirements are *inter alia*:
 - (a) based on objective and transparent criteria, such as competence and the ability to supply the service;
 - (b) not more burdensome than necessary to ensure the quality of the service; and
 - (c) in the case of licensing procedures, not in themselves a restriction on the supply of the service.
 6. Pending the incorporation of disciplines developed under the GATS as referred to in paragraph 5, in the sectors inscribed in its Schedule of Specific Commitments in Annex 6 and subject to any terms, limitations, conditions or qualifications set out therein, each Party shall not apply licensing and qualification requirements and technical standards that nullify or impair its specific commitments in a manner which:
 - (a) does not comply with the criteria outlined in subparagraph (a), (b) or (c) of paragraph 5; and
 - (b) could not reasonably have been expected of that Party at the time the specific commitments in those sectors were made.
 7. In determining whether a Party is in conformity with the obligation under paragraph 6, account shall be taken of international standards of relevant international organisations applied by that Party.
- Note: The term "relevant international organisations" refers to international bodies whose membership is open to the relevant bodies of the Parties.
8. In sectors where specific commitments regarding professional services are undertaken, each Party shall provide for adequate procedures to verify the competence of professionals of the other Party.

Article 65 **Recognition**

1. For the purposes of the fulfilment, in whole or in part, of its standards or criteria for the authorisation, licensing or certification of service suppliers, a Party may recognise the education or experience obtained, requirements met, or licences or certifications granted in the other Party.

2. The Parties shall enter into negotiations regarding the possibility of recognition of the education or experience obtained, requirements met, or licences or certifications granted on specific services sectors with a view to reaching a conclusion within three years after the entry into force of this Agreement.

3. Upon request being made in writing by a Party to the other Party, the Parties shall encourage that the irrespective professional bodies in any regulated service sector negotiate and conclude, within 12 months, any arrangement for mutual recognition of education or experience obtained, requirements met, or licences or certifications granted in that service sector, with a view to the achievement of early outcomes. Any delay or failure by these professional bodies to reach and conclude agreement on the details of such arrangements shall not be regarded as a breach of a Party's obligations under this paragraph and shall not be subject to Chapter 14. Progress in this regard shall be periodically reviewed by the Parties in the Joint Committee established under Article 14.

4. Where a Party recognises, by agreement or arrangement, the education or experience obtained, requirements met or licences or certifications granted in any non-Party, the Party shall afford the other Party, upon request, adequate opportunity to negotiate its accession to such an agreement or arrangement or to negotiate comparable ones with it. Where a Party accords

recognition autonomously, it shall afford the other Party adequate opportunity to demonstrate that the education or experience obtained, requirements met or licences or certifications granted in the other Party should also be recognised.

Article 66 **Transparency**

1. The competent authorities referred to in paragraph 2 of Article 4 shall, upon request by the other Party or service suppliers of the other Party, promptly respond to specific questions from, and provide information to, the other Party or the service suppliers with respect to matters referred to in Article 4, including requirements and procedures for licensing and qualification, through enquiry points. The enquiry points shall be notified to the other Party by diplomatic note on the date of entry into force of this Agreement.

2. Each Party shall endeavour to prepare, forward to the other Party and make public a list providing all existing measures, within the scope of this Chapter, at the central governmental level, and prefectural governmental level in the case of Japan and governmental level of states and Union territories in the case of India, which are inconsistent with Articles 59 and/or 60, whether or not these measures are included in its Schedule of Specific Commitments in Annex 6. The list shall include the following elements and shall be reviewed annually and revised as necessary:

- (a) sector and sub-sector or matter;
- (b) type of inconsistency, (i.e., Market Access and/or National Treatment);
- (c) legal source or authority of the measure; and
- (d) succinct description of the measure.

Note: The list under this paragraph will be made solely for the purposes of transparency, and shall not be construed to affect any rights and obligations of a Party under this Chapter. The Parties understand that the list as required in this paragraph shall be prepared if possible within five years after the entry into force of this Agreement.

- (a) authorises or establishes a small number of service suppliers; and
- (b) substantially prevents competition among those suppliers in its Area.

Article 68 **Payments and Transfers**

3. The dispute settlement procedures provided for in Chapter 14 shall not apply to disputes arising out of paragraphs 1 and 2.

Article 67 **Monopolies and Exclusive** **Service Suppliers**

1. Each Party shall ensure that any monopoly supplier of a service in its Area does not, in the supply of the monopoly service in the relevant market, act in a manner inconsistent with the Party's commitments under this Chapter.

2. Where a Party's monopoly supplier of a service competes, either directly or through an affiliated company, in the supply of a service outside the scope of its monopoly rights and which is subject to that Party's specific commitments, the Party shall ensure that such a supplier does not abuse its monopoly position to act in the Area of the Party in a manner inconsistent with such commitments.

3. If a Party has a reason to believe that a monopoly supplier of a service of the other Party is acting in a manner inconsistent with paragraph 1 or 2, the Party may request the other Party establishing, maintaining or authorising such supplier to provide specific information concerning the relevant operations.

4. The provisions of this Article shall also apply to cases of exclusive service suppliers, where a Party, formally or in effect:

1. Except under the circumstances envisaged in Article 69, a Party shall not apply restrictions on international transfers and payments for current transactions relating to its specific commitments.

2. Nothing in this Chapter shall affect the rights and obligations of the Parties as members of the International Monetary Fund under the Articles of Agreement of the International Monetary Fund, including the use of exchange actions which are in conformity with the Articles of Agreement of the International Monetary Fund, provided that a Party shall not impose restrictions on any capital transactions inconsistently with its specific commitments under this Chapter regarding such transactions, except under Article 69, or at the request of the International Monetary Fund.

Article 69 **Restrictions to Safeguard** **the Balance of Payments**

1. In the event of serious balance-of-payments and external financial difficulties or threat thereof, a Party may adopt or maintain restrictions on trade in services on which it has undertaken specific commitments, including on payments or transfers for transactions relating to such commitments. It is recognised that particular pressure on the balance of payments of a Party in the process of economic development may necessitate the use of restrictions to ensure, inter alia, the maintenance of a level of financial reserves adequate for the implementation of its programme of economic development.

2. The restrictions referred to in paragraph 1:
 - (a) shall be applied by a Party on a national treatment basis and such that the other Party is treated no less favourably than any non-Party;
 - (b) shall be consistent with the Articles of Agreement of the International Monetary Fund;
 - (c) shall avoid unnecessary damage to the commercial, economic and financial interests of the other Party;
 - (d) shall not exceed those necessary to deal with the circumstances described in paragraph 1; and
 - (e) shall be temporary and be phased out progressively as the situation specified in paragraph 1 improves.
 3. In determining the incidence of such restrictions, a Party may give priority to the supply of services which are more essential to its economic or development programmes. However, such restrictions shall not be adopted or maintained for the purposes of protecting a particular service sector.
 4. Any restrictions adopted or maintained under paragraph 1, or any changes therein, shall be promptly notified to the other Party.
2. In the event that either Party considers that its interests have been adversely affected by a subsidy of the other Party, the Parties shall, upon request by the former Party, enter into consultations with a view to resolving the matter.
 3. During the consultations referred to in paragraph 2, the Party granting a subsidy shall, if it deems fit, consider a request of the other Party for information relating to the subsidy programme such as:
 - (a) domestic laws and regulations under which the subsidy is granted;
 - (b) form of the subsidy, (e.g., grant, loan, tax concession);
 - (c) policy objective and/or purpose of the subsidy;
 - (d) dates and duration of the subsidy and any other time limits attached to it; and
 - (e) eligibility requirements of the subsidy including those with respect to potential beneficiaries.
 4. The dispute settlement procedures provided for in Chapter 14 shall not apply to this Article.

Article 70 Subsidies

1. Each Party shall review the treatment of subsidies related to trade in services taking into account the development of the multilateral disciplines pursuant to paragraph 1 of Article XV of the GATS.

Article 71 Review of Commitments

1. The Parties shall review commitments on trade in services with the first review within three years from the date of entry into force of this Agreement, with the aim of improving the overall commitments undertaken by the Parties under this Agreement.
2. In reviewing the commitments in accordance with paragraph 1, the Parties shall take into account paragraph 1 of Article IV of the GATS.

Chapter 7 **Movement of Natural Persons**

Article 73 **General Principles**

1. This Chapter reflects the preferential trading relationship between the Parties, the mutual desire of the Parties to facilitate entry and temporary stay of natural persons on a comparable basis and to establish transparent criteria and procedures for entry and temporary stay, and the need to ensure border security in each Party.

2. Each Party shall apply its measures relating to the provisions of this Chapter in accordance with paragraph 1, and, in particular, shall apply expeditiously those measures so as to avoid unduly impairing or delaying trade in goods or services or investment activities under this Agreement.

Article 74 **Scope**

1. This Chapter shall apply to measures affecting the movement of natural persons of a Party who enter the other Party and fall under one of the categories referred to in Annex 7.

2. This Chapter shall not apply to measures affecting natural persons of a Party seeking access to the employment market of the other Party, nor shall it apply to measures regarding nationality or citizenship, or residence or employment on a permanent basis.

3. This Chapter shall not prevent a Party from applying measures to regulate the entry of natural persons of the other Party into, or their temporary stay in, the former Party, including those measures necessary to protect the territorial integrity and to ensure the orderly movement of natural persons across its borders, provided that such measures are not applied in such a manner so as

to nullify or impair the benefits accruing to the other Party under the terms of specific commitments.

Note: The sole fact of requiring a visa for natural persons of the other Party and not for those of non-Parties shall not be regarded as nullifying or impairing benefits under specific commitments set out in Annex 7.

Article 75 **Definition**

For the purposes of this Chapter, the term "natural persons of a Party" means natural persons who under the law of the Party:

- (a) in respect of India, are citizens of India; and
- (b) in respect of Japan, are nationals of Japan.

Article 76 **Specific Commitments**

1. Each Party shall grant entry and temporary stay to natural persons of the other Party in accordance with this Chapter including the terms and conditions for each category set out in Annex 7, provided that the natural persons comply with the immigration laws and regulations applicable to entry and temporary stay which are not inconsistent with the provisions of this Chapter.

2. Neither Party shall impose or maintain any limitations on the total number of visas to be granted in the Parties to natural persons of the other Party under paragraph 1, unless otherwise specified in Annex 7.

Article 77 **Regulatory Transparency**

1. Each Party shall maintain or establish appropriate mechanisms to respond to inquiries from interested persons of the other Party

regarding regulations affecting entry and temporary stay of natural persons of the other Party. Such inquiries may include those on special difficulties which natural persons of the other Party encounter in the process of seeking entry into and temporary stay in the former Party.

2. To the extent possible, each Party shall allow reasonable time between the date of the publication through electronic or other means of regulations affecting the entry and temporary stay of natural persons of the other Party and their effective date.

3. On the date of entry into force of this Agreement, each Party shall exchange information on procedures relating to the processing of applications for entry and temporary stay which exist at that date. Each Party shall also, without undue delay, provide the other Party updates of information on procedures relating to the processing of applications for entry and temporary stay.

4. Each Party shall notify natural persons of the other Party, regarding the application for entry and temporary stay, either directly or through their prospective employers, of its final determination, including the period of temporary stay and conditions thereof.

5. Each Party shall endeavour, to the maximum extent possible, to take measures to simplify the requirements and to facilitate and expedite the procedures relating to the movement of natural persons of the other Party within the framework of its laws and regulations.

Article 78 General Principles for Grant of Entry and Temporary Stay and Related Issues

1. Each Party shall process without delay

applications for entry and temporary stay from natural persons of the other Party, including requests for further extensions of the temporary stay.

2. The Parties shall hold consultations on the feasibility of concluding a social security agreement. After such consultations, the Parties shall enter into negotiations in order to complete the consultations and negotiations within 36 months after the commencement of the consultations or the date of entry into force of this Agreement, whichever comes earlier.

Article 79 Accompanying Spouse and Dependent

Each Party shall ensure that spouse or dependent who accompanies a natural person of the other Party granted entry and temporary stay pursuant to paragraph 1 of Article 76 shall be allowed to work through change of the status of residence, provided that such spouse or dependent fulfils requirements under its laws and regulations. The Parties agree that spouse or dependent shall not be barred from working solely on the ground that he or she has accompanied a natural person of the other Party.

Note: For the purposes of this Article, the term "spouse" or "dependent" means spouse or dependent recognised as such in accordance with the laws and regulations of the other Party.

Article 81 Reservations

The commitments made by each Party under this Chapter shall be subject to any terms, limitations, conditions and qualifications which the Party specified in its Schedule of Specific Commitments in Annex 6.

Article 82 Further Negotiations

The Parties shall, after the date of entry into force of this Agreement, enter into negotiations in accordance with Annex 7.

Chapter 8 Investment

Article 83 Scope

1. This Chapter shall apply to measures adopted or maintained by a Party relating to investors of the other Party and to their investments in the Area of the former Party.

Note: For greater certainty, this Chapter shall also apply to measures adopted or maintained by a Party relating to investments made by investors of the other Party in the Area of the former Party prior to the entry into force of this Agreement.

2. An investor of a Party whose investments are not made in compliance with the laws and regulations of the other Party which are consistent with this Agreement shall not be entitled to submit an investment dispute to conciliations or arbitrations referred to in paragraph 4 of Article 96.

3. In the event of any inconsistency between this Chapter and Chapter 6:

- (a) with respect to matters covered by Articles 85, 86 and 89, Chapter 6 shall prevail to the extent of the inconsistency; and
- (b) with respect to matters not falling under subparagraph (a), this Chapter shall prevail to the extent of the inconsistency.

4. Nothing in this Chapter shall impose any obligation on either Party regarding measures pursuant to immigration laws and regulations.

Article 84 Definitions

For the purposes of this Chapter:

- (a) the term "financial services" shall have the same meaning as in subparagraph 5(a) of the Annex on Financial Services of the GATS;
- (b) the term "freely usable currencies" means freely usable currencies as defined under the Articles of Agreement of the International Monetary Fund;
- (c) the term "measure adopted or maintained by a Party" means any measure adopted or maintained by:
 - (i) central, regional or local governments or authorities of a Party; and
 - (ii) non-governmental bodies in the exercise of powers delegated by central, regional or local governments or authorities of a Party;
- (d) the term "natural person of a Party" means a natural person who under the law of the Party:
 - (i) in respect of India, is a citizen of India; and
 - (ii) in respect of Japan, is a national of Japan;
- (e) the term "New York Convention" means the United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards, done at New York, June 10, 1958; and
- (f) the term "transfers" means transfers and international payments.

Article 85 **National Treatment**

1. Each Party shall accord to investors of the other Party and to their investments treatment no less favourable than that it accords in like circumstances to its own investors and to their investments with respect to investment activities in its Area.

2. The treatment accorded by a Party under paragraph 1 means, with respect to a regional or local government or authority, treatment no less favourable than the most favourable treatment accorded, in like circumstances, by that regional or local government or authority to investors, and to investments of investors, of the Party of which it forms a part.

Article 86 **Most-Favoured-Nation Treatment**

Each Party shall accord to investors of the other Party and to their investments treatment no less favourable than that it accords, in like circumstances, to investors of any non-Party and to their investments with respect to the management, conduct, operation, maintenance, use, enjoyment and sale or other disposition of investments in its Area.

Article 87 **General Treatment**

1. Each Party shall accord to investments of investors of the other Party treatment in accordance with international law, including fair and equitable treatment and full protection and security.

Note: This paragraph prescribes the customary international law minimum standard of treatment of aliens as the minimum standard of treatment to be afforded to investments of investors of the other Party. The concepts of

"fair and equitable treatment" and "full protection and security" do not require treatment in addition to or beyond that which is required by the customary international law minimum standard of treatment of aliens. A determination that there has been a breach of another provision of this Agreement, or of a separate international agreement, does not establish that there has been a breach of this paragraph.

2. Each Party shall observe any obligation it may have entered into with regard to investment activities in its Area of investors of the other Party.

Article 88 **Access to the Courts of Justice**

Each Party shall in its Area accord to investors of the other Party treatment no less favourable than that it accords in like circumstances to its own investors or investors of a non-Party, with respect to access to its courts of justice and administrative tribunals and agencies in all degrees of jurisdiction, both in pursuit and in defence of such investors' rights.

Article 89 **Prohibition of Performance Requirements**

1. Neither Party shall impose or enforce any of the following requirements, in connection with investment activities in its Area of an investor of the other Party:

- (a) to export a given level or percentage of goods or services;
- (b) to achieve a given level or percentage of domestic content;
- (c) to purchase, use or accord a preference to goods produced or services provided in its Area, or to purchase goods or services from natural or legal persons or any other entity in its Area;

- (d) to relate in any way the volume or value of imports to the volume or value of exports or to the amount of foreign exchange inflows associated with investments of the investor;
 - (e) to restrict sales of goods or services in its Area that investments of the investor produce or provide by relating such sales in any way to the volume or value of its exports or foreign exchange earnings;
 - (f) to restrict the exportation or sale for export;
 - (g) to appoint, as executives, managers or members of board of directors, individuals of any particular nationality;
 - (h) to transfer technology, a production process or other proprietary knowledge to natural or legal persons or any other entity in its Area, except when the requirement:
 - (i) is imposed or enforced by a court of justice, administrative tribunal or competition authority to remedy an alleged violation of competition laws and regulations; or
 - (ii) concerns the transfer of intellectual property which is undertaken in a manner not inconsistent with the Agreement on Trade- Related Aspects of Intellectual Property Rights in Annex 1C to the WTO Agreement (hereinafter referred to as "the TRIPS Agreement"); or
 - (i) to supply to a specific region or the world market exclusively from its Area, one or more of the goods that the investor produces or the services that the investor provides.
2. Paragraph 1 does not preclude either Party from conditioning the receipt or continued receipt of an advantage, in connection with investment activities in its Area of an investor of the other Party, on compliance with any of the requirements set forth in subparagraphs 1 (h) and (i).

Article 90 Reservations and Exceptions

1. Articles 85, 86 and 89 shall not apply to:
 - (a) any existing non-conforming measure that is maintained by the following, as set out in Schedules in Annex 8:
 - (i) the central government of a Party; or
 - (ii) a prefecture of Japan or a state or an Union territory of India;
 - (b) any existing non-conforming measure that is maintained by a local government other than a prefecture and a state or an Union territory referred to in subparagraph (a)(ii);
 - (c) the continuation or prompt renewal of any non conforming measure referred to in subparagraphs (a) and (b); or
 - (d) an amendment or modification to any non conforming measure referred to in subparagraphs (a) and (b), provided that the amendment or modification does not decrease the conformity of the measure, as it existed immediately before the amendment or modification, with Articles 85, 86 and 89.
2. Articles 85, 86 and 89 shall not apply to any measure that a Party adopts or maintains with respect to sectors, sub-sectors and activities set out in its Schedule in Annex 9.
3. Neither Party shall, under any measure adopted after the date of entry into force of this Agreement and covered by its Schedule in Annex

9, require an investor of the other Party, by reason of its nationality, to sell or otherwise dispose of an investment that exists at the time the measure becomes effective.

4. In cases where a Party makes an amendment or a modification to any existing non-conforming measure set out in its Schedule in Annex 8 or where a Party adopts any new or more restrictive measure with respect to sectors, sub-sectors or activities set out in its Schedule in Annex 9 after the entry into force of this Agreement, the Party shall, prior to the implementation of the amendment or modification or the new or more restrictive measure, or in exceptional circumstances, as soon as possible thereafter:

- (a) notify the other Party of detailed information on such amendment, modification or measure; and
- (b) hold, upon request by the other Party, consultations in good faith with that other Party with a view to achieving mutual satisfaction.

5. Each Party shall endeavour, where appropriate, to reduce or eliminate the exceptions specified in its Schedules in Annexes 8 and 9 respectively.

6. Articles 85 and 86 shall not apply to any measure covered by the exceptions to, or derogations from, obligations under Articles 3 and 4 of the TRIPS Agreement, as specifically provided in Articles 3 through 5 of the TRIPS Agreement.

7. Articles 85, 86 and 89 shall not apply to any measure that a Party adopts or maintains with respect to government procurement.

Note: For greater certainty, the term "existing" in this Article means being in effect on the date of entry into force of this Agreement.

Article 92

Expropriation and Compensation

1. Neither Party shall take any measure of expropriation or nationalisation against investments in its Area of investors of the other Party or take any measure tantamount to expropriation or nationalisation (hereinafter referred to in this Chapter as "expropriation") except:

- (a) for a public purpose;
- (b) on a non-discriminatory basis;
- (c) in accordance with due process of law; and
- (d) upon payment of prompt, adequate and effective compensation pursuant to paragraphs 2 through 4.

2. The compensation shall be equivalent to the fair market value of the expropriated investments at the time when the expropriation was publicly announced or when the expropriation occurred, whichever is the earlier. The fair market value shall not reflect any change in market value occurring because the expropriation had become publicly known earlier.

3. The compensation shall be paid without delay and shall include interest at an appropriate commercial rate, taking into account the length of time from the time of expropriation to the time of payment. Such compensation shall be effectively realisable and freely transferable and shall be freely convertible, at the market exchange rate prevailing on the date of expropriation, into the currency of the Party of the investors concerned and freely usable currencies.

4. Without prejudice to Article 96, the investors affected by expropriation shall have a right of access to the courts of justice or the administrative tribunals or agencies of the Party making the expropriation to seek prompt review of the

investors' case and the amount of compensation in accordance with the principles set out in this Article.

5. This Article shall not apply with respect to the grant of compulsory licences concerning intellectual property in accordance with the TRIPS Agreement.

6. This Article shall be interpreted in accordance with Annex 10.

Article 93 Protection from Strife

1. Each Party shall accord to investors of the other Party that have suffered loss or damage relating to their investments in the Area of the former Party due to armed conflict or state of emergency such as revolution, insurrection, civil disturbance or any other similar event in the Area of that former Party, treatment, as regards restitution, indemnification, compensation or any other settlement, that is no less favourable than that it accords to its own investors or to investors of a non-Party.

2. Any payments as a means of settlement referred to in paragraph 1 shall be effectively realisable, freely transferable and freely convertible at the market exchange rate into the currency of the Party of the investors concerned and freely usable currencies.

3. Notwithstanding the provisions of Article 11, neither Party shall be relieved of its obligation under paragraph 1 by reason of its measures taken pursuant to that Article.

Article 94 Transfers

1. Each Party shall ensure that all transfers relating to investments in its Area of an investor

of the other Party may be made freely into and out of its Area without delay. Such transfers shall include, though not limited to, those of:

- (a) the initial capital and additional amounts to maintain or increase investments;
- (b) profits, capital gains, dividends, royalties, interests, fees and other current incomes accruing from investments;
- (c) proceeds from the total or partial sale or liquidation of investments;
- (d) payments made under a contract including payments made pursuant to loan agreements;
- (e) earnings and remuneration of personnel from the other Party who work in connection with investments in the Area of the former Party;
- (f) payments made in accordance with Articles 92 and 93; and
- (g) payments arising out of the settlement of a dispute under Article 96.

2. Each Party shall further ensure that such transfers may be made in freely usable currencies at the market exchange rate prevailing on the date of each transfer.

3. Notwithstanding paragraphs 1 and 2, a Party may delay or prevent such transfers through the equitable, non discriminatory and good faith application of its laws relating to:

- (a) bankruptcy, insolvency or the protection of the rights of creditors;
- (b) issuing, trading or dealing in securities or derivatives including futures and options;
- (c) criminal or penal offenses;

- (d) ensuring compliance with orders or judgments in judicial proceedings or administrative rulings; or
- (e) obligations of investors arising from social security, and public retirement or compulsory savings scheme.
- (e) avoid unnecessary damages to the commercial, economic and financial interests of the other Party.

Note: With respect to India, obligations of investors referred to in this subparagraph include, inter alia, those arising from provident funds, and retirement gratuity/allowance and employees' state insurance programmes under the laws and regulations of India.

Article 97 **Temporary Safeguard Measures**

1. A Party may adopt or maintain measures not conforming with its obligations under Article 85 relating to cross- border capital transactions and Article 94:

- (a) in the event of serious balance-of-payments and external financial difficulties or threat thereof; or
 - (b) in cases where, in exceptional circumstances, movements of capital cause or threaten to cause serious difficulties for macro economic management in particular, monetary and exchange rate policies.
2. Measures referred to in paragraph 1 shall:
- (a) be consistent with the Articles of Agreement of the International Monetary Fund;
 - (b) not exceed those necessary to deal with the circumstances set out in paragraph 1;
 - (c) be temporary and eliminated as soon as conditions permit;
 - (d) be promptly notified to the other Party; and

3. The Party adopting any measures under paragraph 1 shall, on request by the other Party, commence consultations in order to examine the possibility of reviewing the measures adopted by the former Party.

4. Nothing in this Article shall be regarded as altering the rights enjoyed and obligations undertaken by a Party as a party to the Articles of Agreement of the International Monetary Fund.

Article 98 **Prudential Measures**

Where a Party takes measures relating to financial services for prudential reasons, the provisions of paragraph 1 of Section 2 in Annex 4 shall apply accordingly.

Article 99 **Environmental Measures**

Each Party recognises that it is inappropriate to encourage investment activities in its Area of investors of the other Party by relaxing its environmental measures. To this effect each Party should not waive or otherwise derogate from such environmental measures as an encouragement for establishment, acquisition or expansion of investments in its Area.

Article 101 **Duration and Termination**

In respect of investments made prior to the date of termination of this Agreement, the provisions of this Chapter, as well as provisions of this Agreement which are directly related to this Chapter, shall continue to be effective for a period of ten years from the date of termination of this Agreement.

Chapter 9 Intellectual Property

Article 102 General Provisions

1. The Parties shall ensure adequate, effective, and non discriminatory protection of intellectual property, in accordance with the provisions of the TRIPS Agreement.
2. Intellectual property referred to in this Chapter shall mean all categories of intellectual property that are under the TRIPS Agreement.

Article 105 Patents

1. Neither Party shall require the rejection of any application for patent solely on the ground that the subject matter claimed in the application includes, among other things, a computer programme.

Note: This paragraph shall not prejudice the patentability or non-patentability of computer programmes *per se* which shall be determined in accordance with the laws and regulations of each Party.

2. Where the competent authority of a Party intends to render its decision to the effect that an application for a patent is to be refused, it shall notify the applicant for the patent of the reasons for refusal and give the said applicant an opportunity to present, in accordance with the laws and regulations of the Party, its case against the reasons for refusal within a reasonable period of time.
3. Each Party shall provide that a patent owner may file a request in accordance with its laws and regulations for correction of the description, the scope of the claims, or the drawings, that are

attached to the patent application, to the competent authority for patents for the purpose of restriction of the scope of the claims.

Article 106 Trademarks

1. Each Party shall protect well-known trademarks in accordance with the following subparagraphs:

- (a) Each Party may determine in accordance with its laws whether a trademark is a well-known trademark.

- (b) Each Party shall, *ex-officio* if its legislation so permits, or on the objection or request for invalidation raised in opposition or rectification or cancellation or invalidation proceedings by the proprietor of the well-known trademark, in accordance with its laws, refuse the application for or rectify or cancel or invalidate the registration of a trademark which is identical with or similar to a well-known trademark.

Note: For greater certainty, for the purposes of this subparagraph, each Party may in accordance with its laws take into account either of the following conditions and where appropriate other relevant factors:

- (i) the use of the trademark in question is for unfair intentions; or
- (ii) the use of that trademark would take unfair advantage of or be detrimental to the distinctive character or repute of the well-known trademark.

- (c) For the purposes of subparagraphs (a) and (b), each Party shall in accordance with its laws determine that a trademark is a well-known trademark in either one or both of the following circumstances and where appropriate taking into account other relevant factors:

(i) if a trademark is well known in the other Party; or

(ii) if a trademark is well known in both Parties;

as indicating the goods or services of the proprietor of that trademark.

Note: The protection of a well-known trademark shall also extend, subject to the laws of each Party, to goods or services which are not similar to those goods or services which are covered by the well-known trademark.

2. Each Party shall ensure that an applicant may file a request to the competent authority that its application for registration of a trademark be examined in preference to other applications, subject to reasonable grounds and procedural requirements. Where such a request has been filed, the competent authority shall take the request into consideration and endeavour to examine the application in preference to other applications, where appropriate.

Article 108 Unfair Competition

Each Party shall provide for protection against acts of unfair competition in accordance with Article 10 bis of the Paris Convention for the Protection of Industrial Property (1967).

Article 109 Security Exceptions

For the purposes of this Chapter, Article 73 of the TRIPS Agreement is incorporated into and forms part of this Agreement, *mutatis mutandis*.

Chapter 10 Government Procurement

Article 110 Procurement Principle

Recognising the importance of government procurement in furthering the expansion of production and trade so as to promote growth and employment, each Party shall ensure transparency of the measures regarding government procurement in accordance with its national laws and regulations.

Article 111 Non-Discrimination

With respect to any measure regarding government procurement, each Party shall provide to the goods, services and suppliers of the other Party treatment no less favourable than that it accords to non-Party's goods, services and suppliers in accordance with its laws and regulations.

Article 113 Further Negotiations

The Parties shall enter into negotiations to review this Chapter with a view to achieving a comprehensive Chapter on Government Procurement including the provisions of challenge procedures, when India expresses its intention to become a Party to the Agreement on Government Procurement in the Annex 4 to the WTO Agreement (hereinafter referred to as "the GPA").

Note: If the GPA is amended or is superseded by another agreement, "the GPA", for the purposes of this Chapter, shall refer to the GPA as amended or such other agreement.

Article 114 **Negotiations on Non-Discrimination**

In the event that, after the entry into force of this Agreement, a Party offers a non-Party any advantageous treatment concerning the measures regarding government procurement, including access to its government procurement market, the former Party shall, upon the request of the other Party, afford adequate opportunity to enter into negotiation with the other Party with a view to extending such advantageous treatment to the other Party on a reciprocal basis.

Article 115 **Exceptions**

1. The provisions of this Chapter shall not be applicable to:
 - (a) with respect to India, state governments and their entities and local governments; and
 - (b) with respect to Japan, local governments.
2. Nothing in this Chapter shall be construed to prevent any Party from taking any action or not disclosing any information that it considers necessary for the protection of its essential security interests relating to the procurement of arms, ammunition, or war materials, or to procurement indispensable for national security or for national defence purposes.

Chapter 11 **Competition**

Article 116 **Anticompetitive Activities**

Each Party shall, in accordance with its laws and regulations, take measures which it considers appropriate against anti competitive activities, in

order to facilitate trade and investment flows between the Parties and the efficient functioning of its market.

Article 117 **Definitions**

For the purposes of this Chapter, the term "competition laws and regulations" means:

- (a) for India, the Competition Act, 2002, No. 12 of 2003, as amended by the Competition (Amendment) Act, 2007, and its implementing regulations as well as any amendment thereto; and
- (b) for Japan, the Law Concerning Prohibition of Private Monopoly and Maintenance of Fair Trade (Law No. 54 of 1947) and its implementing regulations as well as any amendment thereto.

Article 121 **Transparency**

Each Party shall promote transparency of the implementation of its competition laws and regulations and its competition policy.

Article 122 **Non-Application of Chapter 14**

The dispute settlement procedures provided for in Chapter 14 shall not apply to this Chapter.

Chapter 12 **Improvement of Business Environment**

Article 123 **Basic Principles**

1. With a view to promoting trade and investment between the Parties, each Party shall, in accordance with its laws and regulations, take appropriate measures to further improve the

business environment for the enterprises of the other Party conducting their business activities in its Area.

2. The Parties shall, in accordance with their respective laws and regulations, promote cooperation to further improve the business environment in their respective Areas.

Article 124
Sub-Committee on Improvement
of Business Environment

1. For the purposes of the effective implementation and operation of this Chapter, a Sub-Committee on Improvement of Business Environment (hereinafter referred to in this Chapter as "the Sub-Committee") shall be established on the date of entry into force of this Agreement.

2. The functions of the Sub-Committee shall be:

- (a) supervising the activities of each Consultative Group established in accordance with Article 125;
- (b) addressing and resolving issues that the Sub-Committee considers appropriate taking into account, as necessary, the findings reported by each Consultative Group and each Liaison Office designated in accordance with Article 126;
- (c) reporting the findings and making recommendations to the Parties including the measures to be taken by the Parties, regarding such functions as referred to in subparagraphs (a) and (b) and relevant issues. Such recommendations shall be taken into consideration by the Parties;
- (d) where appropriate, reviewing the measures taken by the Parties in relation to the recommendations referred to in subparagraph (c);

(e) making available to those concerned, in an appropriate manner, the recommendations referred to in subparagraph (c) and the results of the review referred to in subparagraph (d), to the extent allowed by the respective laws and regulations of the Parties; and

(f) reporting the findings and recommendations referred to in subparagraph (c) and other findings in relation to the implementation and operation of this Chapter to the Joint Committee as fully and expeditiously as possible.

3. The Sub-Committee shall be composed of representatives of the Governments of the Parties. The Sub-Committee may, by mutual consent of the Parties, invite representatives of local governments of the Parties and invite representatives of other relevant entities including those from the private sector with the necessary expertise relevant to the issues to be addressed.

4. The Sub-Committee shall meet at such venues and times as may be agreed by the Parties.

5. The Sub-Committee shall cooperate with other relevant Sub-Committees in an appropriate manner with a view to avoiding unnecessary duplication of works with those of other relevant Sub-Committees.

6. The other details of the Sub-Committee shall be set forth in the Implementing Agreement.

Article 125
Consultative Group

1. Each Party shall establish a Consultative Group as a subsidiary body of the Sub-Committee.

2. The composition, functions, and frequency of meetings of the Consultative Groups shall be set forth in the Implementing Agreement.

Article 127
Non-Application of Chapter 14

The dispute settlement procedures provided for in Chapter 14 shall not apply to this Chapter.

Chapter 13
Cooperation

Article 128
Basic Principle and Objectives

1. The Parties shall promote cooperation for their mutual benefits in order to liberalise and facilitate trade and investment between the Parties, to strengthen wide-ranging relations between the Parties and to promote the well-being of the peoples of the Parties. For this purpose, the Parties shall, where necessary and appropriate, encourage and facilitate cooperation between their relevant entities.
2. The main objectives of this Chapter include:
 - (a) liberalisation and facilitation of investment and trade between the Parties through cooperation in the mutually identified fields;
 - (b) strengthening economic competitiveness of the Parties;
 - (c) ensuring long-term sustainable development of the Parties;
 - (d) promoting the Parties' human resource development and capacity building; and
 - (e) improving overall well-being of the peoples of the Parties.

Article 129
Fields of Cooperation

The fields of cooperation under this Chapter shall include:

- (a) environment;
- (b) trade and investment promotion;
- (c) infrastructure;
- (d) information and communications technology;
- (e) science and technology;
- (f) energy;
- (g) tourism;
- (h) textiles;
- (i) small and medium enterprises;
- (j) health;
- (k) entertainment and information;
- (l) metallurgy; and
- (m) other fields to be mutually agreed upon by the Parties.

Article 130
Scope and Forms of Cooperation

The scope and forms of cooperation under each identified field mutually agreed to by the Parties as referred to in Article 129 may be set forth in the Implementing Agreement.

Article 132
Non-Application of Chapter 14

The dispute settlement procedures provided for in Chapter 14 shall not apply to this Chapter.

Chapter 14
Dispute Settlement

Article 133
Scope

1. Unless otherwise provided for in this Agreement, this Chapter shall apply with respect to the settlement of disputes between the Parties concerning the interpretation or application of this Agreement.
2. Nothing in this Chapter shall prejudice any right of the Parties to have recourse to dispute settlement procedures available under the WTO Agreement.
3. Notwithstanding paragraph 2, once the establishment of an arbitral tribunal under this Chapter or a panel under Article 6 of the Understanding on Rules and Procedures Governing the Settlement of Disputes in Annex 2 to the WTO Agreement is requested with respect to a particular dispute, the arbitral tribunal or panel selected shall be used to the exclusion of any other procedure for that particular dispute.

Article 134
Consultations

1. Either Party may request in writing to the other Party for consultations concerning any matter on the interpretation or application of this Agreement.
2. When a Party requests consultations pursuant to paragraph 1, the other Party shall reply to the request and enter into consultations in good faith within 30 days after the date of receipt of the

request, with a view to reaching a mutually satisfactory solution of the matter. In cases of urgency, including those concerning perishable goods, the other Party shall enter into consultations within 15 days after the date of receipt of the request.

Article 135
Good Offices, Conciliation or Mediation

1. Good offices, conciliation or mediation may be requested at any time by either Party. They may begin at any time by agreement of the Parties, and be terminated at any time upon the request of either Party.
2. If the Parties agree, good offices, conciliation or mediation may continue while procedures of the arbitral tribunal provided for in this Chapter are in progress.

Article 136
Establishment of Arbitral Tribunals

1. The complaining Party that requested consultations under Article 134 may request in writing the establishment of an arbitral tribunal to the Party complained against:
 - (a) if the Party complained against does not enter into such consultations within 30 days, or within 15 days in cases of urgency including those concerning perishable goods, after the date of receipt of the request for such consultations; or
 - (b) if the Parties fail to resolve the dispute through such consultations within 60 days, or within 30 days in cases of urgency including those concerning perishable goods, after the date of receipt of the request for such consultations,

provided that the complaining Party considers that any benefit accruing to it directly or indirectly under this Agreement is being nullified or

impaired as a result of the failure of the Party complained against to carry out its obligations under this Agreement, or as a result of the application by the Party complained against of measures which are in conflict with its obligations under this Agreement.

2. Any request for the establishment of an arbitral tribunal pursuant to this Article shall identify:

- (a) the factual basis for the complaint; and
- (b) the legal basis of the complaint including the provisions of this Agreement alleged to have been breached.

3. Each Party shall, within 30 days after the date of receipt of the request for the establishment of an arbitral tribunal, appoint one arbitrator who may be its national and propose up to three candidates to serve as the third arbitrator who shall be the chair of the arbitral tribunal. The third arbitrator shall not be a national of either Party, nor have his or her usual place of residence in either Party, nor be employed by either Party, nor have dealt with the dispute in any capacity.

4. The Parties shall agree on and appoint the third arbitrator within 45 days after the date of receipt of the request for the establishment of an arbitral tribunal, taking into account the candidates proposed pursuant to paragraph 3.

5. If a Party has not appointed an arbitrator pursuant to paragraph 3 or if the Parties fail to agree on and appoint the third arbitrator pursuant to paragraph 4, the arbitrator or arbitrators not yet appointed shall be chosen within seven days by lot-drawing from the candidates proposed pursuant to paragraph 3.

6. The date of the establishment of an arbitral tribunal shall be the date on which the chair is appointed.

7. An arbitral tribunal should be composed of arbitrators with relevant technical or legal expertise.

Article 137

Functions of Arbitral Tribunals

1. The arbitral tribunal established pursuant to Article 136:

- (a) should consult with the Parties as appropriate and provide adequate opportunities for the development of a mutually satisfactory solution;
- (b) shall make its award in accordance with this Agreement and applicable rules of international law;
- (c) shall set out in its award, its findings of law and fact, together with the reasons therefor; and
- (d) may, apart from giving its findings, include in its award suggested implementation options for the Parties to consider in conjunction with Article 140.

2. The arbitral tribunal may seek, from the Parties, such relevant information as it considers necessary and appropriate. The Parties shall respond promptly and fully to any request by the arbitral tribunal for such information as the arbitral tribunal considers necessary and appropriate.

3. With respect to factual issues concerning a scientific or other technical matter raised by a Party, the arbitral tribunal may request information or advisory reports in writing from experts. The arbitral tribunal may, at the request of a Party or on its own initiative, select, in consultation with the Parties, no fewer than two scientific or technical experts who shall assist the arbitral tribunal throughout its proceedings and provide information or advice upon request by the arbitral

tribunal, but who shall not have the right to vote in respect of any decision to be made by the arbitral tribunal, including its award.

