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JOURNAL OF INDIAN SCHOOL OF POLITICAL ECONOMY is devoted to the study of the Indian Economy, Polity and Society. Emphasis is primarily on reviewing developments since Independence with roots in the British administration where relevant. However, papers with a similar focus but not necessarily reviewing developments since Independence will also be considered. When a review is based on statistical data, full statistical base data are presented as far as possible.

ANNOUNCEMENT

Correspondence regarding subscription to the Journal, etc., should be addressed to the Director, Indian School of Political Economy, 'Arthabodh', 968/21-22, Senapati Bapat Road, Pune-411 016 (India). e-mail: ispe@vsnl.net. Details regarding subscription rates are given on the backside of the Contents page.

Editorial communications should continue to be sent to the Editor, *Journal of Indian School of Political Economy*, at the above address. Comments on articles and documentation appearing in the Journal are welcome.

JOURNAL OF INDIAN SCHOOL OF POLITICAL ECONOMY

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DEDICATION - DR. GANGADHAR DARBHA

Dr. Gangadhar Darbha most shockingly passed away all of a sudden on September 11, 2015. While a few weeks before that he was put on dialysis, when I enquired about it to him over the phone just a week before his sad demise he had told me that he was doing well and that the dialysis was going to be a temporary treatment and was expected to be discontinued after a year. A very generous and helpful friend of many of us was suddenly no more.

Born on 30.08.1969, Gangadhar joined the Gokhale Institute of Politics and Economics for his M.A. in economics, after doing his B.A. from Andhra Loyola College, Vijayawada. During his M.A. days at Gokhale Institute itself, all of us teachers there had marked him as a very exceptional student, chasing teachers with difficulties from original journal articles. He went on to complete his Ph.D. at Indira Gandhi Institute of Development Research in 1999, on the theme of "Role of Capital Market Imperfections in Monetary Transmission Mechanism: Some Indian Evidence" under Professor Kirit Parikh's guidance. After a post-doctoral stint at the Wharton School of Finance, Gangadhar launched himself in a bristling research and operational career in investment banking and monetary and macro economics. His areas of professional expertise included fixed income analytics, algorithmic trading and high-frequency quantitative trading strategies, quantitative risk capital allocation strategies, and macro-economic modeling. He worked in a wide range of academic and financial institutions. He was employed in Royal Bank of Scotland, ABN AMRO and Morgan Stanley in London; Indian School of Business, Hyderabad, National Stock Exchange India Ltd., Mumbai; National Institute of Public Finance and Policy, New Delhi; University of Pretoria, South Africa; and Free University, Amsterdam. He was a member of Committee on Financial Benchmarks and the Urjit Patel committee on Monetary Policy framework set up by the RBI. He was also a member of the academic council of BSE Institute Limited and a regular columnist in Mint/Wall street, Financial Express and Economic Times. This rich and varied experience had given him a rare insight into the intricate working of domestic and international money and finance.

At the time of his sudden demise, he had just resigned as Executive Director, Nomura Securities, heading Algorithmic Trading Strategies and Execution Services, to join as Advisor in the Reserve Bank of India to work on an important two-year assignment to unearth possible fixing of the exchange rates of the Indian Rupee by some global bankers.

In this issue of the journal, we publish Dr. Gangadhar Darbha's comments on Professor Nachane's paper on Financial Stability, in which Gangadhar addresses the question as to whether private interests can drive us towards optimal social outcome when choices made by financial institutions are involved and considers market and institutional design towards achieving this object.

In Gangadhar's untimely demise, the profession has lost a brilliant young economist, with immense potential and possibilities. All those possibilities have now simply evaporated. As a mark of our respect to his memory, we dedicate this issue of the journal to his memory.

Vikas Chitre
Editor

BACKGROUND TO THE JOURNAL ISSUE

Sometime back the Indian School of Political Economy decided to organise public lectures by eminent scholars on themes of current interest of the speaker's choice. It was visualised that the guest speaker would make a prepared research paper on the theme available for circulation in advance to three or four invited scholars for preparing written comments on it, which were also to be presented immediately following the lecture by the guest speaker. It was expected to subsequently publish the final revised versions of the lecture and the comments on it in the *Journal of Indian School of Political Economy.*

Accordingly the School organised a public lecture on February 7, 2015, by Professor Dilip M. Nachane, then Emeritus Professor at Indira Gandhi Institute of Development Research, and a Member of the Economic Advisory Committee of the then Prime Minister. Professor Nachane selected the theme, "Safeguarding Financial Stability in An Era of Financial Fragility: An Indian Perspective". The three expert discussants were invited to comment on Professor Nachane's paper, namely, Shri Deepak Mohanty, Executive Director of the Reserve Bank of India, Professor Ashima Goyal of Indira Gandhi Institute of Development Research, Mumbai, and Dr. Gangadhar Darbha, then Executive Director, Nomura Securities. Thus, the three eminent Discussants represented expertise and perspective, from the regulator institution, an academic institution and an active market participant, respectively. We were most fortunate to have the country's foremost macroeconomist, Professor Mihir Rakshit, former Professor of Presidency College, Kolkata and Indian Statistical Institute, Kolkata, and Director, ICRA Money and Finance Project, as the Chief Guest and the Chairperson for the occasion. It is needless to add that the views presented by all the speakers were their personal views and not these of the institutions which they have been associated with.

We are very pleased to publish together in the present issue of the journal, the final, carefully revised and extended versions of the papers and commentaries, presented in the above-mentioned function. Unfortunately, and most sadly, on account of the untimely demise of Dr. Gangadhar Darbha on 11 September, 2015, while the journal issue was being put together (see the Dedication), his paper published here is only the version prepared by us based on the recorded transcript of his speech and his Power Point Presentation. Professor Nachane also painstakingly prepared written Replies to all the comments on his paper made by the Discussants and the Chairperson, which we have published in the present issue of the journal as well.

The Documentation section includes excerpts from important relevant Reports on Financial Stability, namely, the de Larosière Report, the International Monetary Fund's Global Stability Report for October 2015 and the Reserve Bank of India's Financial Stability Report, 2015. We have also included Annex 1.1. on Global Financial Stability Map: Construction and Methodology of the IMF Global Financial Stability Report, 2009, and Annex 2 of Reserve Bank of India Financial Stability Report in order to reflect the methodologies for constructing the IMF's global financial stability map and the RBI's banking stability map, respectively.

In addition to the excerpts of the relevant reports, we have also added Data tables and Charts on variables relevant for assessing the financial stability situation world-wide and in selected countries. In selecting these variables, we were guided by the indicators used in the construction of global financial stability map by IMF and banking stability map by the RBI and the ready availability of data. The Standard & Poor country ratings were used to arrange the selected countries for reporting the data and for grouping them into different charts, where necessary to avoid cluttering of charts.

We are grateful to the authors of the papers for their contributions. The editorial and research assistance provided by Mrs. Manasi Phadke, who, in particular, suggested the use of Standard & Poor country ratings as above, is highly appreciated.

ON FINANCIAL STABILITY- OPENING REMARKS[1]

Vikas Chitre

The Genesis of the Global Financial Crisis:

The following elements primarily in the context of the US economy played critical roles in the origin and the spread all over the world of the Global Financial Crisis of 2008.

(i) The economic boom since 2000 was sustained and over-extended by elastic finance due to lax regulation of the banking system (with a loose monetary policy under Greenspan in the US). The elastic finance was further fostered by (a) efforts for providing inclusive housing finance through government-sponsored institutions like Fannie Mae and Freddie Mac, which went out of hands and ended in the sub-prime crisis; and (b) global imbalances between saving and investment (and hence in the current account balances), with excess saving in the emerging economies keeping a downward pressure on the global interest rates.

(ii) Almost unregulated activities of what have been called shadow banks, including the investment banks like Lehman Brothers and Bear Stearns;

(iii) Financial innovations bordering on misadventure leading to opaque credit derivatives and securitisation;

(iv) The not necessarily dependable ratings done by the rating agencies, which not only failed to assess correctly the systemic risks associated with the possible de-leveraging by the financial institutions which held the highly risky portfolios, but also bolstered the ratings of various financial instruments and financial institutions by uncritically or even fraudulently accepting incorrect information supplied by their clients [Kindleberger and Aliber, 2011].;

(v) The remuneration structures of executives in key decision-making positions in financial institutions linked to short-run profits.

The crisis spread rapidly throughout the world because of: (a) massive international financial flows; and (b) the much closer global trade links, which prevail now.

Most of these elements are going to be around in one form or another in developing as well as developed countries.

New Initiatives since the Global Financial Crisis:

The deep and prolonged recession which followed the Global Financial Crisis has directed the attention of the world community towards developing appropriate financial architecture and regulation of national and international financial system, with a view to incorporating macro-prudential regulation as well as strengthening the existing micro-prudential regulation. The setting up of the Financial Stability Board through the initiative of the G-20, to promote financial stability (with a membership of G-20 countries and four more, including India, and international financial institutions like the IMF, the World Bank and the BIS), the Dodd-Frank Act, legislated by the US Congress in 2010, and the introduction of Basel III, are instances of the steps already initiated in this direction.

While Basel III norms will primarily cover banks and may also be applied to Global Systemically Important Insurance companies, provisions for supervision of a wide range of systemically important non-banking institutions

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1. Author is grateful to Professors Dilip Nachane and Nilakantha Rath for very thoughtful comments on an earlier draft of this note, which made it more comprehensive and improved its content. Needless to say that he alone is responsible for the inadequacies which still remain in these Remarks.

and financial entities, limits imposed on the amount of shares in hedge funds and private equity firms which banks can hold, on the risky derivatives which banks can hold and the restrictions placed on compensation packages of mortgage originators and requirements on them to hold 5 per cent of the mortgages which they originate, under the Dodd-Frank Act, cast a much wider net and may be more useful. [See Kindleberger and Aliber, 2011] Though the Dodd-Frank Act is obviously an initiative limited domestically to the US, it may help contain the impulses of possible future crises emanating from the world's largest financial economy and also serve as a model which can be considered by the other countries as well.

The International Monetary Fund has started bringing out regularly an assessment of the current global financial situation from the point of view of global financial stability through Global Financial Stability Reports. Many central banks, including the Reserve Bank of India, similarly publish country-specific Financial Stability Reports and conduct stress tests of banks and major non-bank financial institutions. In 2010, the Government of India has set up the Financial Stability and Development Council to coordinate the policies of the regulators of the financial sector in the economy (the Ministry of Finance, the Reserve Bank of India, the Securities and Exchange Board of India, the Insurance Regulatory and Development Authority of India, and the Pension Fund Regulatory and Development Authority) with a view to ensuring financial stability and promoting financial development. In spite of these multifarious initiatives, the problem of financial instability is not completely resolved at all as yet.

There have been suggestions and attempts to extend the scope of pure monetary policy to explicitly include concerns of financial stability in the formulation of monetary policy. Woodford [2011] has extended the familiar Taylor Rule for conducting monetary policy through changes in the policy rate (short term rate), to address the concerns about financial stability. He recommended including in the Taylor Rule the premium on credit default swaps in addition to the output gap and difference between current inflation and the target inflation rate. This means raising the policy rate beyond what would be required otherwise, if financial stability is threatened. However, Svenssone [2014a, 2014b] evaluating Sweden's experience of the extended Taylor Rule by its Central Bank, the Riksbank, has argued that such leaning back against wind has not proved sufficiently effective. The effect of the corresponding policy rate on housing indebtedness has been very weak and its further effect in terms of mitigation of risk associated with household debt miniscule. Indeed, the lower than otherwise desired level of inflation has increased the real burden of household debt and, if at all, increased the risk associated with household debt.

In a recent paper, Acemoglu et.al [2015] point out that greater denseness of financial network may help dampen financial contagion when the financial shock is smaller than a threshold by permitting an optimum use of the available liquidity of the system, but greatly enhances the contagion when the financial shock exceeds the threshold defined by the available liquidity in the system. Thus, the Central Bank's lender of the last resort function in quick and timely provision of liquidity in the system is of critical importance in controlling the contagion. But that, in turn, raises the questions of moral hazard and bailouts involved in the process.

The Indian Context: These issues are of current relevance to the Indian economy as well. The following initiatives and developments bring this out:

(i) The RBI is considering modernizing monetary policy framework. The Urjit Patel

Committee, appointed by the RBI for this, has recommended flexible inflation targeting for the purpose.

As a critique of the Urjit Committee Report, it may be pointed out that the Urjit Patel Committee Report takes a somewhat ambivalent position on the impact of inflation on growth. It states that "persistently high inflation adversely impacts economy's allocative efficiency and impedes growth". Elsewhere, it fixes a higher end-point of the range for target inflation rate at 6.2 percent, claiming that to be the threshold inflation rate for combined CPI, applying Akerlof et.al. [2000] logic for a backward bending *long-run* Phillips Curve. It also states that "the output gap was fairly close to zero" during the period when the CPI inflation was at 4 percent. The Report presents no estimate of how much growth would be lost if CPI inflation is 6.2 percent rather than 4 percent. While it may be argued that the loss of growth would be much less when inflation expectations are anchored by moving to inflation targeting, the following comparison between the US and the Canadian experiences is worth paying attention to. Fortin, Akerlof, Dickens and Perry [2002] compared the Canadian experience of strict target of 2 percent inflation rate with the US dual goal of low inflation and low unemployment. Annual consumer price inflation, excluding food and energy called core inflation, ranged between just over 1 percent to just over 2 percent in Canada and between 2 and 3 percent in the US, but, surprisingly, the unemployment rate remained much lower between 4 and 6 percent in the US compared to between 7 and 11.4 percent in Canada.

(ii) Whereas a major source of financial instability in the advanced countries may be the excessive and unrestricted development of finance, for developing countries like India it is likely to be inadequate and lopsided development of finance, for example, lack of availability of long-term finance in general and infrastructure finance in particular; inadequate development of corporate debt market; excessive dependence of small and medium industries on banks and of the unorganised sectors on informal finance. The burden of financing infrastructure has created a serious problem of asset-liability mismatch and significantly increased the NPAs, particularly of nationalised banks, in turn, also posing a threat to financial stability.

(iii) We are in the process of breaking new grounds in financial inclusion through schemes like Jan Dhan Yojana. We are trying to experiment with new types of banks with mandates mainly for expanding the payments mechanism.

Will these initiatives strengthen or weaken financial stability in the country?

Outstanding Current Concerns:

At the international level, the US President has claimed that that country has come out of the shadow of the crisis. But has that economy successfully scaled down the "fiscal cliff"? High household debt levels and government deficit and current account deficit along with imbalances in the current accounts of different countries are still major worries. Euro zone has serious economic and political problems with serious challenges of avoiding loan defaults and instabilities in currency and bond markets, threatened due to the now on and now off possibility of the exit of one or other member country, such as Greece, from the euro area.

The falling price of oil may be a boon to oil importing countries. But it is creating huge fiscal problems and stagnation or recession of incomes in the oil exporting countries. If these countries try to adjust their exchange reserves greatly, could that de-stabilize the world exchange markets? Also, how would the oil importing countries adjust their economies when oil price starts rising again, as is expected?

Again, at the international level, the IMF, which was designed to meet the challenges of trade imbalances, would not have been/will not be able to do the firefighting by itself alone in the face of any future possible global financial turmoil of the type of the recent Global Financial Crisis. With globalisation, not only has international trade as proportion of the world GDP as well as the proportions of it in many countries greatly increased, but the shares of world trade and the trade imbalances of a number of countries have also greatly altered. (See Table 19)[2] Besides, of course, the international capital flows have expanded hugely. The governance and the conduct of operations of the IMF are therefore in the protracted process of undergoing consequent necessary reform.

Overall Message Emanating from the Papers-an Assessment

The papers included in this issue of the journal exhaustively examine the multifarious aspects of the analytical issues relating to the question of financial stability, the developments emanating from the global concern for financial stability provoked by the Global Financial Crisis and the regulation of the financial system necessary for financial stability. Comprehensively analysed in the paper by Nachane, and effectively amplified and qualified in the papers by Mohanty, Goyal, Darbha and Rakshit, commenting on Nachane's paper, and Nachane's responses to these comments, which follow, the ever-widening scope of the agenda for the policy reforms necessary for achieving financial stability, involves:

(i) going beyond the objectives of growth and commodity price stability of monetary policy to encompass the question of financial stability which, in particular, necessitates monitoring and supervision to address emergence of asset price inflation and asset price bubbles. However, as argued by Rakshit "It cannot be sufficiently emphasised that for containing sectoral bubbles and imbalances the central bank needs to curb financial flows to the overheated asset market, not impose restrictions on credit in general." (p. 428); In fact, Rakshit points out that "real and/or financial sector imbalances even when they are not accompanied with a cumulative rise in asset prices" could "erode resilience of banks and end up in systemic financial problem" and such imbalances "are required to be addressed through sector-specific rather than macroeconomic monetary measures" (p. 429) not only, indeed not primarily by the central banks, as pointed out by Rakshit, but by the government. Recall the massive business cycles caused by the steep increases in oil prices in 1973 and 1979, which compressed the aggregate demand of the net importers of oil and subsequently the world over;

(ii) going beyond monetary policy to monitoring, regulating and supervising the entire financial sector;

(iii) "structured and continuous communication with market participants" (Mohanty p. 398) and forward guidance on the part of the regulators;

(iv) strengthening standards of capital adequacy and the quality of capital as well as assets of banks and other financial institutions to take into account macro-prudential as well as micro-prudential norms to address systemic as well as institution-specific risks;

(v) designing of the incentive structure for the executives in the financial institutions, so that the risk-takers' compensations are based on maximising not the current profits but the "average profits" over a number of future years [Darbha, Pp. 425-426];

2. All page references here are to those in the present issue of the journal and all references to Tables and Figures are to those in the Statistical section in this issue.

(vi) -coordinating the regulatory and supervisory policies and actions of the central bank and other financial regulatory agencies. But despite wide-ranging suggestions by the Financial Sector Legislative Reforms Commission for reforming the regulatory structure, as correctly argued by Goyal (Pp. 406-408), "Changing the existing balance of power towards politicians in search of soft options will only aggravate these issues. Only marginal changes are required in the Indian regulatory structure." (p. 408) In particular, on the controversial proposal for setting up a Public Debt Management Agency, separate from the monetary authority, Goyal argues that "..., the regulatory division proposed with all trading to go to a new Unified Financial Agency will split regulation of debt products and of credit. The government securities market could be set back, and the conduct of monetary policy harmed" (p. 407).;

(vii) ensuring independence of the regulators from the government as well as the market participants (Nachane p. 373);

(viii) managing international capital flows;

(ix) developing adequate architecture for coordinating the regulation and stabilisation policies and actions of national and international regulators.

Comprehensive as the papers are, the following points still make one uneasy about having ensured a future of global financial stability, and would warrant further consideration:

It is true that macroeconomic stability by itself may not ensure financial stability. Indeed, *"monetary stability* could not only co-exist with *financial instability* but there could also occasionally be a causal nexus from the former to the latter". (Nachane, p. 364). However, it also needs to be emphasised that the fault lines in the macro economy and the underlying sources of macroeconomic instability can gravely raise the probability of the confluence of macroeconomic and financial crises, and of the severity and duration of the ensuing recession. History tells us that the Great Recessions or the Great Depressions in the past have occurred precisely under these conditions. Even at the present juncture, for example, the consequences for the global economy of the steep declines in oil price or the difficulty in the structural adjustments in Euro zone or the slowing down of the Chinese economy in the face of its "re-balancing" could be severely aggravated if these underlying sources of macroeconomic instability happen to engender financial instability by causing turmoil in the currency, bond and stock markets.

Even more certainly " ... the viability of the financial sector is crucially dependent on macroeconomic policies" (Rakshit, p. 429). The current persisting problems of the banks and the other financial institutions are quite likely due to the below average growth rates of GDP after 2011.

Regulating growth and build-up of one type of investment and asset prices in one sector or one country drives funds into markets for other assets and for the same assets in other countries. Regulating one class of shadow banks leads to emergence of other kinds of shadow banks, thus we often have shifting nodes of financial instability, making it difficult to monitor and regulate them. "... when regulated firms are forced to hold more costly capital than what the market requires, they have incentive to shift activity outside the regulatory perimeter" (Mohanty, p. 398) making "cycle-proof regulation" difficult.