4. Any information or advice obtained by the arbitral tribunal pursuant to paragraph 3 shall be made available to the Parties. Each Party may make written submissions on the handling of such information or advice by the arbitral tribunal.

Article 138 **Proceedings of Arbitral Tribunals**

1. The arbitral tribunal shall meet in closed session.

2. The deliberations of the arbitral tribunal and the documents submitted to it shall be kept confidential.

3. Notwithstanding paragraph 2, either Party may make public statements as to its views regarding the dispute, but shall treat as confidential, information and written submissions submitted by the other Party to the arbitral tribunal which that other Party has designated as confidential. Where a Party has provided information or written submissions designated as confidential, that Party shall, upon request of the other Party, provide a non- confidential summary of the information or written submissions which may be disclosed publicly.

4. The Parties shall be given the opportunity to attend any of the presentations, statements or rebuttals in the proceedings. Any information or written submissions submitted by a Party to the arbitral tribunal, including any comments on the descriptive part of the draft award and responses to questions put by the arbitral tribunal, shall be made available to the other Party.

5. The award of the arbitral tribunal shall be drafted without the presence of the Parties, and in the light of the information provided and the statements made.

6. The arbitral tribunal shall, within 120 days, or within 60 days in cases of urgency including those concerning perishable goods, after the date of its establishment, submit to the Parties its draft award, including both the descriptive part and its findings and conclusions, for the purposes of enabling the Parties to review precise aspects of the draft award. When the arbitral tribunal considers that it cannot submit its draft award within the aforementioned 120 days or 60 days period, it may extend that period with the consent of the Parties. A Party may submit comments in writing to the arbitral tribunal on the draft award within 15 days after the date of submission of the draft award.

7. The arbitral tribunal shall issue its award, within 30 days after the date of submission of the draft award.

8. The arbitral tribunal shall attempt to make its decisions, including its award, by consensus. Failing such consensus, it may make its decisions, including its award, by majority vote. In case of majority vote, opinions expressed by individual arbitrators shall be anonymous.

9. The award of the arbitral tribunal shall be final and binding on the Parties.

Article 140 **Implementation of Award**

1. The Party complained against shall promptly comply with the award of the arbitral tribunal issued pursuant to Article 138.

2. If the prompt compliance with the award is impracticable, the Party complained against shall, within 20 days after the date of issuance of the award, notify the complaining Party of the period

of time required for implementing the award. If the complaining Party considers that the period of time notified is unacceptable, it may refer the matter to an arbitral tribunal which then shall determine the reasonable implementation period.

3. If the Party complained against considers it impracticable to comply with the award within the implementation period as determined pursuant to paragraph 2, the Party complained against shall, no later than the expiry of that implementation period, enter into consultations with the complaining Party, with a view to developing mutually satisfactory compensation. If no satisfactory compensation has been agreed within 30 days after the date of expiry of that implementation period, the complaining Party may notify the Party complained against that it intends to suspend the application to the Party complained against of concessions or other obligations under this Agreement.

4. If the complaining Party considers that the Party complained against has failed to comply with the award within the implementation period as determined pursuant to paragraph 2, it may refer the matter to an arbitral tribunal.

5. If the arbitral tribunal to which the matter is referred pursuant to paragraph 4 confirms that the Party complained against has failed to comply with the award within the implementation period as determined pursuant to paragraph 2, the complaining Party may, within 30 days after the date of such confirmation by the arbitral tribunal, notify the Party complained against that it intends to suspend the application to the Party complained against of concessions or other obligations under this Agreement.

6. The suspension of the application of concessions or other obligations under paragraphs 3 and 5 may only be implemented at least 30 days after the date of the notification in accordance with those paragraphs. Such suspension shall:

- (a) not be effected if, in respect of the dispute to which the suspension relates, consultations or proceedings before the arbitral tribunal are in progress;
- (b) be temporary, and be discontinued when the Parties reach a mutually satisfactory resolution or where compliance with the original award is effected;
- (c) be restricted to the same level of nullification or impairment that is attributable to the failure to comply with the original award; and
- (d) be restricted to the same sector or sectors to which the nullification or impairment relates, unless it is not practicable or effective to suspend the application of concessions or obligations in such sector or sectors.

7. If the Party complained against considers that the requirements for the suspension of the application to it of concessions or other obligations under this Agreement by the complaining Party set out in paragraph 3, 5 or 6 have not been met, it may request consultations with the complaining Party. The complaining Party shall enter into consultations within 10 days after the date of receipt of the request. If the Parties fail to resolve the matter within 30 days after the date of receipt of the request for consultations pursuant to this paragraph, the Party complained against may refer the matter to an arbitral tribunal.

8. The arbitral tribunal that is established for the purposes of this Article shall, wherever possible, have, as its arbitrators, the arbitrators of the original arbitral tribunal. If this is not possible, then the arbitrators to the arbitral tribunal that is established for the purposes of this Article shall be appointed pursuant to paragraphs 3 through 5 of Article 136.

9. Unless the Parties agree to a different time period, the arbitral tribunal established under this Article shall issue its award within 60 days after the date when the matter is referred to it. Such award shall be binding on the Parties.

Chapter 15 Final Provisions

Article 145 Amendment

1. This Agreement may be amended by agreement between the Parties.

2. Such amendment shall be approved by the Parties in accordance with their respective legal procedures, and shall enter into force on the date to be agreed upon by the Parties.

3. Notwithstanding paragraph 2, amendments relating only to the following may be made by diplomatic notes exchanged between the Governments of the Parties:

- (a) Annex 1, provided that the amendments to the Schedule of a Party are made in accordance with the amendment of the Harmonized System, and include no change on the rates of customs duty to be applied to the originating goods of the other Party in accordance with Annex 1; or

(b) Annex 2.

Article 146 Entry into Force

This Agreement shall enter into force on the first day of the second month following the month in which the Governments of the Parties exchange diplomatic notes informing each other that their respective legal procedures necessary for entry into force of this Agreement have been completed. It shall remain in force unless terminated as provided for in Article 147.

Article 147 Termination

Either Party may terminate this Agreement by giving one year's advance notice in writing to the other Party.

IN WITNESS WHEREOF, the undersigned, being duly authorised by their respective Governments, have signed this Agreement.

DONE at Tokyo on this sixteenth day of February in the year 2011 in duplicate in the English language.

For Japan:
sd/-

For the Republic of India:
Anand Sharma

Annex 1 Referred to in Chapter 2

Schedules in relation to Article 19

Part 1 General Notes

1. For the purposes of Article 19, the following categories indicated in Column 4 in each Party's Schedule in Part 2 and Part 3 shall be applied:

- (a) Customs duties on originating goods classified under the tariff lines indicated with "A" shall be eliminated, as from the date of entry into force of this Agreement;

(b) Customs duties on originating goods classified under the tariff lines indicated with "B5" shall be eliminated in six equal annual instalments from the Base Rate to free;

(c) Customs duties on originating goods classified under the tariff lines indicated

- with "B7" shall be eliminated in eight equal annual instalments from the Base Rate to free;
- (d) Customs duties on originating goods classified under the tariff lines indicated with "B10" shall be eliminated in 11 equal annual instalments from the Base Rate to free;
 - (e) Customs duties on originating goods classified under the tariff lines indicated with "B15" shall be eliminated in 16 equal annual instalments from the Base Rate to free;
 - (f) Customs duties on originating goods classified under the tariff lines indicated with "Pa" and "Pb" shall be reduced in accordance with the terms and conditions set out in the respective Notes indicated in the Schedule of India in Part 2; and
 - (g) The originating goods classified under the tariff lines indicated with "X" shall be excluded from any commitment of reduction or elimination of customs duties.
2. For the purposes of the elimination or reduction of customs duties in accordance with this Annex, any fraction less than 0.1 of a percentage point shall be rounded to one decimal place (in the case of 0.05 percent, the fraction is rounded to 0.1 percent) in the cases of ad valorem duties, and any fraction smaller than 0.01 of the official monetary unit of each Party shall be rounded to two decimal places (in the case of 0.005, the 104 fraction is rounded to 0.01) in the cases of specific duties. This shall not be applied to the case of customs duties on originating goods classified in tariff item number 84082020 and 87084000 of the Schedule of India in Part 2, and in HS 0703.10, 7403.11, 7403.12, 7403.13, 7403.19, 7801.10, 7901.11 and 7901.12, derived from the difference between the value for customs duty and the value specified in Column 3 of the Schedule of Japan in Part 3.
3. This Annex is made based on the Harmonized System, as amended on January 1, 2007.
4. For the purposes of this Annex, Base Rate shall be the rate specified in Column 3 in each Party's Schedule in Part 2 and Part 3. The rate indicated in Column 3 of the Schedule of India in Part 2 is made based on the most-favoured-nation applied rate on April 1, 2007 of India.
5. For the purposes of implementing equal annual instalments, the following shall apply:
- (a) Base Rate is only the starting point of equal annual instalments of elimination or reduction of customs duties;
 - (b) The reduction for the first year shall take place on the date of entry into force of this Agreement; and
 - (c) The subsequent annual reductions shall take place on the first day of each following year.
6. (a) For the purposes of this Annex, the term "year" means, with respect to the first year, the period from the date of entry into force of this Agreement until the coming March 31 and, with respect to each subsequent year, the twelve-month period which starts on April 1 of that year.
- (b) Notwithstanding subparagraph (a), in the case of customs duties on originating goods classified in tariff item number 84082020 and 87084000 of the Schedule of India in Part 2, the term "year" means, with respect to the first year, the period from the date of entry into force of this Agreement until the coming December 31 and, with respect to each subsequent year, the twelve-month period which starts on January 1 of that year.

Part 2*
Schedule of India

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
010210	Pure-bred breeding animals		
01021010	Bulls, adult	30	B10
01021020	Cows, adult	30	B10
01021030	Buffaloes, adult and calves	30	B10
01021090	Other	30	B10
0104	Live sheep and goats.		
010410	Sheep		
01041010	Sheep including lamb for breeding purpose	30	B10
01041090	Other	30	B10
010420	Goats		
01042000	Goats	30	B10
0105	Live poultry, that is to say, fowls of the species <i>Gallus domesticus</i>, ducks, geese, turkeys and guinea fowls.		
01051100	Weighing not more than 185 g: Fowls of the species <i>Gallus domesticus</i>	X	
0201	Meat of bovine animals, fresh or chilled.		
02011000	Carcasses and half-carcasses	30	B10
0202	Meat of bovine animals, frozen.		
02021000	Carcasses and half-carcasses	30	B10
02022000	Other cuts with bone in	30	B10
0203	Meat of swine, fresh, chilled or frozen.		
02031100	Carcasses and half-carcasses	30	B10
02031200	Hams, shoulders and cuts thereof, with bone in	30	B10
0204	Meat of sheep or goats, fresh, chilled or frozen.		
02041000	Carcasses and half carcasses of lamb, fresh or chilled Other meat of sheep, fresh or chilled:	30	B10
02042100	Carcasses and half-carcasses	30	B10
02042200	Other cuts with bone in	30	B10
0206	Edible offal of bovine animals, swine, sheep, goats, horses, asses, mules or hinnies, fresh, chilled or frozen.		
02061000	Of bovine animals, fresh or chilled	30	B10

(Contd.)

* [Editor's Note: Selected entries have been provided here]

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
0207	Meat and edible offal, of the poultry of heading 01.05, fresh, chilled or frozen.		
02071100	Not cut in pieces, fresh or chilled		X
02071300	Cuts and offal, fresh or chilled		X
02084000	Of whales, dolphins and porpoises (mammals of the order Cetacea); of manatees and dugongs (mammals of the order Sirenia)	30	B10
0301	Live fish.		
03019100	Trout (<i>Salmo trutta</i> , <i>Oncorhynchus mykiss</i> , <i>Oncorhynchus clarki</i> , <i>Oncorhynchus aguabonita</i> , <i>Oncorhynchus gilae</i> , <i>Oncorhynchus apache</i> and <i>Oncorhynchus chrysogaster</i>)**	30	B10
03019400	Bluefin tunas	30	B10
0302	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 03.04.		
03021100	Trout		X
03021200	Pacific salmon, Atlantic salmon and Danube salmon	30	B10
03022100	Halibut	30	B10
03023400	Bigeye tunas	30	B10
03023500	Bluefin tunas	30	B10
03023600	Southern bluefin tunas	30	B10
03025000	Cod, excluding livers and roes		
03026100	Sardines, sardinella (<i>Sardinella</i> spp.), brisling or sprats (<i>Sprattus sprattus</i>)		
03026200	Haddock		
03026300	Coalfish	30	B10
03026400	Mackerel		X
03026700	Swordfish		X
03026910	Hilsa		X
03026920	Dara		X
03026930	Pomfret		X
03026990	Other		X
03031100	Sockeye salmon (red salmon)		
03032100	Trout		X

(Contd.)

** [Editor's Note: Scientific (Latin) names provided in the original have been dropped here, henceforth.]

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
03032200	Atlantic salmon (<i>Salmo salar</i>) and Danube salmon (Hucho hucho)	30	B10
03033100	Halibut	30	B10
03034100	Albacore or longfinned tunas		X
03034200	Yellowfin tunas		X
03034300	Skipjack or stripe-bellied bonito	30	B10
03034400	Bigeye tunas	30	B10
03034500	Bluefin tunas	30	B10
03034600	Southern bluefin tunas	30	B10
03035100	Herrings	30	B10
03035200	Cod	30	B10
03036100	Swordfish		X
03036200	Toothfish (<i>Dissostichus</i> spp.)		X
03037100	Sardines, sardinella, brisling or sprats		X
03037200	Haddock	30	B10
03037300	Coalfish	30	B10
03037400	Mackerel		X
03037910	Hilsa		X
03037920	Dara		X
03037930	Ribbon fish		X
03037940	Seer		X
03037950	Pomfret (white or silver or black)		X
03037960	Ghole		X
03037970	Threadfin		X
03037980	Croacker, Grouper, Hounder		X
	Other:		
0304	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen.		
	Fresh or chilled:		
03041100	Swordfish		X
03041200	Toothfish		X
03041900	Frozen fillets:		
03042100	Swordfish		X
03042200	Toothfish		X
03042910	Hilsa		X
03042920	Shark		X
03042930	Seer		X
03042940	Tuna		X
03042950	Cuttlefish		X
03042990	Other		X
0305	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; flours, meals and pellets of fish, fit for human consumption.		
03051000	Flours, meals and pellets of fish, fit for human consumption		X

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
03053000	Fish fillets, dried, salted or in brine, but not smoked Smoked fish, including fillets:		X
03054100	Pacific salmon, Atlantic salmon and Danube salmon	30	B10
03055100	Cod	30	B10
03055910	Mumbai duck	30	B10
0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans, fit for human consumption.		
	Frozen:		
03061100	Rock lobster and other sea crawfish	30	B10
030612	Lobsters		
03061210	whole, cooked	30	B10
03061290	Other	30	B10
030613	Shrimps and prawns		
	Shrimps (scampi)-macrobractium:		
03061311	AFD Shrimp		X
03061319	Other		X
03061320	Prawns		X
030614	Crabs		
03061400	Crabs		X
03062100	Rock lobster and other sea crawfish		X
03062200	Lobsters		X
030623	Shrimps and prawns		
03062310	Powdered		X
03062390	Other		X
030624	Crabs		
03062400	Crabs		X
03071000	Oysters	30	B10
	Scallops, including queen scallops, of the genera Pecten, Chlamys or Placopecten:		
03072100	Live, fresh or chilled	30	B10
03073910	Clams, clam meat	30	B10
03076000	Snails, other than sea snails	30	B10
03079910	Sea shell flesh	30	B10
0401	Milk and cream, not concentrated nor containing added sugar or other sweetening matter.		
04011000	Of a fat content, by weight, not exceeding 1%		X
04012000	Of a fat content, by weight, exceeding 1% but not exceeding 6%		X

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
04013000	Of a fat content, by weight, exceeding 6%		X
0402	Milk and cream, concentrated or containing added sugar or other sweetening matter.		
040210	In powder, granules or other solid forms, of a fat content, by weight, not exceeding 1.5%		
04021010	Skimmed milk		X
04021020	Milk food for babies		X
04021090	Other		X
	In powder, granules or other solid forms, of a fat content, by weight, exceeding 1.5%:		
04022100	Not containing added sugar or other sweetening matter		X
04022910	Whole milk		X
04022920	Milk for babies		X
04022990	Other		X
040291	Not containing added sugar or other sweetening matter		
04029110	Condensed milk		X
04029190	Other		X
040299	Other		
04029910	Whole milk		X
04029920	Condensed milk		X
04029990	Other		X
0403	Buttermilk, curdled milk and cream, yogurt, kephir and other fermented or acidified milk and cream, whether or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruit, nuts or cocoa.		
04031000	Yogurt	30	B10
04039010	Butter milk	30	B10
0405	Butter and other fats and oils derived from milk; dairy spreads.		
04051000	Butter		X
04052000	Dairy Spreads		X
04059010	Butter Oil		X
04059020	Ghee		X
0406	Cheese and curd.		
040610	Fresh (unripened or uncured) cheese, including whey cheese, and curd		
04061000	Fresh (unripened or uncured) cheese, including whey cheese, and curd	30	B10
04062000	Grated or powdered cheese, of all kinds	30	B10
04063000	Processed cheese not grated or powdered	30	B10
04064000	Blue veined cheese and other cheese containing veins produced by <i>Penicillium roqueforti</i>	30	B10
04069000	Other cheese		X
0407	Birds' eggs, in shell, fresh, preserved or cooked.		
04070010	Of the species <i>gallus domesticus</i> and ducks for hatching		X

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
04070020	Of the species gallus domesticus and ducks other than for hatching		X
0408	Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, moulded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter.		
04081100	Dried		X
04081900	Other		X
04089100	Dried		X
04090000	Natural Honey		X
05010010	Human hair, unworked, whether or not washed or scoured	30	B10
05071010	Ivory	30	B10
05071020	Ivory powder and waste	30	B10
06011000	Bulbs, tubers, tuberous roots, corms, crowns and rhizomes, dormant	5	B10
0602	Other live plants (including their roots), cuttings and slips; mushroom spawn.		
06021000	Unrooted cuttings and slips	5	B5
06022010	Edible fruit or nut trees, grafted or not	5	B10
06022020	Cactus	5	B10
06024000	Roses, grafted or not	5	B5
06029010	Mushroom spawn	5	B10
06029020	Flowering plants (excluding roses and rhododendrons)	5	B5
0603	Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared.		
06031100	Roses		X
06031200	Carnations	60	B10
06031300	Orchids		X
06031400	Chrysanthemums		X
06031900	Other		X
06039000	Other		X
0701	Potatoes, fresh or chilled.		
07011000	Seed		X
07020000	Tomatoes, fresh or chilled		X
07031010	Onions		X
07031020	Shallots		X
07032000	Garlic		X
07039000	Leeks and other alliaceous vegetables	30	B10
07041000	Cauliflowers and headed broccoli		X
07042000	Brussels sprouts	30	B10
07051100	Cabbage lettuce (head lettuce)	30	B10
07061000	Carrots and turnips		X
07069010	Horse radish		X
07069030	Salad beetroot		X
07070000	Cucumbers and gherkins, fresh or chilled		X
07081000	Peas (Pisum sativum)		X

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
07082000	Beans (Vigna spp., Phaseolus spp.)		X
07093000	Aubergines (egg-plants)		X
07094000	Celery other than celeriac	30	B10
07095100	Mushrooms of the genus Agaricus	30	B10
07097000	Spinach, new zealand spinach and orache spinach (garden spinach)	30	B10
07099010	Olives	30	B10
07099020	Plantain (curry banana)	30	B10
07099030	Pumpkins	30	B10
07099040	Green pepper	30	B10
07099050	Mixed vegetables	30	B10
07101000	Potatoes		X
	Leguminous vegetables, shelled or unshelled:		
07102100	Peas		X
07102200	Beans		X
07103000	Spinach, New Zealand spinach and orache spinach (garden spinach)	30	B10
071040	Sweet corn		
07104000	Sweet corn		X
07109000	Mixtures of vegetables		X
0711	Vegetables provisionally preserved (for example, by sulphur dioxide gas, in brine, in sulphur water or in other preservative solutions), but unsuitable in that state for immediate consumption.		
07112000	Olives	30	B10
07114000	Cucumbers and gherkins	30	B10
	Mushrooms and truffles:		
07115100	Mushrooms of the genus Agaricus	30	B10
07119010	Green pepper in brine	30	B10
07119020	Assorted canned vegetables	30	B10
0712	Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared.		
07122000	Onions		X
	Mushrooms, wood ears (Auricularia spp.), jelly fungi (Tremella spp.) and truffles:		
07123100	Mushrooms of the genus Agaricus	30	B10
07129010	Asparagus		X
07129020	Dehydrated garlic powder		X
07129030	Dehydrated garlic flakes		X
07129040	Dried garlic		X
07129050	Marjoram, oregano		X
07129060	Potatoes		X
0713	Dried leguminous vegetables, shelled, whether or not skinned or split.		
07131000	Peas		X
07132000	Chickpeas	30	B10
	Beans		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
07133100	Beans of the species <i>Vigna mungo</i> (L.) Hepper or <i>Vigna radiata</i> (L.) Wilczek	30	B10
07133200	Small red beans	30	B10
07133300	Kidney beans, including white pea beans	30	B10
07133910	Guar seeds	30	B10
07134000	Lentils	30	B10
07139091	Split (Pulses)	30	B10
07142000	Sweet potatoes	30	B10
0801	Coconuts, Brazil nuts and cashew nuts, fresh or dried, whether or not shelled or peeled. Coconuts:		
08011100	Desiccated		X
08011910	Fresh		X
08011920	Dried		X
	Brazil nuts:		
08012100	In shell	30	B10
08012200	Shelled	30	B10
	Cashew nuts:		
08013100	In shell	30	B10
08013210	Cashew kernel, broken		X
08013220	Cashew kernel, whole		X
08013290	Other		
08021100	In shell		X
08021200	Shelled		X
	Hazelnuts or filberts (<i>Corylus</i> spp.):		
08022100	In shell	30	B10
08022200	Shelled	30	B10
	Walnuts:		
08023100	In shell	30	B10
08024000	Chestnuts (<i>Castanea</i> spp.)	30	B10
08025000	Pistachios	30	B10
08026000	Macadamia nuts		X
	Betel nuts:		
08029011	Whole		X
08029012	Split		X
08029013	Ground		X
080410	Dates		
08041010	Fresh (excluding wet dates)	30	B10
08041020	Soft (khayzur or wet dates)	30	B10
08041030	Hard (Chhohara or kharek)	30	B10
08041090	Other	30	B10
080420	Figs		
08042010	Fresh	30	B10
08043000	Pineapples	30	B10
08044000	Avocados	30	B10
08045010	Guavas, fresh or dried	30 B10	
08045020	Mangoes, fresh	30	B10
08045030	Mangoes, sliced dried	30	B10

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
08045040	Mango pulp	30	B10
08051000	Oranges		X
08052000	Mandarins (including tangerines and satsumas); clementines, wilkings and similar citrus hybrids		X
08054000	Grape fruit, including pomelos		X
08055000	Lemons (Citrus limon, citrus limonum) and limes (Citrus aurantifolia, Citrus latifolia)	40	B10
0806	Grapes, fresh or dried.		
08061000	Fresh		X
08062010	Raisins		X
08062090	Other		X
08071100	Water melons	30	B10
08072000	Papaws (papayas)	30	B10
08081000	Apples		X
08082000	Pears and quinces		X
08091000	Apricots	30	B10
08092000	Cherries	30	B10
08093000	Peaches, including nectarines	30	B10
08094000	Plums and sloes		X
08101000	Strawberries	30	B10
08102000	Raspberries, blackberries, mulberries and loganberries	30	B10
08104000	Cranberries, bilberries and other fruits of the genus Vaccinium	30	B10
08105000	Kiwi fruit	30	B10
08109010	Pomegranates	30	B10
08109020	Tamarind, fresh	30	B10
08109030	Sapota (chico)	30	B10
08109040	Custard-apple (Ata)	30	B10
08109050	Bore	30	B10
08109060	Lichi	30	B10
0811	Fruit and nuts, uncooked or cooked by steaming or boiling in water, frozen, whether or not containing added sugar or other sweetening matter.		
081110	Strawberries		
08111010	Containing added sugar	30	B10
08111020	Not containing added sugar	30	B10
081120	Raspberries, blackberries, mulberries, loganberries, black, white or red currants and gooseberries		
08112010	Containing added sugar	30	B10
08112020	Not containing added sugar	30	B10
0812	Fruit and nuts, provisionally preserved (for example, by sulphur dioxide gas, in brine, in sulphur water or in other preservative solutions), but unsuitable in that state for immediate consumption.		
08121000	Cherries	30	B10
08129010	Mango slices in brine	30	B10
08129090	Other		X
0813	Fruit, dried, other than that of headings 08.01 to 08.06; mixtures of nuts or dried fruits of this Chapter.		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
08131000	Apricots		X
08132000	Prunes	25	B10
08133000	Apples		X
08134010	Tamarind, dried	30	B10
08134020	Singoda whole (water nut)	30	B10
08134090	Other		X
08135010	Mixtures of nuts		X
08135020	Mixtures of dried fruits		X
08140000	Peel of citrus fruit or melons (including watermelons), fresh, frozen, dried or provisionally preserved in brine, in sulphur water or in other preservative solutions	30	B10
0901	Coffee, whether or not roasted or decaffeinated, coffee husks and skins; coffee substitutes containing coffee in any proportion. Coffee, not roasted:		
090111	Not decaffeinated		
	Arabica plantation:		
09011111	A Grade		X
09011112	B Grade		X
09011113	C Grade		X
09011119	Other		X
	Arabica cherry:		
09011121	AB Grade		X
09011122	PB Grade		X
09011123	C Grade		X
09011124	B/B/B GRADE		X
09011129	Other		X
	Rob Parchment:		
09011131	AB Grade		X
09011132	PB Grade		X
09011133	C Grade		X
09011139	Other		X
	Rob cherry:		
09011141	AB Grade		X
09011142	PB Grade		X
09011143	C Grade		X
09011144	B/B/B GRADE		X
09011145	Bulk		X
09011149	Other		X
09011190	Other		X
090112	Decaffeinated		
09011200	Decaffeinated		X
	Coffee, roasted:		
090121	Not decaffeinated		
09012110	In bulk packing		X
09012190	Other		X
090122	Decaffeinated		
09012210	In bulk packing		X
09012290	Other		X
090190	Other		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
09019010	Coffee husks and skins	100	B10
09019020	Coffee substitutes containing coffee	100	B10
09019090	Other		X
0902	Tea, whether or not flavoured.		
090210	Green tea (not fermented) in immediate packings of a content not exceeding 3 kg		
09021010	Content not exceeding 25 g.	100	B10
09021020	Content exceeding 25 g. but not exceeding 1 kg.		X
09021030	Content exceeding 1 kg. but not exceeding 3 kg.	100	B10
09021090	Other		X
090220	Other green tea (not fermented)		
09022010	Green tea in packets with contents exceeding 3 kg. but not exceeding 20 kg.	100	B10
09022020	Green tea in bulk	100	B10
09022030	Green tea agglomerated in forms such as ball, brick and tablets	100	B10
09022040	Green tea waste	100	B10
09022090	Other		X
090230	Black tea (fermented) and partly fermented tea, in immediate packings of a content not exceeding 3 kg		
09023010	Content not exceeding 25 g.	100	B10
09023020	Content exceeding 25 g. but not exceeding 1 kg.	100	B10
09023030	Content exceeding 1 kg. but not exceeding 3 kg.	100	B10
09023090	Other	100	B10
090240	Other black tea (fermented) and other partly fermented tea		
09024010	Content exceeding 3 kg. but not exceeding 20 kg.	100	B10
09024020	Black tea, leaf in bulk	100	B10
09024030	Black tea, dust in bulk	100	B10
09024040	Tea bags	100	B10
09024050	Black tea, agglomerated in forms such as ball, brick and tablets	100	B10
09024060	Black tea, waste	100	B10
09024090	Other		X
0903	Maté.		
09030000	Mate	30	B10
0904	Pepper of the genus Piper; dried or crushed or ground fruits of the genus Capsicum or of the genus Pimenta.		
	Pepper:		
090411	Neither crushed nor ground		
09041110	Pepper, long		X
09041120	Light black pepper		X
09041130	Black pepper, garbled		X
09041140	Black pepper ungarbled		X
09041150	Green pepper, dehydrated		X
09041160	Pepper pinheads		X
09041170	Green pepper, frozen or dried		X
09041180	Pepper other than green, frozen		X
09041190	Other		X

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
090412	Crushed or ground		
09041200	Crushed or ground		X
090420	Fruits of the genus Capsicum or of the genus Pimenta, dried or crushed or ground		
09042010	Chilly	70	B10
09042020	Chilly powder	70	B10
09042030	Fruits of the genus capsicum	70	B10
09042040	Chilly seed	70	B10
09042050	Jamaica pepper	70	B10
09042090	Other		X
0905	Vanilla.		
09050010	Bean		X
09050020	Powder		X
09050090	Other		X
0906	Cinnamon and cinnamon-tree flowers. Neither crushed nor ground:		
090611	Cinnamon		
09061110	Cinnamon bark	30	B10
09061120	Cinnamon tree flowers	30	B10
09061190	Other	30	B10
090619	Other		
09061910	Cassia	30	B10
09061990	Other	30	B10
090620	Crushed or ground		
09062000	Crushed or ground	30	B10
0907	Cloves (whole fruit, cloves and stems).		
09070010	Extracted		X
09070020	Not extracted (other than stem)		X
09070030	Stems		X
09070090	Other		X
0908	Nutmeg, mace and cardamoms.		
090810	Nutmeg		
09081010	In shell		X
09081020	Shelled		X
09082000	Mace		X
090830	Cardamoms		
09083010	Large (amomum)		X
09083020	Small (elettaria), alleppey green		X
09083030	Small, coorg green		X
09083040	Small, bleached, half bleached or bleachable		X
09083050	Small, seeds		X
09083060	Small (mixed)		X
09083070	Powder		X
09083090	Other		X
090920	Seeds of coriander		
09092010	Of seed quality		X
09092090	Other		X
090930	Seeds of cumin Cumin, black:		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
09093011	Of seed quality		X
09093019	Other		X
	Cumin, other than black:		
090940	Seeds of caraway		
09094010	Of seed quality	30	B10
09094090	Other	30	B10
090950	Seeds of fennel, juniper berries		
	Fennel seeds:		
09095011	Of seed quality	30	B10
09095019	Other	30	B10
	Juniper berries:		
09095021	Of seed quality	30	B10
09095029	Other	30	B10
0910	Ginger, saffron, turmeric (curcuma), thyme, bay leaves, curry and other spices.		
091010	Ginger		
09101010	Fresh		X
09101020	Dried, unbleached		X
09101030	Dried, bleached		X
09101040	Powder		X
09101090	Other		X
091020	Saffron		
09102010	Saffron stigma	30	B10
09102020	Saffron stamen	30	B10
09102090	Other	30	B10
091030	Turmeric (curcuma)		
09103010	Fresh		X
09103020	Dried		X
09103030	Powder		X
09103090	Other		X
	Other spices:		
091091	Mixtures referred to in Note 1 (b) to this Chapter		
09109100	Mixtures referred to in Note 1 (b) to this Chapter		X
091099	Other Seed:		
09109911	Celery	30	B10
09109912	Fenugreek	30	B10
09109913	Dill	30	B10
09109914	Ajwain	30	B10
09109915	Cassia torea	30	B10
09109919	Other	30	B10
	Powder:		
09109921	Cassia	30	B10
09109922	Cumin	30	B10
09109923	Celery	30	B10
09109924	Fenugreek	30	B10
09109925	Dill	30	B10
09109926	Poppy	30	B10
09109927	Mustard	30	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
09109931	Cardamom	30	B10
100110	Durum wheat		
10011010	Of seed quality		X
10019010	Wheat of seed quality		X
10019020	Other wheat		X
	Meslin: 1002 Rye.		
1002	Rye.		
10020010	Of seed quality		A
10020090	Other		A
1003	Barley.		
10030010	Of seed quality A		
10030090	Other A		
1004	Oats.		
10040010	Of seed quality A		
10040090	Other A		
1005	Maize (corn).		
100510	Seed		
10051000	Seed		X
100610	Rice in the husk (paddy or rough)		
10061010	Of seed quality		X
10061090	Other		X
100620	Husked (brown) rice		
10062000	Husked (brown) rice		X
100630	Semi-milled or wholly milled rice, whether or not polished or glazed		
10063010	Rice, parboiled		X
10063020	Basmati rice		X
10063090	Other	70	B10
100640	Broken rice		
10064000	Broken rice		X
1007	Grain sorghum.		
10070010	Of seed quality		X
10070090	Other		X
100820	Millet Jawar:		
10082011	Of seed quality		X
10082019	Other		X
	Bajra:		
10082021	Of seed quality		X
10082029	Other		X
	Ragi (finger millet):		
10082031	Of seed quality		X
10082039	Other		X
11021000	Rye flour	30	B10
11022000	Maize (corn) flour		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
1105	Flour, meal, powder, flakes, granules and pellets of potatoes.		
11051000	Flour, meal and powder	30	B10
11052000	Flakes, granules and pellets	30	B10
11081100	Wheat starch	30	B10
11081200	Maize (corn) starch		X
11081300	Potato starch		X
110819	Other starches		
11081910	Sago	50	B10
11090000	Wheat gluten, whether or not dried		X
1201	Soya beans, whether or not broken.		
12010010	Of seed quality	30	B10
12010090	Other	30	B10
1202	Ground-nuts, not roasted or otherwise cooked, whether or not shelled or broken.		
120210	In shell H.P.S: 12021011 Of seed quality	30	B10
12030000	Copra		X
1204	Linseed, whether or not broken.		
12040010	Of seed quality	30	B10
12040090	Other	30	B10
12051000	Low erucic acid rape or colza seeds	30	B10
1206	Sunflower seeds, whether or not broken.		
12060010	Of seed quality	30	B10
12060090	Other	30	B10
1207	Other oil seeds and oleaginous fruits, whether or not broken.		
120720	Cotton seeds		
12072010	Of seed quality	30	B10
12072090	Other	30	B10
120740	Sesamum seeds		
12074010	Of seed quality	30	B10
12074090	Other	30	B10
120750	Mustard seeds		
12075010	Of seed quality	30	B10
12075090	Other	30	B10
	Other:		
12079910	Ajams	30	B10
12079920	Mango Kernel	30	B10
12079930	Niger seed	30	B10
12079940	Kokam	30	B10
1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard.		
12081000	Of soya beans	30	B10
1209	Seeds, fruit and spores, of a kind used for sowing.		
12091000	Sugar beet seed	30	B10
	Seeds of forage plants:		
12092200	Clover seed	30	B10
12092300	Fescue seed	30	B10
120991	Vegetable seeds		
12099110	Of cabbage	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
12099120	Of cauliflower	10	B10
12099130	Of onion	10	B10
12099140	Of pea	10	B10
12099150	Of radish	10	B10
12099160	Of Tomato	10	B10
12099190	Other	10	B10
12099910	Fruit seeds for planting or sowing	10	B10
12119013	Psyllium seed (isobgul)	30	B10
12119014	Neem seed	30	B10
12119039	Roots and rhizomes:		
12119041	Belladonna roots	30	B10
12119042	Galangal rhizomes and roots	30	B10
12119043	Ipecac dried rhizome and roots	30	B10
12119044	Serpentina roots	30	B10
12119050	Sandalwood chips and dust	30	B10
12119070	Mint including leaves (all species)	30	B10
12122010	Seaweeds	30	B10
12122090	Other algae	30	B10
	Other:		
12129100	Sugar beet	30	B10
12129910	Kokam (cocum) flowers	30	B10
12129920	Mohua flowers	30	B10
13012000	Gum Arabic	30	B10
	Natural gums:		
13019011	Asian gum	30	B10
13019012	African gum	30	B10
13019013	Asafoetida	30	B10
1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other mucilages and thickeners, whether or not modified, derived from vegetable products.		
	Vegetable saps and extracts:		
13021100	Opium	30	B10
13021200	Of liquorice	30	B10
130219	Other Extracts:		
13021911	Of belladonna	30	B10
13021912	Of cascara sagrada	30	B10
13021913	Of nuxvomica	30	B10
13021914	Of ginseng (including powder)	30	B10
13021915	Of agarose	30	B10
13021916	Of neem	30	B10
13021920	Cashew shell liquid (CNSL), crude	30	B10
14011000	Bamboos	30	B10
14019010	Canes	30	B10
14042000	Cotton linters	30	B10
14049010	Bidi wrapper leaves (tendu)	30	B10
	Soap-nuts:		
14049040	Betel leaves	30	B10
14049050	Indian katha	30	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
14049060	Coconut shell, unworked	30	B10
14049070	Rudraksha seeds	30	B10
1502	Fats of bovine animals, sheep or goats, other than those of heading 15.03.		
15020010	Mutton tallow	15	B10
1504	Fats and oils and their fractions, of fish or marine mammals, whether or not refined, but not chemically modified.		
15041010	Cod liver oil	30	B10
	Other:		
15041091	Squid liver oil	30	B10
150420	Fats and oils and their fractions, of fish, other than liver oils		
15042010	Fish body oil	30	B10
15042020	Fish lipid oil	30	B10
15042030	Sperm oil	30	B10
1507	Soya-bean oil and its fractions, whether or not refined, but not chemically modified.		
15071000	Crude oil, whether or not degummed		X
1508	Ground-nut oil and its fractions, whether or not refined, but not chemically modified.		
15081000	Crude oil		X
15089010	Deodorized (Salad Oil)		X
1509	Olive oil and its fractions, whether or not refined, but not chemically modified.		
15091000	Virgin	45	B10
15099010	Edible grade		X
1511	Palm oil and its fractions, whether or not refined, but not chemically modified.		
15111000	Crude oil		X
15119010	Refined bleached deodorised palm oil		X
15121110	Sunflower seed oil		X
15121120	Safflower seed oil (kardi seed oil)		X
15121930	Saffola oil, edible grade		X
15121940	Saffola oil, non-edible grade		X
15121990	Other		X
	Cotton-seed oil and its fractions:		
15122100	Crude oil, whether or not gossypol has been removed		X
1513	Coconut (copra), palm kernel or babassu oil and fractions thereof, whether or not refined, but not chemically modified.		
	Coconut (copra) oil and its fractions:		
15131100	Crude oil		X
15132110	Palm kernel oil		X
15141920	Refined rapeseed oil of edible grade	75	B10
15149120	Mustard oil	75	B10
15149190	Rapeseed oil		X
1515	Other fixed vegetable fats and oils (including jojoba oil) and their fractions, whether or not refined, but not chemically modified.		
	Linseed oil and its fractions:		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
15151100	Crude oil		X
15151990	Other		X
	Maize (corn) oil and its fractions:		
15152100	Crude oil		X
151530	Castor oil and its fractions		
15153010	Edible grade		X
15153090	Other		X
151550	Sesame oil and its fractions		
15155010	Crude oil		X
15155091	Edible grade		X
15161000	Animal fats and oils and their fractions	30	B10
151620	Vegetable fats and oils and their fractions Cotton Seed oil:		
15162011	Edible grade		X
15162019	Other		X
	Groundnut oil:		
15162021	Edible grade		X
15162029	Other		X
	Hydrogenated castor oil (opal-wax):		
15162031	Edible grade		X
15162039	Other		X
151710	Margarine, excluding liquid margarine		
15171010	Of animal origin		X
	Of vegetable origin:		
15171021	Edible grade		X
15179020	Peanut butter		X
15179030	Imitation lard of animal origin		X
15179040	Imitation lard of vegetable origin		X
152110	Vegetable waxes Carnauba Waxes:		
15211011	Edible wax for waxing fresh fruits and vegetables	30	B10
15211019	Other	30	B10
15211090	Other	30	B10
152190	Other		
15219010	Beewax whether or not coloured	30	B10
15219020	Shellac wax whether or not coloured	30	B10
15220020	Soap stocks	30	B10
16010000	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products		X
1602	Other prepared or preserved meat, meat offal or blood.		
160210	Homogenised preparations		
16021000	Homogenised preparations		X
16024100	Hams and cuts thereof		X
16024200	Shoulders and cuts thereof		X
16024900	Other, including mixtures	30	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
1604	Prepared or preserved fish; caviar and caviar substitutes prepared from fisheggs. Fish, whole or in pieces, but not minced:		
16041100	Salmon	30	B10
16041310	Sardines, sardinella and brisling	30	B10
16041410	Tunas		X
16041500	Mackerel		X
16041600	Anchovies	30	B10
16042000	Other prepared or preserved fish	30	B10
16043000	Caviar and caviar substitutes		X
16051000	Crab	30	B10
16052000	Shrimps and prawns		X
16053000	6		X
16054000	Other crustaceans	30	B10
16059010	Clams	30	B10
16059020	Squid, octopus and cuttlefish	30	B10
16059030	Oysters	30	B10
16059090	Other	30	B10
1701	Cane or beet sugar and chemically pure sucrose, in solid form. Raw sugar not containing added flavouring or colouring matter:		
17011110	Cane jaggery		X
17011120	Khandasari sugar	100	B10
17011190	Other		X
17011200	Beet sugar		X
	Other:		
17019100	Refined sugar containing added flavouring or colouring matter		X
17019910	Sugar cubes		X
1702	Other sugars, including chemically pure lactose, maltose, glucose and fructose, in solid form; sugar syrups not containing added flavouring or colouring matter; artificial honey, whether or not mixed with natural honey; caramel. Lactose and lactose syrup:		
17021110	In solid form	30	B10
17021190	Other	30	B10
17031000	Cane molasses	30	B10
18010000	Cocoa Beans, whole or broken, raw or roasted	30	B10
1803	Cocoa paste, whether or not defatted.		
18031000	Not defatted		X
18032000	Wholly or partly defatted		X
18050000	Cocoa Powder, not containing added sugar or other sweetening Matter	30	B10
18061000	Cocoa powder, containing added sugar or other sweetening Matter	30	B10
18069010	Chocolate and chocolate products		X
190110	Preparations for infant use, put up for retail sale		
19011010	Malted milk (including powder)	30	B10
19030000	Tapioca and substitutes therefor prepared from starch, in the form of flakes, grains, pearls, siftings or in similar forms		X