An "imposition of a minimum haircut requirement at the level of asset-backed securities of all investors, not just banks... can constrain short-term leverage for all investors taking position in credit assets, thus restraining shadow

banks also" (Goyal, p. 409). Goyal argues that experience of Lehman Brothers with a leverage of 30 and Bear Sterns with a leverage of 33 at the time of the onset of the global financial crisis has shown that a leverage of 33 implied by Basel III norms is precariously inadequate, and endorses a leverage ratio as low as 5 times. While this makes sense, it is easy to see that a universal capping of all investors leverage at 5 means a substantial capping on all financial intermediation.[3] Goyal even brings capping of leverage centre stage of the reform of international financial architecture by suggesting that the emerging economies should press for reducing financial over-leveraging in order to reduce the volatility of international capital flows. She also refers to proposals for taxing financial transactions or financial activities or financial services and financial derivatives, albeit at very low rates (inviting global co-ordination to avoid double taxation as well as double non-taxation). While these measures may be desirable to usher in financial stability, containing financialisation in this manner in the heydays of financial capitalism is going to be easier said than done.

In view of this, the probability of future financial crises would always remain positive, and therefore, considerably greater attention needs to be provided to reducing costs of financial failures, as suggested by Nachane (Pp. 379-80). Notwithstanding the efforts to put forth the Basel III norms to reduce systemic risk, the inherent limitations of such an exercise [See Acharya, 2011; cited by Nachane on p. 381] reflected in the aggravation of systemic risk at the aggregate level and over time, also point to the inadequacy of Basel III kind of measures in warding off future financial crises. Therefore, continuous monitoring of incipient threats to financial stability through periodic systemic risk surveys, financial stability reports and banking financial stability maps as presented by the IMF and the RBI [See the Documentation section of this issue of the journal] is essential to provide the necessary early warning systems.

Indeed, as Schumpeter argued long time back, capitalist development unfolds through business cycles caused in the process of clustering of innovations resulting from entrepreneurial activity. Under financial capitalism, an important driving force working for increasing productivity and growth is the continuous stream of innovations in financial instruments, financial institutions and financial markets, aimed at a better matching of the investors' and savers' liquidity and risk preferences. For example, the large credit supply based on these financial innovations also created the world-wide boom and high growth of 2003-2008. Innovations such as zero-balance accounts, pure payment banks and mobile banking can promote the much desired financial inclusion necessary for a wide dispersal of the benefits of growth. However, the line between enterprise, experimentation and innovation on the one hand and greed and misadventure on the other is very thin. How to judiciously regulate financial development without discouraging financial innovation altogether and blocking financial

3. Recall the 100 per cent reserve requirement for all chequable or demand deposits by the banks accepting such deposits, initially advocated by Paul H. Douglas, Irving Fisher, Frank D. Graham, Earl J. Hamilton, Willford I. King and Charles R. Whittlesey in the wake of the Great Depression of the 30s, and later strongly recommended by Milton Friedman, which effectively would place a cap of unity on all money (and credit) creation by banks, effectively removing altogether the ability of the banks to create money. Money supply changes being the main cause of business cycles according to him, Friedman had proposed a constant rate of growth of money supply to ensure stable macroeconomic conditions, and 100 per cent reserve requirements would make it easier for the central banks to better regulate the growth of money supply. Recall also how the early deposit banking was indeed a 100 per cent reserve banking, which transformed itself into the present day fractional reserve banking as the bankers started exploiting the profit opportunities involved in the much lower probability than unity of withdrawal of deposits during any given short period. Indeed, monetary targeting on the lines proposed by Milton Friedman became unworkable, among other reasons, because the demand for money was rendered unstable very soon on account of the growth of financial innovations introducing various close money substitutes. Monetary policy making then shifted to using interest rate variable in place of the control of monetary reserves, and monetary targeting was replaced by inflation targeting.

inclusion is the key question that we need to answer in promoting financial stability without unduly hurting growth.

A message coming out loud and clear from the papers is the need and the success of international co-operation and co-ordination of the stabilisation policies. World opinion has now moved towards firmly accepting the futility of competitive protective tariffs. The internationally synchronised quantitative monetary easing and the near-zero policy rates in major countries prevented the recession turning into a depression.

Because of the peculiar circumstance in which the banks and the financial institutions happened to have been trapped with large stocks of "toxic assets" most major central banks adopted an unconventional policy of purchasing such assets, thus deviating from the normal policy of conducting open market operations through government securities. But the dominance of New Consensus Macroeconomics led to a dependence on easy money policy rather than expansionary fiscal policy. "The argument that in a balance sheet recession when the private sector is deleveraging, and there is a possibility of a debt deflation trap, the government must spend has validity." (Goyal, p. 418). Long inside lags, weak effects of tax cuts due to permanent income hypothesis, vertical long-run Phillips curve, monetarists' claim of vertical LM curve, crowding out of private expenditures by government expenditures, small fiscal multipliers with government budget constraints, Clinton's deficit-*reduction* package (long-run fiscal consolidation) for stimulating aggregate demand by lowering long-term interest rates by "credible reduction in *expected future* budget deficits", and the Ricardian Equivalence of tax financed and bond financed government expenditure- all these ideas which surfaced over the years through the academic and fiscal policy history of the US and the other western developed countries have weakened the main-stream economists 'and policy makers' belief in the efficacy of fiscal policy as a stabilisation tool [see Blinder, 2004]. Yet, the slow recovery out of the recession due to the banks and other financial institutions being firmly caught in a prolonged liquidity trap naturally raises the question as to whether an expansionary fiscal policy by the governments of the major global countries (accompanied with an accommodative monetary policy) would not have induced a more rapid recovery.

The present value constraint is the crux of Life cycle or permanent income hypothesis, or Ricardian Equivalence. As pointed out by Nachane (p. 360), the transversality or the closing condition of the inter-temporal (stochastic) optimisation by a representative individual, that all debts are settled in full, may not be satisfied in all contingent states, invalidating the present value budget constraint, and create circumstances of general debt deflation everywhere. Equally possible failure of the present value budget constraint may occur when the economic agents cannot borrow against future anticipated receipts, and find their spending to be liquidity constrained in the current period. "If liquidity constraints are binding, ..., current income will matter more than future income because it loosens liquidity constraints. In that case, a debt-financed tax cut will raise spending". [Blinder, 2004, p. 19]. After a detailed econometric study of the quarterly time series data from 1954 to 1984 on real purchases of nondurable goods and services, in which they split current real wealth and current income between anticipated (given by their respective expected values, given as the one-period-ahead forecasts of these variables based on a vector auto regression for these variables which includes lagged values of all variables influencing them) and unanticipated (given by the difference between their actual and the expected values), conclude that: "It seems to be mainly unexpected, not expected, changes in income and wealth that cause consumption to change..." Further, their

examination of the Barro (Ricardian Equivalence) hypothesis 'clearly implies that a debt-financed tax cut raises consumptions substantially'. [Blinder and Deaton, 1985]. Also, as is well-known, even under permanent income hypothesis, consumers may increase their saving in response to temporary increases in disposable income by spending on durables, and consumer *expenditure* reacts more than consumption [Blinder, 2004, p. 20]. Indeed, in the context of the zero bound on nominal interest rate 'a combined monetary-fiscal effort-deficit spending or tax cuts financed by printing money-may be needed. Indeed, fiscal policy might well be the senior member of such a partnership, since a liquidity trap not only reduces the power of monetary policy but also increases the power of fiscal policy (because there is little or no "crowding out" from higher interest rates'. [Blinder, 2004, p. 38]. In his paper in the present issue, Rakshit argues that in the absence of a fiscal stimulus, the easy money policy merely led to exchange rate depreciation which did 'little to boost global demand for goods and services' (p. 430, also see Figure 18), leading to a lack-lustre performance of the global economy after 2011.

To be sure, most major countries showed high, though gradually tapering, fiscal deficits during the post-crisis years (see Table 10 and Figure 10). It is possible that these fiscal deficits represent "the mutually re-inforcing effects of fiscal consolidation everywhere" which "magnify the loss of employment and output and tend to widen budget deficit in all countries" (as hypothesised by Rakshit (p. 430)) rather than efforts at providing fiscal stimuli. In any case, the large fiscal deficits after the crisis (whether representing active fiscal policy actions or passive outcome of contracting output due to fiscal consolidation) also raised the government debt-GDP ratios above average for most countries (see Table 11) which possibly must have also ruled out raising fiscal deficits further for providing additional fiscal stimulus.

IMF immediately after the crisis initially strongly recommended expansionary fiscal policies to ward off spread of recession, but soon reverted to its traditional scepticism about the efficacy of counter-cyclical fiscal policy and began to advocate strict fiscal consolidation after 2011 [Ban, 2014]. The US and the UK ran large fiscal deficits during the post crisis years (see Figure 10). The average GDP growth rate for the US was the highest among the developed countries for the years 2009-2014, and that of the UK was the same as that for Germany which followed a much tighter fiscal policy (see Table 13). In India, the Government allowed the fiscal deficits to rise above the time path prescribed by the Fiscal Responsibility and Budget Management Act, for a few years after the crisis. Notably for India, the post-crisis GDP growth rates have remained higher than average for the period from 1991 to 2014. (See Table 13) The fiscal deficits did, however, also raised the interest rates (and possibly added to inflation heightened and sustained by supply - side shocks) and made it difficult for the Reserve Bank to lower the policy rates.

While the focus of discussion in the papers included here has been primarily on monetary and financial policies, there is much scope for re-examining and re-emphasising the working of fiscal policy and a better co-ordination of monetary and fiscal policies for macro-economic stabilisation, especially when the interest rates are low in the context of developed economies and when the supply shocks are at work in the context of the developing economies. In the former case, low *nominal* interest rates make it difficult to lower these rates further, hence make it more difficult to operate monetary policy. On the other hand, when credit and private spending show low growth rates even when the real interest rates are low (as was the case during the post-crisis years), it is precisely the situation in which expansionary fiscal policy may be necessary for stimulating the economy. It is only when even the *real* (post-tax)

interest rate on government borrowing, adjusted for, that is, *reduced* by, the return on government investment, cannot be lowered below the growth rate of real GDP [see Rakshit, 2000] or alternately, when the latter cannot be raised above the former that the government would find it difficult to carry larger fiscal deficits lest the government debt GDP ratios should worsen and the interest burden should mount still further. In the context of the developing economies, plagued by supply constraints, for example, in respect of the food sector, it may be necessary to go beyond purely Keynesian monetary and fiscal policies. To be sure, the sticky food inflation during recent several yeas was driven by both demand pull facto0rs on account6 of growth of real private disposable income, including rural wage incomes, money growth, fiscal deficits, Growth of world GDP, global commodity price trends and inflationary expectations, and also the supply side factors such as slow growth of food production, minimum support prices (Gopakumar and Pandit, 2012], and lack of post harvest and supply chain infrastructure. Therefore, pure monetary policy had a role in containing growth of demand and preventing spill-over of existing food inflation in the wage-price spiral. However, these policies must be extended to include appropriate sectoral tax, government expenditure/investment and credit policies aimed at relaxing the supply constraints impinging on the constrained sector or sectors. It may also be necessary to supplement these policies with reforms of the economy and the financial sector, for achieving the same purpose.

The critical analyses in the papers and the material in the Documentation and Statistical sections included in this issue will attract further attention of researchers to the above-mentioned and other issues relating to the important goal of financial stability.

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SAFEGUARDING FINANCIAL STABILITY IN AN ERA OF FINANCIAL FRAGILITY: AN INDIAN PERSPECTIVE

D.M. Nachane

The recent global crisis has brought several issues to the forefront of macro-policy analysis including most prominently (i) pro-cyclicality of bank capital regulation (ii) role of asset bubbles (iii) high social costs of financial failures and (iv) high leverage of financial institutions. It has been realised by the global community that tackling these problems calls for a globally coordinated approach in which both national regulators and multilateral global institutions/agencies will have to play a vital role. The focus of this paper is on the role of national regulatory and supervisory authorities, with special emphasis on seven key policy areas, viz., (i) making monetary policy respond to asset prices (ii) strengthening and expanding the scope of regulation and supervision (iii) controlling leverage of financial institutions (iv) dampening pro-cyclicality of capital requirements (v) reducing costs of financial failures (vi) devising market incentives for prudent behaviour and (vii) a shift from micro-prudential to macro-prudential regulation. We examine to what extent the official financial supervisory and regulatory authorities in India have fulfilled this role successfully. In the latter part of the paper, some attention is also devoted to the role of global multilateral institutions in ensuring financial stability.

1. Recent Global Crisis : A Brief Overview

The recent global crisis has thrown into turmoil both the theoretical perceptions about how the macro-economy works as well as several of the well-entrenched notions about how policy (especially monetary policy) should be conducted and towards what goals. For a better appreciation of these consequences, it is appropriate to delve (albeit briefly) into the causes of the extent and severity of the crisis.[1] There is general agreement among economists that the causes of the crisis are to be located primarily in six factors, viz., (i) the so-called Great Moderation (ii) the Global Savings Glut (iii) loose monetary policy by the Fed under the Chairmanship of Alan Greenspan (iv) the home price bubble (iv) sub-prime lending growth and (vi) mortgage based securitisation (MBS).

The Great Moderation is usually taken to mean the relatively tranquil period of 1990 -2007 for the global economy (though marred by the Asian Crisis of 1997-98 and the dot.com bust of 2001) in which most of the Western economies experienced low inflation accompanied by low interest rates and steady (though moderate) rates of growth while the Emerging Market Economies (EMEs) grew rapidly and asset prices generally (but residential property prices in particular) rose sharply. Coincidentally, this period also witnessed a steep rise in savings rates in China, Japan, OPEC, and East Asia in view of the high growth rates and possibly an increasingly skewed distribution of income. Parts of these savings were invested in US Treasury Securities as well as European bonds, leading to chronic low long-term interest rates in these countries, in turn stimulating credit-based spending on consumer durables and housing. Savings rates correspondingly declined in the US and Europe, while current account deficits widened.

One of the important factors often held

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responsible for the global crisis is the conduct of U.S. monetary policy under Alan Greenspan. Greenspan succeeded Paul Volcker to the Chairmanship of FRB in June 1987 and systematically began a process of reversing his predecessor's conservative monetary policies, beginning with the October 1987 Wall Street Crash. He is widely believed by many to have been responsible for the dot.com bubble disaster -- by refraining from raising interest rates or imposing stock market margins as the bubble built up, till it was too late [see Krugman, 2009c; Canterbery, 2011 etc.). The easy money policy continued in the wake of the bubble burst, as part of the *mop-up* operations. Within a span of about 3 years the fed funds rate (the key FRB monetary policy target) was down from 3.5% to 1%. Not surprisingly this provoked a boom in asset markets, including housing prices, and a corresponding fall in the U.S. dollar. Unfazed by the rise in housing prices, Greenspan actually seemed to view it favourably claiming that "Besides sustaining the demand for new construction, mortgage markets have also been a powerful stabilising force over the past two years of economic distress by facilitating the extraction of some of the equity that homeowners have built up over the years".[2] In mid-2004, Greenspan reversed the interest rate cycle, and in the process brought about a hard landing of housing prices shortly after his tenure ended in Jan. 2006.

What lent the global crisis its special severity was, however, the emergence and proliferation of mortgage-based securitisation (MBS) in the U.S. Traditionally, the U.S. housing market has been characterised by four types of mortgages, viz.

1. Prime Mortgages (following standards set by FREDDIE MAC (Federal Home Loan Mortgage Corporation) and FANNIE MAE (Federal National Mortgage Association))
2. Jumbo mortgages (exceeding loan limits set by FM1 (FANNIE MAE) and FM2 (FREDDIE MAC))
3. Alt-A mortgages (not satisfying the criteria laid down by FM1 and FM2 but with borrowers having good credit (FICO[3]) scores)
4. Sub-Prime mortgages (covering borrowers with poor credit history and FICO *scores*).

Actually, sub-prime mortgages originated in the U.S. with the decision of the Clinton Administration in the mid-1990s to promote home-ownership among the economically and socially backward, who would otherwise be denied mortgages by commercial financial companies and banks, under the CRA (Community Reinvestment Act 1977). This had the immediate effect of driving up home demand and home prices. Private financial players saw in this a unique opportunity to expand their business with resort to the derivative instrument of MBS. Securitisation or the bundling of bank loans to create tradeable bonds may be said to have commenced in 1968 with GINNIE MAE (Government National Mortgage Association) issuing saleable instruments based on combining Federal Housing Administration (FHA) and the U.S. Department of Veterans Affairs (VA) loans. In 1981, FANNIE MAE introduced MBS based on *prime* mortgages. Government Sponsored Enterprises (GSEs) began to pool conventional, prime mortgages, to create "mortgage-backed securities" (MBS), for sale with guarantees against default on the underlying mortgages. Securitisation is often referred to as an O-D[4] model in contrast to the traditional O-H (or "originate-to-hold" model) wherein the bank originating the mortgage held it till maturity and bore the risk of default.

By about 2002 a pronounced change was occurring in the MBS market. Instead of MBS being issued by government agencies (GSEs) based exclusively on prime mortgages, their origination was increasingly being undertaken by private companies (*private label securities*) based on *sub-prime* mortgages. These "private label"

originators used "structured finance" to create securities. Structuring involved "slicing" the pooled mortgages into "tranches", each having a different priority in the stream of monthly or quarterly principal and interest stream. The top buckets/tranches possessed considerable credit-worthiness, capable of attracting "triple A" credit ratings, making them saleable to money market and pension funds that would not otherwise deal with subprime mortgage securities. With a view to marketing the MBS tranches lower in payback priority that could not earn higher ratings investment banks developed another security-known as the collateralised debt obligation (CDO). These CDOs pooled the leftover BBB, A-, etc. rated tranches, and produced new tranches - 70% to 80% of which were rated triple A by rating agencies. The 20-30% remaining mezzanine tranches were sometimes blended with other CDOs. The credibility of these new instruments was underpinned by a network of credit rating agencies. A thriving market for these low quality private label securities was sustained by the global "Giant Pool of Money" (estimated at around $70 trillion) arising from the savings glut in the rapidly growing economies of China and East Asia, which sought higher yields than those offered by U.S. Treasury bonds during the years 2002-07.

Banks found it increasingly convenient to entrust the task of issuing such CDOs to Special Purpose agents Vehicles (SPVs) and Trusts. Side by side Special Investment Vehicles (SIVs) emerged to market these securities to individual buyers. Thus there was a fairly longish securitisation chain linking several agents:

Home Owner / Borrower → Broker → Originator (Bank / Mortgage Company) → Arranger / Issuer → Trust / SPV → Asset Fund / SIV → End-Investor (who could be any Individual, Bank, Finance Company, etc., located anywhere in the World)

Home lending proliferated under schemes such as SIVA, NIVA and NINA (or Ninja loans),[5] while *subprime* mortgages grew from 5% of total originations ($35 billion) in 1994, to 20% ($600 billion) in 2006.

Many financial institutions, investment banks in particular, issued large amounts of debt during 2004-2007, and invested the proceeds in mortgage-backed securities (MBS), essentially betting that house prices would continue to rise, and that households would continue to make their mortgage payments. This strategy was essentially bare-faced speculation yielding huge profits while the housing boom was on.

Another financial innovation that made its appearance around this time was the Credit Default Swaps (CDS), proposed as a hedge for MBS investors, from the risk of default but could also be used by speculators to profit from default. The volume of CDS outstanding increased 100-fold from 1998 to 2008, with estimates of the debt covered by CDS contracts, as of November 2008, ranging from US$33 to $47 trillion. CDS are lightly regulated, largely because of the Commodity Futures Modernisation Act of 2000. As of 2008, there was no central clearing house to honour CDS in the event a party to a CDS proved unable to perform his obligations under the CDS contract. Required disclosure of CDS-related obligations has been criticised as inadequate and an important contributory factor to the crisis.

Around this time, several weaknesses were becoming evident in the securitisation chain.

(i) Brokers driven by commission based on quantum of loans rather than their quality created a situation of *moral hazard,* with manipulation of credit scores, etc.

(ii) Originators had no incentives to ensure quality of loans under the O-D system in

contrast to the earlier O-H system. Similarly, bankers were unavailable for sorting out borrower problems and minimise defaults during the course of the mortgage.

(iii) Huge profits from securitisation encouraged strong leveraging

(iv) Tranching enabled SPVs to tailor CDOs to needs of various investors (CDOs based on senior tranches with AAA ratings for pension funds, CDOs based on lower tranches with BBB ratings for SIVs and conduits, etc.)

(v) A large share of the business of rating agencies emanated from CDOs, CDS , etc. As they get their fees from the issuer rather than the investor, there are some incentives for rating agencies to compromise their standards.

(vi) Fund managers motivated by bonuses based on competition relative to peers, offered CDOs on the market with high returns but often with the underlying risk carefully cached.