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
19041010	Corn flakes	30	B10
19051000	Crispbread	30	B10
19052000	Gingerbread and the like Sweet biscuits; waffles and wafers	30	B10
	Sweet biscuits; waffles and wafers:		
19053100	Sweet biscuits	45	B10
190532	Waffles and wafers Communion wafers:		
19053211	Coated with chocolate or containing chocolate	45	B10
19054000	Rusks, toasted bread and similar toasted products	30	B10
19059010	Pastries and cakes	30	B10
19059020	Biscuits not elsewhere specified or included	30	B10
19059040	Papad	30	B10
2001	Vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid.		
20011000	Cucumbers and gherkins	30	B10
20021000	Tomatoes, whole or in pieces		X
20031000	Mushrooms of the genus Agaricus		X
2004	Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, frozen, other than products of heading 20.06.		
20041000	Potatoes		X
20049000	Other vegetables and mixtures of vegetables	30	B10
2005	Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, not frozen, other than products of heading 20.06.		
20051000	Homogenised vegetables		X
20052000	Potatoes		X
20054000	Peas (pisum, sativum)		X
	Beans (Vigna spp., Phaseolus spp.):		
20055100	Beans, shelled		X
20056000	Asparagus	30	B10
20057000	Olives	30	B10
20058000	Sweet corn (Zea mays var. saccharata)		X
	Other vegetables and mixtures of vegetables:		
20059100	Bamboo shoots		X
20060000	Vegetables, fruit, nuts fruit-peel and other parts of plants, preserved by sugar (drained, glaci or crystallised)		X
2007	Jams, fruit jellies, marmalades, fruit or nut purie and fruit or nut pastes, obtained by cooking, whether or not containing added sugar or other sweetening matter.		
20071000	Homogenised preparations	30	B10
	Other:		
20079100	Citrus fruit	30	B10
20079910	Mango	30	B10
20079920	Guava	30	B10
20079930	Pine apple	30	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
20079940	Apple	30	B10
20079990	Other	30	B10
2008	Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit, not elsewhere specified or included.		
	Nuts, ground-nuts and other seeds, whether or not mixed together:		
20081100	Ground-nuts	30	B10
20081910	Cashew nut, roasted, salted or roasted and salted	30	B10
20081920	Other roasted nuts and seeds	30	B10
20081930	Other nuts, otherwise prepared or preserved	30	B10
20081940	Other roasted and fried vegetable products	30	B10
20082000	Pineapples	30	B10
200830	Citrus fruit		
20083010	Orange		X
20083090	Other		X
20084000	Pears	30	B10
200850	Apricots		
20085000	Apricots		X
20086000	Cherries	30	B10
20087000	Peaches, including nectarines	30	B10
20088000	Strawberries	30	B10
	Other, including mixtures other than those of subheading 2008.19:		
20089200	Mixtures	30	B10
20089911	Mango	30	B10
20089912	Lemon		X
20089913	Orange		X
20089914	Pineapple		X
20089919	Other		
	Other:		X
20089991	Fruit cocktail		X
20089992	Grapes		X
20089993	Apples		X
20089994	Guava	30	B10
20089999	Other		X
2009	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter.		
	Orange juice:		
20091100	Frozen		X
20095000	Tomato juice		X
	Grape juice (including grape must):		
20096100	Of a Brix value not exceeding 30	30	B10
20096900	Other	30	B10
	Apple juice:		
20097100	Of a Brix value not exceeding 20	30	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
200980	Juice of any other single fruit or vegetable		
20098010	Mango juice	30	B10
20098090	Other	30	B10
2101	Extracts, essences and concentrates, of coffee, tea or mati and preparations with a basis of these products or with a basis of coffee, tea or mati; roasted chicory and other roasted coffee substitutes, and extracts, essences and concentrates thereof.		
	Extracts, essences and concentrates, of coffee, and preparations with a basis of these extracts, essences or concentrates or with a basis of coffee:		
21011110	Instant coffee, flavoured	30	B10
210120	Extracts, essences and concentrates, of tea or mati, and preparations with a basis of these extracts, essences or concentrates or with a basis of tea or mati		
21012010	Instant tea	30	B10
21012020	Quick brewing black tea	30	B10
21031000	Soya sauce	30	B10
21032000	Tomato ketchup and other tomato sauces	30	B10
21033000	Mustard flour and meal and prepared mustard	30	B10
21042000	Homogenised composite food preparations		X
21050000	Ice cream and other edible ice, whether or not containing Cocoa	30	B10
21061000	Protein concentrates and textured protein substances	30	B10
210690	Other Soft drink concentrates:		
21069011	Sharbat		X
21069019	Other		X
21069020	Pan masala	30	B10
21069030	Betel nut product known as "Supari"		X
22011010	Mineral waters	30	B10
22011020	Aerated waters		
220210	Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured		
22021010	Aerated waters	30	B10
22021020	Lemonade	30	B10
22021090	Other	30	B10
220290	Other		
22029010	Soya milk drinks, whether or not sweetened or flavoured	30	B10
22029020	Fruit pulp or fruit juice based drinks	30	B10
22029030	Beverages containing milk	30	B10
22029090	Other	30	B10
22030000	Beer made from malt		X
22041000	Sparkling wine		X
	Other wine; grape must with fermentation prevented or arrested by the addition of alcohol:		
22042110	Port and other red wines		X
22042120	Sherry and other white wines		X
22042190	Other		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
22042920	Sherry and other white wines		X
22042990	Other		X
22043000	Other grape must		X
2205	Vermouth and other wine of fresh grapes flavoured with plants or aromatic substances.		
22051000	In containers holding 2l or less		X
22059000	Other		X
22060000	Other fermented beverages (for example, cider, perry, mead), mixtures of fermented beverages and mixtures of fermented beverages and non-alcoholic beverages not elsewhere specified or included		X
22071011	Concentrates of alcoholic beverages		X
220820	Spirits obtained by distilling grape wine or grape marc In containers holding 2l or less:		
22082011	Brandy		X
22082012	Liquors		X
22082019	Other		X
	Other:		X
22082091	Brandy		X
22082092	Liquors		X
22082099	Other		X
220830	Whiskies In containers holding 2l or less:		
22083011	Bourbon whiskey		X
22083012	Scotch		X
22083013	Blended		X
22083019	Other		X
	Other:		
22083091	Bourbon whiskey		X
22083092	Scotch		X
22083093	Blended		X
22083099	Other		X
22084011	Rum		X
22085011	Gin		X
22085013	Vodka		X
	Other:		
2302	Bran, sharps and other residues, whether or not in the form of pellets, derived from the sifting, milling or other working of cereals or of leguminous plants.		
23021010	Maize bran	30	B10
23023000	Of wheat	30	B10
23024000	Of other cereals	30	B10
23040010	Oil-cake and oil-cake meal of soyabean, expeller variety	30	B10

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
23040020	Oil-cake of soyabean, solvent extracted (defatted) variety	30	B10
23040030	Meal of soyabean, solvent extracted (defatted)	30	B10
23040090	Other	30	B10
23050010	Oil-cake and oil-cake meal of ground nut, expeller variety	30	B10
23050020	Oil-cake and oil-cake meal of ground-nut, solvent extracted variety (defatted)	30	B10
230610	Of cotton seeds		
23061010	Oil-cake and oil-cake meal, decorticated expeller variety	30	B10
23061020	Oil-cake and oil-cake meal, decorticated, solvent extracted (defatted) variety	30	B10
23061030	Oil-cake and oil-cake meal, undecorticated, expeller variety	30	B10
23061040	Oil-cake and oil-cake meal, undecorticated, solvent extracted (defatted) variety	30	B10
23061090	Other	30	B10
230620	Of linseed		
23062010	Oil-cake and oil-cake meal, expeller variety	30	B10
230630	Of sunflower seeds		
23063010	Oil-cake and oil-cake meal, expeller variety	30	B10
23063020	Oil-cake and oil-cake meal, solvent extracted (defatted) variety	30	B10
23063090	Other	30	B10
	Of rape or colza seeds:		
230641	Of low erucic acid rape or colza seeds		
23064100	Of low erucic acid rape or colza seeds		X
230649	Other		
23064900	Other	30	B10
230650	Of coconut or copra		
23065010	Oil-cake and oil-cake meal, expeller variety	30	B10
23065020	Oil-cake and oil-cake meal, solvent extracted (defatted) variety	30	B10
23065090	Other	30	B10
23091000	Dog or cat food, put up for retail sale	20	B10
230990	Other		
23099010	Compounded animal feed		X
23099020	Concentrates for compound animal feed		X
	Feeds for fish (prawn, etc.):		
23099031	Prawn and shrimps feed		X
23099032	Fish meal in powdered form		X
2401	Unmanufactured tobacco; tobacco refuse.		
240110	Tobacco, not stemmed/stripped		
24011010	Flue cured virginia tobacco		X
24011020	Sun cured country(natu) tobacco		X
24011030	Sun cured virginia tobacco		X
24011040	Burley tobacco		X

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
24011050	Tobacco for manufacture of biris, not stemmed	30	B10
24011060	Tobacco for manufacture of chewing tobacco	30	B10
24011070	Tobacco for manufacture of cigar and cheroot	30	B10
24011080	Tobacco for manufacture of hookah tobacco	30	B10
24011090	Other		X
240120	Tobacco, partly or wholly stemmed/stripped		
24012010	Flue cured virginia tobacco		X
24012020	Sun cured country (natu) tobacco		X
24012030	Sun cured virginia tobacco		X
24012040	Burley tobacco		X
24012050	Tobacco for manufacture of biris	30	B10
24012060	Tobacco for manufacture of chewing tobacco	30	B10
24012070	Tobacco for manufacture of cigar and cheroot	30	B10
24012080	Tobacco for manufacture of hookah tobacco	30	B10
24021010	Cigar and cheroots		X
240220	Cigarettes containing tobacco		
24022010	Other than filter cigarettes, of length not exceeding 60 millimetres		X
24022020	Other than filter cigarettes, of length exceeding 60 millimetres but not exceeding 70 millimetres		X
24022030	Filter cigarettes of length (including the length of the filter, the length of filter being 11 millimetres or its actual length, whichever is more) not exceeding 70 millimetres		X
24022040	Filter cigarettes of length (including the length of the filter, the length of filter being 11 millimetres or its actual length, whichever is more) exceeding 70 millimetres but not exceeding 75 millimetres		X
24022050	Filter cigarettes of length (including the length of the filter, the length of filter being 11 millimetres or its actual length, whichever is more) exceeding 75 millimetres but not exceeding 85 millimetres		X
24022090	Other		X
25010010	Common Salt (including iodised salt)	5	B10
250300	Sulphur of all kinds, other than sublimed sulphur, precipitated sulphur and colloidal sulphur		
25030010	Sulphur recovered as by-product in refining of crude oil	5	B10
25030090	Other	5	B10
251710	Pebbles, gravel, broken or crushed stone, of a kind commonly used for concrete aggregates, for road metalling or for railway or other ballast, shingle and flint, whether or not heat-treated		
25171010	Pakur stone, crushed or broken	5	B10
25171020	Flint	5	B10

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
252100	Limestone flux; limestone and other calcareous stone, of a kind used for the manufacture of lime or cement		
25210010	Limestone flux (L.D., below 1% SiO ₂)	5	B10
2523	Portland cement, aluminous cement, slag cement, supersulphate cement and similar hydraulic cements, whether or not coloured or in the form of clinkers.		
252310	Cement clinkers		
25231000	Cement clinkers	10	B10
	Portland cement:		
252321	White cement, whether or not artificially coloured		
25232100	White cement, whether or not artificially coloured	10	B10
252329	Other		
25232910	Ordinary portland cement, dry		A
25232920	Ordinary portland cement, coloured		A
25232930	Portland pozzolana Cement		A
25232940	Portland slag cement		A
25232990	Other		A
252330	Aluminous cement		
25233000	Aluminous cement	10	B10
252390	Other hydraulic cements		
25239010	Sagol; ashmoh		X
25239020	High alumina refractory cement		X
25239090	Other		X
25251010	Mica blocks	5	B10
25251020	Condensor films trimmed but not cut to shape	5	B10
25251030	Mica splittings, book form	5	B10
25251040	Mica splittings, loose	5	B10
25251090	Other	5	B10
252520	Mica powder		
25252010	Mica flakes, 2.20 mesh	5	B10
25252020	Mica powder, dry ground	5	B10
25252030	Mica powder, micronised	5	B10
25252040	Mica powder, wet ground	5	B10
25252050	Mica powder, calcined	5	B10
25252090	Other	5	B10
252530	Mica waste		
25253010	Mica mine scrap and waste	5	B10
25253020	Mica factory scrap	5	B10
25253030	Mica cuttings book form	5	B10
25253090	Other	5	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
2601	Iron ores and concentrates, including roasted iron pyrites.		
	Iron ores and concentrates, other than roasted iron pyrites:		
260111	Non-agglomerated		
26011110	Iron ore lumps (60% Fe or more)	2	B10
26011120	Iron ore lumps (below 60% Fe, including black iron ore containing up to 10% Mn)	2	B10
26011130	Iron ore fines (62% Fe or more)	2	B10
26011140	Iron ore fines (below 62% Fe)	2	B10
26011150	Iron ore concentrates	2	B10
26011190	Other	2	B10
260112	Agglomerated		
26011210	Iron ore pellets	2	B10
26011290	Other	2	B10
26020010	Manganese ore (46% or more)	2	B10
26020020	Manganese ore (44% or more but below 46%)	2	B10
26020030	Manganese ore (40% or more but below 44%)	2	B10
26020040	Manganese ore (35% or more but below 40%)	2	B10
26020050	Manganese ore (30% or more but below 35%)	2	B10
26020060	Ferruginous (10% or more but below 30%)	2	B10
26020070	Manganese ore sinters, agglomerated	2	B10
26020090	Other	2	B10
26030000	Copper ores and concentrates	2	B10
26040000	Nickel ores and concentrates	2	B10
26050000	Cobalt ores and concentrates	2	B10
260600	Aluminium ores and concentrates		
26060010	Bauxite (natural), not calcined	2	B10
26060020	Bauxite (natural), calcined	2	B10
26060090	Other aluminium ores and concentrates	2	B10
26070000	Lead ores and concentrates	2	B10
26080000	Zinc ores and concentrates	2	B10
26090000	Tin ores and concentrates	2	B10
26121000	Uranium ores and concentrates	2	B10
261610	Silver ores and concentrates		
26161000	Silver ores and concentrates	2	B10
26180000	Granulated slag (slag sand) from the manufacture of iron or steel	5	B10
261900	Slag, dross (other than granulated slag), scalings and other waste from the manufacture of iron or steel		
26190010	Converted slag (scull) of blast furnace	5	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
2620	Slag, ash and residues (other than from the manufacture of iron or steel) containing metals, arsenic or their compounds. Containing mainly zinc:		
26201100	Hard zinc spelter	10	B10
26201900	Other	10	B10
	Containing mainly lead:		
262110	Ash and residues from the incineration of municipal waste		
26211000	Ash and residues from the incineration of municipal waste	5	B10
27011200	Bituminous coal	55	B10
27011910	Coking coal	10	B10
27011920	Steam coal	10	B10
27011990	Other	10	B10
27090000	Petroleum oils and oils obtained from bituminous minerals, crude	5	B10
2710	Petroleum oils and oils obtained from bituminous minerals, other than crude; preparations not elsewhere specified or included, containing by weight 70% or more of petroleum oils or of oils obtained from bituminous minerals, these oils being the basic constituents of the preparations; waste oils.		
27101120	Natural gasoline liquid (NGL)	10	B10
27101190	Other	10	B10
27101910	Superior kerosine oil (SKO)	10	B10
27101920	Aviation turbine fuel (ATF)	10	B10
27101930	High speed diesel (HSD)	7.5	B10
27101940	Light diesel oil (LDO)	10	B10
27101950	Fuel oil	10	B10
27101960	Base oil	10	B10
27101970	Jute batching oil and textile oil	10	B7
27101980	Lubricating oil	10	B7
27101990	Other		X
	Waste oils:		
2711	Petroleum gases and other gaseous hydrocarbons		
	Liquefied:		
271111	Natural gas		
27111100	Natural gas	10	B10
27111200	Propane	5	B10
27111300	Butanes	5	B10

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
27111400	Ethylene, propylene, butylene and butadiene In gaseous state:		X
27112100	Natural gas	5	B10
2712	Petroleum jelly; paraffin wax, micro-crystalline petroleum wax, slack wax, ozokerite, lignite wax, peat wax, other mineral waxes, and similar products obtained by synthesis or by other processes, whether or not coloured.		
271210	Petroleum jelly		
27121010	Crude	10	B10
27121090	Other	10	B10
271220	Paraffin wax containing by weight less than 0.75% of oil		
27122010	Chlorinated paraffin wax	10	B10
27122090	Other		X
27129010	Micro-crystalline petroleum wax		X
27129020	Lignite wax	10	B10
27129030	Slack wax	10	B10
27129090	Other		X
2713	Petroleum coke, petroleum bitumen and other residues of petroleum oils or of oils obtained from bituminous minerals.		
	Petroleum coke:		
27131100	Not calcined		X
27131200	Calcined	10	B10
27132000	Petroleum bitumen		A
27139000	Other residues of petroleum oils or of oils obtained from bituminous minerals		X
27141000	Bituminous or oil shale and tar sands	10	B10
27149010	Asphalt, natural	10	B10
27149020	Bitumen, natural	10	B10
27160000	Electrical energy		A
28013020	Bromine	5	B10
280200	Sulphur, sublimed or precipitated; colloidal sulphur		
28020010	Sublimed sulphur	5	B10
28020020	Precipitated sulphur	5	B10
28020030	Colloidal sulphur	5	B10
2901	Acyclic hydrocarbons.		
290110	Saturated		
29011000	Saturated	7.5	B10
	Unsaturated:		
29012100	Ethylene	7.5	B10
29012200	Propene (propylene)	7.5	B10
29012300	Butene (butylene) and isomers thereof	7.5	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
29012400	Buta-1,3-diene and isoprene	7.5	B10
29012910	Acetylene, whether or not in dissolved condition	7.5	B10
29029040	Napthalene pure	7.5	B10
29031110	Chloromethane (methyl chloride)	7.5	B10
29031120	Chloroethane (ethyl chloride)	7.5	B10
29031300	Chloroform (trichloro methane)	7.5	B10
29051100	Methanol (methyl alcohol)		X
29051210	Propyl alcohol		X
29051220	Isopropyl alcohol		X
29061100	Menthol	7.5	B10
29091100	Diethyl ether	7.5	B10
29121100	Methanal (formaldehyde)	7.5	B10
29121200	Ethanal (acetaldehyde)	7.5	B10
29122920	Phenyl acetaldehyde		X
29141100	Acetone		X
291421	Camphor		
29142110	Natural	7.5	B10
29142120	Synthetic	7.5	B10
29171110	Oxalic acid	7.5	B10
29171120	Calcium oxalate	7.5	B10
29181400	Citric acid	7.5	B10
3001	Glands and other organs for organo-therapeutic uses, dried, whether or not powdered; extracts of glands or other organs or of their secretions for organo -therapeutic uses; heparin and its salts; other human or animal substances prepared for therapeutic or prophylactic uses, not elsewhere specified or included.		
300120	Extracts of glands or other organs or of their secretions		
30012010	Liquid extracts of liver	10	B10
30012020	Liver extracts, dry	10	B10
30012030	Snake venom	10	B10
30012090	Other	10	B10
3002	Human blood; animal blood prepared for therapeutic, prophylactic or diagnostic uses; antisera and other blood fractions and modified immunological products, whether or not obtained by means of biotechnological processes; vaccines, toxins, cultures of micro-organisms (excluding yeasts) and similar products.		
	Antisera:		
30021011	For diptheria	10	B10
30021012	For tetanus	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
30021013	For rabies	10	B10
30021014	For snake venom	10	B10
30021019	Other	10	B10
30021020	Hemoglobin blood globulins and serum globulins	10	B10
	Other:		
30021091	Of human origin	10	B10
30021099	Other	10	B10
	Single vaccines:		
30022011	For cholera and typhoid	10	B10
30022012	For hepatitis	10	B10
30022013	For tetanus	10	B10
30022014	For polio	10	B10
30022015	For tuberculosis	10	B10
30022016	For rabies	10	B10
30022017	For Japanese encephalitis	10	B10
30022018	For whooping cough (pertusis)	10	B10
30022019	Other	10	B10
	Mixed vaccines:		
30022021	For diphtheria, pertusis and tetanus (DPT)	10	B10
30022022	For diphtheria and tetanus (DT)	10	B10
30022023	For measles, mumps, and rubella(MMR)	10	B10
30022024	For typhoid-paratyphoid (TAB) or typhoid- paratyphoid- cholera (TABC)	10	B10
30022029	Other	10	B10
30023000	Vaccines for veterinary medicine	10	B10
30029030	Cultures of micro-organisms(excluding yeast)	10	B10
30029040	Toxins	10	B10
30029090	Other	10	B10
300310	Containing penicillins or derivatives thereof, with a penicillanic acid structure, or streptomycins or their derivatives		
30031000	Containing penicillins or derivatives thereof, with a penicillanic acid structure, or streptomycins or their derivatives	10	B10
30032000	Containing other antibiotics	10	B10
	Containing hormones or other products of heading 29.37 but not containing antibiotics:		
30033100	Containing insulin	10	B10
30033900	Other	10	B10
30034000	Containing alkaloids or derivatives thereof but not containing hormones or other products of heading 29.37 or antibiotics	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Ayurvedic, Unani, Siddha, Homoeopathic or Bio-chemic systems medicaments:		
30039011	Of Ayurvedic system	10	B10
30039012	Of Unani system	10	B10
30039013	Of Siddha system	10	B10
30039014	Of Homoeopathic System	10	B10
30039015	Of Bio-chemic system 10 B10 Menthol crystals and milk of magnesia:		
30039021	Menthol crystals	10	B10
30039022	Milk of magnesia	10	B10
	Bovine albumin and drugs of animal origin, merbromine national formulary XII (mercurochrome), calcium sennoside, anaesthetic agents used in human or veterinary medicine or surgery, aluminium hydroxide gel:		
30039034	Anaesthetic agents used in human or veterinary medicine or Surgery	10	B10
300410	Containing penicillins or derivatives thereof, with a penicillanic acid structure, or streptomycins or their derivatives		
30041010	Penicillins	10	B10
30041020	Ampicillin	10	B10
30041030	Amoxycillin	10	B10
30041040	Becampicillin	10	B10
30041050	Cloxacillin	10	B10
30041060	Ampicillin and cloxacillin combinations	10	B10
30041070	Streptomycin	10	B10
30041090	Other	10	B10
300420	Containing other antibiotics Cephalosporins and their derivatives:		
30042011	Cefazolin	10	B10
30042012	Cephalexin	10	B10
30042013	Ciprofloxacin	10	B10
30042014	Cefoxitin	10	B10
30042019	Other	10	B10
30042020	Sulfonamides and cotrimoxazole	10	B10
	Fluoroquinolones: Tetracyclines:		
30042041	Chlortetracycline	10	B10
30042042	Oxytetracycline	10	B10
30042049	Other	10	B10
30042050	Chloramphenicol	10	B10
	Macrolide:		
30042061	Erythromycin	10	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
30042062	Roxithromycin	10	B10
30042063	Clarithromycin	10	B10
30042064	Azithromycin	10	B10
30042099	Other	10	B10
	Containing hormones or other products of heading 29.37 but not containing antibiotics:		
300431	Containing insulin		
30043110	Insulin injection	10	B10
30043190	Other	10	B10
	Pituitary hormones; prednisolone; dexamethasone; danazol; other progestogen and oestrogen group hormones:		
30043911	Pituitary hormones	10	B10
30043912	Prednisolone	10	B10
300440	Containing alkaloids or derivatives thereof but not containing hormones, other products of heading 29.37 or anti-biotics		
30044010	Atropin and salts thereof	10	B10
30044020	Caffein and salts thereof	10	B10
30044030	Codeine and its derivatives, with or without ephedrine Hydrochloride	10	B10
300450	Other medicaments containing vitamins or other products of heading 29.36		
30045010	Heamatinics and erythropoietin preparations	10	B10
30045020	Preparations of minerals and their supplements Preparations of vitamins:	10	B10
30045031	Of vitamin A	10	B10
30045032	Of vitamin B1 and B2 and salts thereof	10	B10
30045033	Of vitamin B9	10	B10
30045034	Of vitamin B12	10	B10
30045035	Of vitamin C	10	B10
30045036	Of vitamin D	10	B10
30045037	Of Vitamin E	10	B10
30045039	Other	10	B10
30045090	Other	10	B10
	Ayurvedic, Unani, Homoeopathic, Siddha or Bio-chemic systems medicaments, put up for retail sale:		
30049011	Of Ayurvedic system	10	B10
30049012	Of Unani system	10	B10
30049013	OF Siddha system	10	B10
30049014	Of Homoeopathic system	10	B10
30049015	Of Bio-chemic system	10	B10

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Anthelmintics drugs; antiamoebic and other antiprotozal drugs; antifungal drugs:		
	Anticancer drugs:		
30049041	Cyclophosphamide	10	B10
30049042	Methotrexate, 5-fluorouracil(5-FU) and ftorafur	10	B10
30049043	Bincristine and vinblastine	10	B10
30049044	Paclitaxel and docetaxel	10	B10
30049045	Etoposide	10	B10
30049046	Actinomycin D Dactinomycin and doxorubicin	10	B10
30049047	L-Asparaginase, cisplatin and carboplatin	10	B10
30049048	Tamoxifen	10	B10
30049049	Other	10	B10
	Antitubercular drugs; antileprotic drugs; antimalarial drugs:		
30049051	Isoniazid	10	B10
30049052	Rifampicin	10	B10
30049053	Pyrazinamide and ethambutol	10	B10
30049054	Streptomycin	10	B10
30049055	Dapsone(DDS), acedapsone(DADDS),solopsone and clofazimine	10	B10
30049056	Chloroquine, amodiaquine, mefloquine, quinine, chloroguanide, pyrimethamine	10	B10
30049057	Other antitubercular drugs	10	B10
30049058	Other antileprotic drugs	10	B10
30049059	Other antimalarial drugs	10	B10
	Nonsteroidal antiinflammatory,analgesics and antipyretic drugs:		
30049061	Analgin with or without other compounds such as paracetamol	10	B10
	Antihypertensive drugs:		
30049071	Captopril, enalapril, lisinopril, perindopril and ramipril	10	B10
30049072	Verapamil, nifedipine, amlodipine and lacidipine	10	B10
30049073	Losartan	10	B10
30049074	Propranolol, metoprolol, atenolol and labetalol	10	B10
30049075	Prazosin, terazosin, phentolamine and phenoxybenzamine	10	B10
30049076	Clonidine, methyl dopa	10	B10
30049077	Hydralazine, minoxidil and diazoxide	10	B10
30049079	Other	10	B10
	Antiepileptic drugs; sulfa drugs not elsewhere specified or included,preparations of enzymes; veterinary medicinal preparations, not for human use, not elsewhere specified or included oral rehydration salts; antibacterial formulations not elsewhere specified or included, sedatives and tranquilizers:		
30049081	Phenobarbitone, mephobarbitone, primidone, phenytoin, carbamazepine, ethosuccimide, valporic acid (sodium valporate), diazepam, lamotrigine, gabapentin, bigabatin, phenacemide, trimethadione and acetazolamide	10	B10

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
30049082	Other antiepileptic drugs	10	B10
30049083	Sulpha drugs not elsewhere specified or included	10	B10
30049084	Preparations of enzymes	10	B10
30049085	Veterinary medicinal preparations, not for human use, not elsewhere specified or included	10	B10
30049086	Oral rehydration salts	10	B10
30049087	Antibacterial formulations, not elsewhere specified or included	10	B10
30049088	Sedatives	10	B10
30049089	Tranquilizers	10	B10
30049092	Plasma expanders	10	B10
30049093	Chloropheniramine maleate, with or without other compounds (excluding steriods and alkaloids)	10	B10
30049094	Theophylline, aminophylline and other broncho dilators	10	B10
30049095	Carcino-chemotherapeutic drugs not elsewhere specified or Included	10	B10
300510	Adhesive dressings and other articles having an adhesive layer		
30051010	Adhesive guaze	10	B10
30051020	Adhesive tape	10	B10
30051090	Other	10	B10
30059010	Cotton wool, medicated	10	B10
30059020	Poultice of Kaolin	10	B10
30059030	Lint, medicated	10	B10
30059040	Bandages	10	B10
30059050	Burn therapy dressing soaked in protective gel	10	B10
30059060	Micro pores surgical tapes	10	B10
30059070	Corn removers and callous removers	10	B10
30059090	Other	10	B10
30061010	Sterile, surgical catgut and similar sterile suture materials(including sterile absorbable surgical or dental yarns) and sterile tissue adhesives for wound closure	10	B10
30061020	Sterile laminaria and sterile laminaria tents,sterile absorbable surgical or dental haemostatics,sterile surgical or dental adhesion barriers,whether or not absorbable	10	B10
30062000	Blood grouping reagents	10	B10
30063000	Opacifying preparations for X-ray examinations; diagnostic reagents designed to be administered to the patient	10	B10
30064000	Dental cements and other dental fillings; bone reconstruction Cements	10	B10
30065000	First-aid boxes and kits	10	B10
300660	Chemical contraceptive preparations based on hormones, on other products of heading 29.37 or on spermicides		

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
30066010	Based on hormones		A
30066020	Based on other products of heading 2937		A
30066030	Based on spermicides		A
30067000	Gel preparations designed to be used in human or veterinary medicine as a lubricant for parts of the body for surgical operations or physical examinations or as a coupling agent between the body and medical instruments	10	B10
30069200	Waste pharmaceuticals	10	B10
3101	Animal or vegetable fertilisers, whether or not mixed together or chemically treated; fertilisers produced by the mixing or chemical treatment of animal or vegetable products.		
31010091	Animal dung	7.5	B10
31010092	Animal excreta	7.5	B10
31010099	Other	7.5	B10
31021000	Urea, whether or not in aqueous solution	5	B10
	Ammonium sulphate; double salts and mixtures of ammonium sulphate and ammonium nitrate:		
31022100	Ammonium sulphate	5	B10
31022910	Ammonium sulphonitrate	7.5	B10
31022990	Other	7.5	B10
31023000	Ammonium nitrate, whether or not in aqueous solution	7.5	B10
31024000	Mixtures of ammonium nitrate with calcium carbonate or other inorganic non-fertilising substances	7.5	B10
31025000	Sodium nitrate		A
31026000	Double salts and mixtures of calcium nitrate and ammonium nitrate	7.5	B10
31028000	Mixtures of urea and ammonium nitrate in aqueous or ammoniacal solution	7.5	B10
31029010	Double salts or mixtures of calcium nitrate and magnesium nitrate	7.5	B10
31029090	Other	7.5	B10
3103	Mineral or chemical fertilisers, phosphatic.		
31031000	Superphosphates	7.5	B10
31039000	Other	7.5	B10
3104	Mineral or chemical fertilisers, potassic.		
31042000	Potassium chloride	7.5	B10
31043000	Potassium sulphate	5	B10
3105	Mineral or chemical fertilisers containing two or three of the fertilising elements nitrogen, phosphorus and potassium; other fertilisers; goods of this Chapter in tablets or similar forms or in packages of a gross weight not exceeding 10 kg.		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
31051000	Goods of this Chapter in tablets or similar forms or in packages of a gross weight not exceeding 10 kg	7.5	B10
31052000	Mineral or chemical fertilisers containing the three fertilising elements nitrogen, phosphorus and potassium	5	B10
	Other mineral or chemical fertilisers containing the two fertilising elements nitrogen and phosphorus:		
31055100	Containing nitrates and phosphates	5	B10
31056000	Mineral or chemical fertilisers containing the two fertilising elements phosphorus and potassium	5	B10
310590	Other		
31059010	Mineral or chemical fertilisers containing two fertilising elements namely nitrogen and potassium	5	B10
390410	Poly(vinyl chloride), not mixed with any other substances		
	Other poly (vinyl chloride):		
390421	Non-plasticised		
39042110	Poly(vinyl chloride) resins	7.5	B10
39042190	Other	7.5	B10
390422	Plasticised		
39042210	Poly (vinyl chloride) (PVC) Resins (emulsion grade)		X
39042290	Other		X
3912	Cellulose and its chemical derivatives, not elsewhere specified or included, in primary forms.		
	Cellulose acetates:		
391211	Non-plasticised		
39121110	Cellulose acetate flakes	7.5	B10
39121120	Cellulose acetate moulding powder	7.5	B10
39121130	Cellulose acetobutyrate moulding powder	7.5	B10
39121140	Cellulose nitrate, dynamic grade	7.5	B10
39121190	Other	7.5	B10
391212	Plasticised		
39121210	Cellulose acetate flakes	7.5	B10
39121220	Cellulose acetate moulding powder	7.5	B10
39121230	Cellulose acetobutyrate moulding powder	7.5	B10
39121290	Other	7.5	B10
391220	Cellulose nitrates (including collodions) Non-plasticised:		
39122011	Moulding powders	7.5	B10
39122019	Other	7.5	B10
	Plasticised:		
39122021	Moulding powders	7.5	B10
39122029	Other	7.5	B10
	Cellulose ethers:		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
39123100	Carboxymethyl cellulose and its salts	7.5	B10
391239	Other Non-plasticised:		
39123911	Ethylcellulose	7.5	B10
39123912	Methylcellulose	7.5	B10
39123919	Other cellulose ethers	7.5	B10
	Plasticised:		
39123921	Ethyl cellulose	7.5	B10
39123922	Methyl cellulose	7.5	B10
39123929	Other cellulose ether	7.5	B10
	Chemical derivatives of natural rubber:		
39139011	Chlorinated rubber	7.5	B10
39139019	Other	7.5	B10
3915	Waste, parings and scrap, of plastics.		
39151000	Of polymers of ethylene		X
39152000	Of polymers of styrene		X
39153010	Of copolymers of vinyl chloride		X
39153090	Other		X
391590	Of other plastics		
39159010	Of polypropylene		X
	Of cellulose and its chemical derivatives:		
39159071	Of regenerated cellulose		X
39159072	Cellulose plastic waste such as cellulose nitrate film scrap nonplasticised		X
39159073	Cellulose plastic waste such as cellulose nitrate film scrap Plasticized		X
39159074	Cellulose plastic waste such as cellulose acetate film scrap non plasticized		X
39159075	Cellulose plastic waste such as cellulose acetate film scrap Plasticized		X
39159090	Other		X
3916	Monofilament of which any cross-sectional dimension exceeds 1 mm, rods, sticks and profile shapes, whether or not surface-worked but not otherwise worked, of plastics.		
39161010	Rods of polyethylene		X
391620	Of polymers of vinyl chloride of poly(vinyl chloride)copolymers:		
391690	Of other plastics		
39169010	Canes		X
	Of phenoplast, aminoplast, alkyds and polysters, polyamides, polyurethanes, epoxide-resins (including waste and scrap), polypropylene and acrylic, methacrylic and acrylomethacrylic polymers:		
39169080	Of vinyl plastic		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
39169090	Of other polymerisation and copolymerisation products		X
3917	Tubes, pipes and hoses, and fittings therefor (for example, joints, elbows, flanges), of plastics. Tubes, pipes and hoses, rigid:		
39172110	Tubes of polyethylene	10	B10
391723	Of polymers of vinyl chloride		
39172310	Seamless tubes	10	B10
39172390	Other	10	B10
391729	Of other plastics		
39172910	Seamless tubes of copolymers of vinyl acetate and vinyl chloride	10	B10
39172920	Seamless tubes of polymers and copolymers of polystyrene	10	B10
39172930	Tubes of cellulose nitrate and celluloid, whether or not plasticised	10	B10
39172940	Tubes of cellulose acetate or acetate butyrate	10	B10
39172950	Tubes of vinyl plastics	10	B10
39172990	Other	10	B10
	Other tubes, pipes and hoses:		
39173100	Flexible tubes, pipes and hoses, having a minimum burst pressure of 27.6 Mpa		X
39174000	Fittings		X
3918	Floor coverings of plastics, whether or not self-adhesive, in rolls or in the form of tiles; wall or ceiling coverings of plastics, as defined in Note 9 to this Chapter.		
391810	Of polymers of vinyl chloride		
39181010	Wall or ceiling coverings combined with knitted or woven fabrics, nonwovens or felts		X
39181090	Other		X
391890	Of other plastics		
39189020	Wall or ceiling coverings combined with knitted or woven fabrics, nonwovens or felts		X
39189090	Other		X
3919	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, whether or not in rolls. 39191000 In rolls of a width not exceeding 20 cm		X
39199010	Plastic stickers, whether or not printed, embossed, or impregnated	10	B10
39199020	Cellulose adhesive tape		X
39199090	Other	10	B10
3920	Other plates, sheets, film, foil and strip, of plastics, noncellular and not reinforced, laminated, supported or similarly combined with other materials.		
392010	Of polymers of ethylene		
39201011	Rigid, plain		X
39201012	Flexible, plain		X
39201019	Other		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other:		
392069	Of other polyesters Packaging film:		
39206911	Rigid, plain		X
39206912	Flexible, plain		X
39206919	Other		X
	Sun and/or dust control film:		
39206921	Rigid, plain		X
39206922	Flexible, plain		X
39206929	Other		X
	Other film:		
39206931	Rigid, plain		X
39206932	Flexible, plain		X
39206939	Other		X
392092	Of polyamides Poly (amide fluoride) film:		
39209211	Rigid, plain	10	B10
39209212	Flexible, plain	10	B10
39209219	Other	10	B10
	Other:		
392093	Of amino-resins		
39209310	Rigid, plain	10	B10
39209320	Flexible, plain	10	B10
39209390	Other	10	B10
392094	Of phenolic resins		
39209410	Rigid, plain	10	B10
39209420	Flexible, plain	10	B10
39209490	Other	10	B10
392099	Of other plastics		
	Plates, sheets, film, foil and strip of poly(vinyl acetate):		
39209911	Rigid, plain		X
39209912	Flexible, plain		X
39209919	Other		X
	Film, sheets, strip of vinyl plastics:		
39209921	Rigid, plain		X
39209922	Flexible, plain		X
39209929	Other		X
	Plates, sheets, strip, film or foil of copolymers of vinyl chloride and vinyl acetate:		
3921	Other plates, sheets, film, foil and strip, of plastics. Cellular:		
39211100	Of polymers of styrene		X
39211200	Of polymers of vinyl chloride		X
39211400	Of regenerated cellulose	10	B10
39211900	Of other plastics	10	B10

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
39219010	Thermocol		X
	Of polymers of vinyl chloride:		
3922	Baths, shower-baths, sinks, wash-basins, bidets, lavatory pans, seats and covers, flushing cisterns and similar sanitary ware, of plastics.		
39221000	Baths, shower-baths, sinks and wash basins		X
39222000	Lavatory seats and covers		X
39229000	Other		X
3923	Articles for the conveyance or packing of goods, of plastics; stoppers, lids, caps and other closures, of plastics.		
392310	Boxes, cases, crates and similar articles		
39231010	Plastic containers for audio or video cassettes, cassette tapes, floppy disk and similar articles		X
39231020	Watch-box, jewellery box and similar containers of plastics		X
39231030	Insulated ware		X
39231040	Packing for accommodating connectors		X
39231090	Other		X
	Sacks and bags (including cones):		
392321	Of polymers of ethylene		
39232100	Of polymers of ethylene		X
392329	Of other plastics		
39232910	Of poly (vinyl chloride)		X
39232990	Other		X
39234000	Spools, cops, bobbins and similar supports		X
392350	Stoppers, lids, caps and other closures		
39235010	Caps and closures for bottles		X
39235090	Other		X
392390	Other		
39239010	Insulated ware		X
39239020	Aseptic bags		X
39239090	Other		X
3924	Tableware, kitchenware, other household articles and hygienic or toilet articles, of plastics.		
392410	Tableware and kitchenware		
39241010	Insulated ware		X
39241090	Other		X
392490	Other		
39249010	Toilet articles		X
39249020	Insulated ware		X
39249090	Other		X
3925	Builders' ware of plastics, not elsewhere specified or included.		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
392510	Reservoirs, tanks, vats and similar containers, of a capacity exceeding 300 l		
39251000	Reservoirs tanks, vats and similar containers, of a capacity exceeding 300 l	10	B10
39252000	Doors, windows and their frames and thresholds for doors		X
39253000	Shutters, blinds (including venetian blinds) and similar articles and parts thereof		X
3926	Other articles of plastics and articles of other materials of headings 39.01 to 39.14.		
392610	Office or school supplies Office supplies of a kind classified as stationery other than pins, clips, and writing instruments:		
39261011	Of polyurethane foam		X
39261019	Other		X
392620	Articles of apparel and clothing accessories (including gloves, mittens and mitts) Gloves:		
39262011	Disposable		X
39262019	Non-disposable		X
	Aprons:		
39262021	Of polyurethane foam		X
39262029	Other		X
	Plastic stickers for garments:		
39262031	Of polyurethane foam		X
39262039	Other		X
	Collar stays, patties, butterfly, shoulder-pads and other stays:		
392630	Fittings for furniture, coachwork or the like		
39263010	Of polyurethane foam		X
39263090	Other		X
392640	Statuettes and other ornamental articles Bangles:		
39264011	Of polyurethane foam		X
39264019	Other		X
	Beads:		
39264021	Of polyurethane foam		X
39264029	Other		X
	Statuettes:		
39264031	Of polyurethane foam		X
39264039	Other		X
	Table and other household articles (including hotel and restaurant) for decoration:		
39264041	Of polyurethane foam		X
39264049	Other		X
	Decorative sheets:		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
39264051	Of polyurethane foam		X
	Couplers, packing rings, O rings and the like:		
39269021	Of polyurethane foam	10	B10
39269029	Other	10	B10
	Lasts, with or without steel hinges; EVA and grape sheets for soles and heels; welts: Rings, buckles, tacks, washers and other decorative fittings made of plastic used as trimmings and embellishments for leather products; patterns for leather foot wear, leather garments and leather goods:		
39269041	Of polyurethane foam	10	B10
39269049	Other	10	B10
	Retroreflective sheeting of other than of heading 3920:		
	Hangers:		
39269061	Of polyurethane foam	10	B10
4001	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms or in plates, sheets or strip.		
400110	Natural rubber latex, whether or not pre-vulcanised		
40011010	Prevulcanised		X
40011020	Other than prevulcanised		X
	Natural rubber in other forms:		
40012100	Smoked sheets		X
40012200	Technically specified natural rubber (TSNR)		X
40013000	Balata, gutta-percha, guayule, chicle, and similar natural gums	10	B10
4002	Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any product of heading 40.01 with any product of this heading, in primary forms or in plates, sheets or strip.		
	Styrene-butadiene rubber (SBR); carboxylated styrenebutadiene rubber (XSBR):		
40021100	Latex	10	B10
40021910	Oil extended styrene butadiene rubber	10	B10
40021920	Styrene butadiene rubber with styrene content exceeding 50%	10	B10
40021930	Styrene butadiene styrene oil bound copolymer	10	B10
40021990	Other	10	B10
40022000	Butadiene rubber (BR)	10	B10
	Isobutene-isoprene(butyl)rubber (IIR); halo-isobutene-isoprene rubber(CIIR or BIIR):		
40023100	Isobutene-isoprene(butyl) rubber (IIR)		X
40024100	Latex	10	B10
40024900	Other	10	B10
	Acrylonitrile-butadiene rubber (NBR):		

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
40025100	Latex	10	B10
40026000	Isoprene rubber (IR)	10	B10
40027000	Ethylene-propylene-non-conjugated diene rubber (EPDM)		A
400280	Mixtures of any product of heading 40.01 with any product of this heading		
40029910	Factice (rubber substitute derived from oil)	10	B10
40029920	Tread rubber compound, cushion compound, cushion gum and tread gum for resoling or repairing or retreading rubber tyres	10	B10
40040000	Waste, parings and scrap of rubber (other than hard rubber) and powders and granules obtained therefrom	10	B10
4005	Compounded rubber, unvulcanised, in primary forms or in plates, sheets or strip.		
40051000	Compounded with carbon black or silica	10	B10
400591	Plates, sheets and strip		
40059110	Hospital Sheeting	10	B10
40059190	Other	10	B10
40059910	Granules of unvulcanised natural or synthetic rubber, compounded, ready for vulcanisation	10	B10
40059990	Other	10	B10
4006	Other forms (for example, rods, tubes and profile shapes) and articles (for example, discs and rings), of unvulcanised rubber.		
40061000	"Camel-back" strips for retreading rubber tyres	10	B10
40069010	Thread, not covered	10	B10
400700	Vulcanised rubber thread and cord		
40070010	Thread, not covered	10	B10
40070020	Cord, not covered	10	B10
40070090	Other	10	B10
4008	Plates, sheets, strip, rods and profile shapes, of vulcanised rubber other than hard rubber. Of cellular rubber:		
400811	Plates, sheets and strip		
40081110	Of micro-cellular rubber	10	B10
40081190	Other	10	B10
40081910	Block of micro-cellular rubber but not of latex foam sponge, used in the manufacture of soles, heels or soles and heels combined, for footwear Of non-cellular rubber:		X
400821	Plates, sheets and strip		
40082110	Used in the manufacture of soles, heels, or soles and heels combined, for footwear	10	B10
40082120	For resoling or repairing or retreading rubber tyres	10	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
40082190	Other	10	B10
40082910	Rubber sheets and resin rubber sheets for soles and heels		X
40082920	Blocks used in the manufacture of soles, heels or soles and heels combined, for footwear		X
40082930	Latex foam sponge		X
40082940	Tread rubber and tread packing strip for resoling repairing or retreading rubber tyres		X
40082990	Other		X
4009	Tubes, pipes and hoses, of vulcanised rubber other than hard rubber, with or without their fittings (for example, joints, elbows, flanges). Not reinforced or otherwise combined with other materials:		
40091100	Without fittings	10	B10
40091200	With fittings	10	B10
	Reinforced or otherwise combined only with metal:		
40092100	Without fittings		X
40092200	With fittings	10	B10
	Reinforced or otherwise combined only with textile materials:		
40093100	Without fittings		X
40093200	with fittings	1-0	B10
	Reinforced or otherwise combined with other materials:		
40094100	Without fittings		X
40094200	With fittings		X
4010	Conveyor or transmission belts or belting, of vulcanised rubber. Conveyor belts or belting:		
401011	Reinforced only with metal 40101110 Where the rubber compound content is less than 25% by weight	10	B10
40101190	Other	10	B10
401012	Reinforced only with textile materials		
40101210	Where the rubber compound content is less than 25% by weight	10	B10
40101290	Other	10	B10
40101910	Where the rubber compound content is less than 25% by weight	10	B10
40101990	Other	10	B10
	Transmission belts or belting:		
401031	Endless transmission belts of trapezoidal cross-section (Vbelts), V-ribbed, of an outside circumference exceeding 60 cm but not exceeding 180 cm		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
40103110	Where the rubber compound content is less than 25% by weight	10	B10
40103190	Other	10	B10
401032	Endless transmission belts of trapezoidal cross-section (Vbelts), other than V-ribbed, of an outside circumference exceeding 60 cm but not exceeding 180 cm		
40103210	Where the rubber compound content is less than 25% by weight		X
40103290	Other		X
401033	Endless transmission belts of trapezoidal cross-section (Vbelts), V-ribbed, of an outside circumference exceeding 180 cm but not exceeding 240 cm		
40103310	Where the rubber compound content is less than 25% by weight	10	B10
40103390	Other	10	B10
401034	Endless transmission belts of trapezoidal cross-section (Vbelts), other than V-ribbed, of an outside circumference exceeding 180 cm but not exceeding 240 cm		
40103410	Where the rubber compound content is less than 25% by weight	10	B10
40103490	Other	10	B10
401035	Endless synchronous belts, of an outside circumference exceeding 60 cm but not exceeding 150 cm		
40103510	Where the rubber compound content is less than 25% by weight		X
40103590	Other		X
401036	Endless synchronous belts, of an outside circumference exceeding 150 cm but not exceeding 198 cm		
40103610	Where the rubber compound content is less than 25% by weight	10	B10
40103690	Other	10	B10
40103911	Endless flat belt	10	B10
40103912	Ply belting	10	B10
4011	New pneumatic tyres, of rubber.		
401110	Of a kind used on motor cars (including station wagons and racing cars)		
40111010	Radials		X
40111090	Other		X
401120	Of a kind used on buses or lorries		
40112010	Radials		X
40112090	Other		X
40113000	Of a kind used on aircraft	3	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
40114010	For motor cycles		X
40114020	For motor scooters		X
40114090	Other		X
401150	Of a kind used on bicycles		
40115010	Multi-cellular polyurethane (MCP) tubeless tyres		X
40115090	Other, having a "herring-bone" or similar tread		X
	Other, having a "herring-bone" or similar tread:		
40116100	Of a kind used on agricultural or forestry vehicles and machines	10	B10
40116200	Of a kind used on construction or industrial handling vehicles and machines and having a rim size not exceeding 61 cm	10	B10
40116300	Of a kind used on construction or industrial handling vehicles and machines and having a rim size exceeding 61 cm	10	B10
40116900	Other	10	B10
	Other:		
40119200	Of a kind used on agricultural or forestry vehicles and machines	10	B10
40119300	Of a kind used on construction or industrial handling vehicles and machines and having a rim size not exceeding 61 cm	10	B10
40119400	Of a kind used on construction or industrial handling vehicles and machines and having a rim size exceeding 61 cm	10	B10
4012	Retreaded or used pneumatic tyres of rubber; solid or cushion tyres, tyre treads and tyre flaps, of rubber.		
	Retreated tyres:		
40121100	Of a kind used on Motor cars (including station wagons and racing cars)		X
40121200	Of a kind used on buses or lorries		X
40121300	Of a kind used on aircraft	10	B10
40121910	For two wheelers	10	B10
40121990	Other	10	B10
401220	Used pneumatic tyres		
40122010	For buses, lorries and earth moving equipment including light commercial vehicles		X
40122020	For passenger automobile vehicles, including two wheelers, three wheelers and personal type vehicles		X
40122090	Other		X
401290	Other		
40129010	Solid rubber tyres for motor vehicles	10	B10
40129020	Solid Rubber tyres for other vehicles	10	B10
40129030	Tyres with metal framework	10	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Tyre flaps:		
40129041	Of a kind used in two-wheeled and three- wheeled motor vehicles	10	B10
4013	Inner tubes, of rubber.		
401310	Of a kind used on motor cars (including station wagons and racing cars), buses or lorries		
40131010	For motor cars	10	B10
40131020	For Lorries and buses	10	B10
40132000	Of a kind used on bicycles	10	B10
40139010	For aircraft	10	B10
40139020	For motor cycle	10	B10
40139030	For off the road vehicles, not elsewhere specified or included	10	B10
	For tractors:		
40139041	Rear tyres	10	B10
40139049	Other	10	B10
40139050	Of a kind used in tyres of cycle rickshaws and three-wheeled powered cycle-rickshaws	10	B10
40139090	Other	10	B10
4014	Hygienic or pharmaceutical articles (including teats), of vulcanised rubber other than hard rubber, with or without fittings of hard rubber.		
401410	Sheath contraceptives		
40141010	Rubber contraceptives, male (condoms)	10	B10
40141020	Rubber contraceptives, female (diaphragms), such as cervical Caps	10	B10
401490	Other		
40149010	Hot water bottles	10	B10
40149020	Ice bags	10	B10
40149030	Feeding bottle nipples	10	B10
40149090	Other	10	B10
4015	Articles of apparel and clothing accessories (including gloves, mittens and mitts), for all purposes, of vulcanised rubber other than hard rubber. Gloves, mittens and mitts:		
401511	Surgical		
40151100	Surgical	10	B10
40151900	Other	10	B10
40159010	Rubber apron	10	B10
40159030	Industrial gloves	10	B10
	other:		
40159091	Diving suits	10	B10
40169100	Floor coverings and mats	10	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
40169200	Erasers	10	B10
401693	Gaskets, washers and other seals		
40169310	Patches for puncture repair of self-vulcanizing rubber or a rubber backing	10	B10
40169320	Rubber ring (O-ring)	10	B10
40169330	Rubber seals (Oil seals and the like)	10	B10
40169340	Gaskets	10	B10
40169350	Washers	10	B10
40169360	Plugs		X
40169390	Other	10	B10
40169400	Boat or dock fenders, whether or not inflatable	10	B10
40169510	Air mattresses	10	B10
40169910	Rubber cots for textile industry	10	B10
40169920	Rubber bands	10	B10
40169930	Rubber thread	10	B10
40169940	Rubber blankets	10	B10
40169950	Rubber cushions	10	B10
40169960	Rubber bushes	10	B10
40169970	Ear plug		
40169980	Stoppers	10	B10
40169990	Other	10	B10
5201	Cotton, not carded or combed.		
520100	Cotton, not carded or combed Indian cotton:		
52010011	Bengal deshi		A
52010012	Indian cotton of staple lengths 20.5 mm (25/32") and below (e.g. oomras, yellow picking, Assam Comillas)		A
52010013	Indian cotton of staple length exceeding 20.5 mm (26/32") and but not exceeding 24.5 mm (30/32")		A
52010014	Indian cotton of staple length over 24.5 mm (31/32") to 28 mm		A
52010015	Indian cotton of staple length 28.5 mm (14/32") and above but below 34.5 mm		A
52010019	Indian cotton of all staple length 34.5 mm and above (112/32")		A
52010020	Cotton, other than Indian, of all staple lengths		A
5202	Cotton waste (including yarn waste and garnetted stock).		
520210	Yarn waste (including thread waste)		
52021000	Yarn waste (including thread waste)		A
	Other:		
52029100	Garnetted stock		A
52029900	Other		A
52030000	Cotton, carded or combed		A

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
5204	Cotton sewing thread, whether or not put up for retail sale.		
	Not put up for retail sale:		
520411	Containing 85 % or more by weight of cotton		
52041110	Cotton thread, sewing, containing any synthetic staple fibre		A
52041120	Cotton thread, darning		A
52041130	Embroidery cotton thread		A
52041140	Cotton sewing thread, not containing any synthetic staple fibre		A
52041190	Other		A
520420	Put up for retail sale		
52042010	Cotton thread, sewing, containing any synthetic staple fibre		A
52042020	Cotton thread, darning A 52042030 Embroidery cotton thread		A
52042040	Cotton sewing thread, not containing any synthetic staple fibre		A
52042090	Other		A
5207	Cotton yarn (other than sewing thread) put up for retail sale.		
52071000	Containing 85% or more by weight of cotton		A
52079000	Other		A
5208	Woven fabrics of cotton, containing 85 % or more by weight of cotton, weighing not more than 200 g/m2.		
	Unbleached:		
520811	Plain weave, weighing not more than 100 g/m2		
52081110	Dhoti		A
52081120	Saree		A
52081130	Shirting fabrics		A
520812	Plain weave, weighing more than 100 g/m2		
52081210	Dhoti		A
52081220	Saree		A
52081230	Shirting fabrics		A
52081260	Voils		A
52081310	Shirting fabrics		A
52081320	Dobby fabrics		A
52081390	Other		A
520819	Other fabrics		
52081910	Dedsuti, dosuti fabrics		A
52081990	Other		A
	Bleached:		
520821	Plain weave, weighing not more than 100 g/m2		
52082110	Dhoti		A
52082120	Saree		A
52082140	Shirting fabrics		A
52082170	Muslin (including lawn, mullmull and organdi)		A

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
52082180	Voils (excluding leno fabrics)		A
52082190	Other		A
520822	Plain weave, weighing more than 100 g/m2		
52082210	Dhoti		A
52082220	Saree		A
52082230	Shirting fabrics		A
52082260	Longcloth (including calico)		A
52082270	Sheeting (takia and the like)		A
52082280	Voils(excluding leno fabrics)		A
52082290	Other		A
520829	Other fabrics		
52082910	Dhoti and saree, zari bordered		A
52082920	Dedsuti, dosuti fabrics, ceretonnies and osamburge		A
520831	Plain weave, weighing not more than 100 g/m2		
52083110	Lungi		A
52083120	Saree		A
52083130	Shirting fabrics		A
52083170	Muslin (including lawn mulmul and organdi) of carded or combed Yarn		A
52083180	Voils(excluding leno fabrics)		A
520832	Plain weave, weighing more than 100 g/m2		
52083210	Lungi		A
52083220	Saree		A
52083230	Shirting fabrics		A
520833	3-thread or 4-thread twill, including cross twill		
52083310	Shirting fabrics		A
52083320	Coating (including suiting)		A
52083330	Shirting (including mazri)		A
52083390	Other		A
520839	Other fabrics		
52083910	Zari bordered sarees		A
52083990	Other		A
	Of yarns of different colours:		
520841	Plain weave, weighing not more than 100 g/m2		
52084110	Bleeding Madras		A
52084120	Saree		A
52084130	Shirting fabrics		A
52084140	Bed ticking, domestic		A
52084150	Furnishing fabrics (excluding pile and chenille fabrics)		A
52084190	Other		A
520842	Plain weave, weighing more than 100 g/m2		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
52084210	Bleeding Madras		A
52084220	Saree		A
52084230	Shirting fabrics		
52084240	Casement		A
52084250	Bed ticking, domestic		
52084260	Furnishing fabrics, other than pile and chenille fabrics		A
52084290	Other		A
520843	3-thread or 4-thread twill, including cross twill		
52084310	Bleeding Madras		A
52084320	Shirting fabrics		A
52084330	Bedticking, damask		A
52084340	Flannelette		A
52084390	Other		A
520849	Other fabrics		
52084910	Zari bordered sarees		A
52084920	Real Madras handkerchiefs		A
52084990	Other		A
	Printed:		
520851	Plain weave, weighing not more than 100 g/m2		
52085110	Lungi		A
52085120	Saree		A
52085130	Shirting fabrics		A
52085210	Lungi		A
52085220	Saree		A
52085230	Shirting fabrics		A
52085270	Muslin (including lawn mulmul and organdi) of carded or combed Yarn		A
52085280	Voils (excluding leno fabrics)		A
52085290	Other		A
520859	Other fabrics		
52085910	Zari bordered sarees		A
5209	Woven fabrics of cotton, containing 85 % or more by weight of cotton, weighing more than 200 g/m2.		
	Unbleached:		
520911	Plain weave Handloom:		
52091111	Dhoti		A
52091112	Saree		A
52091114	Sheeting (takia, leopard cloth and other than furnishing)		A
520912	3-thread or 4-thread twill, including cross twill		
52091210	Saree		A
52091220	Shirting fabrics		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
52091230	Furnishing fabrics (excluding pile and chenille fabrics)		A
52091250	Canvas, including duck - carded or combed yarn		A
52091260	Flannelette		A
52091270	Shetting (takia, leopard cloth)		A
520919	Other fabrics		
52091900	Other fabrics		A
	Bleached:		
520921	Plain weave		
52092110	Saree		A
52092120	Shirting fabrics		A
52092130	Furnishing fabrics (excluding pile and chenille fabrics)		A
52092150	Canvas (including duck) of carded or combed yarn		A
52092160	Dhoti		A
52092170	Flannellete		A
52092180	Shetting (takia, leopardcloth)		A
520922	3-thread or 4-thread twill, including cross twill		
52092210	Shirting fabrics		A
52092220	Furnishing fabrics (excluding pile and chenille fabrics)		A
520929	Other fabrics		
52092910	Dhoti and saree, zari bordered		A
52092920	Dedsuti, dosuti fabrics, ceretonnies and osamburge		A
520931	Plain weave		
52093110	Lungi		A
52093120	Saree		A
52093130	Shirting fabrics		A
52093140	Furnishing fabrics (excluding pile and chenille fabrics)		A
52093160	Bedticking, domestic (other than hand dyed)		A
52093170	Canvas (including duck), of carded or combed yarn		A
52093180	Flannellete		A
520932	3-thread or 4-thread twill, including cross twill		
52093210	Shirting fabrics		A
52093220	Furnishing fabrics (excluding pile and chenille fabrics)		A
520939	Other fabrics		
52093910	Zari bordered sarees		A
520941	Plain weave		
52094110	Bleeding Madras		A
52094120	Saree		A
52094130	Shirting fabrics		A
52094140	Furnishing fabrics (excluding pile and chenille fabrics)		A
52094160	Bedticking, domestic(other than hand dyed)		A

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
52094170	Flannelette		A
520942	Denim		
52094200	Denim		A
520943	Other fabrics of 3-thread or 4-thread twill, including cross twill		
52094310	Bleeding Madras		A
52094320	Shirting fabrics		A
52094330	Furnishing fabrics (excluding pile and chenille fabrics)		A
52094340	Coating (including suiting)		A
520949	Other fabrics		
52094910	Zari bordered sari		A
520951	Plain weave		
52095110	Lungi		A
52095120	Saree		A
52095130	Shirting fabrics		A
52095140	Furnishing fabrics (excluding pile and chenille fabrics)		A
520952	3-thread or 4-thread twill, including cross twill		
52095210	Shirting fabrics		A
52095220	Furnishing fabrics (excluding pile and chenille fabrics)		A
520959	Other fabrics		
52095910	Zari bordered saree		A
5210	Woven fabrics of cotton, containing less than 85 % by weight of cotton, mixed mainly or solely with man-made fibres, weighing not more than 200 g/m2. Unbleached:		
52101110	Shirting fabrics		A
52101120	Saree		A
52101190	Other		A
52101900	Other fabrics		A
	Bleached:		
521021	Plain weave		
52102110	Shirting fabrics		A
52102120	Poplin and broad fabrics		A
52102130	Saree		A
52102140	Shirting (including mazri)		A
52102150	Voile		A
521029	Other fabrics		
52102910	Dhoti and saree, zari bordered		A
52102920	Dedsuti, Dosuti, ceretonnies and osamburge		A
521031	Plain weave		
52103110	Shirting fabrics		A
52103120	Coating (including suitings)		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
52103130	Furnishing fabrics (excluding pile and chenille fabrics)		A
52103140	Poplin and broad fabrics		A
52103150	Saree		A
52103160	Voils		A
521032	3-thread or 4-thread twill, including cross twill		
52103210	Crepe fabrics including crepe checks		A
52103220	Shirting fabrics		A
52103230	Bedticking, damask		A
52103910	Zari bordered sarees		
521041	Plain weave		
52104110	Bleeding Madras		A
52104120	Crepe fabrics (excluding crepe checks)		A
52104130	Shirting fabrics		A
52104140	Suitings		A
52104150	Poplin and broad fabrics		A
52104160	Saree		A
52104170	Voils		A
521049	Other fabrics		
52104910	Zari bordered saree		A
	Printed:		
521051	Plain weave		
52105110	Shirting fabrics		A
52105130	Saree		A
52105140	Poplin and broad fabrics		A
52105150	Voils		A
521059	Other fabrics		
52105910	Zari bordered saree		A
5211	Woven fabrics of cotton, containing less than 85 % by weight of cotton, mixed mainly or solely with man-made fibres, weighing more than 200 g/m2. Unbleached:		
521111	Plain weave		
52111110	Shirting fabrics		A
52111120	Saree		A
52111210	Shirting fabrics		A
52111220	Twill, not elsewhere specified (including gaberdine)		A
521119	Other fabrics		
52111900	Other fabrics		A
521120	Bleached		
52112010	Shirting fabrics		A
52112020	Canvas (including duck) of carded or combed yarn		A
52112030	Flannelette		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
52112040	Saree		A
52112050	Crepe fabrics including crepe checks		A
52112060	Twill fabrics		A
	Other:		
52112091	Zari bordered sari		A
52112092	Dedsuti, dosuti, ceretonnies and osamburge		A
52112099	Other		A
	Dyed:		
521131	Plain weave		
52113110	Shirting fabrics		A
52113120	Canvas (including duck) of carded or combed yarn		A
52113130	Coating (including suitings)		A
52113140	Flannelette		A
52113150	Saree		A
521132	3-thread or 4-thread twill, including cross twill		
52113210	Crepe fabrics including crepe checks		A
52113220	Shirting fabrics		A
52113230	Twill, not elsewhere specified (including gaberdine)		A
52113240	Trousers or pant fabrics (excluding jeans and crepe)		A
521139	Other fabrics		
52113910	Zari bordered sarees		A
	Of yarn of different colours:		
521141	Plain weave		
52114110	Bleeding Madras		A
52114120	Check shirting (excluding crepe checks)		A
52114130	Shirting		A
52114140	Suitings		A
52114150	Flannelette		A
52114160	Saree		A
52114170	Parachute fabrics		A
521142	Denim		
52114200	Denim		A
521143	Other fabrics of 3-thread or 4-thread twill, including cross twill		
52114310	Bleeding Madras		A
52114320	Crepe fabrics		A
52114330	Shirting fabrics		A
52114340	Suitings		A
521149	Other fabrics		
52114910	Zari bordered sarees		A
52114990	Other		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Printed:		
521151	Plain weave		
52115110	Shirting fabrics		A
52115120	Furnishing fabrics (excluding pile and chenille fabrics)		A
52115130	Flannelette		A
52115140	Long cloth (chintz)		A
52115150	Saree		A
521152	3-thread or 4-thread twill, including cross twill		
52115210	Crepe fabrics including crepe checks		A
52115220	Shirting fabrics		A
52115230	Twill, not elsewhere specified (including gaberdine)		A
521159	Other fabrics		
52115910	Zari bordered saree		A
5212	Other woven fabrics of cotton. Weighing not more than 200 g/m2:		
521211	Unbleached		
52121100	Unbleached		A
521212	Bleached		
52121200	Bleached		A
52121400	Of yarns of different colours		A
52121500	Printed		A
	Weighing more than 200 g/m2:		
52122100	Unbleached		A
52122200	Bleached		A
52122300	Dyed		A
52122400	Of yarns of different colours		A
53021000	Ture hemp, raw or retted		A
5303	Jute and other textile bast fibres (excluding flax, true hemp and ramie), raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock).		
53031010	Jute,raw or retted		A
53039010	Jute cutting		A
530500	Coconut, abaca (Manila hemp or Musa textilis Nee), ramie and other vegetable textile fibres, not elsewhere specified or included, raw or processed but not spun; tow, noils and waste of these fibres (including yarn waste and garnetted stock)		
53050010	Coir bristles fibre		A
53050020	Coir mattress fibre		A
53050030	Curled or machine twisted coir fibre		A
53050040	Coir pith		A

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
5307	Yarn of jute or of other textile bast fibres of heading 53.03.		
530710	Single		
53071010	Of jute		A
53071090	Other		A
530720	Multiple (folded) or cabled		
53072000	Multiple (folded) or cabled		A
5308	Yarn of othr vegetable textile fibres; paper yarn.		
530810	Coir yarn		
53081010	Baled		A
53082000	True hemp yarn		A
5310	Woven fabrics of jute or of other textile bast fibres of heading 53.03.		
531010	Unbleached Containing 100% by weight of jute:		
53101011	Carpet backing fabrics		A
53101012	Sacking fabrics		A
53101013	Hessian fabrics		A
53101014	Jute canvas		A
53101091	Woven blended fabrics containing more than 50% by weight of Jute		A
53101092	Stranded woven fabrics of jute containing 50% or more by weight of jute		A
53101093	Jute swim fabrics		A
53109010	Bleached		A
53109020	Decorative Fabrics		A
	Other:		
5401	Sewing thread of man-made filaments, whether or not put up for retail sale.		
540110	Of synthetic filaments		
54011000	Of synthetic filaments	10	B10
54012000	Of artificial filaments	10	B10
5402	Synthetic filament yarn (other than sewing thread), not put up for retail sale, including synthetic monofilament of less than 67 decitex. High tenacity yarn of nylon or other poly-amides:		
54021110	Of aramids	10	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
54021910	Nylon tyre yarn	10	B10
540220	High tenacity yarn of polyesters		
54022010	Of terylene dacron	10	B10
	Textured yarn:		
540231	Of nylon or other polyamides, measuring per single yarn not more than 50 tex		
54023100	Of nylon or other polyamides, measuring per single yarn not more than 50 tex	10	B10
54023200	Of nylon or other polyamides, measuring per single yarn more than 50 tex	10	B10
54023300	Of polyesters	10	B10
54023400	Of Polypropylene	10	B10
54023910	Polypropylene filament yarn	10	B10
54023920	Acrylic filament yarn	10	B10
5701	Carpets and other textile floor coverings, knotted, whether or not made up.		
57011000	Of wool or fine animal hair		A
57019010	Of cotton		A
57019090	Other		A
570220	Floor coverings of coconut fibres (coir)		
57022010	Coir matting, woven		A
57022020	Coir carpets and other rugs		A
57022090	Other		A
	A Other, of pile construction, not made up:		
570231	Of wool or fine animal hair		
57023110	Carpets		A
57023120	Druggets		A
57023130	Mats and matting		A
57023140	Carpeting, floor rugs and the like		A
57023190	Other		A
570232	Of man-made textile materials		
57023210	Carpets, carpeting and rugs and the like		A
57023220	Mats and matting		A
57023290	Other		A
570239	Of other textile materials		
57023910	Carpets and other floor coverings other than durries of cotton		A
57023920	Carpets and other floor coverings, of silk Other, of pile construction, made up:		A
5703	Carpets and other textile floor coverings, tufted, whether or not made up.		
570310	Of wool or fine animal hair		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
57031010	Carpets		A
57031020	Mats and matting		A
57031090	Other		A
570320	Of nylon or other polyamides		
57032010	Carpets, carpeting and rugs		A
57032020	100% polyamide tufted velour, or cut pile loop pile carpet mats with jute, rubber latex or PU foam baking		A
57032090	Other		A
570330	Of other man-made textile materials		
57033010	Carpets, carpeting and rugs		A
57033020	100% polypropylene carpet mats with jute, rubber, latex or PU foam baking		A
57033090	Other		A
570390	Of other textile materials		
57039010	Carpets and other floor coverings, of cotton, other than durries		A
57039090	Other		A
57041000	Tiles, having a maximum surface area of 0.3 m ²		A
5705	Other carpets and other textile floor coverings, whether or not made up.		
	Carpets:		
57050011	Of silk		A
57050019	Other		A
	Durries:		
57050021	Durries cotton		A
57050022	Durries of man-made fibres		A
57050023	Durries of wool		A
57050029	Other		A
	Of jute:		
57050031	Of blended jute		A
57050032	Of coir jute		A
57050039	Other		A
	Carpets, carpeting, rugs, mats and mattings:		
57050041	Knitted		A
57050049	Other		A
57050090	Other		A
5801	Woven pile fabrics and chenille fabrics, other than fabrics of heading 58.02 or 58.06		
58011000	Of wool or fine animal hair		A
	Of cotton:		
58012100	Uncut weft pile fabrics		A
580122	Cut corduroy		
58012210	Solely of cotton		A
58012290	Other		A

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
580123	Other weft pile fabrics		
580190	Of other textile materials		
58019010	Pile fabrics and chenille fabrics of silk containing more than 50% by weight of silk, but not containing wool or hair		A
5802	Terry towelling and similar woven terry fabrics, other than narrow fabrics of heading 58.06; tufted textile fabrics, other than products of heading 57.03.		
	Terry towelling and similar woven terry fabrics, of cotton:		
58021100	Unbleached		
580219	Other		
58021910	Bleached		A
58021920	Piece dyed		A
58021930	Yarn dyed		A
58021940	Printed		A
58021990	Other		A
58022000	Terry towelling and similar woven terry fabrics, of other textile materials		A
58023000	Tufted textile fabrics		A
5803	Gauze, other than narrow fabrics of heading 58.06.		
	Of cotton:		
58030011	Unbleached		A
58030012	Bleached		A
58030013	Piece dyed		A
58030014	Yarn dyed		A
58030015	Printed		A
58030019	Other		A
	Of other textile materials:		
58030091	Of silk or silk waste		A
58030092	Of synthetic fibre		A
58030093	Of artificial fibre		A
58030099	Other		A
5804	Tulles and other net fabrics, not including woven, knitted or crocheted fabrics; lace in the piece, in strips or in motifs, other than fabrics of headings 60.02 to 60.06.		
580410	Tulles and other net fabrics		
58041010	Of cotton		A
58041090	Other		A
	Mechanically made lace:		
580421	Of man-made fibres		
58042100	Of man-made fibres		A
580429	Of other textile materials		
58042910	Of cotton		A