(vii) Less liquid tranches which could not be easily "marked to market" were allowed to be "marked to model", i.e., their valuation was based on the internal models of financial companies, often misleading the regulators, clients, etc. about the true net worth of the companies.

An additional dimension of riskiness was imparted to the mortgage market by the ARM (adjustable rate mortgage) where the interest rate is not fixed but floating with the current market interest rate.[6] Many ARMs also had "teaser" rates below 4% for the initial period, with the possibility of monthly payments rising steeply after the initial period. In his February 2004 speech, Greenspan suggested that more homeowners should consider taking out ARMs. The Fed's own funds rate then was at an all-time-low of 1%. Shortly after this, the interest rate cycle was moved upwards with rates rising to 5.25% about two years later. This is widely believed to have brought about the 2007 subprime mortgage crisis, as ARMs were adjusted to interest rates much above those originally negotiated by borrowers.

Excessive securitisation led to the emergence of a parallel / shadow banking system, which was not subject to the same degree of regulatory and supervisory controls as depository banks. The ABCPs (asset-backed commercial paper) and other securities, (e.g., auction-rate preferred securities, tender option bonds and variable rate demand notes), issued by these non-banking financial companies (primarily hedge funds, asset funds, money market mutual funds , etc.) by 2007, amounted to over $6 trillion - about 60% of the overall U.S. banking assets (of around $10 trillion). These entities were especially vulnerable because they borrowed short-term in liquid markets to purchase long-term, illiquid and risky assets. This meant that disruptions in credit markets would make them subject to rapid deleveraging, selling their long-term assets at depressed prices. Overlaying this shadow banking structure was the fact that in the years leading up to the crisis, the top four U.S. depository banks moved an estimated $5.2 trillion in assets and liabilities off-balance sheet into special purpose vehicles or other entities in the shadow banking system. This enabled them to essentially bypass existing regulations regarding minimum capital ratios, thereby increasing leverage and profits during the boom but increasing losses during the crisis. Such a huge superstructure of loosely regulated and volatile finance created a classic Minsky-type of situation of financial fragility [Minsky, 1986, 1992; Papadimitriou and Wray, 1997; Sinapi, 2011], etc.

This fragility became increasingly evident as mortgage rates started rising following the tightening of the interest rate cycle over the period 2004-07. By mid-2005 the downturn in housing prices became evident and sub-prime mortgage defaults showed a rapid rise leading to foreclosures. By October 2007, approximately 16% of

subprime adjustable rate mortgages (ARM) were delinquent, the proportion rising rapidly to 25% by May 2008. By September 2009, about 14.5% of all U.S. mortgages were delinquent and about a million residences faced foreclosure over the period Aug. 2007-October 2008. In domino-style, beginning 2007, financial institutions and individual investors holding MBS also suffered significant losses from mortgage payment defaults and the resulting decline in the value of MBS. This spread uncertainty across the system, as investors wondered which companies would be required to cover the mortgage defaults. In June - July 2007, CDOs backed by MBS were downgraded 4 notches from AAA to A+. In Aug. 2008, Fannie Mae and Freddie Mac share prices slid sharply. They were taken over by the Treasury on 7 September 2008.

SIVs had funded their purchase of CDOs by issuing short-term ABCPs, which needed to be rolled over monthly. In view of the adverse capital market developments, short-term funding to support such roll-overs was rapidly drying up, leading to a seizure of the ABCP market. Effectively, the securitisation markets supported by the shadow banking system started to close down in the spring of 2007 and nearly shut-down in the fall of 2008. More than a third of the private credit markets thus became unavailable as a source of funds, while the traditional banking system did not have the capital to close this gap. Bear Stearns announced on 18 July 2007 that they would incur losses on sub-prime investments through their two hedge fund arms. In March 2008, the Fed staved off a Bear Stearns bankruptcy by assuming $30 bn in liabilities and engineering a sale to J.P. Morgan at a throw-away price. Then in a climactic development, on 12 September 2008, one of the major investment banks Lehman Brothers went bankrupt after the U.S. Treasury refused to bail it out.[7] A bankruptcy of this dimension created much uncertainty as to which financial firms would be required to honour the CDS contracts on its $600 billion of bonds outstanding. Merrill Lynch's large losses in 2008 were attributed in part to the drop in value of its unhedged portfolio of collateralised debt obligations (CDOs) after AIG ceased offering CDS on Merrill's CDOs. The loss of confidence of trading partners in Merrill Lynch's solvency and its inability to refinance its short-term debt led to its acquisition by the Bank of America. Thus during 2008, three of the largest U.S. investment banks either went bankrupt (Lehman Brothers) or were sold at fire sale prices to other banks (Bear Stearns and Merrill Lynch). These failures augmented the instability in the global financial system. The remaining two investment banks, Morgan Stanley and Goldman Sachs, opted to become commercial banks, thereby subjecting themselves to more stringent regulation.

Insurance companies such as American International Group (AIG), MBIA, and Ambac faced ratings downgrades because widespread mortgage defaults increased their potential exposure to CDS losses. These firms had to obtain additional funds (capital) to offset this exposure. AIG with a holding of CDSs against $440 billion of MBS sought and obtained a Federal government bailout in late 2008. Several monoline insurance companies were driven out of business in 2008-2009.

2. A Paradigm Shift in Macro-economic Theory

The *New Consensus Macroeconomics* (NCM), which established itself in the 1980s as the mainstream view of the macroeconomics profession, essentially represented an "uneasy truce" between the then dominant new classical school [Lucas, 1972; Sargent, 1979, etc.] and the nascent neo-Keynesian view [Mankiw, 1989; Phelps, 1968; Taylor, 1980, etc.] -- a truce achieved by securing the micro-foundations of Keynesian sticky prices and wages with optimisation under rational expectations. The NCM (and especially its twin pillars - the Rational

Expectations Hypothesis (REH) and the Efficient Markets Hypothesis (EMH)) also supplied the intellectual basis for the wave of financial liberalisation that surged in the 1980s. The recent global crisis has posed a very serious challenge to the NCM, partly because the NCM failed to anticipate the extent and severity of the crisis and partly because solutions proposed within its framework have met with limited success so far [see e.g., Rakshit, 2009]. This has led to a serious questioning of the NCM from four major alternative schools, viz., the Post-Keynesian, the Austrian, the Structuralist and the Marxist. Of these, the Post-Keynesian critique has been the most dominant and has already had a substantive influence on the post-crisis re-orientation of macroeconomic policy. Hence in this paper, we confine ourselves exclusively to this critique. The policy matrix emanating from the NCM essentially revolved around four prescriptions (i) Inflation Targeting (ii) Taylor Rule (iii) The Jackson Hole Consensus (see below) and (iv) Advocacy of Financialisation.[8]

As mentioned earlier, the NCM essentially incorporates most aspects of the New Classical and Real Business cycle schools but with the important new Keynesian feature of limited flexibility of prices (and wages), though the latter is now solidly grounded in rational, (i.e., model-consistent expectations) micro-foundations [see Bagchi, 1994, Pp. 19-88, for a lucid exposition]. Thus the following elements may be said to constitute the core theoretical propositions of the NCM [Goodfriend & King, 1997; Gali & Gertler, 2007; Woodford, 2003, 2009, etc.]:

1. *NAIRU Hypothesis:* The long-run Phillips curve is vertical, though its short-run counterpart could be upward sloping [NAIRU hypothesis of Friedman, 1968; and Phelps, 1968]. Thus the natural rate of unemployment is fixed in the short-run, independently of the level of aggregate demand, being determined by structural characteristics of the labour market and changing only in a secular manner [see Mankiw, 2001; Ball & Mankiw, 2002, Pp. 115-36; Blanchard & Katz, 1997, Pp. 51-72, etc.].
2. *Ergodic Uncertainty:* Uncertainty is "ergodic", i.e., future events can be attached specific probability generating functions which are reasonably stable over the typical short-run horizons that concern macroeconomists.
3. *Representative Agent & Rational Expectations:* The NCM builds its "micro-foundations" on the assumption of a representative agent basing his consumption decisions on an inter-temporal utility maximising framework, with expectations formed rationally, i.e., by making best use of all available information. This is the famous rational expectations hypothesis (REH) of the NCM. If the assumption of perfectly competitive markets is grafted onto the REH, weak efficiency of markets can be easily derived (EMH).
4. *Transversality condition:* A rather innocuous looking assumption in the NCM has shown up as a major limitation post-crisis. This, of course, is the "transversality condition" [Blanchard & Fischer, 1989, Appendix 2A], which postulates that in the inter-temporal optimisation of the representative individual, all debts are settled in full, thus effectively leaving no space for money, finance and liquidity to enter the model in a meaningful way. This renders the theoretical model particularly inappropriate to analyse the real world problems of credit risk and default.

Dissatisfaction with the NCM on theoretical grounds predates the crisis [see Davidson, 1982, Pp. 182-98; Kirman, 1992; North, 1999, etc.]. However, the crisis brought a certain poignancy to these criticisms, especially as it revealed the

fault lines of the policy implications of the NCM. We will begin with a discussion of the main contours of the theoretical criticisms and later turn to their policy implications. As mentioned earlier, we are confining ourselves to the post-Keynesian critique. We therefore review the criticisms levelled against each of the four major planks of the NCM mentioned above.

Natural Rate Hypothesis: The NCM, posits the NAIRU as a summary statistic for the supply-side equilibrium. However, empirical evidence strongly conflicts with the postulated invariance of the NAIRU *with respect to shifts in aggregate demand.* Empirical studies dealing with U.S. and European data seem to cast doubt on the verticality of the Phillips curve as well as the alleged invariance of the NAIRU to aggregate demand shifts [see Gordon, 1997; Juselius, 2008; Arestis, et al, 2007, Pp. 125-48, etc.]. Further, using a simple "triangle model" of inflation, it can be shown [see Gordon, 1997] that inflation is "an excess nominal GDP phenomenon" and that supply shocks can induce positive correlation between inflation and the unemployment gap. These and similar considerations supply the basis for the hypothesis of the "backward bending Phillips curve" [Akerlof, et al 2000, Pp. 1-76; and Palley, 2008], i.e., a threshold inflation level, below which employment/output and inflation are positively correlated and beyond which the correlation turns negative. Much of the empirical evidence available for India also seems to disfavour the NAIRU invariance to aggregate demand hypothesis [see Nachane and Lakshmi, 2002; Patra and Ray, 2010; Dholakia and Sapre, 2011; Kapur, 2013, etc.].

Nature of Uncertainty: One of the central features of Keynes' *General Theory* was that the uncertainty confronting investors was viewed in a Knightian sense (or what we have called above as "non-ergodic" uncertainty), characterised by a belief that there is *wisdom in numbers,* leading to *herd behaviour* in financial markets. By contrast the REH, in particular, presumes that the future is ergodic and hence *predictable* (within known error bounds). The global crisis brought out the fatal flaw in the REH and its associated premise, viz., the EMH. As is now well-known, the elaborate models used by credit rating agencies to rate / monitor complex products like CDOs predicated on complicated multidimensional probability distributions and copulas, were simply inappropriate to foresee the illiquidity in U.S. money markets that arose from investor herd behaviour in the face of the non-ergodic uncertainty intrinsic in new complex financial innovations. The foundations of a more realistic macroeconomics need to be based on a theory of decision making under non-ergodic uncertainty. The quest for such foundations may have to be located in the emerging field of "behavioural finance" [see Shefrin, 2000; Lo, 2007; Allington, et al 2011, Pp. 1-42, etc.] using "agent-based modelling" in a framework of "adaptive markets".[9] In the context of financial crises, these theories would tend to focus on the complex institutional structure of financial markets and on decision rules circumscribing the behaviour of market participants. From an operational point of view, this line of thinking prompts regulators to pay close attention to nodal interactions within the financial sector and the build-up of *systemic risk.*

Representative Agent & Rational Expectations: The representative agent model postulates the existence and stability of an overall economic equilibrium, arrived at by aggregating over individual demand/supply curves to arrive at their market counterparts. Such a procedure is valid under very restricted assumptions [see Fisher, 1992] and is also subject to the "*fallacy of composition*" critique [see Kirman, 1992]. A more formal criticism comes from the successive writings of Debreu [1974, Pp. 15-21], Sonnenschein [1972] and Mantel [1974], and goes by the

name of the DSM theorem.[10] In spite of Hahn's [1975] admission that the DSM results are "most damaging to neoclassical theory", the mainstream economics profession seems to have largely ignored these implications (some political economy explanations for this neglect are discussed in Hodgson [1997] and Rizvi [1994]). Rational expectations similarly have continued to dominate thinking in the New Classical and neo-Keynesian frameworks, even though its empirical foundations are extremely shaky.[11] A more realistic assessment of inflation expectations formation will have to contend with the limits on individuals' cognitive and computational abilities as well as their inability to separate their perceptions of their local environment from the overall macro environment [see Sims, 2003; Caballero, 2010, Pp. 85-102, etc.].

Transversality Condition: The transversality condition, by closing the intertemporal utility maximisation model of the representative agent so as to rule out liquidity constraints, fails to allow for the endogenous build-up of banking/financial crises [see Buiter, 2009; Goodhart, 2010, etc.]. As such the NCM models can only treat crises as exogenous shocks. There is some controversy as to whether the sub-prime crisis was a random shock or an endogenous development [Lucas, 2009; and Fama, 2010, argue for the former viewpoint, whereas Allington, et al 2011, take the opposite view]. The unfolding of the sequence of events leading up to the collapse of recent crises such as the Long-Term Capital Management (LTCM), [1997], Northern Rock [2007] and Lehman Brothers [2008] (see Section 1 above) seems, however, to strongly suggest that banking and financial crises are usually the outcomes of institutional changes, financial innovations and regulatory shortcomings which are path dependent and which therefore cannot be analysed within the framework of the NCM.

3. Revised Approach to Macro-economic Policy

In line with the episodic revision in academic thinking discussed in Section 2, it was but natural that the contours of central banking policy (a broad term to include monetary and credit policy as well as financial sector regulation and supervision) be redrawn with added emphasis on the role of national regulatory and supervisory authorities in crisis prevention and crisis management. The new thinking in the immediate aftermath of the crisis is encapsulated in two detailed Reports, viz., those of the *de Larosiere Group* (Feb. 2009) in the EU and the *Working Group 1* of the G20 (March 2009). Currently, a broad implicit agreement seems to have emerged among central bankers globally on the following *seven point agenda:*

1. A thorough overhaul of Monetary Policy
2. Re-thinking on Full Capital Account Convertibility
3. Strengthening and expanding the scope of regulation and supervision (R & S)
4. Improved Prudential standards for financial institutions
5. Special attention to non-performing assets (NPAs)
6. Reducing costs of financial failures
7. A Shift from Micro-Prudential to Macro-Prudential Regulation.

But it is also being increasingly realised that national regulators acting on their own cannot completely firewall their domestic jurisdictions from disturbances originating in the rest of the world and that coordinated efforts are needed at the global level, if not to avert, then at least to attenuate the consequences of a crisis of similar dimensions. The main partners in such a coordinated approach are envisaged to be:

1. National Regulatory & Supervisory Authorities
2. IMF

3. Financial Stability Forum (FSF)/Board (FSB)
4. International Standard Setting Bodies like the BCBS (Basel Committee on Banking Supervision) of BIS (Bank of International Settlements), IOSCO (International Organisation of Securities Commissions) , etc. and
5. Globally influential organisations like G-20

Our primary focus in this paper will be on the first of these aspects, though as all the issues are inter-connected, and also for the sake of completeness, we will be including brief discussions on the other aspects also.

We therefore begin with the seven point agenda for the national regulatory authorities and discuss each in some detail below.

4. A New Look at Monetary Policy

Jackson Hole Consensus (JHC) : Prior to the Crisis, the thinking on monetary policy was relatively clear-cut and reflected in what was termed as the *Jackson Hole Consensus* (following Issing (2009)) (JHC for short). The major dimensions of the JHC were the following:

(i) that commodity inflation control should be the overriding (if not exclusive) objective of monetary policy (inflation targeting)
(ii) that asset price bubbles are better left alone as attempts to control (or worse "prick") such bubbles could lead the economy into dangerous territory and
(iii) if, and when, asset prices burst central banks should "mop up the mess", i.e., go into the "lender of last resort" act [see Greenspan, 2004; Blinder & Reis, 2005; Mishkin, 2007, etc.].

The intellectual roots of the JHC are based on a conventional Friedmanian argument that *financial instability* is the outcome of *unexpected shocks* to the inflation level, mainly arising from over-enthusiastic central banks trying to stimulate the economy beyond its *natural* rate [see Friedman & Schwartz, 1963; Schwartz, 1998; Bernanke & Gertler, 1999] cryptically summarise this viewpoint as "central banks should view price stability and financial stability as highly complementary and mutually consistent objectives".

As is now universal knowledge, the global crisis brought out the fatal flaw in this Consensus.

Slipping Transmission Belt of Monetary Policy and Inflation Targeting: As seen earlier, the NCM had carved out the task of monetary policy as the single-minded pursuit of price stability (inflation targeting). However, long before the current global crisis set in, it was becoming increasingly evident that the profound institutional changes set in motion by the successive globalisation waves of the 1980s and 1990s, had considerably reduced both the manoeuvrability space and the efficacy of monetary policy. Several factors seem to be at play here [see e.g., Nachane and Raje, 2007, etc.] including most prominently (i) unchecked financial innovation which led to the emergence of several new near substitutes for *money* (ii) a relative decline in the role of banks in credit creation (iii) the switchover from a reliance on direct monetary policy instruments such as Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), credit ceilings, etc., to indirect measures such as open market operations (OMO) and repo rates and (iv) unrestricted global capital flows. The mechanics via which such changes weakened the link between monetary policy and the credit market have been detailed, for example, in D'Arista [2009] (to whom we also owe the term "slipping transmission belt"). In the light of these considerations, IT has attracted a great deal of criticism. As these criticisms have been detailed in several papers [see e.g., Gordon, 1997; Arestis and Sawyer, 2008, Pp. 629-53; Nachane, 2008, etc.], I only mention the main points here, viz., (i) neglect of the possibility of sustained cost-push factors [Arestis & Sawyer,

2008] (ii) time-varying NAIRU [Gordon, 1997] (iii) IT can compound balance of payments disequilibria [Mendonza & Uribe, 2001; Kumhof et al, 2007] (iv) political and legal problems involved in the IT process.[12]

Advocates of inflation targeting also often slur over a key issue, viz., the choice of the target rate. That some confusion exists over the choice is indicated by the fact that whereas some advocates propose the so-called OLIR (optimum long run inflation rate) defined as the *long run inflation rate that achieves the best average economic performance over time with respect to both the inflation and output objectives* [see Bernanke, 2004, Pp. 165-68], others take a more rigid view denying any systematic trade-off between growth and inflation. As a matter of fact, as argued above (see Section 2) such a trade-off may well exist at low inflation rates where the benefits from reduced microeconomic distortions emanating from further lowering of rates are counterbalanced by the costs of an increased probability of setting off a recession [see also Meyer, 2004]. If one is convinced of the backward-bending shape of the Phillips curve, then the cusp of such a curve yields an inflation rate which is optimal in the sense of being the one which minimises the unemployment rate. Such a rate has been called as the MURI (minimising unemployment rate of inflation) and becomes a natural candidate for the targeted inflation rate. Such a rate may in practice be calculated along the lines of Coenen et al [2003] (who do it for the Euro area).

Monetary Policy and Asset Prices: Perhaps the biggest flaw in the JHC framework was its neglect of balance sheet disorders arising in the current environment of deregulated financial markets and financial innovation. Even before the global crisis, strong empirical evidence was building up to the effect that even prolonged episodes of price stability could conceal severe imbalances building up in the financial sector through asset price bubbles. Thus, *monetary stability* could not only co-exist with *financial instability* but there could also occasionally be a causal nexus from the former to the latter (see e.g., Borio and Lowe, 2003, Pp. 247-70; Laeven and Valencia, 2008, for empirical illustrations]. This can eventuate because periods of monetary stability (such as the so-called Great Moderation spanning the two and a half decades from the early 1980s to about 2007) are often accompanied by robust output growth and correspondingly bullish expectations of future prospects, which in turn, lay the foundations for booms especially in equity markets and real estate. Demand for credit soars especially for investment in highly profitable and rising asset markets. Central banks (exclusively focussed on commodity market inflation) may keep interest rates low, which can enhance the "disaster myopia" psychology of speculative investors [see Rajan, 2005]. This sets the stage for the kind of asset price booms which have preceded many crisis episodes (in the U.S.) including those of 1893, 1907, the Great Depression (1929-33), and of course the current global crisis beginning with the Lehman collapse of 2007.