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
58042990	Other		A
58043000	Hand-made lace		A
5805	Hand-woven tapestries of the type Gobelins, Flanders, Aubusson, Beauvais and the like, and needle-worked tapestries (for example, petit point, cross stitch), whether or not made up.		
58050010	Tapestries hand made or needle worked by hand, of cotton		A
58050020	Tapestries of jute		A
58050090	Other		A
58063110	Typewriter ribbon cloth		A
58063910	Goat hair puttis tape		A
58063920	Jute webbing		A
5807	Labels, badges and similar articles of textile materials, in the piece, in strips or cut to shape or size, not embroidered.		
580710	Woven		
58071010	Of cotton		A
58071020	Of man-made fibre		A
58071090	Other		A
580790	Other		
58079010	Felt or non-woven		A
58079090	Other		A
5808	Braids in the piece; ornamental trimmings in the piece, without embroidery, other than knitted or crocheted; tassels, pompons and similar articles.		
580810	Braids in the piece		
58081010	Of cotton		A
58081090	Other		A
580890	Other		
58089010	Tapes, ornamental or cotton		A
58089020	Hair band of narrow fabrics		A
58089030	Other braids		A
58089040	Ribbons of rayon with ornamental trimmings		A
58089050	Saree falls, borders (other than zari), frings of cotton		A
58089060	Saree falls, borders (Other than zari), frings of man-made fibre		A
58089090	Other		A
58090010	Zari borders		A
58090090	Other		A
58101000	Embroidery without visible ground		A
	Other embroidery:		
58109100	Of cotton		A
581092	Of man-made fibres		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
58109210	Embroidered badges, motifs and the like		A
58109290	Other		A
581099	Of other textile materials		
58109900	Of other textile materials		A
581100	Quilted textile products in the piece, composed of one or more layers of textile materials assembled with padding by stitching or otherwise, other than embroidery of heading 58.10		
58110010	Kantha (multilayer stitched textile fabrics in piece used for bedding, mattress pads or clothing)		A
58110020	Quilted wadding		A
58110090	Other		A
6101	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, knitted or crocheted, other than those of heading 61.03.		
610120	Of cotton		
61012000	Of cotton		A
610130	Of man-made fibres		
61013010	Of synthetic fibres		A
61013020	Of artificial fibres		A
610190	Of other textile materials		
61019010	Of silk		A
61019090	Other		A
6102	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, knitted or crocheted, other than those of heading 61.04.		
610210	Of wool or fine animal hair		
61021000	Of wool or fine animal hair		A
61022000	Of cotton		A
610230	Of man-made fibres		
61023010	Of synthetic fibres		A
61023020	Of artificial fibres		A
610290	Of other textile materials		
61029010	Of silk		A
61029090	Other		A
6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.		
610310	Suits		
61031010	Of silk		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
61031020	Of cotton		A
61031030	Of artificial fibres		A
61031090	Other		A
	Ensembles:		
61032200	Of cotton		A
61032300	Of synthetic fibres		A
61032910	Of silk		A
61032920	Of artificial fibres		A
61032990	Other		A
	Jackets and blazers:		
61033100	Of wool or fine animal hair		A
61033200	Of cotton		A
61033300	Of synthetic fibres		A
61033910	Of silk		A
61033920	Of artificial fibres		A
61033990	Other		A
	Trousers, bib and brace overalls, breeches and shorts:		
61034100	Of wool or fine animal hair		A
61034200	Of cotton		A
61034300	Of synthetic fibres		A
61034910	Of silk		A
61034920	Of artificial fibres		A
61034990	Other		A
6104	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.		
	Suits:		
61041300	Of synthetic fibres		A
61041910	Of silk		A
61041920	Of artificial fibres		A
61041990	Other		A
	Ensembles:		
61042200	Of cotton		A
61042300	Of synthetic fibres		A
61042910	Of silk		A
61042920	Of artificial fibres		A
61042990	Other		A
	Jackets and blazers:		
61043100	Of wool or fine animal hair		A
61043200	Of cotton		A
61043300	Of synthetic fibres		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
61043910	Of silk		A
61043920	Of artificial fibres		A
61043990	Other		A
	Dresses:		
61044100	Of wool or fine animal hair		A
61044200	Of cotton		A
61044300	Of synthetic fibres		A
61044400	Of artificial fibres		A
61044910	Of silk		A
61044990	Of other fibres		A
	Skirts and divided skirts:		
61045100	Of wool or fine animal hair		A
61045200	Of cotton		A
61045300	Of synthetic fibres		A
61045910	Of silk		A
61045920	Of artificial fibres		A
61045990	Of other fibres		A
	Trousers, bib and brace overalls, breeches and shorts:		
61046100	Of wool or fine animal hair		A
61046200	Of cotton		A
61046300	Of synthetic fibres		A
61046910	Of silk		A
61046920	Of artificial fibres		A
61046990	Other		A
6105	Men's or boys' shirts, knitted or crocheted.		
610510	Of cotton		
61051010	Shirts, hand crocheted		A
61051020	Knit shirts (other than T-shirts) and sweat shirts, other than hand Crocheted		A
61051090	Other		A
61052010	Of synthetic fibres		A
61052020	Of artificial fibres		A
61059010	Of silk		A
61059090	Other		A
6106	Women's or girls' blouses, shirts and shirt-blouses, knitted or crocheted.		
61061000	Of cotton		A
61062010	Of synthetic fibres		A
61062020	Of artificial fibres		A
61069010	Of silk		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
61069020	Of wool or fine animal hair		A
61069090	Other		A
6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles, knitted or crocheted. Underpants and briefs:		
61071100	Of cotton		A
61071210	Of synthetic fibres		A
61071220	Of artificial fibres		A
61071910	Of silk		A
61071990	Other		A
	Nightshirts and pyjamas:		
61072100	Of cotton		A
61072210	Of synthetic fibres		A
61072220	Of artificial fibres		A
61072910	Of silk		A
61072920	Of wool or fine animal hair		A
61072990	Other		A
	Other:		
610791	Of cotton		
61079110	Gengis (Vests), other than hand crocheted		A
61079190	Other		A
61079910	Of silk		A
61079920	Of wool or fine animal hair		A
61079990	Other		A
6108	Women's or girls' slips, petticoats, briefs, panties, night-dresses, pyjamas, negligis, bathrobes, dressing gowns and similar articles, knitted or crocheted.		
	Slips and petticoats:		
61081110	Of synthetic fibres		A
61081120	Of artificial fibres		A
61081910	Of silk		A
61081920	Of cotton		A
61081990	Of other fibres		A
	Briefs and panties:		
61082100	Of cotton		A
61082210	Of synthetic fibres		A
61082220	Of artificial fibres		A
61082910	Of silk		A
61082990	Other		A
	Night dresses and pyjamas:		
61083100	Of cotton		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
61083210	Of synthetic fibres		A
61083220	Of artificial fibres		A
61083910	Of silk		A
61083990	Other		A
	Other:		
61089100	Of cotton		A
61089210	Of synthetic fibres		A
61089220	Of artificial fibres		A
61089910	Of silk		A
61089920	Of wool or fine animal hair		A
61089990	Of other textile materials		A
6109	T-shirts, singlets and other vests, knitted or crocheted.		
61091000	Of cotton		A
61099010	Of synthetic fibres		A
61099020	Of artificial fibres		A
61099030	Of silk		A
61099040	Of wool or fine animal hair		A
61099090	Other		A
6110	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted.		
	Of wool or fine animal hair:		
611011	Of wool		
61101110	Jerseys		A
61101120	Sweaters and cardigans		A
61101190	Other		A
611012	Of Kashmir (cashmere) goats		
61101200	Of kashmir (cashmere) goats		A
611019	Other		
61101900	Other		
61102000	Of cotton		A
61103010	Of synthetic fibres		A
61103020	Of artificial fibres		A
61109000	Of other textile materials		A
6111	Babies' garments and clothing accessories, knitted or crocheted.		
61112000	Of cotton		A
61113000	Of synthetic fibres		A
61119010	Of silk		A
61119020	Of artificial fibres		A
61119090	Other		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
6112	Track suits, ski suits and swimwear, knitted or crocheted.		
	Track suits:		
61121100	Of cotton		A
61121200	Of synthetic fibres		A
61121910	Of silk		A
61121920	Of wool or fine animal hair		A
61121930	Of artificial fibres		A
61121990	Other		A
611220	Ski suits		
61122010	Of silk		A
61122020	Of wool or fine animal hair		A
61122030	Of cotton		A
61122040	Of synthetic fibres		A
61122050	Of artificial fibres		A
61122090	Other		A
	Men's or boys' swimwear:		
61123100	Of synthetic fibres		A
61123910	Of silk		A
61123920	Of artificial fibres		A
61123990	Other		A
	Women's or girls' swimwear:		
61124100	Of synthetic fibre		A
61124910	Of silk		A
61124920	Of artificial fibres		A
61124990	Other		A
6113	Garments, made up of knitted or crocheted fabrics of heading 59.03, 59.06 or 59.07.		
61130000	Garments, made up of knitted or crocheted fabrics of heading 5903, 5906 or 5907		A
6114	Other garments, knitted or crocheted.		
61142000	Of cotton		A
61143010	Of synthetic fibres		A
61143020	Of artificial fibres		A
61149010	Of silk		A
61149090	Other		A
6115	Panty hose, tights, stockings, socks and other hosiery, including graduated compression hosiery (for example, stockings for varicose veins) and footwear without applied soles, knitted or crocheted.		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
61151000	Graduated compression hosiery for example,(stockings for varicose veins)		
	A Other panty hose and tights:		
61152100	Of synthetic fibres, measuring per single yarn less than 67 decitex		A
61152200	Of synthetic fibres, measuring per single yarn 67 decitex or more		A
61152910	Of silk		A
61152920	Of wool or fine animal hair		A
61152930	Of artificial fibres		A
61152990	Other		A
61153000	Other women's full-length or knee-length hosiery, measuring per single yarn less than 67 decitex		A
	Other:		
61159400	Of wool or fine animal hair		A
61159500	Of cotton		A
61159600	Of synthetic fibres		A
61159910	Of artificial fibres		A
61159990	Other		A
6116	Gloves, mittens and mitts, knitted or crocheted.		
611610	Impregnated, coated or covered with plastics or rubber		
61161000	Impregnated, coated or covered with plastics or rubber		A
	Other:		
61169100	Of wool or fine animal hair		A
61169200	Of cotton		A
61169300	Of synthetic fibres		A
61169910	Of artificial fibres		A
61169990	Other		A
6117	Other made up clothing accessories, knitted or crocheted; knitted or crocheted parts of garments or of clothing accessories.		
611710	Shawls, scarves, mufflers, mantillas, veils and the like		
61171010	Of silk		A
61171020	Of wool		A
61171030	Of cotton		A
61171040	Of man-made fibres		A
61171090	Other		A
611780	Other accessories		
61178010	Of silk		A
61178020	Of wool		A
61178030	Of cotton		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
61178040	Of man-made fibres		A
61178090	Other		A
61179000	Parts		A
6201	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading 62.03.		
	Overcoats, raincoats, car-coats, capes, cloaks and similar articles:		
62011100	Of wool or fine animal hair		A
620112	Of cotton		
62011210	Raincoats		A
62011290	Other		A
620113	Of man-made fibres		
62011310	Raincoats		A
62011390	Other		A
620119	Of other textile materials		
62011910	Of silk		A
62011990	Of other textile fibres		A
	Other:		
62019100	Of wool or fine animal hair		A
62019200	Of cotton		A
62019300	Of man-made fibres		A
62019910	Of silk		A
62019990	Other		A
6202	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading 62.04.		
	Overcoats, raincoats, car-coats, capes, cloaks and similar articles:		
620211	Of wool or fine animal hair		
62021110	Coats		A
62021190	Other		A
62021200	Of cotton		A
62021300	Of man-made fibres		A
62021910	Coats of silk		A
62021920	Coats of all other fibres		A
62021990	Other		A
	Other:		
620291	Of wool or fine animal hair		
62029110	Wind and ski-jackets, wind-cheaters		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
62029190	Other		A
620292	Of cotton		
62029210	Wind and ski-jackets, wind-cheaters		A
62029290	Other		A
620293	Of man-made fibres		
62029310	Wind and ski-jackets, wind-cheaters		A
62029390	Other		A
	Of silk:		
62029911	Wind and ski-jackets		A
62029919	Other		A
62029990	Other		A
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear).		
	Suits:		
62031100	Of wool or fine animal hair		A
62031200	Of synthetic fibres		A
62031910	Of cotton		A
62031990	Other		A
	Ensembles:		
62032200	Of cotton		A
62032300	Of synthetic fibres		A
62032900	Of other textile materials		A
	Jackets and blazers:		
62033100	Of wool or fine animal hair		A
62033200	Of cotton		A
62033300	Of synthetic fibres		A
62033910	Of silk		A
62033990	Other		A
	Trousers, bib and brace overalls, breeches and shorts:		
62034100	Of wool or fine animal hair		A
62034200	Of cotton		A
62034300	Of synthetic fibres		A
62034910	Of silk		A
62034990	Other		A
6204	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear).		
	Suits:		
62041100	Of wool or fine animal hair		A
62041200	Of cotton		A

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
62041300	Of synthetic fibres		A
620419	Of other textile materials		
	Of silk:		
62041911	Sequinned or beaded with chattons or embroidered		A
62041919	Other		A
62041990	Of all other fibres		A
	Ensembles:		
62042100	Of wool or fine animal hair		A
620422	Of cotton		
62042210	Blouses combined with skirts, trousers or shorts		A
62042290	Other		A
62042300	Of synthetic fibres		A
620429	Of other textile materials		
	Of silk:		
62042911	Sequinned or beaded		A
62042919	Other		A
62042990	Other		A
	Jackets and blazers:		
62043100	Of wool or fine animal hair		A
62043200	Of cotton		A
62043300	Of synthetic fibres		A
620439	Of other textile materials		
	Of silk:		
62043911	Sequinned or beaded with chattons or embroidered		A
62043919	Other		A
62043990	Other		A
	Dresses:		
620441	Of wool or fine animal hair		
62044110	House coats and like dresses		A
62044120	Blazers		A
62044190	Other		A
620442	Of cotton		
62044210	House coats and the like dresses		A
62044220	Dresses		A
62044290	Other		A
620443	Of synthetic fibres		
62044310	House coats and the like		A
62044390	Other		A
62044400	Of artificial fibres		A
620449	Of other textile materials		
	Of silk:		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
62044911	House coats and the like dresses		A
62044919	Other		A
62044990	Other		A
	Skirts and divided skirts:		
62045100	Of wool or fine animal hair		A
62045200	Of cotton		A
62045300	Of synthetic fibres		A
62045910	Of silk		A
62045990	Other		A
	Trousers, bib and brace overalls, breeches and shorts:		
620461	Of wool or fine animal hair		
62046110	Trousers and shorts		A
62046190	Other		A
62046200	Of cotton		A
62046300	Of synthetic fibres		A
620469	Of other textile materials		
	Of silk:		
62046911	Sequinned or beaded or embroidered		A
62046919	Other		A
62046990	Other		A
6205	Men's or boys' shirts.		
62052000	Of cotton		A
62053000	Of man-made fibres		A
62059010	Of silk		A
62059090	Other		A
6206	Women's or girls' blouses, shirts and shirt-blouses.		
62061010	Of silk		A
62061090	Other		A
62062000	Of wool or fine animal hair		A
62063000	Of cotton		A
62064000	Of man made fibres		A
62069000	Of other textile materials		A
6207	Men's or boys' singlets and other vests, underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles.		
	Underpants and briefs:		
62071100	Of cotton		A
62071910	Of synthetic fibres		A
62071920	Of wool		A
62071930	Of silk		A
62071990	Other		A

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Nightshirts and pyjamas:		
62072110	Of cotton		A
62072190	Other		A
62072200	Of man-made fibres		A
62072900	Of other textile materials		A
	Other:		
620791	Of cotton		
62079110	Dressing gowns and bathrobes		A
62079120	Under shirts other than hand printed		A
62079190	Other		A
	Of silk:		
62079911	Dressing gowns and bathrobes		A
62079919	Other		A
	Of wool:		
62079921	Dressing gowns and bathrobes		
62079929	Other		A
62079990	Other		A
6208	Women's or girls' singlets and other vests, slips, petticoats, briefs, panties, nightdresses, pyjamas, negligis, bathrobes, dressing gowns and similar articles.		
	Slips and petticoats:		
62081100	Of man-made fibres		A
62081910	Of cotton other than hand printed		A
62081990	Other		A
	Nightdresses and pyjamas:		
62082100	Of cotton		A
62082200	Of man-made fibres		A
62082910	Of silk		A
62082920	Of wool		A
62082990	Other		A
	Other:		
620891	Of cotton		
62089110	Dressing gowns and bathrobes		A
62089190	Other		A
620892	Of man-made fibres		
62089210	Dressing gowns and bathrobes		A
62089290	Other		A
620899	Of other textile materials		
62089910	Dressing gowns and bathrobes of wool		A

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
62089920	Dressing gowns and bathrobes of silk		A
62089990	Other		A
6209	Babies' garments and clothing accessories.		
62093000	Of synthetic fibres		A
62099010	Of silk		A
62099090	Other		A
6210	Garments, made up of fabrics of heading 56.02, 56.03, 59.03, 59.06 or 59.07.		
62101000	Of fabrics of heading 5602 or 5603		A
621020	Other garments, of the type described in subheadings 6201.11 to 6201.19		
62102010	Outer garments, of rubberised textile fabrics		A
62102020	Outer garments, of fabrics impregnated, coated, covered or laminated with preparations of cellulose derivatives and other artificial plastic materials		A
62102030	Outer garments, of fabrics otherwise impregnated or coated		A
62102090	Other		A
621030	Other garments, of the type described in subheadings 6202.11 to 6202.19		
62103010	Outer garments, of textiles impregnated, coated, covered or laminated with preparations of cellulose derivatives and other artificial plastic materials		A
62103020	Outer garments, of rubberised textile fabrics		A
62103030	Outer garments, of fabrics otherwise impregnated		A
62103090	Other		A
621040	Other men's or boys' garments		
62104010	Bullet proof jacket, bomb disposal jacket and the like		A
62104090	Other		A
621050	Other women's or girls' garments		
62105000	Other women's or girls' garments		A
6211	Track suits, ski suits and swimwear; other garments.		
	Swimwear:		
62111100	Men's or boys'		A
62111200	Women's or girls'		A
62112000	Ski suits		A
	Other garments, men's or boys':		
62113200	Of cotton		A
62113300	Of man-made fibres		A
62113900	Of other textile materials		A
	Other garments, women's or girls':		
62114100	Of wool or fine animal hair		A

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
62114210	Kurta and salwar with or without duppatta		A
62114290	Other		A
62114300	Of man-made fibres		A
62114900	Of other textile materials		A
6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, whether or not knitted or crocheted.		
62121000	Brassieres		A
62122000	Girdles and panty-girdles		A
62123000	Corselettes		A
621290	Other		
62129010	Suspender belts, braces, suspender garters		A
62129090	Other		A
6213	Handkerchiefs.		
62132000	Of cotton		A
62139010	Of man-made fibres		A
62139090	Of other textile materials		A
6214	Shawls, scarves, mufflers, mantillas, veils and the like.		
621410	Of silk or silk waste		
62141010	Scarves of silk measuring 60 cms or less		A
62141020	Shawls, scarves (exceeding 60 cms) and the like		A
62141090	Other		A
621420	Of wool or fine animal hair		
62142010	Shawls		A
62142020	Scarves		A
62142030	Mufflers		A
62142090	Other		A
62143000	Of synthetic fibres		A
62144000	Of artificial fibres		A
62149010	Abrabroomal, cotton		A
	Chadars, cotton:		
62149021	Grey		A
62149022	White bleached		A
62149029	Other		A
	Odhani, cotton:		
62149031	Grey		A
62149032	White bleached		A
62149039	Other		A
62149040	Scarves, cotton		A
62149050	Shawls, mufflers and the like, of cotton		A
62149060	Shawls, mufflers and the like of man-made fibres		A
62149090	Other		A

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
6215	Ties, bow ties and cravats.		
62151000	Of silk or silk waste		A
62152000	Of man-made fibres		A
621590	Of other textile materials		
62159010	Of cotton		A
62159090	Other		A
6216	Gloves, mittens and mitts.		
621600	Gloves, mittens and mitts		
62160010	Of cotton		A
62160090	Other		A
6217	Other made up clothing accessories; parts of garments or of clothing accessories, other than those of heading 62.12.		
621710	Accessories		
62171010	For articles of apparel of cotton		A
62171020	For articles of apparel of synthetic fibres		A
62171030	For articles of apparel of wool		A
62171040	For articles of apparel of silk		A
62171050	For articles of apparel of regenerated fibre		A
62171060	For articles of apparel of other fibres		A
62171070	Stockings, socks, sockettes and the like of cotton		A
62171090	Other		A
621790	Parts		
62179010	Collar cuffs and the like of cotton		A
62179020	Of silk		A
62179030	Of wool		A
62179040	Separately presented removable linings for raincoats and Other		A
62179090	Other		A
7101	Pearls, natural or cultured, whether or not worked or graded but not strung, mounted or set; pearls, natural or cultured, temporarily strung for convenience of transport.		
710110	Natural pearls		
71011010	Unworked	10	B10
71011020	Worked	10	B10
	Cultured pearls:		
71012100	Unworked	10	B10
71012200	Worked	10	B10
7102	Diamonds, whether or not worked, but not mounted or set.		
71021000	Unsorted	10	B10
	Industrial:		
710221	Unworked or simply sawn, cleaved or bruted		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
71022110	Sorted	10	B10
71022120	Unsorted	10	B10
710229	Other		
71022910	Crushed	10	B10
71022990	Other	10	B10
	Non-industrial:		
710231	Unworked or simply sawn, cleaved or bruted		
71023100	Unworked or simply sawn, cleaved or bruted	10	B10
71023910	Diamond, cut or otherwise worked but not mounted or set	10	B10
71023990	Other	10	B10
7103	Precious stones (other than diamonds) and semi-precious stones, whether or not worked or graded but not strung, mounted or set; ungraded precious stones (other than diamonds) and semi-precious stones, temporarily strung for convenience of transport.		
710310	Unworked or simply sawn or roughly shaped Precious stones:		
71031011	Emerald	10	B10
71031012	Ruby and sapphire	10	B10
71031019	Other	10	B10
	Semi-precious stones:		
71031021	Feldspar (Moon stone)	10	B10
71031022	Garnet	10	B10
71031023	Agate	10	B10
71031024	Green aventurine	10	B10
71031029	Other	10	B10
	Otherwise worked:		
71039100	Ruby, sapphire and emeralds	10	B10
71039910	Feldspar (Moon stone)	10	B10
71039920	Garnet	10	B10
71039930	Agate	10	B10
71039940	Chalcedony	10	B10
71039990	Other	10	B10
7104	Synthetic or reconstructed precious or semi-precious stones, whether or not worked or graded but not strung, mounted or set; ungraded synthetic or reconstructed precious or semiprecious stones, temporarily strung for convenience of transport.		
710410	Piezo-electric quartz		
71041000	Piezo-electric quartz	10	B10
710420	Other, unworked or simply sawn or roughly shaped		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
71042000	Other, unworked or simply sawn or roughly shaped	10	B10
71049000	Other	10	B10
7105	Dust and powder of natural or synthetic precious or semi-precious stones.		
71051000	Of diamond	10	B10
71059000	Other	10	B10
7106	Silver (including silver plated with gold or platinum), unwrought or in semi-manufactured forms, or in powder form.		
71061000	Powder	10	B10
	Other:		
71069100	Unwrought	10	B190
710692	Semi-manufactured		
71069210	Sheets, plates, strips, tubes and pipes	10	B10
71069290	Other	10	B10
7107	Base metals clad with silver, not further worked than semi-manufactured.		
71070000	Base metals clad with silver, not further worked than semi-manufactured	10	B10
7108	Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.		
	Non-monetary:		
71081100	Powder	10	B10
71081200	Other unwrought forms	10	B10
71081300	Other semi- manufactured forms	10	B10
71082000	Monetary	10	B10
71090000	Base metals or silver, clad with gold, not further worked than semi-manufactured	10	B10
7110	Platinum, unwrought or in semi-manufactured forms, or in powder form.		
	Platinum:		
711011	Unwrought or in powder form		
71101110	Unwrought form	10	B10
71101120	In powder form	10	B10
711019	Other		
71101900	Other	10	B10
	Palladium:		
71102100	Unwrought or in powder form	10	B10
71102900	Other	10	B10
	Rhodium:		
71103100	Unwrought or in powder form	10	B10
71103900	Other	10	B10
	Iridium, osmium and ruthenium:		

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
71104100	Unwrought or in powder form	10	B10
71104900	Other	10	B10
7111	Base metals, silver or gold, clad with platinum, not further worked than semi-manufactured.		
71110000	Base metals, silver or gold, clad with platinum, not further worked than semi-manufactured	10	B10
7112	Waste and scrap of precious metal or of metal clad with precious metal; other waste and scrap containing precious metal compounds, of a kind used principally for the recovery of precious metal.		
71123000	Ash containing precious metal or precious metal compounds	10	B10
	Other:		
71129100	Of gold, including metal clad with gold but excluding sweepings containing other precious metals	10	B10
71129200	Of platinum, including metal clad with platinum but excluding sweepings containing other precious metals	10	B10
71129910	Of silver, including metal clad with silver but excluding sweepings containing other precious metals	10	B10
71129920	Sweepings containing gold or silver	10	B10
71129990	Other	10	B10
7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal. Of precious metal whether or not plated or clad with precious metal:		
711311	Of silver, whether or not plated or clad with other precious metal		
71131110	Jewellery with filigree work	10	B10
71131120	Jewellery studded with gems	10	B10
71131130	Other articles of Jewellery	10	B10
71131190	Parts	10	B10
711319	Of other precious metal, whether or not plated or clad with precious metal		
71131910	Of gold, unstudded	10	B19
71131920	Of gold, set with pearls	10	B10
71131930	Of gold, set with diamonds	10	B10
71131940	Of gold, set with other precious and semi-precious stones	10	B10
71131950	Of platinum, unstudded	10	B10
71131960	Parts	10	B10

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
71131990	Other	10	B10
71132000	Of base metal clad with precious metal	10	B10
7114	Articles of goldsmiths' or silversmiths' wares and parts thereof, of precious metal or metal clad with precious metal.		
	Of precious metal whether or not plated or clad with precious metal:		
711411	Of silver, whether or not plated or clad with other precious metal		
71141110	Articles	10	B10
71141120	Parts	10	B10
711419	Of other precious metal, whether or not plated or clad with precious metal		
71141910	Articles of gold	10	B10
71141920	Articles of platinum	10	B10
71141930	Parts	10	B10
711420	Of base metal clad with precious metal		
71142010	Articles clad with gold	10	B10
71142020	Other articles	10	B10
71142030	Parts	10	B10
7115	Other articles of precious metal or of metal clad with precious metal.		
711510	Catalysts in the form of wire cloth or grill, of platinum		
71151000	Catalysts in the from of wire cloth or grill, of platinum	10	B10
711590	Other		
71159010	Laboratory and industrial articles of precious metal	10	B10
71159020	Spinneret's made mainly of gold	10	B10
71159090	Other	10	B10
7116	Articles of natural or cultured pearls, precious or semiprecious stones (natural, synthetic or reconstructed).		
71161000	Of natural or cultured pearls	10	B10
711620	Of precious or semi-precious stones (natural, synthetic or reconstructed)		
71162000	Of precious or semi-precious stones (natural, synthetic or reconstructed)	10	B10
7117	Imitation jewellery. Of base metal, whether or not plated with precious metal:		
71171100	Cuff-links and studs	10	B10
71171910	Bangles	10	B10
71171920	German silver jewellery	10	B10
71171990	Other	10	B10

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
711790	Other		
71179010	Jewellery studded with imitation pearls or imitation or synthetic stones	10	B10
71179090	Other	10	B10
71181000	Coin (other than gold coin), not being legal tender	10	B10
7401	Copper mattes; cement copper (precipitated copper).		
74010010	Copper mattes	5	B10
74010090	Cement copper (precipitated copper)	5	B10
740200	Unrefined copper; copper anodes for electrolytic refining		
74020010	Blister copper	5	B10
74020090	Other	5	B10
7403	Refined copper and copper alloys, unwrought.		
	Refined copper:		
74031100	Cathodes and sections of cathodes	5	B10
74031200	Wire-bars	5	B5
74031300	Billets	5	B10
74031900	Other	5	B5
	Copper alloys:		
740321	Copper-zinc base alloys (brass)		
74032100	Copper-zinc base alloys (brass)	5	B5
740322	Copper-tin base alloys (bronze)		
74032210	Phosphor bronze	5	B10
74032290	Other	5	B10
74032900	Other copper alloys (other than master alloys of heading 7405)	5	B5
740400	Copper waste and scrap		
	Of copper:		
74040011	Empty or discharged cartridges of all bores and sizes		X
74040012	Copper scrap, namely the following:	5	B10
	copper wire scrap covered by ISRI code words Barley, Berry and Birch;		
	heavy copper scrap covered by ISRI code word Candy;		
	unalloyed copper scrap covered by ISRI code word Cliff;		
	copper wire nodules scrap covered by ISRI code words Clove, Cobra and Cocoa;		
	light copper scrap covered by ISRI code word Dream;		
	muntz metal tubes covered by ISRI code word Palms		
74040019	Other	5	B10
	Of copper alloys:		
74040021	Empty or discharged cartridges of all bores and sizes	5	B10
74040022	Brass scrap,	5	B10
74050000	Master alloys of copper	5	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
7406	Copper powders and flakes.		
74061000	Powders of non-lamellar structure	5	B10
74062000	Powders of non-lamellar structure; flakes	5	B10
7407	Copper bars, rods and profiles.		
74071040	Hollow bars of copper	5	B10
	Profiles:		
740721	Of copper-zinc base alloys (brass)		
74072110	Bars	5	B5
74072120	Rods	5	B5
74072130	Hollow bars	5	B5
74072190	Other	5	B5
74072910	Rods of bronze and similar alloys	5	B10
7408	Copper wire.		
	Of refined copper:		
740811	Of which the maximum cross-sectional dimension exceeds 6 mm		
74081110	Copper weld wire	5	B10
74081190	Other	5	B10
740819	Other		
74081910	Copper weld wire	5	B10
74081920	Welding wire	5	B10
	Of copper alloys:		
740821	Of copper-zinc base alloys (brass)		
74082110	Of which the maximum cross-sectional dimension exceeds 6 mm	5	B5
74082190	Other	5	B5
74082210	Silver plated flattened wire of copper (lametta)	5	B10
74082220	Other of which the maximum cross-sectional dimension exceeds 6 mm	5	B10
74082290	Other	5	B10
74082910	Wire of bronze and similar alloys	5	B10
74082990	Other	5	B10
7409	Cooper plates, sheets and strip, of a thickness exceeding 0.15 mm.		
	Of refined copper:		
74091100	In coils	5	B5
	Of copper-zinc base alloys (brass):		
74092100	In coils	5	B5
	Of copper-tin base alloys (bronze):		
74093100	In coils	5	B5

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
74094000	Of copper-nickel base alloys (cupro-nickel) or copper-nickel-zinc base alloys (nickel silver)	5	B5
740990	Of other copper alloys		
74099000	Of other copper alloys	5	B5
7410	Copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.15 mm. Not backed:		
74101100	Of refined copper	5	B5
74101200	Of copper alloys	5	B10
	Backed:		
74102100	Of refined copper	5	B10
74102200	Of copper alloys	5	B10
7411	Copper tubes and pipes.		
74111000	Of refined copper	5	B5
	Of copper alloys:		
74112100	Of copper-zinc base alloys (brass)	10	B10
74112200	Of copper-nickel base alloys (cupro-nickel) or copper-nickel-zinc base alloys (nickel silver)	10	B10
7412	Copper tube or pipe fittings (for example, couplings, elbows, sleeves).		
74121000	Of refined copper	10	B10
	Brass:		
74122011	Tube-well strainer	10	B10
74122012	Hose connectors	10	B10
74122019	Other	10	B10
74122090	Fittings of bronze or other alloys of copper	10	B10
74130000	Stranded wire, cables, plaited bands and the like, of copper, not electrically insulated	10	B10
7415	Nails, tacks, drawing pins, staples (other than those of heading 83.05) and similar articles, of copper or of iron or steel with heads of copper; screws, bolts, nuts, screw hooks, rivets, cotters, cotter-pins, washers (including spring washers) and similar articles, of copper.		
74151000	Nails and tacks, drawing pins, staples and similar articles	10	B10
	Other articles, not threaded:		
74152100	Washers (including spring washers)	10	B10
	Other threaded articles:		
74153310	Screws for wood	10	B10
74153910	Rivets (excluding tubular or bifurcated)	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
7418	Table, kitchen or other household articles and parts thereof; of copper pot scourers and scouring or polishing pads, gloves and the like: of copper; sanitary ware and parts thereof, of copper.		
	Table, kitchen or other household articles and parts thereof; pot scourers and scouring or polishing pads, gloves and the like:		
74181100	Pot scourers and scouring or polishing pads, gloves and the like	10	B10
	Utensils:		
74181921	Of brass	10	B10
74181922	Of copper	10	B10
74181929	Of other copper alloys	10	B10
74181930	Other table, kitchen or other household articles	10	B10
74182010	Sanitary ware	10	B10
74191010	Chain	10	B10
	Parts:		
74199910	Reservoirs, tanks, vats and similar containers of a capacity above 300 l	10	B10
74199920	Articles of copper alloys electro-plated with nickel-silver	10	B10
74199930	Articles of brass	10	B10
74199940	Copper worked articles	10	B10
74199990	Other articles of copper	10	B10
7601	Unwrought aluminium.		
760110	Aluminium, not alloyed		
76011010	Ingots	5	B10
76011020	Billets	5	B10
76011030	Wire bars	5	B10
76011040	Wire rods	5	B10
760120	Aluminium alloys		
76012010	Ingots	5	B5
76012020	Billets	5	B10
76012030	Wire bars	5	B5
76012040	Wire rods	5	B5
76012090	Other	5	B10
76020010	Aluminium scrap		
76020090	Other waste and scrap	5	B10
76031010	Aluminium powder for thermit process	5	B10
76031090	Other	5	B5
76032000	Powders of lamellar structure; flakes	5	B10
7604	Aluminium bars, rods and profiles.		
760410	Of aluminium, not alloyed		
76041010	Wire rods	5	B5
76041020	Bars and rods, other than wire rods	5	B5
	Profiles:		

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
76041031	Hollow	5	B5
76041039	Other	5	B5
	Of aluminium alloys:		
76042100	Hollow profiles	5	5B
76042910	Hard drawn bare aluminium conductors steel re-inforced (A.C.S.R.)	5	B10
76042920	Wire rods	5	B10
76042930	Bars and rods, other than wire rods	5	B10
76042990	Other	5	B10
7605	Aluminium wire.		
	Of a aluminium, not alloyed:		
76051100	Of which the maximum cross-sectional dimension exceeds 7 mm	5	B10
76051910	Of which the maximum cross-sectional dimension exceeds 6 mm but does not exceed 7 mm	5	B10
	Other:		
76051991	Hard drawn bare-solid	5	B10
76051999	Other	5	B10
	Of aluminium alloys:		
76052100	Of which the maximum cross-sectional dimension exceeds 7 mm	5	B10
76052910	Of which the maximum cross-sectional dimension exceeds 6 mm but does not exceed 7 mm	5	B10
76052990	Other	5	B5
7606	Aluminium plates, sheets and strip, of a thickness exceeding 0.2 mm. Rectangular (including square):		
760611	Of aluminium, not alloyed		
76061110	Electrolytic plates or sheets	5	B5
76061190	Other	5	B5
76061200	Of aluminium alloys	5	B5
	Other:		
760691	Of aluminium, not alloyed		
76069110	Circles	5	B10
76069120	Electrolytic plates or sheets	5	B10
76069190	Other	5	B5
760692	Of aluminium alloys		
76069210	Circles	5	B5
76069290	Other	5	B5

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
7607	Aluminium foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.2 mm.		
	Not backed:		
760711	Rolled but not further worked		
76071110	Ordinarily used for tea chest lining	5	B5
76071190	Other	5	B5
760719	Other		
76071910	Ordinarily used for tea chest lining	5	B10
	Other:		
76071991	Plain	5	B10
76071992	Embossed	5	B10
76071993	Perforated or cut-to-shape	5	B10
76071994	Coated	5	B10
76071995	Printed	5	B10
76071999	Other	5	B10
760720	Backed		
76072010	Ordinarily used for tea chest lining	5	B10
76072090	Other	5	B10
7608	Aluminium tubes and pipes.		
76081000	Of aluminium, not alloyed	7.5	B5
76082000	Of aluminium alloys	7.5	B5
76090000	Aluminium tube and pipe fittings (for example, couplings, elbows, sleeves)	7.5	B10
7610	Aluminium structures (excluding prefabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, balustrades, pillars and columns); aluminium plates, rods, profiles, tubes and the like, prepared for use in structures.		
76101000	Doors, windows and their frames and thresholds for doors	10	B10
76109010	Structures	10	B10
76109020	Parts of structures, not elsewhere specified	10	B10
76109030	Aluminium plates, rods, profiles, tubes and the like prepared for use in structure	10	B10
76109090	Other	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
76110000	Aluminium reservoirs, tanks, vats and similar containers, for any material (other than compressed or liquefied gas), of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment.	10	B10
7612	Aluminium casks, drums, cans, boxes and similar containers (including rigid or collapsible tubular containers), for any material (other than compressed or liquefied gas), of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment.		
761210	Collapsible tubular containers		
76121010	Plain	10	B10
76121020	Lacquered	10	B10
76121030	Printed	10	B10
76121090	Other	10	B10
761290	Other		
76129010	Plain	10	B10
76129020	Lacquered	10	B10
76129030	Printed	10	B10
761300	Aluminium containers for compressed or liquefied gas		
	Low pressure cylinders:		
76130011	Plain	10	B10
76130012	Lacquered	10	B10
76130013	Printed	10	B10
76130019	Other	10	B10
	High pressure cylinders:		
76130021	Plain	10	B10
76130022	Lacquered	10	B10
76130023	Printed	10	B10
76130029	Other	10	B19
	Other:		
76130091	Plain	10	B10
76130092	Lacquered	10	B10
76130093	Printed	10	B10
76130099	Other	10	B10
7614	Stranded wire, cables, plaited bands and the like, of aluminium, not electrically insulated.		
76141000	With steel core	10	B10
76149000	Other	10	B10
7615	Table, kitchen or other household articles and parts thereof; of aluminium; pot scourers and scouring or polishing pads, gloves and the like, of aluminium; sanitary ware and parts thereof, of aluminium.		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
76151100	Pot scourers and scouring or polishing pads, gloves and the like	10	B10
76151910	Pressure cookers	10	B10
76151920	Non-stick utensils	10	B10
76151930	Solar collectors and parts thereof	10	B10
76151940	Other table and kitchenware	10	B10
76151990	Other	10	B10
76152010	Sanitary ware of aluminium and aluminium alloys for indoor use	10	B10
76152020	Parts	10	B10
76152090	Other	10	B10
76161000	Nails, tacks, staples (other than those of heading 8305), screws, bolts, nuts, screw hooks, rivets, cotters, cotter-pins, washers and similar articles	10	B10
	Other:		
76169100	Cloth, grill, netting and fencing, of aluminium wire	10	B10
76169910	Expanded metal of aluminium and aluminium alloys	10	B10
76169920	Chains	10	B10
76169930	Bobbins	10	B10
76169990	Other	10	B10
8601	Rail locomotives powered from an external source of electricity or by electric accumulators.		
86011000	Powered from an external source of electricity	10	B10
86012000	Powered by electric accumulators	10	B10
86021000	Diesel-electric locomotives	10	B10
86029010	Steam locomotives and tenders thereof	10	B10
86029090	Other	10	B10
8603	Self-propelled railway or tramway coaches, vans and trucks, other than those of heading 86.04.		
86031000	Powered from an external source of electricity	10	B10
86039000	Other	10	B10
86040000	Railway or tramway maintenance or service vehicles, whether or not self-propelled (for example, workshops, cranes, ballast tampers, trackliners, testing coaches and track inspection vehicles)	10	B10
86050000	Railway or tramway passenger coaches, not self-propelled; luggage vans, post office coaches and other special purpose railway or tramway coaches, not self-propelled (excluding those of heading 8604)	10	B10
8606	Railway or tramway goods vans and wagons, not self-propelled.		

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
860610	Tank wagons and the like		
86061010	Four wheeler tank wagons of pay-load exceeding 23 tonnes	10	B10
86061020	Eight wheeler tank wagons of pay-load not exceeding 60 tonnes	10	B10
86061090	Other	10	B10
86069110	Meter guage eight wheeler covered wagons of pay-load not exceeding 38 tonnes	10	B10
86069120	Broad guage eight wheeler covered wagons of pay-load not exceeding 60 tonnes	10	B10
86069210	Bogie eight wheeler wagons of pay-load not exceeding 60 tonnes	10	B10
86069220	Broad guage bogie eight wheeler wagons of pay-load exceeding 60 tonnes but not exceeding 67 tonnes	10	B10
86069290	Other	10	B10
8607	Parts of railway or tramway locomotives or rolling-stock. Bogies, bissel-bogies, axles and wheels, and parts thereof:		
86071100	Driving Bogies and bissel-bogies	10	B10
86071200	Other bogies and bissel-bogies	10	B10
860719	Other, including parts		
86071910	Axles, wheels for coaches, van and wagons (rolling- stock)	10	B10
86071920	Axles and wheels for locomotives	10	B10
86071930	Axle boxes (lubricating or grease box)	10	B10
86071990	Other parts of axles and wheels	10	B10
	Brakes and parts thereof:		
86072100	Air brakes and parts thereof	10	B10
860730	Hooks and other coupling devices, buffers, and parts thereof		
86073010	Buffers and coupling devices	10	B10
86079100	Of locomotives	10	B10
86079910	Parts of coach work of railway running stock	10	B10
86079920	Parts of tramway, locomotives and running stock	10	B10
86079930	Hydraulic shock absorbers for railway bogies	10	B10
86079990	Other	10	B10
86080010	Railway and tramway track fixtures and fittings	10	B10
86080020	Mechanical equipment, not electrically powered for signalling to, or controlling, road rail or other vehicles, ships or aircraft	10	B10
86080030	Other traffic control equipment for railways	10	B10
86080040	Other traffic control equipment for roads or inland waterways including automatic traffic control equipment for use at ports and airports	10	B10
86090000	Containers (including containers for the transport of fluids) specially designed and equipped for carriage by one or more modes of transport	10	B10
8701	Tractors (other than tractors of heading 87.09).		

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Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
87011000	Pedestrian controlled tractors	10	B10
87012010	Of engine capacity not exceeding 1800 cc	10	B10
87012090	Other	10	B10
870130	Track-laying tractors Garden tractors:		
87013011	Of engine capacity not exceeding 1800 cc	10	B10
87013019	Other	10	B10
	Other:		
87013091	Of engine capacity not exceeding 1800 cc	10	B10
87013099	Other	10	B10
870190	Other		
87019010	Of engine capacity not exceeding 1800 cc	10	B10
87019090	Other	10	B10
8702	Motor vehicles for the transport of ten or more persons, including the driver.		
870210	With compression-ignition internal combustion piston engine (diesel or semi-diesel)		
	Vehicles for transport of not more than 13 persons, including the driver:		
87021011	Integrated monocoque vehicle		X
87021012	Air-conditioned vehicle		X
87021019	Other		X
	Other:		
87021091	Integrated monocoque vehicle		X
87021092	Air-conditioned vehicle		X
87021099	Other		X
870290	Other		
	Vehicles for transport of not more than 13 persons, including the driver:		
87029011	Integrated monocoque vehicle		X
87029012	Air-conditioned vehicle		X
87029013	Electrically operated		X
87029019	Other		X
87029020	Electrically operated vehicle not elsewhere included or specified		X
	Other:		
87029091	Integrated monocoque vehicle		X
87029092	Air-conditioned vehicle		X
87029099	Other		X
870310	Vehicles specially designed for travelling on snow; golf cars and similar vehicles		
87031010	Electrically operated	100	B10
87031090	Other	100	B10
	Other vehicles, with spark-ignition internal combustion reciprocating piston engine:		
870321	Of a cylinder capacity not exceeding 1,000 cc		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
87032110	Vehicles principally designed for the transport of more than seven persons including the driver		X
87032120	Three Wheeled vehicles		X
	Other:		
87032191	Motor cars		X
87032192	Specialised transport vehicles such as ambulances, prison vans and the like		X
870322	Of a cylinder capacity exceeding 1,000 cc but not exceeding 1,500 cc		
87032210	Vehicles principally designed for the transport of more than seven persons, including the driver		X
87032220	Specialised transport vehicles such as ambulances, prison vans and the like		X
87032230	Three-wheeled vehicles		X
	Other:		
87032291	Motor cars		X
870323	Of a cylinder capacity exceeding 1,500 cc but not exceeding 3,000 cc		
87032310	Vehicles principally designed for the transport of more than seven persons including the driver		X
87032320	Three-wheeled vehicles		X
	Other:		
87032391	Motor cars		X
87032392	Specialised transport vehicles such as ambulances, prison vans and the like		X
87032399	Other		X
870324	Of a cylinder capacity exceeding 3,000 cc		
87032410	Vehicles principally designed for the transport of more than seven persons, including the driver		X
87032420	Three Wheeled vehicles		X
	Other:		
87032491	Motor cars		X
87032492	Specialised transport vehicles such as ambulances, prison vans and the like		X
87032499	Other		X
	Other vehicles, with compression-ignition internal combustion piston engine (diesel or semi-diesel):		
870331	Of a cylinder capacity not exceeding 1,500 cc		
87033110	Vehicles principally designed for the transport of more than seven persons, including the driver		X
87033120	Three Wheeled vehicles		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other:		
87033191	Motor cars		X
87033192	Specialised transport vehicles such as ambulances, prison vans and the like		X
87033199	Other		X
870332	Of a cylinder capacity exceeding 1,500 cc but not exceeding 2,500 cc		
87033210	Vehicles principally designed for the transport of more than seven persons, including the driver		X
87033220	Three-wheeled vehicles		X
	Other:		
87033291	Motor cars		X
87033292	Specialised transport vehicles such as ambulances, prison vans and the like		X
87033299	Other		X
870333	Of a cylinder capacity exceeding 2,500 cc		
87033310	Vehicles principally designed for the transport of more than seven persons, including the driver		X
87033320	Three-wheeled vehicles		X
	Other:		
87033391	Motor cars		X
87033392	Specialised transport vehicles such as ambulances, prison vans and the like		X
87033399	Other		X
870390	Other		
87039010	Electrically operated		X
87039090	Other		X
8704	Motor vehicles for the transport of goods.		
870410	Dumpers designed for off-highway use		
87041010	With net weight (excluding pay-load) exceeding 8 tonnes and maximum pay-load capacity not less than 10 tonnes		X
87041090	Other		X
	Other, with compression-ignition internal combustion piston engine (diesel or semi-diesel):		
870421	g.v.w. not exceeding 5 tonnes		
87042110	Refrigerated		X
87042120	Three-wheeled motor vehicles		X
87042190	Other		X
870422	g.v.w. exceeding 5 tonnes but not exceeding 20 tonnes Lorries and trucks:		
87042211	Refrigerated		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
87042219	Other		X
87042290	Other		X
870423	g.v.w. exceeding 20 tonnes Lorries and trucks:		
87042311	Refrigerated		X
87042319	Other		X
87042390	Other		X
	Other, with spark-ignition internal combustion piston engine:		
870431	g.v.w. not exceeding 5 tonnes		
87043110	Refrigerated		X
87043120	Three-wheeled motor vehicles		X
87043190	Other		X
870432	g.v.w. exceeding 5 tonnes Lorries and trucks:		
87043211	Refrigerated	10	B10
87043219	Other	10	B10
87043290	Other	10	B10
870490	Other Lorries and trucks:		
87049011	Refrigerated	10	B10
87049012	Electrically operated	10	B10
87049019	Other	10	B10
87049090	Other	10	B10
87051000	Crane lorries		X
87052000	Mobile drilling derricks		X
87053000	Fire fighting vehicles		X
87054000	Concrete-mixer lorries		X
87059000	Other		X
	For the tractors of heading 8701:		
87060011	Of engine capacity not exceeding 1,800 cc		X
87060019	Other	10	B10
870810	Bumpers and parts thereof		
87081010	For tractors	10	B10
87081090	Other	10	B10
	Other parts and accessories of bodies (including cabs):		
87082100	Safety seat belts		X
87083000	Brakes and servo-brakes; parts thereof		X
87084000	Gear boxes and parts thereof		Pb(Note)
	(i) 11.25 percent as from the date of entry into force of this Agreement;		
	(ii) 10.63 percent as from January 1, 2012;		
	(iii) 10 percent as from January 1, 2013;		
	(iv) 9.38 percent as from January 1, 2014;		

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	(v) 8.75 percent as from January 1, 2015; (vi) 8.13 percent as from January 1, 2016; (vii) 7.5 percent as from January 1, 2017; (viii) 6.88 percent as from January 1, 2018; and (ix) 6.25 percent as from January 1, 2019.		
87088000	Suspension systems and parts thereof (including shock-absorbers)		X
	Other parts and accessories:		
87089100	Radiators and parts thereof		X
87089200	Silencers (mufflers) and exhaust pipes; parts thereof	10	B10
87089300	Clutches and parts thereof		X
87089400	Steering wheels, steering columns and steering boxes; parts thereof		X
87089500	Safety airbags with inflator system; parts thereof		X
87100000	Tanks and other armoured fighting vehicles, motorised, whether or not fitted with weapons, and parts of such vehicles		A
871110	With reciprocating internal combustion piston engine of a cylinder capacity not exceeding 50 cc		
87111010	Mopeds		X
87111020	Motorised cycles		X
87111090	Other		X
871120	With reciprocating internal combustion piston engine of a cylinder capacity exceeding 50cc but not exceeding 250 cc		
	Scooters:		
87112011	Of cylinder capacity not exceeding 75 cc		X
87112019	Other		X
	Motor cycles:		
87112021	Of cylinder capacity not exceeding 75 cc		X
87112029	Other		X
	Mopeds:		
87112031	Of cylinder capacity not exceeding 75 cc		X
87112039	Other		X
	Other:		
87112091	Of cylinder capacity not exceeding 75 cc		X
87112099	Other		X
87119010	Side-cars	100	B10
87120010	Bicycles		X

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
87120090	Other		X
8713	Carriages for disabled persons, whether or not motorised or otherwise mechanically propelled.		
871310	Not mechanically propelled		
87131010	Wheel chairs for invalid	10	B10
87131090	Other	10	B10
871390	Other		
87139010	Wheel chairs for invalid	10	B10
87139090	Other		
8714	Parts and accessories of the motor vehicles of headings 87.11 to 87.13.		
871420	Of carriages for disabled persons		
87142010	Mechanically propelled	10	B10
87142020	Non mechanically propelled	10	B10
87142090	Other	10	B10
	Other:		
87149210	Bicycle rims	10	B10
87149220	Bicycle spokes	10	B10
87149290	Other	10	B10
87149310	Bicycle hubs	10	B10
87149320	Bicycle free-wheels	10	B10
87149400	Brakes, including coaster braking hubs and hub brakes, and parts thereof	10	B10
871495	Saddles		
87149510	Bicycle saddles	10	B10
87149590	Other	10	B10
87149600	Pedals and crank-gear, and parts thereof	10	B10
87149910	Bicycle chains	10	B10
87149920	Bicycle wheels	10	B10
87150010	Baby carriages	10	B10
87150020	Parts	10	B10
87161000	Trailers and semi-trailers of the caravan type, for housing or Camping	10	B10
87162000	Self-loading or self-unloading trailers and semi-trailers for agricultural purposes	10	B10
	Other trailers and semi-trailers for the transport of goods:		
87163100	Tanker trailers and tanker semi-trailers	10	B10
87168010	Hand propelled vehicles, (e.g., hand carts, rickshaws and the like)	10	B10
87168020	Animal drawn vehicles	10	B10
88010010	Gliders and hang Gliders	10	B10
88010020	Balloons	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
8802	Other aircraft (for example, helicopters, aeroplanes); spacecraft (including satellites) and suborbital and space-craft launch vehicles.		
	Helicopters:		
88021100	Of an unladen weight not exceeding 2,000 kg	10	B10
88021200	Of an unladen weight exceeding 2,000 kg	10	B10
88022000	Aeroplanes and other aircraft, of an unladen weight not exceeding 2,000 kg	3	B10
88023000	Aeroplanes and other aircraft, of an unladen weight exceeding 2,000 kg but not exceeding 15,000 kg	3	B10
88024000	Aeroplanes and other aircraft, of an unladen weight exceeding 15,000 kg	3	B10
88026000	Spacecraft (including satellites) and suborbital and spacecraft launch vehicles	10	B10
88031000	Propellers and rotors and parts thereof	3	B10
88032000	Under-carriages and parts thereof	3	B10
88033000	Other parts of Aeroplanes or helicopters	3	B10
88040010	Parachutes (including dirigible parachutes and paragliders) and parts and accessories thereof	10	B10
88040020	Rotachutes; parts and accessories thereof	10	B10
88051010	Aircraft launching gear	10	B10
88051020	Deck arrestor or similar gear	10	B10
88051030	Part of aircraft launching gear and deck-arrestor or similar gear	10	B10
	Ground flying trainers and parts thereof:		
88052100	Air combat simulators and parts thereof	10	B10
890110	Cruise ships, excursion boats and similar vessels principally designed for the transport of persons; ferry-boats of all kinds		
89011010	Ships	10	B10
89011020	Launches	10	B10
89011030	Boats	10	B10
89011040	Barges	10	B10
89011090	Other	10	B10
89012000	Tankers	10	B10
89013000	Refrigerated vessels, other than those of sub- heading 8901 20	10	B10
89019000	Other vessels for transport of goods and other vessels for the transport of both persons and goods	10	B10
890200	Fishing vessels; factory ships and other vessels for processing or preserving fishery products		
89020010	Trawlers and other fishing vessels	10	B10
89020090	Other	10	B10

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Schedule of India (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
89039100	Sail boats, with or without auxiliary motor	10	B10
89039200	Motorboats, other than outboard motorboats	10	B10
89039910	Canoes	10	B10
89040000	Tugs and pusher craft	10	B10
89051000	Dredgers	10	B10
89052000	Floating or submersible drilling or production platforms	10	B10
89059010	Floating docks	10	B10
89061000	Warships	10	B10
89069000	Other	10	B10
89071000	Inflatable rafts	10	B10
9001	Optical fibres and optical fibre bundles; optical fibre cables other than those of heading 85.44; sheets and plates of polarising material; lenses (including contact lenses), prisms, mirrors and other optical elements, of any material, unmounted, other than such elements of glass not optically worked.		
90011000	Optical fibres, Optical fibres bundles and cables	10	B10
90012000	Sheets and plates of polarising material	10	B10
90013000	Contact lenses	10	B10
900140	Spectacle lenses of glass		
90014010	Polarised glass	10	B10
90014090	Other	10	B10
90015000	Spectacle lenses of other materials	10	B10
90019010	Optical calcile crystal	10	B10
9002	Lenses, prisms, mirrors and other optical elements, of any material, mounted, being parts of or fittings for instruments or apparatus, other than such elements of glass not optically worked.		
	Objective lenses:		
90021100	For cameras, projectors or photographic enlargers or reducers	10	B10
90021900	Other	10	B10
90022000	Filters	10	B10
90029000	Other	10	B10
9003	Frames and mountings for spectacles, goggles or the like, and parts thereof.		
	Frames and mountings:		
90031100	Of plastics	10	B10
90031900	Of other materials	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
9004	Spectacles, goggles and the like, corrective, protective or other.		
90041000	Sunglasses	10	B10
90049010	Passive night vision goggles	10	B10
90049020	Prismatic eyeglasses for reading	10	B10
9005	Binoculars, monoculars, other optical telescopes, and mountings therefor; other astronomical instruments and mountings therefor, but not including instruments for radioastronomy.		
90051000	Binoculars	10	B10
900580	Other instruments		
90058010	Monocular and refracting telescopes	10	B10
90058020	Astronomical instruments	10	B10
90058090	Other	10	B10
900590	Parts and accessories (including mountings)		
90059010	Of binocular or telescopic of heading 9005, other than mountings	10	B10
90059020	Mountings for astronomical instruments	10	B10
9006	Photographic (other than cinematographic) cameras; photographic flashlight apparatus and flashbulbs other than discharge lamps of heading 85.39.		
90061000	Cameras of a kind used for preparing printing plates or cylinders	10	B10
90063000	Cameras specially designed for underwater use, for aerial survey or for medical or surgical examination of internal organs; comparison cameras for forensic or criminological purposes	10	B10
90064000	Instant print cameras	10	B10
	Other cameras:		
90065100	With a through-the-lens viewfinder [single lens reflex(SLR)] for roll film of a width not exceeding 35 mm	10	B10
90065200	Other, for roll film of a width less than 35 mm	10	B10
90065310	Fixed focus 35 mm cameras	10	B10
90065390	Other	10	B10
90065910	Fixed focus 110 mm cameras	10	B10
90065990	Other	10	B10
	Photographic flashlight apparatus and flashbulbs:		
90066100	Discharge lamp ("electronic") flashlight apparatus	10	B10
	Parts and accessories:		
9007	Cinematographic cameras and projectors, whether or not incorporating sound recording or reproducing apparatus.		
	Cameras:		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90071100	For film of less than 16 mm width or for double-8 mm film	10	B10
90071900	Other	10	B10
90072010	For film of less than 16 mm width	10	B10
	Parts and accessories:		
90079100	For cameras	10	B10
90079200	For projectors	10	B10
9008	Image projectors, other than cinematographic; photographic (other than cinematographic) enlargers and reducers.		
90081000	Slide projectors	10	B10
90082000	Microfilm, microfiche or other microform readers, whether or not capable of producing copies	10	B10
90083000	Other image projectors	10	B10
90084000	Photographic (other than cinematographic) enlargers and Reducers	10	B10
90089000	Parts and accessories	10	B10
9010	Apparatus and equipment for photographic (including cinematographic) laboratories, not specified or included elsewhere in this Chapter: negatoscopes; projection screens.		
90101000	Apparatus and equipment for automatically developing, photographic (including cinematographic) film or paper in rolls or for automatically exposing developed film to rolls of photographic paper	7.5	B10
90105000	Other apparatus and equipment for photographic (including cinematographic) laboratories; negatoscopes	7.5	B10
90106000	Projection screens	10	B10
90109000	Parts and accessories	7.5	B10
9011	Compound optical microscopes, including those for photomicrography, cinephotomicrography or microprojection.		
90111000	Stereoscopic microscopes	7.5	B10
90112000	Other microscopes, for photomicrography, cinephotomicrography or microprojection	7.5	B10
90118000	Other microscopes	7.5	B10
90119000	Parts and accessories	7.5	B10
90121010	Electron microscopes fitted with equipment specifically designed for the handling and transport of semiconductor wafers or reticles	7.5	B10
9013	Liquid crystal devices not constituting articles provided for more specifically in other headings; lasers, other than laser diodes; other optical appliances and instruments, not specified or included elsewhere in this Chapter.		
90131010	Telescopic sights for fitting to arms	10	B10
90131020	Periscopes	7.5	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90132000	Lasers, other than laser diodes	7.5	B10
90138010	Liquid crystal devices (LCD)		A
901390	Parts and accessories		
90139010	For liquid crystal devices (LCD)		A
90139090	Other	7.5	B10
90141000	Direction finding compasses	7.5	B10
90142000	Instruments and appliances for aeronautical or space navigation (other than compasses)	7.5	B10
90148010	Echo sounding instrument	7.5	B10
9015	Surveying (including photogrammetrical surveying), hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses; rangefinders.		
90151000	Rangefinders	7.5	B10
90152000	Theodolites and tachymeters (tacheometers)	7.5	B10
90154000	Photogrammetrical surveying instruments and appliances	7.5	B10
90158010	Hydrographic instruments		X
90158020	Meteorological instruments	7.5	B10
90158030	Geophysical instruments	7.5	B10
90158090	Other	7.5	B10
90160010	Electric Balances	10	B10
90160020	Other balances	10	B10
90171000	Drafting tables and machines, whether or not automatic	10	B10
90172010	Drawing and marking-out instruments	10	B10
90172020	Mathematical calculating instruments	10	B10
90173010	Micro-meters and calipers	10	B10
	Gauges:		
90173021	Plug	10	B10
90173022	Ring	10	B10
90173023	Slip	10	B10
90173029	Other	10	B10
90178010	Measuring rods and tapes and divided scales	10	B10
9018	Instruments and appliances used in medical, surgical, dental or veterinary sciences, including scintigraphic apparatus, other electro-medical apparatus and sight-testing instruments.		
90181100	Electro-cardiographs	7.5	B10
90181210	Linear ultrasound scanner	7.5	B10
90181300	Magnetic resonance imaging apparatus	7.5	B10
90181400	Scintigraphic apparatus	7.5	B10
90181920	Echo cardiograph	7.5	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90182000	Ultra-violet or infra-red ray apparatus	7.5	B10
	Syringes, needles, catheters, cannulae and the like:		
90183100	Syringes, with or without needles	7.5	B10
90183210	Needles for suture	7.5	B10
90183220	Hollow needles for injection, aspiration, biopsy and transfusion	7.5	B10
90183910	Catheters (for urine, stool)	7.5	B10
90183920	Cardiac catheters	7.5	B10
	Other instruments and appliances, used in dental sciences:		
90184100	Dental drill engines, whether or not combined on a single base with other dental equipment	7.5	B10
90184900	Other	7.5	B10
901850	Other ophthalmic instruments and appliances	7.5	B10
90185010	Ophthalmoscopes	7.5	B10
90185020	Tonometers	7.5	B10
90185030	Ophthalmic lasers	7.5	B10
901890	Other instruments and appliances Diagnostic instruments and apparatus:		
90189011	Instrument and apparatus for measuring blood pressure	7.5	B10
90189012	Stethoscopes	7.5	B10
90189019	Other	7.5	B10
	Surgical tools:		
90189021	Bone saws, drills and trephines	7.5	B10
90189022	Knives, scissors and blades	7.5	B10
90189023	Forceps, forcep clamps, clips, needle holders, introducers, cephalotribe bone holding and other holding instruments	7.5	B10
90189024	Chisel, gauges, elevators, raspatones, osteotome, craniotome, bone cutters	7.5	B10
90189025	Retractors, spatulaprobes, hooks dialators, sounds, mallets	7.5	B10
90189029	Other	7.5	B10
	Renal dialysis equipment, blood transfusion apparatus and haemofiltration instruments:		
90189031	Renal dialysis equipment(artificial kidneys, kidney machines and dialysers)	7.5	B10
90189032	Blood transfusion apparatus	7.5	B10
90189033	Haemofiltration instruments	7.5	B10
	Anesthetic apparatus and instruments, ENT precision instruments, acupuncture apparatus, and endoscopes:		
90189041	Anesthetic apparatus and instruments	7.5	B10
90189042	ENT precision instruments	7.5	B10
90189043	Acupuncture apparatus	7.5	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90189044	Endoscopes	7.5	B10
	Other:		
90189092	Baby incubators	7.5	B10
90189093	Heart - lung machines	7.5	B10
90189096	Laprosopes	7.5	B10
90189098	Apparatus for nerve stimulation	7.5	B10
901910	Mechano-therapy appliances; massage apparatus; psychological aptitude-testing apparatus		
90191010	Mechano-therapy appliances	7.5	B10
90191020	Massage apparatus	7.5	B10
90191090	Other	7.5	B10
901920	Ozone therapy, oxygen therapy, aerosol therapy, artificial respiration or other therapeutic respiration apparatus		
90192010	Oxygen therapy apparatus	7.5	B10
90192090	Other	7.5	B10
90200000	Other breathing appliances and gas masks, excluding protective masks having neither mechanical parts nor replaceable filters	7.5	B10
90211000	Orthopaedic or fracture appliances	7.5	B10
	Artificial teeth and dental fittings:		
90212100	Artificial teeth	7.5	B10
	Other artificial parts of the body:		
90213100	Artificial Joints	7.5	B10
90214010	Frequency modulated hearing aid system used for hearing by handicapped persons in group situation	7.5	B10
90215000	Pacemakers for stimulating heart muscles, excluding parts and Accessories	7.5	B10
90219010	Parts and accessories of hearing aids	7.5	B10
	Apparatus based on the use of X-rays, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus:		
90221200	Computed tomography apparatus	7.5	B10
90221300	Other, for dental uses	7.5	B10
90221410	X-ray generators and apparatus (non-portable)	7.5	B10
90221420	Portable X-ray machine	7.5	B10
90221900	For Other uses		
	Apparatus based on the use of alpha, beta or gamma radiations, whether or not for medical, surgical, dental or veterinary uses, including radiography or radiotherapy apparatus:		
90222100	For medical, surgical, dental or veterinary uses	7.5	B10
90222900	For other uses	7.5	B10
90223000	X-ray tubes	7.5	B10

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Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90229010	X-ray valves	7.5	B10
90229020	Radiation generation units	7.5	B10
90229030	Radiation beam delivery units	7.5	B10
90229040	X-ray examination or treatment table, chairs and the like	7.5	B10
90229090	Other	7.5	B10
902300	Instruments, apparatus and models, designated for demonstrational purposes (for example, in education or exhibitions), unsuitable for other uses		
90230010	Teaching aids	10	B10
9024	Machines and appliances for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials (for example, metals, wood, textiles, paper, plastics).		
90241000	Machines and appliances for testing metals	7.5	B10
90248010	For testing textiles, paper and paper board	7.5	B10
	Other:		
90248091	For testing hardness	7.5	B10
	Thermometers and pyrometers, not combined with other instruments:		
90251110	Clinical thermometers	10	B10
90251910	Digital thermometers	10	B10
90258010	Hydrometers and similar floating instruments	7.5	B10
90258020	Barometers, not combined with other instruments	7.5	B10
90258030	Lactometer	7.5	B10
9026	Instruments and apparatus for measuring or checking the flow, level, pressure or other variables of liquids or gases (for example, flow meters, level gauges, manometers, heat meters), excluding instruments and apparatus of heading 90.14, 90.15, 90.28, or 90.32.		
90261010	Flow meters		A
90261020	Level Gauges		A
90261090	Other		A
90262000	For measuring or checking pressure		A
90268010	Heat meters		A
90269000	Parts and accessories		A
9027	Instruments and apparatus for physical or chemical analysis (for example, polarimeters, refractometers spectrometers, gas or smoke analysis apparatus); instruments and apparatus for measuring or checking viscosity, porosity, expansion, surface tension or the like; instruments and apparatus for measuring or checking quantities of heat, sound or light (including exposure meters); microtomes.		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90271000	Gas or smoke analysis apparatus	10	B10
90272000	Chromatographs and electrophoresis instruments		A
90273010	Spectrometers		A
90273020	Spectrophotometers		A
902750	Other instruments and apparatus using optical radiations (UV, visible, IR)		
90275010	Photometers		A
90275020	Refractometers		A
90275030	Polarimeters		A
90275090	Other		A
90278020	Calorimeters		A
90278040	Nuclear magnetic resonance instruments		A
90279010	Microtomes, including parts and accessories thereof	7.5	B10
90279020	Printed circuit assemblies for the goods of sub-heading 9027 80	7.5	B10
9028	Gas, liquid or electricity supply or production meters, including calibrating meters therefor.		
90281000	Gas meters	7.5	B10
90282000	Liquid meters	7.5	B10
902830	Electricity meters		
90283010	For alternating current		X
90283090	Other		X
902890	Parts and accessories		
90289010	For electricity meters	7.5	B10
90289090	Other	7.5	B10
902910	Revolution counters, production counters, taximeters, mileometers, pedometers and the like		
90291010	Taximeters	10	B10
902920	Speed indicators and tachometers; stroboscopes		
90292010	Tachometers, non-electrical	7.5	B10
90292020	Speedometers, non-electrical		X
9030	Oscilloscopes, spectrum analysers and other instruments and apparatus for measuring or checking electrical quantities, excluding meters of heading 90.28; instruments and apparatus for measuring or detecting alpha, beta, gamma, X-ray, cosmic or other ionising radiations.		
90301000	Instruments and apparatus for measuring or detecting ionising radiations	7.5	B10
90302000	Oscilloscopes and oscillographs	7.5	B10
	Other instruments and apparatus, for measuring or checking voltage, current, resistance or power:		

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
90303100	Multimeters without a recording device	7.5	B10
90303200	Multimeters with a recording device	7.5	B10
90303310	Ammeters, volt meters and watt meters	7.5	B10
90303320	Spectrum resistance meters	7.5	B10
90303330	Capacitance meter	7.5	B10
90303340	Frequency measuring apparatus	7.5	B10
90304000	Other instruments and apparatus, specially designed for telecommunications (for example, cross-talk meters, gain measuring instruments, distortion factor meters, psophometers) Other instruments and apparatus:		A
90308200	For measuring or checking semiconductor wafer or device		A
90308400	Other, with a recording device	7.5	B10
90308910	Scintillator counters	7.5	B10
903090	Parts and accessories		
90309010	Of meters and counters	7.5	B10
90311000	Machines for balancing mechanical parts Other optical instruments and appliances:	7.5	B10
90314100	For inspecting semiconductor wafers, or devices or for inspecting photo-masks or reticules used in manufacturing semiconductor devices		A
90314900	Other	7.5	B10
90318000	Other instruments, appliances and machines	7.5	B10
90319000	Parts and accessories	7.5	B10
903210	Thermostats		
90321010	For refrigerating and air-conditioning appliances and machinery	7.5	B10
90321090	Other	7.5	B10
903220	Manostats		
90322010	For refrigerating and air-conditioning appliances and machinery Other instruments and apparatus:	7.5	B10
90328100	Hydraulic or pneumatic	7.5	B10
90328910	Electronic automatic regulators	7.5	B10
9101	Wrist-watches, pocket-watches and other watches, including stop-watches, with case of precious metal or of metal clad with precious metal.		
91011100	With mechanical display only	10	B10
91011900	Other	10	B10

(Contd.)

Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other wrist-watches, whether or not incorporating a stop-watch facility:		
91012100	With automatic winding	10	B10
91012900	Other	10	B10
	Other:		
910191	Electrically operated		
91019110	Pocket watches	10	B10
91019120	Stop watches	10	B10
91019190	Other	10	B10
910199	Other		
91019910	Pocket watches	10	B10
91019920	Stop watches	10	B10
91019990	Other	10	B10
9102	Wrist-watches, pocket-watches and other watches, including stop-watches, other than those of heading 91.01.		
91021100	With mechanical display only	10	B10
91021200	With opto-electronic display only	10	B10
91021900	Other	10	B10
	Other wrist watches, whether or not incorporating a stop-watch facility:		
91022100	With automatic winding	10	B10
91022900	Other	10	B10
	Other:		
910291	Electrically operated		
91029110	Pocket watches	10	B10
91029120	Stop watches	10	B10
91029190	Other	10	B10
910299	Other		
91029910	Pocket watches	10	B10
91029920	Stop watches	10	B10
91029990	Other	10	B10
9103	Clocks with watch movements, excluding clocks of heading 91.04.		
91031000	Electrically operated	10	B10
91039000	Other	10	B10
91040000	Instrument panel clocks and clocks of similar type for vehicles, aircraft, spacecraft of vessels	10	B10
	Alarm clocks:		
91051100	Electrically operated	10	B10
91051900	Other	10	B10

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Wall clocks:		
91052100	Electrically operated	10	B10
91052900	Other	10	B10
	Other:		
910591	Electrically operated		
91059100	Battery, accumulator or mains powered	10	B10
910599	Other		
91059910	Time pieces	10	B10
9106	Time of day recording apparatus and apparatus for measuring, recording or otherwise indicating intervals of time, with clock or watch movement or with synchronous motor (for example, time-registers, time recorders).		
910610	Time-registers; time recorders		
91061000	Time-registers; time-recorders	10	B10
91070000	Time switches with clock or watch movement or with synchronous motor	10	B10
9108	Watch movements, complete and assembled. Electrically operated:		
91081100	With mechanical display only or with a device to which a mechanical display can be incorporated	5	B10
91081200	With opto-electronic display only	5	B10
91081900	Other	5	B10
91082000	With automatic winding	5	B10
91089000	Other	5	B10
9109	Clock movements, complete and assembled. Electrically operated:		
91091100	Of alarm clocks	10	B10
9113	Watch straps, watch bands and watch bracelets, and parts thereof.		
91131000	Of precious metal or of metal clad with precious metal	10	B10
9114	Other clock or watch parts.		
911410	Springs, including hair-springs		
91141010	For watches	10	B10
91141020	For clocks	10	B10
911420	Jewels		
91142000	Jewels	10	B10
911430	Dials		
91143010	For watches	5	B10
91143020	For clocks	10	B10
911440	Plates and bridges		

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Schedule of India (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
91144010	For watches	10	B10
91144020	For clocks	10	B10
9201	Pianos, including automatic pianos; harpsichords and other keyboard stringed instruments.		
92011000	Upright pianos	10	B10
92012000	Grand pianos	10	B10
92019000	Other	10	B10
9202	Other string musical instruments (for example, guitars, violins, harps).		
92021000	Played with a bow	10	B10
92029000	Other	10	B10
9205	Other wind musical instruments (for example, clarinets, trumpets, bagpipes).		
92051000	Brass-wind instruments	10	B10
92059010	Flutes	10	B10
92059020	Clarinets	10	B10
92059090	Other	10	B10
92060000	Percussion musical instruments (for example, drums, xylophones, cymbals, castanets, maracas)	10	B10
92071000	Keyboard instruments, other than accordions	10	B10
92081000	Musical boxes	10	B10
92093000	Musical instrument strings	10	B10
	Other:		

Part 3
Schedule of Japan*

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 1	Live animals		
01.02	Live bovine animals.		
0102.10	- Pure-bred breeding animals		A
0102.90	- Other:		A
	Buffaloes		
	Other		X
01.04	Live sheep and goats.		A
01.05	Live poultry, that is to say, fowls of the species ducks, geese, turkeys and guinea fowls.		A
01.06	Other live animals.		A
Chapter 2	Meat and edible meat offal		
02.01	Meat of bovine animals, fresh or chilled.		X
02.02	Meat of bovine animals, frozen.		X
02.03	Meat of swine, fresh, chilled or frozen.		
	- Fresh or chilled:		
0203.12	-- Hams, shoulders and cuts thereof, with bone in:		
	Of wild boars		A
	Other		X
02.04	Meat of sheep or goats, fresh, chilled or frozen.		A
0206.10	- Of bovine animals, fresh or chilled		X
02.07	Meat and edible offal, of the poultry of heading 01.05, fresh, chilled or frozen.		
	- Of fowls of the species		
0207.11	-- Not cut in pieces, fresh or chilled		X
0207.12	-- Not cut in pieces, frozen		X
0207.14	-- Cuts and offal, frozen:		A
	Livers		
	Other		X
	- Of ducks, geese or guinea fowls:		
0207.32	-- Not cut in pieces, fresh or chilled:	9.6%	B10
	Of ducks		
	Other		A
0207.35	-- Other, fresh or chilled:	9.6%	B10
	Of ducks		
	Other		A
02.10	Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal.		
0210.20	- Meat of bovine animals		X
Chapter 3	Fish and crustaceans, molluscs and other aquatic invertebrates		
03.01	Live fish.		

(Contd.)

* [Editor's Note: Selected entries have been provided here.]

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
0301.10	- Ornamental fish:	3.5%	B7
	Carp and gold-fish		
	Other		A
	- Other live fish:		
0301.91	-- Trout		A
	Fry for fish culture		
	Other	3.5%	B10
0301.94	-- Bluefin tunas (<i>Thunnus thynnus</i>)*		
	Fry for fish culture		A
	Other		X
0301.95	-- Southern bluefin tunas		
	Fry for fish culture		A
	Other		X
0301.99	-- Other:		
	Fry for fish culture		
	Other		X
03.02	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 03.04.		
0302.11	-- Trout		X
0302.12	-- Pacific salmon, Atlantic salmon and Danube salmon		X
0302.19	-- Other		X
0302.21	-- Halibut	3.5%	B10
0302.31	-- Albacore or longfinned tunas		X
0302.32	-- Yellowfin tunas		X
0302.33	-- Skipjack or stripe-bellied bonito		X
0302.34	-- Bigeye tunas		X
0302.35	-- Bluefin tunas		X
0302.36	-- Southern bluefin tunas		X
0302.39	-- Other		X
0302.40	- Herrings, excluding livers and roes		X
0302.50	- Cod, excluding livers and roes		X
0302.61	-- Sardines, sardinella, brisling or sprats:		X
	Other	3.5%	B10
0302.62	-- Haddock	3.5%	B10
0302.63	-- Coalfish	3.5%	B10
0302.64	-- Mackerel		X

(Contd.)

* [Editor's Note: Scientific (Latin) names provided in the original have been dropped here, henceforth.]

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
03.03	Fish, frozen, excluding fish fillets and other fish meat of heading 03.04.		
	- Pacific salmon, excluding livers and roes:		
0303.11	-- Sockeye salmon (red salmon)		X
0303.19	-- Other		X
0303.21	-- Trout		X
0303.22	-- Atlantic salmon		X
0303.31	- Halibut	3.5%	B10
0303.41	-- Albacore or longfinned tunas		X
0303.42	-- Yellowfin tunas		X
0303.43	-- Skipjack or stripe-bellied bonito		X
0303.44	-- Bigeye tunas		X
0303.45	-- Bluefin tunas		X
0303.46	-- Southern bluefin tunas		X
0303.49	-- Other		X
0303.51	-- Herrings		X
0303.52	-- Cod		X
0303.71	-- Sardines (<i>Sardina pilchardus</i> , <i>Sardinops spp.</i>), sardinella (<i>Sardinella spp.</i>), brisling or sprats (<i>Sprattus sprattus</i>):		
	Of <i>Sardinops spp.</i>		X
	Other	3.5%	B10
0303.72	-- Haddock	3.5%	B10
0303.74	-- Mackerel		X
0303.79	-- Other:		X
	Other:		
	Barracouta kingclip and sea breams:		
	Sea breams	2%	B7
	Other	2%	B10
	Shishamo	2%	B10
03.04	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen.		
	- Fresh or chilled:		
0304.11	-- Swordfish		X
0304.12	-- Toothfish		X
0304.19	-- Other:		X
	Fillets		
	Other: Nishin, Tara, Buri, Saba, Iwashi, Aji and Samma		X
	Barracouta, king-clip and sea breams	2%	B7
	Dogfish and other sharks	2.5%	B7
	Other:		X
	Bluefin tunas and Southern bluefin tunas		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other	3.5%	B10
	- Frozen fillets:		
0304.21	-- Swordfish		X
0304.22	-- Toothfish		X
0304.29	-- Other:		
	Nishin, Tara, Buri (Seriola spp.), Saba (Scomber spp.), Iwashi, Aji and Samma		X
	Other:		X
	Tunas, billfish and salmonidae		
	Other	3.5%	B10
0304.99	-- Other:		
	Nishin, Tara, Buri, Saba, Iwashi, Aji and Samma		X
	Barracouta, kingclip and sea breams	2%	B7
	Dogfish and other sharks	2.5%	B7
	Shishamo	2.8%	b7
03.05	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; flours, meals and pellets of fish, fit for human consumption.		
0305.10	- Flours, meals and pellets of fish, fit for human consumption		x
0305.20	- Livers and roes of fish, dried, smoked, salted or in brine:		
	Hard roes of Nishin other than Nishin roes on the tangles	8.4%	B10
	Hard roes of Salmonidae and of Tara		X
	Nishin roes on the tangles	10%	B10
	Other		A
0305.30	- Fish fillets, dried, salted or in brine, but not smoked:		
	Salmonidae		X
	Other:		X
	Nishin, Tara, Buri, Saba, Iwashi, Aji and Samma		
	Other	10.5%	B10
	- Smoked fish, including fillets:		
0305.41	-- Pacific salmon, Atlantic salmon, and Danube salmon		X
0305.42	-- Herrings	10%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
0305.49	-- Other - Dried fish, whether or not salted but not smoked:	10%	B10
0305.51	-- Cod		X
0305.59	-- Other - Fish, salted but not dried or smoked and fish in brine:		X
0305.61	-- Herrings		X
0305.62	-- Cod		X
0305.63	-- Anchovies		X
0305.69	-- Other		X
03.06	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans, fit for human consumption. - Frozen:		
0306.11	-- Rock lobster and other sea crawfish		A
0306.12	-- Lobsters		A
0306.13	-- Shrimps and prawns		A
0306.14	-- Crabs: Tanner crabs		X
	Other	4%	B10
0306.19	-- Other, including flours, meals and pellets of crustaceans, fit for human consumption: Ebi		A
	Other	7%	B10
	- Not frozen:		
0306.21	-- Rock lobster and other sea crawfish Live, fresh or chilled		A
	Other	4%	B10
0306.22	-- Lobsters Live, fresh or chilled		A
	Other	4%	B10
0306.23	-- Shrimps and prawns: Live, fresh or chilled		A
	Other	4%	B10
0306.24	-- Crabs: Live, fresh or chilled: Tanner crabs		X
	Other	4%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other	10%	B10
0306.29	-- Other, including flours, meals and pellets of crustaceans, fit for human consumption: Live, fresh or chilled: Ebi		A
	Other	7%	B10
0307.10	- Oysters		X
	- Scallops, including queen scallops, of the genera <i>Pecten</i> , <i>Chlamys</i> or <i>Placopecten</i> :		
0307.21	-- Live, fresh or chilled		X
0307.29	- Other		X
	- Mussels		
	- Octopus		
0307.51	-- Live, fresh or chilled		X
0307.59	-- Other:		
	Frozen	5%	B7
	Other	10%	B7
0307.60	- Snails, other than sea snails: Live, fresh, chilled or frozen	7%	B10
	Other	10%	B10
	- Other, including flours, meals and pellets of aquatic invertebrates other than crustaceans, fit for human consumption:		
0307.91	-- Live, fresh or chilled: Live aquatic invertebrates other than crustaceans or molluscs		A
	Adductors of shellfish, cuttle fish and squid		X
	Other:		
	Hard clam		X
	Other:		
	Akagai ((bloody clam), live), sea urchins and abalone		X
	Jellyfish	7%	B10
	Other:		
	Baby clam and fresh water clam		X
0307.99	-- Other:		
	Frozen:		
	Adductors of shellfish, cuttle fish and squid		X
	Sea urchins, jellyfish and sea cucumbers:		
	Sea urchins		X
	Other	7%	B10
	Other:		
	Hard clam	3.5%	B10
	Other		X

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other:		
	Adductors of shellfish, cuttle fish and squid		X
	Sea urchins, jellyfish and sea cucumbers:		
	Sea urchins		X
	Other	7%	B10
	Other:		
	Hard clam, salted or in brine	5.3%	B10
	Other:		
	Hard clam, dried	9%	B10
	Other		X
Chapter 4	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included		
04.01	Milk and cream, not concentrated nor containing added sugar or other sweetening matter.		X
04.02	Milk and cream, concentrated or containing added sugar or other sweetening matter.		X
04.03	Buttermilk, curdled milk and cream, yogurt, kephir and other fermented or acidified milk and cream, whether or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruit, nuts or cocoa.		X
04.04	Whey, whether or not concentrated or containing added sugar or other sweetening matter; products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, not elsewhere specified or included.		X
04.05	Butter and other fats and oils derived from milk; dairy spreads.		X
04.06	Cheese and curd.		X
0407.00	Birds' eggs, in shell, fresh, preserved or cooked:		
	For hatching		A
	Other		X
04.08	Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, moulded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter.		X
0409.00	Natural honey.		X
0410.00	Edible products of animal origin, not elsewhere specified or included.		A
Chapter 5	Products of animal origin, not elsewhere specified or included		A