With the benefit of hindsight, it is now clear that central banks cannot afford to play the combined role of a *bystander* while an asset boom is in progress and a *Good Samaritan* once the boom goes bust of its own accord. In short, the facts argue for a more pro-active role for central banks in asset markets [see Bean, et al 2010, Buiter, 2008, etc.]. In practice, central bank intervention could assume either of three forms (including combinations).

(i) Firstly monetary policy could be made responsive to asset price developments, either by using asset prices as explicit targets (as originally suggested by Goodhart (1995)) or minimally as indicators.

(ii) Secondly, a stricter system of controls on capital requirements in banks and other financial institutions could be instituted, and

(iii) Thirdly, restrictions could be imposed on certain types of trades in asset markets [see Friedman, 2010].

Turning now to the situation in India, in recognition of the need to revisit the conduct of monetary policy, an Expert Committee was appointed (Urjit Patel Committee or UPC for short) in 2013. However, in a rather surprising twist, the approach adopted by the Committee [see RBI, 2014] does not seem to be in consonance with the revised thinking on monetary policy set out above. Instead, (as Box II.1 of the Committee makes it amply clear) the theoretical framework of this Report closely follows that of its antecedents, viz., the Percy Mistry Committee Report and the Raghuram Rajan Committee Report. This theoretical framework, rooted in the twin hypotheses of rational expectations and continuously clearing efficient markets is precisely the NCM approach, which in our view, stands largely discredited in the post-crisis era [see e.g., Allington et al. 2011; Arestis & Karakitsos, 2011; Nachane, 2013, etc.].

Even though the finely balanced opening remarks of the UPC almost lead one to expect that it would favour a monetary policy moving away from a "narrow focus on inflation towards a multiple targets-multiple-indicators approach" (see Para II.3), the theoretical framework (NCM) espoused by the UPC drives it inexorably to a *flexible inflation targeting* framework, (i.e., one where the inflation target is expected to be maintained on the average over the business cycle). By and large, the empirical evidence does indicate that inflation targeting regimes are successful in their avowed purpose of moderating commodity inflation and tempering its volatility [see Agenor and da Silva, 2013, Box 3, Pp. 32-34 for a summary of the latest evidence in this regard]. But this, of itself, does not constitute an unqualified criterion for success. There is an abundant theoretical literature supported by adequate econometric evidence that such regimes could unfavourably impact several other macroeconomic dimensions of direct /indirect significance for social welfare [see Blanchard, 2005; Akram & Eitrheim, 2008, Pp. 1242-54; Lo, 2010; Nachane, 2014, etc.].

5. Revisiting Full Capital Account Convertibility

Advocacy of open capital accounts is based on the neo-liberal view that free global capital markets enable EMEs and LDCs to get cheaper access to international credit, thereby promoting growth and stability. This view, always of dubious theoretical merit [see Arteta, et al, 2003; Nachane, 2007; De Long 2009, etc.], was seriously challenged both by the currency crises of the 1990s in Latin America and Asia [see Ocampo, Spiegel and Stiglitz, 2008] and the recent global crisis. In the wake of the last crisis, as the developed world struggled with a tepid industrial recovery, weak financial systems, burgeoning fiscal deficits and unsustainable debt-GDP ratios, it was becoming increasingly clear that part of the burden of the painful adjustment to global imbalances was likely to be shifted to the EMEs. The low interest rates, quantitative easing of credit and frequent bailouts in the U.S. and Europe all injected massive amounts of global liquidity which wended its way inexorably to EMEs, driven by the search for greater returns and the relatively sound macroeconomic fundamentals of the latter. Confronted with capital flow upsurges, several EMEs imposed some form of capital restrictions (most notably Brazil, Venezuela, Thailand, Indonesia, South Korea and Taiwan), though India remained a notable exception, with official pronouncements repeatedly reaffirming commitments to further capital account liberalisation.

The received theoretical literature as well as empirical evidence available at the time [see BIS, 2009a] were broadly pointing to a rethinking on the benefits of full capital account liberalisation,

with a more nuanced consensus emerging on three issues: (i) the benefits of capital account liberalisation in EMEs have been vastly overstated (ii) they (benefits) are circumscribed by too many conditionalities which are unlikely of fulfilment in many EMEs and LDCs and (iii) controls over capital inflows can effectively reduce the vulnerability of economies to financial crises. As a result, full capital account liberalisation need not be some kind of an ultimate goal for all developing economies - a conclusion quite at variance, incidentally, with the official Indian thinking on the subject.

Capital management is a broad term used to refer to a policy which seeks to manage the capital account as warranted by the overall domestic and global macroeconomic situation As a matter of fact, it is well to take cognisance here of some of the well-known benefits of such an approach:

1. Capital inflows typically confront an economy with a dilemma on the exchange rate front. As complete sterilisation of large inflows usually raises domestic interest rates (and thereby stimulates further inflows) and entails a fiscal burden, central banks have either to resort to incomplete sterilisation and risk inflation or allow the real exchange rate to appreciate. Most central banks, whether inflation targeters or not, are inclined to favour the latter alternative. As a matter of fact, the RBI has in recent years been favouring a "hands off" policy on the exchange rate front [see EPW Research Foundation, 2010]. This has resulted in a steady appreciation in the real effective exchange rate (REER). Thus, for example, [in the case of India] the 36-country trade-weighted REER based on the new CPI series (base year 2004-05) has risen from 102.75 (Jan. 2014) to 111.46 (Jan. 2015) - an (annual) appreciation of 8.47%. A secular rise in REER is fraught with serious consequences for the economy. Firstly it dampens exports and hence growth. Secondly it raises the prices of non-tradeables (especially real estate and labour) versus tradeables. The implied relative rise in wages is likely to affect labour intensity adversely. Thus, employment faces a double jeopardy from an appreciating REER, viz., reduced labour intensity and falling aggregate demand. Capital management techniques can resolve this dilemma by moderating inflows and thereby controlling REER appreciation.
2. One of the important beneficial fallouts of capital management is that if used appropriately it can reinforce financial stability -- as the REER stabilisation via capital controls can considerably dampen *carry trade* in the concerned currency by setting at rest speculation centred around expected one-way movements in that currency and prevent the emergence of currency crises.
3. Capital controls by cutting the Gordian knot of *the impossible trinity* can provide additional space for domestic monetary policy [see Epstein, 2009; Reinhart and Rogoff, 2008, etc.].

There are other, more general, advantages to capital management techniques. They lead to an overall reduction in the political power of the financial community, especially foreign investors and multilateral institutions. This creates vitally needed space for the interests of other groups (such as the peasantry, urban poor, SMEs) to play a role in the design of economic and social policy.

Turning now to a discussion of capital management techniques, it is important to emphasise that the focus of these measures is on preventing banking and currency crises. They are not designed to address the issue of the salvage measures that need to be adopted once a country is actually overcome by a crisis. Preventive

measure comprise two aspects (i) the actual content of these measures and (ii) a mechanism for their activation.

A variety of capital controls have been suggested in the theoretical literature and many of these have been invoked by different countries at various periods in the post-World War II period [see Epstein et al., 2005 for details].

Perhaps the oldest such proposal is the Tobin tax on capital *inflows*, suggested by Tobin (1978) in an influential article. Other types of capital controls (on *inflows*) include (i) unremunerated reserve requirements (URR) which require a certain percentage of inflows to be deposited with the domestic central bank for a lock-in period (usually not less than a year) (ii) taxes on external commercial loans (iii) sectoral regulation of FDI (iv) interest *equalisation taxes* (v) restriction on domestic spending of NRI deposits, etc.

Controls on outflows are less common but have nevertheless been resorted to in times of duress by countries such as Malaysia, Taiwan and Singapore. They could include (i) exchange controls (ii) restraints on domestic institutions from extending credit (denominated in domestic currency) to non-residents (iii) graduated exit levies (inversely?) proportional to length of stay of the investment in the country (iv) repatriation waiting periods , etc.

Two broad mechanisms have been suggested in the literature to activate these preventive capital management techniques. The first is the *Early Warning Systems (EWS)* approach initiated in an early paper by Sachs et al [1996], and elaborated in several later papers by Goldstein et al [2000], Edison and Reinhart [2001], Abiad [2003], etc. The essential logic here is simply to identify a group of variables relevant for crisis prediction and then use probit/logit models or signal extraction methods to recognise particular patterns associated with banking/currency crises. Thus, EWS methods can, in principle, be used by central banks (or financial stability authorities) to identify situations that have the potential to lead up to a crisis. However, there are several problems with the use of an EWS. Firstly, at the conceptual level, it is not clear whether these should be used exclusively by the central bank or whether the signals emanating from an EWS should be made public. Several proponents seem to believe that making the signals public could avert impending crises by inducing market stabilising behaviour by rational investors. But it seems equally (if not more) likely that the herd mentality and proclivity to panic behaviour noted famously by Keynes, could actually result in precipitating the crisis that the EWS was intended to forestall in the first place. Secondly, as pointed out by Grabel [2004] the presence of an EWS (whether exclusive or public) might prompt investors to assume a more than normal risky behaviour as long as the EWS does not indicate a looming crisis. Finally, the actual prediction performance of EWS seems to be quite unsatisfactory [see e.g., Sharma, 1999; Edison, 2000].

The second approach has been somewhat colourfully termed the Trip Wires-Speed Bumps (TW-SB) Approach, whose essence rests on the idea that specific changes in policy ought to be activated to curtail particular financial risks as soon as the vulnerabilities become evident. The approach has been exciting increasing interest among economists in recent years [see Ariyoshi et al., 2000; Grabel, 2003, etc.]. The TWs are usually simple indicators that are designed to warn policymakers of impending risks.[13] Under the approach, whenever TWs cross pre-determined critical thresholds, various regulatory actions called speed-bumps (SBs) are called into play.[14] The idea has parallels in the typical *circuit breakers* employed routinely in several stock exchanges around the world (including the BSE and NSE in India), to stabilise excess market volatility. In contrast to the EWS, this approach does not presume that the self-correcting actions

of market agents will prevent financial risks from developing into full-blown crises. Instead, it assumes that the actions of private sector agents in response to evident financial vulnerabilities can actually trigger instability. It, therefore, assigns to regulators the task of activating regulatory measures as signs of financial vulnerability start to emerge.