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage		A
Chapter 7	Edible vegetables and certain roots and tubers		
07.01	Potatoes, fresh or chilled.		A
0702.00	Tomatoes, fresh or chilled.	3%	B10
07.03	Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled.		
0703.10	- Onions and shallots:		
	Onions:		
	Not more than 73.70 yen/kg in value for customs duty	8.5% or the difference between 73.70 yen/kg and the value for customs duty per kilogram, whichever is the less	B15
	More than 73.70 yen/kg in value for customs duty		A
	Shallots		A
0703.20	- Garlic	3%	B7
0703.90	- Leeks and other alliaceous vegetables:		
	Welsh onions	3%	B10
	Other		A
07.04	Cabbages, cauliflowers, kohlrabi, kale and similar edible brassicas, fresh or chilled.		
0704.10	- Cauliflowers and headed broccoli		A
0704.20	- Brussels sprouts		A
0704.90	- Other:		
	Broccoli		A
	Other	3%	B10
07.05	Lettuce and chicory, fresh or chilled.		
	- Lettuce:		
0705.11	-- Cabbage lettuce (head lettuce)	3%	B10
0705.19	-- Other	3%	B10
	- Chicory:		
0705.21	-- Witloof chicory		A
0705.29	-- Other		A
07.06	Carrots, turnips, salad beetroot, salsify, celeriac, radishes and similar edible roots, fresh or chilled.		
0706.10	- Carrots and turnips	3%	B7
0707.00	Cucumbers and gherkins, fresh or chilled.	3%	B7

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
07.08	Leguminous vegetables, shelled or unshelled, fresh or chilled.		A
07.09	Other vegetables, fresh or chilled.		
0709.20	- Asparagus		A
0709.30	- Aubergines (egg-plants)	3%	B10
0709.40	- Celery other than celeriac		A
	- Mushrooms and truffles:		
0709.51	-- Mushrooms of the genus <i>Agaricus</i>		A
0709.59	-- Other:		
	Shiitake mushrooms		X
	Other		A
0709.60	- Fruits of the genus <i>Capsicum</i> or of the genus <i>Pimenta</i> :	3%	B10
	Sweet peppers (Large bell type)		
	Other	3%	B7
0709.70	- Spinach, New Zealand spinach and orache spinach (garden spinach)	3%	B7
0709.90	- Other:		
	Sweet corn	6%	B7
	Other		A
07.10	Vegetables (uncooked or cooked by steaming or boiling in water), frozen.		
0710.10	- Potatoes	8.5	B10
	- Leguminous vegetables, shelled or unshelled:		
0710.21	-- Peas	8.5%	B10
0710.22	-- Beans	8.5%	B10
0710.29	-- Other:		
	Green soya beans	6%	B10
	Other	8.5%	B10
0710.30	- Spinach, New Zealand spinach and orache spinach (garden spinach)	6%	B10
0710.40	- Sweet corn	10.6%	B10
0710.90	- Mixtures of vegetables:		
	Chiefly consisting of sweet corn	10.6%	B10
	Other	6%	B7
07.11	Vegetables provisionally preserved but unsuitable in that state for immediate consumption.		
0711.20	- Olives		A
0711.40	- Cucumbers and gherkins	9%	B7
	- Mushrooms and truffles:		
0711.51	-- Mushrooms of the genus <i>Agaricus</i>	9%	B10
0711.59	-- Other		A
0711.90	- Other vegetables; mixtures of vegetables:		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Aubergines (egg-plants), weighing not more than 20g per piece, scallion and bracken	6%	B10
07.12	Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared.		
0712.20	- Onions	9%	B15
	- Mushrooms, wood ears, jelly fungi and truffles:		
0712.31	-- Mushrooms of the genus <i>Agaricus</i>	9%	B10
0712.32	-- Wood ears		A
0712.33	-- Jelly fungi		A
0712.39	-- Other:		
	Shiitake mushrooms		X
	Other	9%	B10
0712.90	- Other vegetables; mixtures of vegetables:		
	Sweet corn:		
	Rendered suitable solely for sowing by chemical treatment (for example, sterilisation, acceleration of germination)		A
	Other	9 yen/kg	B10
	Other:		
	Potatoes whether or not cut or sliced but not further prepared	10%	B10
	Other:		
	Bamboo shoots	7.5%	B10
	Other	9%	B10
07.13	Dried leguminous vegetables, shelled, whether or not skinned or split.		
0713.10	- Peas		
	Rendered suitable solely for sowing by chemical treatment (for example, sterilisation, acceleration of germination)		A
	Other:		
	Certified as seeds for sowing vegetables in accordance with the provisions of a Cabinet Order		A
	Other		X
0713.20	- Chickpeas		A
	- Beans:		
0713.31	-- Beans of the species <i>Vigna mungo</i>		A
0713.32	-- Small red, beans		X
0713.33	-- Kidney beans, including white pea beans:		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Rendered suitable solely for sowing by chemical treatment (for example, sterilisation, acceleration of germination)		A
	Other:		
	Certified as seeds for sowing vegetables in accordance with the provisions of a Cabinet Order	3%	B10
	Other		X
0713.40	- Lentils		A
07.14	Manioc, arrowroot, salep, Jerusalem artichokes, sweet potatoes and similar roots and tubers with high starch or inulin content, fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets; sago pith.		
0714.10	- Manioc (cassava):		
	Frozen:		
	For feeding purposes		
	Note: The imports under this item are to be used as materials for fodder and feed under the supervision of the customs authority.		A
	Other	12%	B10
	Other:		
	Pellets of flour or meal:		
	For feeding purposes		
	Note: The imports under this item are to be used as materials for fodder and feed under the supervision of the customs authority.		A
	Other		X
	Other:		
	For feeding purposes		
	Note: The imports under this item are to be used as materials for fodder and feed under the supervision of the customs authority.		A
	Other	9%	B10
0714.20	- Sweet potatoes:		
	Frozen	12%	B10
	Other	12.8%	B10
Chapter 8	Edible fruit and nuts; peel of citrus fruit or melons		
08.01	Coconuts, Brazil nuts and cashew nuts, fresh or dried, whether or not shelled or peeled.		A
08.02	Other nuts, fresh or dried, whether or not shelled or peeled.		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	- Almonds:		
0802.11	-- In shell		A
0802.12	-- Shelled		A
	- Hazelnuts or filberts (Corylus spp.):		
0802.21	-- In shell		A
0802.22	- Shelled		A
	- Walnuts:		
0802.31	-- In shell	10%	B10
0802.32	-- Shelled	10%	B10
0802.40	- Chestnuts	9.6%	B15
0802.50	- Pistachios		A
0802.60	- Macadamia nuts		A
0802.90	- Other:		A
	Betel nuts and pecans		
	Other	12%	B10
0803.00	Bananas, including plantains, fresh or dried:		
	Fresh		X
	Dried		A
08.04	Dates, figs, pineapples, avocados, guavas, mangoes and mangosteens, fresh or dried.		
0804.10	- Dates		A
0804.20	- Figs	3%	B10
0804.30	- Pineapples		X
0804.40	- Avocados		A
0804.50	- Guavas, mangoes and mangosteens		A
08.05	Citrus fruit, fresh or dried.		
0805.10	- Oranges:		
	If imported during the period from June 1 to November 30	16%	B15
	If imported during the period from December 1 to May 31	32%	B15
0805.20	- Mandarins (including tangerines and satsumas); clementines, wilkings and similar citrus hybrids		X
0805.40	- Grapefruit, including pomelos	10%	B10
0805.50	- Lemons and limes		A
0805.90	- Other:		
	Limes other than Citrus aurantifolia, Citrus latifolia)		A
	Other		A
08.06	Grapes, fresh or dried.		
0806.10	- Fresh:		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	If imported during the period from March 1 to October 31	17%	B15
	If imported during the period from November 1 to the last day of February	7.8%	B10
0806.20	- Dried		A
08.07	Melons (including watermelons) and papaws (papayas), fresh.		
	- Melons (including watermelons):		
0807.11	- Watermelons	6%	B10
0807.19	- Other	6%	B10
0807.20	- Papaws (papayas)		A
08.08	Apples, pears and quinces, fresh.		
0808.10	- Apples	17%	B15
0808.20	- Pears and quinces	4.8%	B10
08.09	Apricots, cherries, peaches (including nectarines), plums and sloes, fresh.		
0809.10	- Apricots	6%	B10
0809.20	- Cherries	8.5%	B10
0809.30	- Peaches, including nectarines	6%	B10
0809.40	- Plums and sloes	6%	B10
08.10	Other fruit, fresh.		
0810.10	- Strawberries	6%	B10
0810.20	- Raspberries, blackberries, mulberries and loganberries		A
0810.40	- Cranberries, bilberries and other fruits of the genus <i>Vaccinium</i>		A
0810.50	- Kiwifruit	6.4%	B10
0810.60	- Durians		A
0810.90	- Other:		A
	Rambutan, passion-fruit, litchi and carambola (starfruit)		
	Other:		A
	Black, white or red currants and gooseberries		
	Other	6%	B10
08.11	Fruit and nuts, uncooked or cooked by steaming or boiling in water, frozen, whether or not containing added sugar or other sweetening matter.		
0811.10	- Strawberries:	9.6%	B10
	Containing added sugar		
	Other	12%	B10
0811.20	- Raspberries, blackberries, mulberries, loganberries, black, white or red currants and gooseberries		A
0811.90	- Other:		
	Containing added sugar:		
	Pineapples		X
	Berries		A

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Sour cherries	6.9%	B10
	Peaches and pears	7%	B10
	Other:		
	Papayas, pawpaws, avocados, guavas, durians, bilimbis, champeder, jackfruit, bread-fruit, rambutan, rose-apple jambo, jambosa diambookaget, chicomamey, cherimoya, kehapi, sugarapples, mangoes, bullock's-heart, passion-fruit, dookoo kokosan, mangosteens, soursop and litchi	6%	B10
	Other	12%	B10
	Other:		
	Pineapples		X
	Papayas, pawpaws, avocados, guavas, durians, bilimbis, champeder, jackfruit, bread-fruit, rambutan, rose-apple jambo, jambosa diamboo-kaget, chicomamey, cherimoya, kehapi, sugar-apples, mangoes, bullock's-heart, passion-fruit, dookoo kokosan, mangosteens, soursop and litchi	3.6%	B10
	Berries		A
	Peaches and pears	7%	B10
	Other:		
	CamuCamu		A
	Other	12%	B10
08.12	Fruit and nuts, provisionally preserved (for example, by sulphur dioxide gas, in brine, in sulphur water or in other preservative solutions), but unsuitable in that state for immediate consumption.		
0812.10	- Cherries	17%	B15
0812.90	- Other:		X
	Bananas and oranges		
	Grapefruit, including pomelos	10%	B10
	Other:		
	Lemons and limes, excluding those provisionally preserved in preservative solutions		A
	Chestnuts	9.6%	B15
	Other:		
	Papayas, pawpaws, avocados, guavas, durians, bilimbis, champeder, jackfruit, bread-fruit, rambutan, rose-apple jambo, jambosa diambookaget, chicomamey, cherimoya, kehapi, sugarapples, mangoes, bullock's-heart, passion-fruit, dookoo kokosan, mangosteens, soursop and litchi	6%	B10

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Mandarins (including tangerines and satsumas); clementines, wilkings and similar citrus hybrids		X
	Other	12%	B10
08.13	Fruit, dried, other than that of headings 08.01 to 08.06; mixtures of nuts or dried fruits of this Chapter.		
0813.10	- Apricots	9%	B10
0813.20	- Prunes		A
0813.30	- Apples	9%	B10
0813.40	- Other fruit:		
	Berries, papayas, pawpaws, durians, bilimbis, champeder, jackfruit, bread-fruit, rambutan, rose-apple jambo, jambosa diamboo-kaget, chicomamey, cherimoya, sugar-apples, bullock's-heart, passion-fruit, dookoo kokosan, soursop, litchi and kehapi		A
	Other	9%	B10
0813.50	- Mixtures of nuts or dried fruits of this Chapter:		
	Mixtures containing more than 50% by weight of a single nut or dried fruit constituent, excluding those containing chestnuts, walnuts, pistachios, nuts of subheading 0802.90 (except betel nuts) or dried fruits of subheadings 0813.10 to 0813.40		A
	Other	6%	B10
0814.00	Peel of citrus fruit or melons (including watermelons), fresh, frozen, dried or provisionally preserved in brine, in sulphur water or in other preservative solutions.		A
Chapter 9	Coffee, tea, maté and spices		
09.01	Coffee, whether or not roasted or decaffeinated; coffee husks and skins; coffee substitutes containing coffee in any proportion.		
	- Coffee, not roasted:		
0901.11	-- Not decaffeinated		A
0901.12	-- Decaffeinated		A
	- Coffee, roasted:		
0901.21	-- Not decaffeinated		X
0901.22	- Decaffeinated		X
0901.90	- Other		A
09.02	Tea, whether or not flavoured.		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
0902.10	- Green tea (not fermented) in immediate packings of a content not exceeding 3kg	17%	B15
0902.20	- Other green tea (not fermented): Waste, unfit for beverage Other	17%	A B15
0902.30	- Black tea (fermented) and partly fermented tea, in immediate packings of a content not exceeding 3kg: Black tea Other	12% 17%	B15 B15
0902.40	- Other black tea (fermented) and other partly fermented tea: Waste, unfit for beverage Other: Black tea Other	2.5%	A B10 X
0903.00	Maté	6%	B10
09.04	Pepper of the genus <i>Piper</i> ; dried or crushed or ground fruits of the genus <i>Capsicum</i> or of the genus <i>Pimenta</i> .		A
0905.00	Vanilla.		A
09.06	Cinnamon and cinnamon-tree flowers.		A
0907.00	Cloves (whole fruit, cloves and stems).		A
09.08	Nutmeg, mace and cardamoms.		A
09.09	Seeds of anise, badian, fennel, coriander, cumin or caraway; juniper berries.		A
09.10	Ginger, saffron, turmeric (curcuma), thyme, bay leaves, curry and other spices.		
0910.10	- Ginger: Provisionally preserved in brine, in sulphur water or in other preservative solutions Other	9%	B10 A
0910.20	- Saffron		A
0910.30	- Turmeric (curcuma)		A
	- Other spices:		
0910.91	-- Mixtures referred to in Note 1 (b) to this Chapter		A
0910.99	-- Other: Curry Other	3.6%	B10 A
Chapter 10	Cereals		
10.01	Wheat and meslin.		X
1002.00	Rye.		A
1003.00	Barley.		X

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
1004.00	Oats.		A
10.05	Maize (corn).		
1005.10	- Seed		A
1005.90	- Other:		
	Popcorn, corn which is explosive with heating under normal air pressure		A
	Other:		
	For feeding purposes		A
	Note: The imports under this item are to be used as materials for fodder and feed under the supervision of the customs authority.		
	Other		X
10.06	Rice.		X
1007.00	Grain sorghum.		A
10.08	Buckwheat, millet and canary seed; other cereals.		
1008.10	- Buckwheat:		A
	Rendered suitable solely for sowing by chemical treatment (for example, sterilisation, acceleration of germination)		
	Other	9%	B10
1008.20	- Millet		A
1008.30	- Canary seed		A
1008.90	- Other cereals:		
	Rendered suitable solely for sowing by chemical treatment (for example, sterilisation, acceleration of germination)		A
	Other:		
	Triticale		X
	Other		A
Chapter 11	Products of the milling industry; malt; starches; inulin; wheat gluten		
1101.00	Wheat or meslin flour.		X
11.02	Cereal flours other than of wheat or meslin.		
1102.10	- Rye flour	7.5%	B10
1102.20	- Maize (corn) flour		X
1102.90	- Other:		X
	Barley flour, triticale flour and rice flour		
	Other	21.3%	B10
1103.20	- Pellets:		
	Of wheat, rice, barley or triticale		X
	Of oats	6%	B10
	Of maize (corn)	21.3%	B10
	Other	8.5%	B10
11.04	Cereal grains otherwise worked (for example, hulled, rolled, flaked, pearled, sliced or kibbled), except rice of heading 10.06; germ of cereals, whole, rolled, flaked or ground.		
	- Rolled or flaked grains:		
1104.12	-- Of oats	6%	B10
1104.19	-- Of other cereals:		
	Of wheat, triticale, rice or barley		X

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Of maize (corn)	21.3%	B10
	Other	8.5%	B10
	- Other worked grains (for example, hulled, pearled, sliced or kibbled):		
1104.22	-- Of oats	6%	B10
1104.23	-- Of maize (corn):	16.2%	B10
	Intended for use in the manufacture of cornflakes		
	Other	18%	B10
1104.29	-- Of other cereals:		
	Of wheat, triticale, rice or barley		X
	Other	17%	B10
11.05	Flour, meal, powder, flakes, granules and pellets of potatoes.	20%	B15
11.06	Flour, meal and powder of the dried leguminous vegetables of heading 07.13, of sago or of roots or tubers of heading 07.14 or of the products of Chapter 8.		
1106.10	- Of the dried leguminous vegetables of heading 07.13		X
1106.30	- Of the products of Chapter 8:		
	Flour, meal and powder of bananas:		
	For feeding purposes		
	Note: The imports under this item are to be used as materials for fodder and feed under the supervision of the customs authority.		A
	Other	15%	B10
	Other	15%	B10
11.07	Malt, whether or not roasted.		X
11.08	Starches; inulin.		X
1109.00	Wheat gluten, whether or not dried.		X
Chapter 12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder		
1201.00	Soya beans, whether or not broken.		A
12.02	Ground-nuts, not roasted or otherwise cooked, whether or not shelled or broken.		
1202.10	- In shell:		
	For oil extraction		
	Note: The imports under this item are to be used as materials for oil extraction under the supervision of the customs authority.		A
	Other		A
1202.20	- Shelled, whether or not broken:		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	For oil extraction		
	Note: The imports under this item are to be used as materials for oil extraction under the supervision of the customs authority.		A
	Other		X
1203.00	Copra.		A
1204.00	Linseed, whether or not broken.		A
12.05	Rape or colza seeds, whether or not broken.		A
1206.00	Sunflower seeds, whether or not broken.		A
12.11	Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered.		A
1212.20	- Seaweeds and other algae:		
	Edible seaweeds and other algae, fresh, chilled, frozen or dried		X
1212.91	-- Sugar beet		A
Chapter 13	Lac; gums, resins and other vegetable saps and extracts		
13.01	Lac; natural gums, resins, gum-resins and oleoresins (for example, balsams).		A
13.02	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other mucilages and thickeners, whether or not modified, derived from vegetable products.		
	- Vegetable saps and extracts:		
1302.11	- Opium		A
1302.12	-- Of liquorice		A
Chapter 14	Vegetable plaiting materials; vegetable products not elsewhere specified or included		
1401.10	- Bamboos		A
1401.20	- Rattans		A

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
14.04	Vegetable products not elsewhere specified or included.		A
Chapter 15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes		
1501.00	Pig fat (including lard) and poultry fat, other than that of heading 02.09 or 15.03:		
	Pig fat:		
	Of an acid value exceeding 1.3		A
	Other		X
	Other	6.4%	B10
1502.00	Fats of bovine animals, sheep or goats, other than those of heading 15.03.		A
1503.00	Lard stearin, lard oil, oleostearin, oleo-oil and tallow oil, not emulsified or mixed or otherwise prepared.		A
15.04	Fats and oils and their fractions, of fish or marine mammals, whether or not refined, but not chemically modified.		
1504.10	- Fish-liver oils and their fractions		X
1504.20	- Fats and oils and their fractions, of fish, other than liver Oils	7% or 4.20 yen/kg, whichever is the greater	B10
15.07	Soya-bean oil and its fractions, whether or not refined, but not chemically modified.		X
15.08	Ground-nut oil and its fractions, whether or not refined, but not chemically modified.		X
15.09	Olive oil and its fractions, whether or not refined, but not chemically modified.		A
15.11	Palm oil and its fractions, whether or not refined, but not chemically modified.		A
15.12	Sunflower-seed, safflower or cotton-seed oil and fractions thereof, whether or not refined, but not chemically modified.		
	- Sunflower-seed or safflower oil and fractions thereof:		
1512.11	-- Crude oil		X
1512.19	- Other		X
	- Cotton-seed oil and its fractions:		
1512.21	-- Crude oil, whether or not gossypol has been removed:		
	Used for the manufacture of canned fish or shellfish for export		A
	Other		X

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
15.13	Coconut (copra), palm kernel or babassu oil and fractions thereof, whether or not refined, but not chemically modified.		A
15.14	Rape, colza or mustard oil and fractions thereof, whether or not refined, but not chemically modified.		X
15.15	Other fixed vegetable fats and oils (including jojoba oil) and their fractions, whether or not refined, but not chemically modified.		
	- Linseed oil and its fractions:		
1515.11	-- Crude oil		X
1515.19	- Other		X
	- Maize (corn) oil and its fractions:		
1515.21	-- Crude oil		X
1515.29	- Other		X
1515.30	- Castor oil and its fractions		A
1515.50	- Sesame oil and its fractions		X
15.17	Margarine; edible mixtures or preparations of animal or vegetable fats or oils or of fractions of different fats or oils of this Chapter, other than edible fats or oils or their fractions of heading 15.16.		
1517.10	- Margarine, excluding liquid margarine		X
1518.00	Animal or vegetable fats and oils and their fractions, boiled, oxidised, dehydrated, sulphurised, blown, polymerised by heat in vacuum or in inert gas or otherwise chemically modified, excluding those of heading 15.16; inedible mixtures or preparations of animal or vegetable fats or oils or of fractions of different fats or oils of this Chapter, not elsewhere specified or included.		A
1520.00	Glycerol, crude; glycerol waters and glycerol lyes.		A
15.21	- Vegetable waxes (other than triglycerides), beeswax, other insect waxes and spermaceti, whether or not refined or coloured.		
1521.10	- Vegetable waxes		A
1521.90	- Other:		
	Beeswax	6.4%	B10
	Other		A
1522.00	Degras; residues resulting from the treatment of fatty substances or animal or vegetable waxes.		A
Chapter 16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates		
1601.00	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products.		X
16.02	Other prepared or preserved meat, meat offal or blood.		
1602.10	- Homogenised preparations		X

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
1602.20	- Of liver of any animal - Of poultry of heading 01.05: -		X
1602.31	-- Of turkeys: Guts, bladders and stomachs, whole and pieces thereof, simply boiled in water		A
1602.32	-- Of fowls of the species <i>Gallus domesticus</i> : Guts, bladders and stomachs, whole and pieces thereof, simply boiled in water		A
1602.39	Of swine:		
1602.41	-- Hams and cuts thereof		X
1602.42	-- Shoulders and cuts thereof		X
1602.50	- Of bovine animals: Guts, bladders and stomachs, whole and pieces thereof, simply boiled in water		A
	Other		X
1603.00	Extracts and juices of meat, fish or crustaceans, molluscs or other aquatic invertebrates: Extracts and juices of meat		X
	Other	6.4%	B10
16.04	Prepared or preserved fish; caviar and caviar substitutes pre- pared from fish eggs. - Fish, whole or in pieces, but not minced:		
1604.11	- Salmon		X
1604.12	- Herrings		X
1604.13	-- Sardines, sardinella and brisling or sprats		X
1604.14	-- Tunas, skipjack and bonito (<i>Sarda spp.</i>)		X
1604.15	- Mackerel		X
1604.16	- Anchovies		X
16.05	Crustaceans, molluscs and other aquatic invertebrates, pre- pared or preserved.		
1605.10	- Crab		X
1605.20	- Shrimps and prawns: Smoked; simply boiled in water or in brine; chilled, frozen, salted, in brine or dried, after simply boiled in water or in brine	3.2%	B10
	Other:		
	Containing rice		X
	Other	5.3%	B10
1605.30	- Lobster: Smoked; simply boiled in water or in brine; chilled, frozen, salted, in brine or dried, after simply boiled in water or in brine	3.2%	B10

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Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other	5%	B10
Chapter 17	Sugars and sugar confectionery		
17.01	Cane or beet sugar and chemically pure sucrose, in solid form.		X
17.02	Other sugars, including chemically pure lactose, maltose, glucose and fructose, in solid form; sugar syrups not containing added flavouring or colouring matter; artificial honey, whether or not mixed with natural honey; caramel.		
	- Lactose and lactose syrup:		
1702.11	-- Containing by weight 99% or more lactose, expressed as anhydrous lactose, calculated on the dry matter		A
1702.19	- Other		A
1702.20	- Maple sugar and maple syrup		X
1702.30	Glucose and glucose syrup, not containing fructose or containing in the dry state less than 20% by weight of fructose		X
1702.40	Glucose and glucose syrup, containing in the dry state at least 20% but less than 50% by weight of fructose, excluding invert sugar		X
1702.50	- Chemically pure fructose		A
1702.60	- Other fructose and fructose syrup, containing in the dry state more than 50% by weight of fructose, excluding invert sugar		X
1702.90	- Other, including invert sugar and other sugar and sugar syrup blends containing in the dry state 50% by weight of fructose: Sugar, sugar syrup, artificial honey and caramel		X
17.03	Molasses resulting from the extraction or refining of sugar.		
1703.10	- Cane molasses:		
	Intended for use in the manufacture of glutamic acid and its salts, yeast, lysine, 5'-ribonucleotide and its salts and other products stipulated by a Cabinet Order	3%	B10
	Other:		
	For feeding purposes		
	Note: The imports under this item are to be used as materials for fodder and feed under the supervision of the customs authority.		A
	Other		X
17.04	Sugar confectionery (including white chocolate), not containing cocoa.		
1704.10	- Chewing gum, whether or not sugar-coated		X
1704.90	- Other:		
	Liquorice extract, not put up as confectionery		A
	Other		X

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 19	Preparations of cereals, flour, starch or milk; pastrycooks' products		
19.01	Malt extract; food preparations of flour, groats, meal, starch ... containing less than 40% by weight of cocoa ...		X
19.02	Pasta, whether or not cooked or stuffed (with meat or other substances) or otherwise prepared, such as spaghetti, macaroni, noodles, lasagne, gnocchi, ravioli, cannelloni; couscous, whether or not prepared.		X
1903.00	Tapioca and substitutes therefor prepared from starch, in the form of flakes, grains, pearls, siftings or in similar forms.	9.6%	B10
19.04	Prepared foods obtained by the swelling or roasting of cereals or cereal products (for example, corn flakes); cereals (other than maize (corn)) in grain form or in the form of flakes or other worked grains (except flour, groats and meal), pre-cooked, or otherwise prepared, not elsewhere specified or included.		X
19.05	Bread, pastry, cakes, biscuits and other bakers' wares, whether or not containing cocoa; communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper and similar products.		
1905.10	- Crispbread		X
1905.20	- Gingerbread and the like		X
	- Sweet biscuits; waffles and wafers:		
1905.31	-- Sweet biscuits		X
1905.32	-- Waffles and wafers		X
1905.40	- Rusks, toasted bread and similar toasted products		X
1905.90	- Other:		
	Bread, ship's biscuits, and other ordinary bakers' wares, not containing added sugar, honey, eggs, fats, cheese or fruit		X
	Communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper and similar products		X
	Other:		
	Containing added sugar:		
	Crisp savoury food products, made from a dough based on potato powder	9%	B15
	Other		X
	Other:		
	Crisp savoury food products, made from a dough based on potato powder	9%	B15
	Other		X
Chapter 20	Preparations of vegetables, fruit, nuts or other parts of plants		
20.01	Vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid.		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
2001.10	- Cucumbers and gherkins: Containing added sugar	12%	B10
	Other	9%	B10
2001.90	- Other: Containing added sugar: Papayas, pawpaws, avocados, guavas, durians, bilimbis, champeder, jackfruit, bread-fruit, rambutan, rose-apple jambo, jambosa diamboo-kaget, chicomamey, cherimoya, kehapi, sugar-apples, bullock's-heart, passion-fruit, dookoo kokosan, soursop, litchi, mangoes and mangosteens		A
	Sweet corn	10.5%	B10
	Young corncobs	16.8%	B10
	Other	12%	B10
	Other: Papayas, pawpaws, avocados, guavas, durians, bilimbis, champeder, jackfruit, bread-fruit, rambutan, rose-apple jambo, jambosa diamboo-kaget, chicomamey, cherimoya, kehapi, sugar-apples, bullock's-heart, passion-fruit, dookoo kokosan, soursop, litchi, mangoes and mangosteens		A
	Sweet corn	7.5%	B10
	Young corncobs	9%	B10
	Other: Ginger		X
	Other	9%	B10
20.02	Tomatoes prepared or preserved otherwise than by vinegar or acetic acid.		X
20.03	Mushrooms and truffles, prepared or preserved otherwise than by vinegar or acetic acid.		
2003.10	- Mushrooms of the genus <i>Agaricus</i> : Containing added sugar		A
	Other: In airtight containers not more than 10kg each including container:		
	French mushrooms	13.6%	B10
	Other		A
2004.10	- Potatoes: Cooked, not otherwise prepared	8.5%	B15
	Other: Mashed potatoes	13.6%	B10
	Other	9%	B15
2004.90	- Other vegetables and mixtures of vegetables: Containing added sugar: Sweet corn	10.5%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other	23.8%	B10
	Other:		
	Asparagus and leguminous vegetables:		
	Asparagus	17%	B10
	Leguminous vegetables		X
	Bamboo shoots	13.6%	B10
	Sweet corn	7.5%	B10
	Young corncobs:		
	In airtight containers	9%	B10
	Other	15%	B10
	Other	9%	B10
20.05	Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, not frozen, other than products of heading 20.06.		
2005.10	- Homogenised vegetables:		
	Containing added sugar	16.8%	B15
	Other	9.6%	B10
2005.20	- Potatoes:		
	Mashed potatoes and potato flakes	13.6%	B10
	Other:		
	In airtight containers not more than 10kg each including container	9.6%	B10
	Other	9%	B10
2005.40	- Peas		
	Containing added sugar		X
	Other:		
	In airtight containers not more than 10kg each including container:		
	Unshelled	9.6%	B10
	Other	7.5%	B10
	Other:		
	Unshelled	9%	B10
	Other	6.8%	B10
	- Beans		
2005.51	-- Beans, shelled:		
	Containing added sugar:		
	In airtight containers, containing tomato purie or other kind of tomato preparation and meat of swine, lard or other pig fat	14%	B10
	Other		X

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other		X
2005.59	-- Other:		
	Containing added sugar		X
	Other:		
	In airtight containers not more than 10kg each including container	9.6%	B10
	Other	9%	B10
2005.60	- Asparagus:		
	In airtight containers not more than 10kg each including Container	16%	B10
	Other	12%	B10
2005.70	- Olives		A
2005.80	- Sweet corn		
	Containing added sugar	14.9%	B10
	Other	10%	B10
	- Other vegetables and mixtures of vegetables:		
2005.91	-- Bamboo shoots:		
	Containing added sugar	13.4%	B10
	Other	13.6%	B10
2005.99	-- Other:		
	Containing added sugar:		
	Leguminous vegetables (podded out):		
	In airtight containers, containing tomato purie or other kind of tomato preparation and meat of swine, lard or other pig fat	14%	B10
	Other		X
	Other		X
	Other:		
	Young corncobs:		
	In airtight containers	9%	B10
	Other	15%	B10
	Leguminous vegetables (podded out)	17%	B10
	Sauerkraut	9.6%	B10
	Other:		
	In airtight containers not more than 10kg each including containers	9.6%	B10
	Other:		
	Garlic powder	8%	B10
	Other	9%	B10
2006.00	Vegetables, fruit, nuts, fruit-peel and other parts of plants, preserved by sugar (drained, glaci or crystallised):		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Marrons glacé	12.6%	B15
	Other	9%	B10
20.07	Jams, fruit jellies, marmalades, fruit or nut purie and fruit or nut pastes, obtained by cooking, whether or not containing added sugar or other sweetening matter.		
2007.10	- Homogenised preparations		X
	- Other:		
2007.91	-- Citrus fruit:		
	Jams, fruit jellies and marmalades:		
	Containing added sugar	16.8%	B10
	Other	12%	B10
	Fruit purée and fruit pastes:		
	Containing added sugar		X
	Other	21.3%	B10
2007.99	-- Other:		
	Jams and fruit jellies:		
	Containing added sugar	16.8%	B10
	Other	12%	B10
	Other:		
	Containing added sugar		X
	Other:		
	Fruit purée and fruit pastes	21.3%	B10
	Other	25%	B10
20.08	Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit, not elsewhere specified or included.		
	- Nuts, ground-nuts and other seeds, whether or not mixed together:		
2008.11	-- Ground-nuts:		
	Containing added sugar:		
	Peanut butter	12%	B10
	Other		X
	Other:		
	Peanut butter	10%	B10
	Other		X
2008.19	-- Other, including mixtures:		
	Containing added sugar:		
	In pulp form	10.5%	B10
	Other:		
	Cashew nuts and other roasted nuts	5.5%	B10

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other:		
	Chestnuts (in airtight containers not more than 10kg each including container), not roasted		X
	Other	16.8%	B10
	Other:		
	In pulp form		A
	Other:		
	Roasted almonds, macadamia nuts, roasted pecan and cashew nuts		A
	Coconuts, Brazil nuts, paradise nuts and hazel Nuts	4%	B10
2008.20	- Pineapples		X
2008.30	- Citrus fruit		X
2008.40	- Pears:		
	Containing added sugar:		
	In pulp form:		
	In airtight containers	15%	B10
	Other	21%	B15
	Other:		
	In airtight containers	10.8%	B10
	Other	15%	B10
	Other:		
	In pulp form:		
	In airtight containers	12%	B10
	Other	7.5%	B10
2008.50	- Apricots:		
	Containing added sugar	15%	B10
	Other	6%	B10
2008.60	- Cherries:		
	Containing added sugar	15%	B10
	Other:		
	In pulp form	12%	B10
	Other	6%	B10
2008.70	- Peaches, including nectarines:		
	Containing added sugar:		
	In pulp form:		
	In airtight containers	21.3%	B15
	Other	29.8%	B15
	Other:		
	In airtight containers:		
	Not less than 2kg each including container	6.7%	B10
	Other	8%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
2008.80	- Strawberries:		
	Containing added sugar:		
	In pulp form	21%	B10
	Other	11%	B10
	Other:		
	In pulp form	15%	B10
	Other	12%	B10
2008.91	-- Palm hearts	7.5%	B10
2008.92	-- Mixtures:		
	Mixed fruit, fruit salad and fruit cocktail:		
	Containing added sugar	6%	B7
	Other		A
	Other		X
2008.99	-- Other:		
	Ume (fruit of Mume plum)	12%	B10
	Other:		
	Containing added sugar:		
	In pulp form:		
	Bananas and avocados	10.5%	B10
	Other	29.8%	B15
	Other:		
	Berries, prunes, bananas, avocados, mangoes, guavas and mangosteens	5.5%	B10
	Other:		
	Durians, rambutan, passion-fruit, litchi and carambola (star-fruit)	7%	B10
	Other	16.8%	B15
	Other:		
	In pulp form:		
	Bananas, avocados, prunes, mangoes, guavas and mangosteens	7.5%	B10
	Camucamu		A
	Other	21.3%	B15
	Other:		
	Prunes, bananas, avocados, mangoes, guavas and mangosteens		A
20.09	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter.		
	- Orange juice:		
2009.11	- Frozen		X
2009.12	-- Not frozen, of a Brix value not exceeding 20		X
2009.19	- Other		X
	- Grapefruit (including pomelo) juice:		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
2009.21	-- Of a Brix value not exceeding 20: Containing added sugar: Not more than 10% by weight of sucrose, naturally and artificially contained Other	23% 29.8% or 23 yen/kg, whichever is the greater	B10 B10
2009.31	- Juice of any other single citrus fruit: -- Of a Brix value not exceeding 20: Containing added sugar Other: Not more than 10% by weight of sucrose: Lemon juice Lime juice Other Other	 6% 12%	 B10 B10 X X
2009.39	-- Other: Containing added sugar Other: Not more than 10% by weight of sucrose: Lemon juice Lime juice Other Other	 6% 12%	 B10 B10 X X
2009.41	- Pineapple juice: -- Of a Brix value not exceeding 20		X
2009.49	- Other		X
2009.50	- Tomato juice - Grape juice (including grape must):		X
2009.61	-- Of a Brix value not exceeding 30: Containing added sugar: Not more than 10% by weight of sucrose, naturally and artificially contained Other Other	23% 29.8% or 23 yen/kg, whichever is the greater 19.1%	B15 B15 B15
2009.69	-- Other:		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Containing added sugar:		
	Not more than 10% by weight of sucrose, naturally and artificially contained	23%	B15
	Other	29.8% or 23 yen/kg, whichever is the greater	B15
	Other:		
	Not more than 10% by weight of sucrose	19.1%	B15
	Other	25.5%	B15
	- Apple juice:		
2009.71	-- Of a Brix value not exceeding 20		X
2009.79	- Other		X
2009.80	- Juice of any other single fruit or vegetable:		
	Fruit juices:		
	Containing added sugar:		
	Not more than 10% by weight of sucrose, naturally and artificially contained	23%	B15
	Other	29.8% or 23 yen/kg, whichever is the greater	B15
	Other:		
	Not more than 10% by weight of sucrose:		
	Prune juice	14.4%	B10
	Other	19.1%	B15
	Other	25.5%	B15
	Vegetable juices:		
	Containing added sugar	8.1%	B10
2009.90	- Mixtures of juices:		
	Mixtures of fruit juices		X
	Mixtures of vegetable juices:		
	Containing added sugar	8.1%	B10
	Other	5.4%	B10
Chapter 21	Miscellaneous edible preparations		
21.01	Extracts, essences and concentrates, of coffee, tea or maté and preparations with a basis of these products or with a basis of coffee, tea or maté; roasted chicory and other roasted coffee substitutes, and extracts, essences and concentrates thereof.		
2101.11	-- Extracts, essences and concentrates:		
	Containing added sugar		X
	Other:		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Instant coffee	8.8%	B10
	Other		A
2101.12	-- Preparations with a basis of extracts, essences or concentrates or with a basis of coffee:		
	Preparations with a basis of extracts, essences or concentrates:		
	Containing added sugar		X
	Other:		
	Instant coffee	8.8%	B10
	Other		A
	Preparations with a basis of coffee:		
	Containing not less than 30% of natural milk constituents by weight, calculated on the dry matter		X
	Other:		
	Containing added sugar		X
	Other	15%	B10
2101.20	- Extracts, essences and concentrates, of tea or maté, and preparations with a basis of these extracts, essences or concentrates or with a basis of tea or maté:		
	Instant tea		A
	Other	8%	b10
	Preparations with a basis of tea or maté:		
	Containing not less than 30% of natural milk constituents by weight, calculated on the dry matter		X
	Other:		
	Containing added sugar		X
	Other	15%	B10
21.02	Yeasts (active or inactive); other single-cell microorganisms, dead (but not including vaccines of heading 30.02); prepared baking powders.		
2102.10	- Active yeasts	10%	B10
2102.20	- Inactive yeasts; other single-cell micro-organisms, dead		A
2102.30	- Prepared baking powders		A
21.03	Sauces and preparations therefor; mixed condiments and mixed seasonings; mustard flour and meal and prepared mustard.		
2103.10	- Soya sauce	6%	B10
2103.20	- Tomato ketchup and other tomato sauces		X
2103.30	- Mustard flour and meal and prepared mustard:		
	Put up in containers for retail sale	9%	B10
	Other	7.5%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
2103.90	- Other: Sauces: Mayonnaise, French dressings and salad dressings Other	6%	B7
	Other: Instant curry and other curry preparations	3.6%	B10
2104.10	- Soups and broths and preparations therefor: Of vegetable, in airtight containers Other	7% 8.4%	B10 B10
2104.20	- Homogenised composite food preparations	6%	B10
2105.00	Ice cream and other edible ice, whether or not containing cocoa.		X
21.06	Food preparations not elsewhere specified or included.		
2106.10	- Protein concentrates and textured protein substances: Preparations containing not less than 30% of natural milk constituents by weight, calculated on the dry matter; excluding protein concentrates containing not less than 80% of protein by weight, the largest ingredient is vegetable protein and put up in containers for retail sale by weight of less than 500g each excluding container Other: Containing added sugar Other: Vegetable protein Other		X B10 B10
	Sugar syrup, containing added flavouring or colouring matter, chewing gum and Konnyaku		X
	Compound alcoholic preparations of a kind used for the manufacture of beverages, of an alcoholic strength by volume of more than 0.5% vol: Preparations with a basis of fruit juices, of an alcoholic strength by volume of less than 1% vol Other	29.8% or 23 yen/kg, whichever is the greater	B15 A
	Containing added sugar Food supplement with a basis of vitamins Other	12.5%	B10 X
	Other:		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Prepared edible fats and oils, containing more than 15% and less than 30% by weight of those of heading 04.05		X
	Food supplement with a basis of vitamins or of hydrolysed vegetable protein	12.5%	B10
	Other:		
	Protein preservative of a kind used for manufacturing frozen minced fish, obtained from sorbitol and other materials stipulated by a Cabinet Order, which have been prepared by processes stipulated by a Cabinet Order		A
	Other		X
Chapter 22	Beverages, spirits and vinegar		
22.01	Waters, including natural or artificial mineral waters and aerated waters, not containing added sugar or other sweetening matter nor flavoured; ice and snow.		A
22.02	Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured, and other non-alcoholic beverages, not including fruit or vegetable juices of heading 20.09.		
2202.10	- Waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured:		
	Containing added sugar	13.4%	B10
2203.00	Beer made from malt.		A
22.04	Wine of fresh grapes, including fortified wines; grape must other than that of heading 20.09.		
2204.10	- Sparkling wine		X
	- Other wine; grape must with fermentation prevented or arrested by the addition of alcohol:		
2204.21	-- In containers holding 2l or less		X
2204.29	- Other		X
2204.30	- Other grape must:		X
	Of an alcoholic strength by volume of less than 1% vol		
	Other		A
22.05	Vermouth and other wine of fresh grapes flavoured with plants or aromatic substances.		X
2206.00	Other fermented beverages (for example, cider, perry, mead); mixtures of fermented beverages and mixtures of fermented beverages and non-alcoholic beverages, not elsewhere specified or included:		
	Of an alcoholic strength by volume of less than 1% vol		X
	Other:		

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Sake (Seishu and Dakushu)		X
	Other:		
	Mixtures of fermented beverages (excluding Seishu), and products of heading 20.09 or 22.02		X
	Other:		
	Sparkling beverages made, in part, from malt	A	
	Other	X	
2207.10	- Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol or higher:		
	Of an alcoholic strength by volume of 90% vol or higher:		
	Intended for provision in manufacturing industrial alcohol, ethyl acetate or ethylamine	A	
	Other:		
	Intended for use in distilling alcohol for making alcoholic beverages through the continuous still	A	
	Other		
	Other:		
	Intended for use in distilling alcohol for making alcoholic beverages through the continuous still	A	
	Other		
2207.20	- Ethyl alcohol and other spirits, denatured, of any strength		
22.08	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80% vol; spirits, liqueurs and other spirituous beverages.		
2208.20	- Spirits obtained by distilling grape wine or grape marc	A	
2208.30	- Whiskies	A	
2208.40	- Rum and other spirits obtained by distilling fermented sugar-cane products	A	
2208.50	- Gin and Geneva	A	
2208.60	- Vodka	A	
2208.70	- Liqueurs and cordials	A	
2208.90	- Other:		
	Ethyl alcohol and distilled alcoholic beverages:		
	Fruit brandy	A	
	Other spirituous beverages:		
	Imitation sake and white sake	A	
	Beverages with a basis of fruit juices, of an alcoholic strength by volume of less than 1% vol	29.8% or 23 yen/kg, whichever is the greater	B15
	Other		A

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 23	Residues and waste from the food industries; prepared animal fodder		
23.01	Flours, meals and pellets, of meat or meat offal, of fish or of crustaceans, molluscs or other aquatic invertebrates, unfit for human consumption; greaves.		A
23.02	Bran, sharps and other residues, whether or not in the form of pellets, derived from the sifting, milling or other working of cereals or of leguminous plants.		A
23.03	Residues of starch manufacture and similar residues, beetpulp, bagasse and other waste of sugar manufacture, brewing or distilling dregs and waste, whether or not in the form of pellets.		A
2304.00	Oil-cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soyabean oil.		A
2305.00	Oil-cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of ground-nut oil.		A
23.09	Preparations of a kind used in animal feeding.		
2309.10	- Dog or cat food, put up for retail sale: Containing not less than 10% of lactose by weight	Per each kilogram, 59.50 yen + 6 yen for every 1% exceeding 10% by weight of lactose contained	B10
Chapter 24	Tobacco and manufactured tobacco substitutes		
24.01	Unmanufactured tobacco; tobacco refuse.		A
24.02	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes.		X
24.03	Other manufactured tobacco and manufactured tobacco substitutes; "homogenised" or "reconstituted" tobacco; tobacco extracts and essences.		
2403.10	- Smoking tobacco, whether or not containing tobacco substitutes in any proportion		X
	- Other:		
2403.91	-- "Homogenised" or "reconstituted" tobacco		A
2403.99	-- Other:		
	Tobacco extracts and essences		A
	Other		X

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Schedule of Japan (Contd.)

Column 1 Tariff item number	Column 2 Description of goods	Column 3 Base Rate	Column 4 Category
Chapter 25	Salt; sulphur; earths and stone; plastering materials, lime and cement		
2501	Salt and pure sodium chloride, of which at least 70% by weight passes through a woven metal wire cloth sieve with an aperture of 2.8 mm, or agglomerated, other than those in aqueous solution		X
	Other		A
2502.00	Unroasted iron pyrites.		A
2503.00	Sulphur of all kinds, other than sublimed sulphur, precipitated sulphur and colloidal sulphur.		A
25.04	Natural graphite.		A
25.05	Natural sands of all kinds, whether or not coloured, other than metalbearing sands of Chapter 26.		A
25.06	Quartz (other than natural sands); quartzite, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape.		A
2507.00	Kaolin and other kaolinic clays, whether or not calcined.		A
25.08	Other clays (not including expanded clays of heading 68.06), andalusite, kyanite and sillimanite, whether or not calcined; mullite; chamotte or dinas earths.		A
2509.00	Chalk.		A
25.10	Natural calcium phosphates, natural aluminium calcium phosphates and phosphatic chalk.		A
25.11	Natural barium sulphate (barytes); natural barium carbonate (witherite), whether or not calcined, other than barium oxide of heading 28.16.		A
2512.00	Siliceous fossil meals (for example, kieselguhr, tripolite and diatomite) and similar siliceous earths, whether or not calcined, of an apparent specific gravity of 1 or less.		A
25.13	Pumice stone; emery; natural corundum, natural garnet and other natural abrasives, whether or not heat-treated.		A
2514.00	Slate, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape.		A
25.15	Marble, travertine, ecaussine and other calcareous monumental or building stone of an apparent specific gravity of 2.5 or more, and alabaster, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape.		A

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
25.16	Granite, porphyry, basalt, sandstone and other monumental or building stone, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape.		A
25.23	Portland cement, aluminous cement, slag cement, supersulphate cement and similar hydraulic cements, whether or not coloured or in the form of clinkers.		A
25.24	Asbestos.		A
25.25	Mica, including splittings; mica waste.		A
Chapter 26	Ores, slag and ash		A
Chapter 27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes		
27.01	Coal; briquettes, ovoids and similar solid fuels manufactured from coal.		A
27.02	Lignite, whether or not agglomerated, excluding jet.		A
2704.00	Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon.		A
2705.00	Coal gas, water gas, producer gas and similar gases, other than petroleum gases and other gaseous hydrocarbons.		A
2706.00	Tar distilled from coal, from lignite or from peat, and other mineral tars, whether or not dehydrated or partially distilled, including reconstituted tars.		A
27.07	Oils and other products of the distillation of high temperature coal tar; similar products in which the weight of the aromatic constituents exceeds that of the non-aromatic constituents.		A
2709.00	Petroleum oils and oils obtained from bituminous minerals, crude.		A
2710.11	-- Light oils and preparations: Petroleum oils and oils obtained from bituminous minerals, including those containing less than 5% by weight of products other than petroleum oils and oils obtained from bituminous minerals: Petroleum spirits: Mixed alkylenes with a very low degree of polymerisation: Tripropylene Other Intended for use in the manufacture of petrochemical products stipulated by a Cabinet Order Other Kerosenes: Mixed alkylenes with a very low degree of Polymerisation	2.2% 1,179 yen/kl 2.5%	A B10 A B10 B10

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other:		A
	Normal paraffins (containing not less than 95% by weight of saturated straight chain hydrocarbon)		
	Other:		A
	Intended for use in the manufacture of petrochemical products stipulated by a Cabinet Order		
	Gas oils:		
	Intended for use in the manufacture of petrochemical products stipulated by a Cabinet Order		A
	Other	1,024 yen/kl	B10
2710.19	-- Other:		
	Petroleum oils and oils obtained from bituminous minerals, including those containing less than 5% by weight of products other than petroleum oils and oils obtained from bituminous minerals:		
	Kerosenes:		
	Mixed alkylenes with a very low degree of Polymerization	2.5%	B10
	Other:		
	Heavy fuel oils and raw oils:		
	Of a specific gravity not more than 0.9037 at 15:C:		
	Intended for use as raw materials in refining, including those manufactured from the oil under the supervision of the customs authority		A
	Other:		
	Intended for use in agriculture, forestry and fishery, having a specific gravity of not less than 0.83 at 15:C and a flash point not exceeding 130:C when arrived at Japan or when mixed with other petroleum oils by the method stipulated in a Cabinet Order		A
	Intended for use as raw materials in refining including those manufactured from the oil under the supervision of the customs authority		A
27.11	Petroleum gases and other gaseous hydrocarbons.		A

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Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
27.12	Petroleum jelly; paraffin wax, micro-crystalline petroleum wax, slack wax, ozokerite, lignite wax, peat wax, other mineral waxes, and similar products obtained by synthesis or by other processes, whether or not coloured.		A
27.13	Petroleum coke, petroleum bitumen and other residues of petroleum oils or of oils obtained from bituminous minerals.		A
27.14	Bitumen and asphalt, natural; bituminous or oil shale and tar sands; asphaltites and asphaltic rocks.		A
2715.00	Bituminous mixtures based on natural asphalt, on natural bitumen, on petroleum bitumen, on mineral tar or on mineral tar pitch (for example, bituminous mastics, cutbacks).		A
Chapter 28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes		A
Chapter 29	Organic chemicals		
2905.11	-- Methanol (methyl alcohol)		A
2905.12	-- Propan-1-ol (propyl alcohol) and propan-2-ol (isopropyl alcohol)		A
2905.13	-- Butan-1-ol (n-butyl alcohol)		A
2905.14	-- Other butanols		A
2905.16	-- Octanol (octyl alcohol) and isomers thereof		A
29.37	Hormones, prostaglandins, thromboxanes and leukotrienes, natural or reproduced by synthesis; derivatives and structural analogues thereof, including chain modified polypeptides, used primarily as hormones.		A
29.39	Vegetable alkaloids, natural or reproduced by synthesis, and their salts, ethers, esters and other derivatives.		A
2940.00	Sugars, chemically pure, other than sucrose, lactose, maltose, glucose and fructose; sugar ethers, sugar acetals and sugar esters, and their salts, other than products of heading 29.37, 29.38 or 29.39.		A
29.41	Antibiotics.		A
Chapter 30	Pharmaceutical products		A
Chapter 31	Fertilisers		A
Chapter 32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks		A
Chapter 33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations - Essential oils of citrus fruit:		

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
3301.12	-- Of orange		A
3301.13	-- Of lemon		A
3301.19	-- Other		A
	- Essential oils other than those of citrus fruit:		
3301.24	-- Of peppermint		A
3301.25	-- Of other mints:		
	Peppermint oils obtained from <i>Mentha arvensis</i> :		
	Containing more than 65% by weight of total menthol when determined by the testing method stipulated by a Cabinet Order		A
	Other	5.4%	B10
	Other		A
3303.00	Perfumes and toilet waters.		A
33.04	Beauty or make-up preparations and preparations for the care of the skin (other than medicaments), including sunscreen or sun tan preparations; manicure or pedicure preparations.		A
33.05	Preparations for use on the hair.		A
33.06	Preparations for oral or dental hygiene, including denture fixative pastes and powders; yarn used to clean between the teeth (dental floss), in individual retail packages.		A
33.07	Pre-shave, shaving or after-shave preparations, personal deodorants, bath preparations, depilatories and other perfumery, cosmetic or toilet preparations, not elsewhere specified or included; prepared room deodorisers, whether or not perfumed or having disinfectant properties.		A
Chapter 34	Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations with a basis of plaster		A
Chapter 37	Photographic or cinematographic goods		A
Chapter 38	Miscellaneous chemical products		A
Chapter 39	Plastics and articles thereof		
39.01	Polymers of ethylene, in primary forms.		
3901.10	- Polyethylene having a specific gravity of less than 0.94:		
	In blocks of irregular shape, lumps, powders (including moulding powders), granules, flakes and similar bulk forms	1.3% or 4.48 yen/kg, whichever is the less	B10
	Other		A

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
3901.20	- Polyethylene having a specific gravity of 0.94 or more: In blocks of irregular shape, lumps, powders (including moulding powders), granules, flakes and similar bulk forms	1.3% or 4.48 yen/kg, whichever is the less	B10
	Other		A
39.02	Polymers of propylene or of other olefins, in primary forms.		
3902.10	- Polypropylene: In blocks of irregular shape, lumps, powders (including moulding powders), granules, flakes and similar bulk forms	1.3% or 5.12 yen/kg, whichever is the less	B10
	Other		A
39.04	Polymers of vinyl chloride or of other halogenated olefins, in primary forms.		
3904.10	- Poly (vinyl chloride), not mixed with any other substances: In blocks of irregular shape, lumps, powders (including moulding powders), granules, flakes and similar bulk forms	0.78%	B7
	Other		A
3904.22	-- Plasticised: In blocks of irregular shape, lumps, powders (including moulding powders), granules, flakes and similar bulk forms	0.78%	B7
	Other		A
39.09	Amino-resins, phenolic resins and polyurethanes, in primary forms		A
3910.00	Silicones in primary forms.		A
39.13	Natural polymers (for example, alginic acid) and modified natural polymers (for example, hardened proteins, chemical derivatives of natural rubber), not elsewhere specified or included, in primary forms.		A
39.15	Waste, parings and scrap, of plastics.		A
39.17	Tubes, pipes and hoses, and fittings therefor (for example, joints, elbows, flanges), of plastics.		A
39.18	Floor coverings of plastics, whether or not self-adhesive, in rolls or in the form of tiles; wall or ceiling coverings of plastics, as defined in Note 9 to this Chapter.		
39.19	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, whether or not in rolls.		A
39.20	Other plates, sheets, film, foil and strip, of plastics, noncellular and not reinforced, laminated, supported or similarly combined with other materials.		A
39.21	Other plates, sheets, film, foil and strip, of plastics.		A
39.22	Baths, shower-baths, sinks, wash-basins, bidets, lavatory pans, seats and covers, flushing cisterns and similar sanitary ware, of plastics.		A

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
39.23	Articles for the conveyance or packing of goods, of plastics; stoppers, lids, caps and other closures, of plastics.		A
39.24	Tableware, kitchenware, other household articles and hygienic or toilet articles, of plastics.		A
39.25	Builders' ware of plastics, not elsewhere specified or included.		A
39.26	Other articles of plastics and articles of other materials of headings 39.01 to 39.14.		
3926.10	- Office or school supplies		A
3926.20	- Articles of apparel and clothing accessories (including gloves, mittens and mitts)		A
3926.30	- Fittings for furniture, coachwork or the like		A
3926.40	- Statuettes and other ornamental articles		A
3926.90	- Other:		
	Chassis spring and leaves thereof, for motor vehicles		A
	Other:		
	Woven fabrics obtained from strip, entirely coated or covered on both sides with plastics	0.78%	B7
	Other		A
Chapter 40	Rubber and articles thereof		A
Chapter 41	Raw hides and skins (other than furskins) and leather		
41.01	Raw hides and skins of bovine (including buffalo) or equine animals (fresh, or salted, dried, limed, pickled or otherwise preserved, but not tanned, parchment-dressed or further prepared), whether or not dehaired or split.		
4101.20	- Whole hides and skins, of a weight per skin not exceeding 8kg when simply dried, 10kg when dry-salted, or 16kg when fresh, wet-salted or otherwise preserved:		
	Of which have undergone a chrome tanning (including pre-tanning) process which is reversible, or of which have not yet undergone any tanning process		A
	Other	12%	B10
4101.50	- Whole hides and skins, of a weight exceeding 16kg:		
	Of which have undergone a chrome tanning (including pre-tanning) process which is reversible, or of which have not yet undergone any tanning process		A
41.02	Raw skins of sheep or lambs (fresh, or salted, dried, limed, pickled or otherwise preserved, but not tanned, parchment-dressed or further prepared), whether or not with wool on or split, other than those excluded by Note 1 (c) to this Chapter.		A
41.05	Tanned or crust skins of sheep or lambs, without wool on, whether or not split, but not further prepared.		

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
4105.10	- In the wet state (including wet-blue)		A
4105.30	- In the dry state (crust): Dyed or coloured	16%	B10
	Other		A
41.06	Tanned or crust hides and skins of other animals, without wool or hair on, whether or not split, but not further prepared. - Of goats or kids:		
4106.21	-- In the wet state (including wet-blue)		A
4106.22	-- In the dry state (crust): Dyed or coloured	16%	B10
	Other		A
41.07	Leather further prepared after tanning or crusting, including parchment-dressed leather, of bovine (including buffalo) or equine animals, without hair on, whether or not split, other than leather of heading 41.14. - Whole hides and skins:		
4107.11	-- Full grains, unsplit: Parchment-dressed	1.2%	B10
	Other: Dyed, coloured, stamped or embossed:		
	Dyed or coloured, excluding bovine leather, of a unit surface area not exceeding 2.6m ² , buffalo leather and roller leather	13.3%	B10
4112.00	Leather further prepared after tanning or crusting, including parchment-dressed leather, of sheep or lamb, without wool on, whether or not split, other than leather of heading 41.14: Parchment-dressed	1.2%	B10
	Other: Dyed, coloured, stamped or embossed	16%	B10
	Other		A
41.13	Leather further prepared after tanning or crusting, including parchment-dressed leather, of other animals, without wool or hair on, whether or not split, other than leather of heading 41.14.		
4113.10	- Of goats or kids: Parchment-dressed	1.2%	B10
	Other: Dyed, coloured, stamped or embossed	16%	B10
	Other		A
4115.10	- Composition leather with a basis of leather or leather fibre, in slabs, sheets or strip, whether or not in rolls	1.2%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
4115.20	- Parings and other waste of leather or of composition leather, not suitable for the manufacture of leather articles; leather dust, powder and flour	6%	B10
Chapter 42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)		
4201.00	Saddlery and harness for any animal(including traces, leads, knee pads, muzzles, saddle cloths, saddle bags, dog coats and the like), of any material.	1.06%	B10
42.02	Trunks, suit-cases, vanity-cases, executive-cases, briefcases, school satchels, spectacle cases, binocular cases, camera cases, musical instrument cases, gun cases, holsters and similar containers; travelling-bags, insulated food or beverages bags, toilet bags, rucksacks, handbags, shoppingbags, wallets, purses, map-cases, cigarette-cases, tobaccopouches, tool bags, sports bags, bottle-cases, jewellery boxes, powder-boxes, cutlery cases and similar containers, of leather or of composition leather, of sheeting of plastics, of textile materials, of vulcanised fibre or of paperboard, or wholly or mainly covered with such materials or with paper.		
	- Trunks, suit-cases, vanity-cases, executive-cases, briefcases, school satchels and similar containers:		
4202.11	-- With outer surface of leather, of composition leather or of patent leather:		
	Vanity-cases, combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semi-precious stones, pearls, coral, elephants' tusks or Bekko, more than 6,000 yen/piece in value for customs duty	12.8%	B10
	Other	8%	B10
	-- Other	0.82%	B10
	- Handbags, whether or not with shoulder strap, including those without handle:		
4202.21	-- With outer surface of leather, of composition leather or of patent leather:		
	Combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semi-precious stones, pearls, coral, elephants' tusks or Bekko, more than 6,000 yen/piece in value for customs duty:		
	Of leather or of patent leather	11.2%	B10
	Other	12.8%	B10
	Other:		
	Of leather or of patent leather	6.4%	B10

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other	8%	B10
4202.31	-- With outer surface of leather, of composition leather or of patent leather: Wallets and purses, combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semiprecious stones, pearls, coral, elephants' tusks or Bekko, more than 6,000 yen/piece in value for customs duty	12.8%	B10
	Other	8%	B10
4202.99	-- Other: Of wood	0.54%	B10
	Of ivory, of bone, of tortoise-shell, of horn, of antlers, of coral, of mother-of-pearl or of other animal carving material	0.68%	B10
	Other	0.92%	B10
42.03	Articles of apparel and clothing accessories, of leather or of composition leather.		
4203.10	- Articles of apparel: Trimmed with furskin or combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semiprecious stones, pearls, coral, elephants' tusks or Bekko	16%	B10
	Other	10%	B10
	- Gloves, mittens and mitts:		
4203.21	-- Specially designed for use in sports: Containing furskin or combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semiprecious stones, pearls, coral, elephants' tusks or Bekko	16%	B10
	Other		X
4203.29	-- Other: Containing furskin or combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semiprecious stones, pearls, coral, elephants' tusks or Bekko:		
	Of leather	14%	B10
	Of composition leather	16%	B10

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other		X
4203.30	- Belts and bandoliers: Trimmed with furskin or combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semiprecious stones, pearls, coral, elephants' tusks or Bekko	16%	B10
	Other		X
4203.40	- Other clothing accessories: Trimmed with furskin or combined or trimmed with precious metal, metal clad with precious metal, metal plated with precious metal, precious stones, semiprecious stones, pearls, coral, elephants' tusks or Bekko	16%	B10
	Other	10%	B10
4205.00	Other articles of leather or of composition leather: Of a kind used in machinery or mechanical appliances or for other technical uses: Belts and beltings, combing leathers and intergillleathers	3.6%	B10
	Other	0.66%	B10
	Other	6%	B10
4206.00	Articles of gut (other than silk-worm gut), of goldbeater's skin, of bladders or of tendons.	0.66%	B10
Chapter 48	Paper and paperboard; articles of paper pulp, of paper or of Paperboard		A
Chapter 50	Silk		
5001.00	Silk-worm cocoons suitable for reeling.		X
5002.00	Raw silk (not thrown): Wild silk		A
	Other		X
5003.00	Silk waste (including cocoons unsuitable for reeling, yarn waste and garneted stock).		A
5004.00	Silk yarn (other than yarn spun from silk waste) not put up for retail sale.		A
5005.00	Yarn spun from silk waste, not put up for retail sale.		A
5006.00	Silk yarn and yarn spun from silk waste, put up for retail sale; silk-worm gut.		A
50.07	Woven fabrics of silk or of silk waste.		A

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Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 51	Wool, fine or coarse animal hair; horsehair yarn and woven Fabric		A
Chapter 52	Cotton		A
Chapter 54	Man-made filaments; strip and the like of man-made textile Materials		A
Chapter 57	Carpets and other textile floor coverings		A
Chapter 58	Special woven fabrics, tufted textile fabrics; lace; tapestries; trimmings; embroidery		A
Chapter 59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use		A
Chapter 60	Knitted or crocheted fabrics		A
Chapter 61	Articles of apparel and clothing accessories, knitted or Crocheted		A
Chapter 62	Articles of apparel and clothing accessories, not knitted or Crocheted		A
Chapter 64	Footwear, gaiters and the like; parts of such articles		
64.01	Waterproof footwear with outer soles and uppers of rubber or of plastics, the uppers of which are neither fixed to the sole nor assembled by stitching, riveting, nailing, screwing, plugging or similar processes.		X
64.02	Other footwear with outer soles and uppers of rubber or plastics.		X
64.03	Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather.		
	- Sports footwear:		
6403.12	-- Ski-boots, cross-country ski footwear and snowboard boots		X
6403.19	-- Other		X
6403.20	- Footwear with outer soles of leather, and uppers which consist of leather straps across the instep and around the big toe:		
	House footwear	24%	B10
	Other	21.6%	B10
6403.40	- Other footwear, incorporating a protective metal toe-cap		X
	- Other footwear with outer soles of leather:		
6403.51	-- Covering the ankle:		
	House footwear	24%	B10
	Other:		
	Footwear for gymnastics, athletics or similar Activities		X
	Other	21.6	B10
6403.59	-- Other:		
	Slippers or other house footwear:		
	Slippers		X

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Other	24%	B10
	Other:		
	Footwear for gymnastics, athletics or similar Activities		X
	Other	21.6%	B10
64.04	Footwear with outer soles of rubber, plastics, leather or composition leather and uppers of textile materials.		
	- Footwear with outer soles of rubber or plastics:		
6404.11	-- Sports footwear; tennis shoes, basketball shoes, gym shoes, training shoes and the like		X
6404.19	- Other		X
Chapter 66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof		A
Chapter 67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair		A
Chapter 68	Articles of stone, plaster, cement, asbestos, mica or similar Materials		A
Chapter 71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin		
71.01	Pearls, natural or cultured, whether or not worked or graded but not strung, mounted or set; pearls, natural or cultured, temporarily strung for convenience of transport.		A
71.02	Diamonds, whether or not worked, but not mounted or set.		A
71.03	Precious stones (other than diamonds) and semi-precious stones, whether or not worked or graded but not strung, mounted or set; ungraded precious stones (other than diamonds) and semi-precious stones, temporarily strung for convenience of transport.		A
71.04	Synthetic or reconstructed precious or semi-precious stones, whether or not worked or graded but not strung, mounted or set; ungraded synthetic or reconstructed precious or semiprecious stones, temporarily strung for convenience of transport.		A
71.05	Dust and powder of natural or synthetic precious or semiprecious stones.		A
71.06	Silver (including silver plated with gold or platinum), unwrought or in semi-manufactured forms, or in powder form.		A
7107.00	Base metals clad with silver, not further worked than semi-manufactured.		A

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Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
71.08	Gold (including gold plated with platinum) unwrought or in semi-manufactured forms, or in powder form.		A
7109.00	Base metals or silver, clad with gold, not further worked than semi-manufactured.		A
71.10	Platinum, unwrought or in semi-manufactured forms, or in powder form.		A
7111.00	Base metals, silver or gold, clad with platinum, not further worked than semi-manufactured.		A
71.12	Waste and scrap of precious metal or of metal clad with precious metal; other waste and scrap containing precious metal or precious metal compounds, of a kind used principally for the recovery of precious metal.		A
71.13	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal. - Of precious metal whether or not plated or clad with precious metal:		
7113.11	-- Of silver, whether or not plated or clad with other precious metal	2.08%	B10
7113.19	-- Of other precious metal, whether or not plated or clad with precious metal: Of platinum, whether or not plated or clad with other precious metal	2.08%	B10
	Other	2.16%	B10
7113.20	- Of base metal clad with precious metal	2.16%	B10
71.14	Articles of goldsmiths' or silversmiths' wares and parts thereof, of precious metal or of metal clad with precious metal.		A
71.15	Other articles of precious metal or of metal clad with precious metal.		A
71.16	Articles of natural or cultured pearls, precious or semiprecious stones (natural, synthetic or reconstructed).		A
71.17	Imitation jewellery.		A
71.18	Coin.		A
Chapter 72	Iron and steel		
72.01	Pig iron and spiegeleisen in pigs, blocks or other primary forms.		A
72.02	Ferro-alloys. - Ferro-manganese:		
7202.11	-- Containing by weight more than 2% of carbon	5.04%	B10
7202.19	-- Other	5.04%	B10
	- Ferro-silicon		
7202.21	-- Containing by weight more than 55% of silicon		A
7202.29	-- Other		A
7202.30	- Ferro-silico-manganese	2%	B10

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Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	- Ferro-chromium:		
7202.41	-- Containing by weight more than 4% of carbon		A
7202.49	-- Other	3.18%	B7
7202.50	- Ferro-silico-chromium	2%	B7
7202.60	- Ferro-nickel		A
7202.70	- Ferro-molybdenum	2.64%	B7
7202.80	- Ferro-tungsten and ferro-silico-tungsten:		
	Ferro-tungsten	1.6%	B7
	Ferro-silico-tungsten	2%	B7
	- Other:		
7202.91	-- Ferro-titanium and ferro-silico-titanium	2%	B7
72.03	Ferrous products obtained by direct reduction of iron ore and other spongy ferrous products, in lumps, pellets or similar forms; iron having a minimum purity by weight of 99.94%, in lumps, pellets or similar forms.		A
72.04	Ferrous waste and scrap; remelting scrap ingots of iron or steel.		A
72.05	Granules and powders, of pig iron, spiegeleisen, iron or steel.		A
72.06	Iron and non-alloy steel in ingots or other primary forms (excluding iron of heading 72.03).		A
72.07	Semi-finished products of iron or non-alloy steel.		A
72.08	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated.		A
72.09	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated.		A
72.10	Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated.		A
72.11	Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated.		A
72.12	Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated.		A
72.13	Bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel.		A
72.14	Other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling.		A
72.15	Other bars and rods of iron or non-alloy steel.		A
72.16	Angles, shapes and sections of iron or non-alloy steel.		A
72.17	Wire of iron or non-alloy steel.		A

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
72.18	Stainless steel in ingots or other primary forms; semifinished products of stainless steel.		A
72.19	Flat-rolled products of stainless steel, of a width of 600 mm or more.		A
72.20	Flat-rolled products of stainless steel, of a width of less than 600 mm.		A
7221.00	Bars and rods, hot-rolled, in irregularly wound coils, of stainless steel.		A
72.22	Other bars and rods of stainless steel; angles, shapes and sections of stainless steel.		A
7223.00	Wire of stainless steel.		A
72.24	Other alloysteel in ingots or other primary forms; semifinished products of other alloy steel.		A
72.25	Flat-rolled products of other alloy steel, of a width of 600 mm or more.		A
72.26	Flat-rolled products of other alloy steel, of a width of less than 600 mm.		A
72.27	Bars and rods, hot-tolled, in irregularly would coils, of other alloy steel.		A
72.28	Other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel.		A
72.29	Wire of other alloy steel.		A
Chapter 73	Articles of iron or steel		A
Chapter 74	Copper and articles thereof		
7401.00	Copper mattes; cement copper (precipitated copper).		A
7402.00	Unrefined copper; copper anodes for electrolytic refining.		A
74.03	Refined copper and copper alloys, unwrought.		
	- Refined copper:		
7403.11	-- Cathodes and sections of cathodes:		
	Not more than 500 yen/kg in value for customs duty	1.8% or the difference between 500 yen and the value for customs duty per kilogram multiplied by 3/5, whichever is the less	B10
	More than 500 yen/kg in value for customs duty		A
7403.12	-- Wire-bars:		

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
	Not more than 500 yen/kg in value for customs duty	1.8% or the difference between 500 yen and the value for customs duty per kilogram multiplied by 3/5, whichever is the less	B10
	More than 500 yen/kg in value for customs duty		A
7403.19	- Copper alloys:		
7403.21	-- Copper-zinc base alloys (brass)		A
7403.22	-- Copper-tin base alloys (bronze)		A
7403.29	-- Other copper alloys (other than master alloys of heading 74.05)		A
7404.00	Copper waste and scrap.		A
7405.00	Master alloys of copper.		A
74.06	Copper powders and flakes.		A
74.07	Copper bars, rods and profiles.		A
74.08	Copper wire.		A
74.09	Copper plates, sheets and strip, of a thickness exceeding 0.15 mm.		A
74.10	Copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.15 mm.		A
74.11	Copper tubes and pipes.		A
74.12	Copper tube or pipe fittings (for example, couplings, elbows, sleeves).		A
74.15	Nails, tacks, drawing pins, staples (other than those of heading 83.05) and similar articles, of copper or of iron or steel with heads of copper; screws, bolts, nuts, screw hooks, rivets, cotter-pins, washers (including spring washers) and similar articles, of copper.		A
74.18	Table, kitchen or other household articles and parts thereof, of copper; pot scourers and scouring or polishing pads, gloves and the like, of copper; sanitary ware and parts thereof, of copper.		A
74.19	Other articles of copper.		A
Chapter 76	Aluminium and articles thereof		A
Chapter 84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof		A
Chapter 85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles		A

(Contd.)

Schedule of Japan (Contd.)

Colum 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 86	Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds		A
Chapter 87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof		A
Chapter 88	Aircraft, spacecraft, and parts thereof		A
Chapter 89	Ships, boats and floating structures		A
Chapter 90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof		A
Chapter 91	Clocks and watches and parts thereof		
91.01	Wrist-watches, pocket-watches and other watches, including stop-watches, with case of precious metal or of metal clad with precious metal.		A
91.02	Wrist-watches, pocket-watches and other watches, including stop-watches, other than those of heading 91.01.		A
91.03	Clocks with watch movements, excluding clocks of heading 91.04.		A
9104.00	Instrument panel clocks and clocks of a similar type for vehicles, aircraft, spacecraft or vessels.		A
91.05	Other clocks		A
91.06	Time of day recording apparatus and apparatus for measuring, recording or otherwise indicating intervals of time, with clock or watch movement or with synchronous motor (for example, time-registers, time recorders).		A
9107.00	Time switches with clock or watch movement or with synchronous motor.		A
91.11	Watch cases and parts thereof.		A
91.13	Watch straps, watch bands and watch bracelets, and parts thereof.		
9113.10	- Of precious metal or of metal clad with precious metal		A
9113.20	- Of base metal, whether or not gold- or silver-plated		A
9113.90	- Other:		
	Of leather or of composition leather:	16%	B10
	Containing furskin or combined or trimmed with precious metal, metal clad with precious metal or metal plated with precious metal, precious stones, semi-precious stones, pearls, coral, elephants' tusks or Bekko		
	Other	10%	B10
Chapter 92	Musical instruments; parts and accessories of such articles		A

(Contd.)

Schedule of Japan (Contd.)

Column 1 Tariff item number	Column 2 Description of goods	Column 3 Base Rate	Column 4 Category
Chapter 93	Arms and ammunition; parts and accessories thereof		A
Chapter 94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like; prefabricated buildings		
94.01	Seats (other than those of heading 94.02), whether or not convertible into beds, and parts thereof.		
9401.10	- Seats of a kind used for aircraft		A
9401.20	- Seats of a kind used for motor vehicles		A
9401.30	- Swivel seats with variable height adjustment		A
9401.40	- Seats other than garden seats or camping equipment, convertible into beds		A
	- Seats of cane, osier, bamboo or similar materials:		
9401.51	-- Of bamboo or rattan		A
9401.59	- Other		A
	- Other seats, with wooden frames:		
9401.61	- Upholstered		A
9401.69	- Other		A
	- Other seats, with metal frames:		
9401.71	- Upholstered		A
9401.79	- Other		A
9401.80	- Other seats		A
94.02	Medical, surgical, dental or veterinary furniture (for example, operating tables, examination tables, hospital beds with mechanical fittings, dentists' chairs); barbers' chairs and similar chairs, having rotating as well as both reclining and elevating movements; parts of the foregoing articles.		A
94.03	Other furniture and parts thereof.		A
94.04	Mattress supports; articles of bedding and similar furnishing (for example, mattresses, quilts, eiderdowns, cushions, pouffes and pillows) fitted with springs or stuffed or internally fitted with any material or of cellular rubber or plastics, whether or not covered.		A
94.05	Lamps and lighting fittings including searchlights and spotlights and parts thereof, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like, having a permanently fixed light source, and parts thereof not elsewhere specified or included.		A
9406.00	Prefabricated buildings.		A

(Contd.)

Schedule of Japan (Contd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
Chapter 95	Toys, games and sports requisites; parts and accessories thereof		A
Chapter 96 96.01	Miscellaneous manufactured articles Worked ivory, bone, tortoise-shell, horn, antlers, coral, mother-of-pearl and other animal carving material, and articles of these materials (including articles obtained by moulding).		A
9602.00	Worked vegetable or mineral carving material and articles of these materials; moulded or carved articles of wax, of stearin, of natural gums or natural resins or of modelling pastes, and other moulded or carved articles, not elsewhere specified or included; worked, unhardened gelatin (except gelatin of heading 35.03) and articles of unhardened gelatin.		A
96.03	Brooms, brushes (including brushes constituting parts of machines, appliances or vehicles), hand-operated mechanical floor sweepers, not motorised, mops and feather dusters; prepared knots and tufts for broom or brush making; paint pads and rollers; squeegees (other than roller squeegees).		A
9604.00	Hand sieves and hand riddles.		A
9605.00	Travel sets for personal toilet, sewing or shoe or clothes cleaning.	5.28%	B10
96.06	Buttons, press-fasteners, snap-fasteners and press-studs, button moulds and other parts of these articles; button blanks.		A
96.07	Slide fasteners and parts thereof.		A
96.08	Ball point pens; felt tipped and other porous-tipped pens and markers; fountain pens, stylograph pens and other pens; duplicating stylos; propelling or sliding pencils; penholders, pencilholders and similar holders; parts (including caps and clips) of the foregoing articles, other than those of heading 96.09.		A
96.09	Pencils (other than pencils of heading 96.08), crayons, pencil leads, pastels, drawing charcoals, writing or drawing chalks and tailors' chalks.		A
9610.00	Slates and boards, with writing or drawing surfaces, whether or not framed.		A
9611.00	Date, sealing or numbering stamps, and the like (including devices for printing or embossing labels), designed for operating in the hand; hand-operated composing sticks and hand printing sets incorporating such composing sticks.		A
96.12	Typewriter or similar ribbons, inked or otherwise prepared for giving impressions, whether or not on spools or in cartridges; ink-pads, whether or not inked, with or without boxes.		A

(Contd.)

Schedule of Japan (Concl'd.)

Column 1	Column 2	Column 3	Column 4
Tariff item number	Description of goods	Base Rate	Category
96.13	Cigarette lighters and other lighters, whether or not mechanical or electrical, and parts thereof other than flints and wicks.		A
9614.00	Smoking pipes (including pipe bowls) and cigar or cigarette holders, and parts thereof.		A
96.15	Combs, hair-slides and the like; hairpins, curling pins, curling grips, hair-curlers and the like, other than those of heading 85.16, and parts thereof.		A
96.16	Scent sprays and similar toilet sprays, and mounts and heads therefor; powder-puffs and pads for the application of cosmetics or toilet preparations.		A
9617.00	Vacuum flasks and other vacuum vessels, complete with cases; parts thereof other than glass inners.		A
9618.00	Tailors' dummies and other lay figures; automata and other animated displays used for shop window dressing.		A

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