Surprisingly, the pronounced swing of opinion against unfettered capital account liberalisation, which has occurred among a majority of academic economists[15] as well as several foreign governments and multilateral institutions (the IMF not excepted) in the light of the recent financial upheavals, seems to have completely by-passed Indian policy circles. It is important to realise that central banks in EMEs like India, with substantial segments of vulnerable population, cannot be narrowly focused on commodity inflation targeting alone (though this is an extremely important objective), but have to worry about a host of other objectives such as equitable growth, financial stability, availability of credit, etc. Today with the interest rate as the sole instrument of monetary policy, the central bank finds itself burdened with too many objectives and resembles "an army with only a single corps" [Friedman, 1999].

6. Strengthening and Expanding the Scope of Regulation and Supervision

There is increasing awareness in the global community that crisis prevention and management requires a considerable strengthening of the national financial regulatory and supervisory framework. This would essentially involve a three-pronged approach:

1. Entrusting a special regulatory authority (either an existing one or a newly constituted one) with an explicit financial stability mandate.
2. Ensuring coordination between different regulatory authorities.
3. Expanding the scope of regulation to include credit rating agencies and private pools of capital (including hedge funds) via a system of registration, disclosure requirements and oversight.

Special Regulatory Authority: On the first two of the above aspects the Indian authorities have been particularly active. The Board for Financial Supervision (BFS) had already been established as early as Nov. 1994 and the RBI carries out its financial stability mandate under the general guidance of the BFS. The Financial Stability Assessment Update (FSAU) of the IMF [2013], while expressing overall satisfaction with the regulatory and supervisory process in India highlighted several important lacunae in this regard [IMF, 2013, Pp. 24-32]. As regards the banking sector, for example, the FSAU felt that (i) Indian banks operating in overseas jurisdictions display a considerable lack of communication with the overseas supervisory authorities. (ii) Legal provisions of the Banking Regulation Act (1949) limit the *de jure* independence of the RBI from the central government and (iii) Similarly while deposit-taking NBFCs (non-banking financial companies) had been brought under the ambit of prudential regulation, regulatory gaps and latent arbitrage opportunities were present in the interconnected operations of non-deposit taking NBFCs, which could pose systemic risks to the financial sector.

Coordination among Regulators: Any modern economy is characterised by a diversity of financial institutions, each under a possibly different regulatory and supervisory (henceforth R&S) authority. In India, the R & S mandate for the financial sector is vested in several different bodies with reasonably well delineated domains. The apex R & S bodies along with their main domains are (i) Reserve Bank of India (RBI) (banks, nonbanking finance companies (NBFCs) and micro-finance institutions (MFIs)) (ii) Securities & Exchange Board of India (SEBI)

(securities markets) (iii) Insurance Regulatory Development Authority (IRDA) (insurance sector) (iv) Forward Markets Commission (FMC) (forward commodity markets) and (v) Pension Fund Regulatory & Development Authority (PFRDA) (pension funds). September 29, 2015 marked the amalgamation of the FMC, (the erstwhile commodities regulatory body) with SEBI, an idea first floated in 1997 in the wake of the Asian crisis.[16]

In addition to these apex bodies there are a number of Tier 2 bodies performing certain R&S functions under the overall directions of an apex body such as the National Bank for Agriculture and Rural Development (NABARD), Deposit Insurance and Credit Guarantee Corporation (DICGC), National Housing Bank (NHB), etc. The Ministry of Finance is also a key player in the finance sector, being responsible for financial planning and legislation.[17]

Until the establishment of the Financial Stability and Development Council (FSDC), coordination between the three major regulators RBI (Reserve Bank of India), SEBI (Securities & Exchange Board of India) and IRDA (Insurance Regulatory Development Authority) was weak and potentiality for conflicts not ruled out. The rise of hybrid products in recent years has considerably raised the possibility of *turf wars* or inter-regulatory conflicts in a multiple regulatory system.[18] Keeping these considerations in mind, the Indian government established the (FSDC) as an apex level body in December 2010. The FSDC is chaired by the Finance Minister and its members include the heads of the entire five apex R & S institutions mentioned above in addition to the Finance Secretary and the Chief Economic Advisor. Most of the operational matters of the FSDC are handled by a Sub-Committee, chaired by the RBI Governor. In addition, there are several working groups focused on special issues such as the Inter-regulatory Technical Group (IR-TG), the Inter-regulatory Forum for Monitoring Financial Conglomerates (IRF-FC), the Macro Financial and Monitoring Group (MFMG) , etc.

Expanding the Scope of R & S: The defining feature that sets the current crisis apart from other crises of comparable intensity in the past is the critical role played by the *shadow* banking sector. In the last three decades or so, there has been a proliferation of non-deposit taking financial intermediaries, which engage in lending but (in the absence of access to public deposits or central bank funding) rely on funding via *asset-backed commercial paper* or in the repo market against collateral. The institutions typically constituting the *shadow* banking sector are hedge funds, money market mutual funds, private pension funds, special purpose vehicles (SPVs), etc. The growth of such institutions is attributable to several factors including the emergence of securitisation and new financial products (such as credit derivatives, collateralised debt obligations (CDOs), etc.) as well as the proliferation of the *universal banking* syndrome [see Gorton and Souleles, 2006]. In times of liquidity panics such *asset-backed commercial paper* markets are prone to collapse (as happened in the U.S. financial crisis of 2008) [see Brunnermeier and Pedersen, 2009, Pp. 2201-38]. As such, it is critical for financial stability to bring the shadow banking sector under the regulatory pale. The large number of institutions in the shadow banking sector and the opacity of their operations pose formidable obstacles in the way of placing them on a regulatory par with traditional depository institutions.

In India, regulation and supervision of the shadow banking sector is weak and riddled with loopholes. About the only effective restriction is that imposed on members of the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) to maintain several types of margins with these Exchanges including most prominently

daily margins, mark-to-market margins, carry forward margins, ad-hoc margins, etc. The FSAU [IMF, 2013, p. 27] has highlighted several basic shortcomings so far as the non-banking financial sector is concerned such as (i) loose supervision of mutual funds and other fund managers (especially hedge funds) (ii) frequent non-compliance of security issuers with reporting and disclosure requirements (iii) much needed up-gradation of accounting and auditing standards (iv) weak enforcement of criminal procedures (v) unusually light sanctions , etc. The New Companies Act 2013 is designed to address many of these lacunae but it is too early to comment on the degree of its likely success.

Financial Sector Legislative Reforms Commission: It has long been recognised that the legislation in respect of financial sector regulation and supervision in India was in serious need of overhaul. To address this stupendous task, the government of India set up the Financial Sector Legislative Reforms Commission (FSLRC) under the Chairmanship of Justice B.N. Srikrishna in March 2011. In its Report submitted to the government two years later (March 2013) the FSLRC suggested a broad sweep of reforms spanning several aspects of the financial system. The general approach of the FSLRC is best described as a *non-sectoral principles-based approach* (as opposed to the current *sectoral rules-based* one). Among the most important of the suggestions are the following: (i) *Consumer Protection* for safeguarding the interests of consumers in their interactions with financial firms. For this it has proposed a new unified agency to be termed the Financial Redressal Agency (FRA). (ii) *Micro-prudential Regulation.* This aspect needs strengthening and the FSLRC emphasises the following five dimensions of micro-prudential regulation, viz., regulation of entry, regulation of risk-taking, regulation of loss absorption, governance rules and regulatory and supervisory independence. (iii) A new *Resolution Corporation* is recommended to look after the unwinding proceedings of firms in financial distress. (iv) The FSLRC proposes to statutorily empower the FSDC to deal with its mandate of *systemic financial stability*. (v) *Monetary Policy.* The FSLRC seems to implicitly endorse an inflation targeting strategy. Its recommendation is for the Ministry of Finance to set up this target, with the RBI entrusted with the task of monitoring and implementing this target, with a Monetary Policy Committee (MPC) aiding the task. The composition of the MPC, its role vis-à-vis the RBI (whether advisory or executive) and the terms of its appointment have been left quite vague. (vi) *Public Debt Management.* The establishment of a new agency, the Public Debt Management Agency (PDMA), has been proposed by the FSLRC as it was felt that under the present system (where the RBI handles all government debt issues) the RBI faces a potential conflict between its monetary policy objectives and debt management objectives[19] (vii) *Unified Financial Agency*. The existing sectoral regulatory architecture is disfavoured by the FSLRC, which proposes to move to a new system, where the RBI (as before) continues to be entrusted with banking regulation and supervision, whereas regulation and supervision of all other financial transactions are sought to be brought under a common umbrella organisation to be called the Unified Financial Agency (UFA).

The FSLRC explicitly espouses a *principles-based* approach to financial regulation more or less along the lines recommended by the Rajan Committee earlier (see Government of India (2009)). Even though it is fashionable in the economics and accounting literature to speak of *principles versus rules based regulatory systems,* legal theorists emphasise the futility of pursuing such a binary classification [see e.g., Cunningham, 2007, Pp. 1411-93]. Several criteria have been advanced to classify given provisions as rules or principles, including most prominently *temporal orientation*,[20] the levels of *abstractness,*

specificity, universality (as opposed to *particularity*), *vagueness and scope of discretion.*[21] Since most provisions would partake of these characteristics to varying degrees, actual legal systems are collections of hybrid provisions located along a continuum. Bearing this in mind, the existing Indian financial legislative system may be classified as rules-heavy, while what the FSLRC is advocating is a principles-loaded system. Even if it is conceded that such a transition cannot be immediate, nevertheless, there are the following reasonable grounds for skepticism about a *principles-loaded* system for India as a long-term goal:

1. A *principles-based* system vests considerable discretionary power with the regulator and does require a supra-regulatory mechanism for resolving conflicts of interpretation between regulators and compliers along the lines of the UFA and Financial Services Appellate Tribunal (FSAT) proposed by the FSLRC. But even with a supra-regulator in place, much of the litigation involving regulators is likely to be disruptive of efficiency, given the notoriously slow judicial system in India [see Debroy, 2000; Armour and Lele, 2008, etc.]. Of course, conflicts of interpretation arise also within a rules-based framework, but are much less likely to be severe, if rules are well-specified.
2. Rules are also appealing because of their relative predictability and certainty. This certainty is especially important in modern financial markets dealing with complex products, where risk-assessment tools are of the essence and one key risk dimension is regulatory and enforcement risk [BIS, 2009b]
3. An important argument in favour of a *rules-based* system is the judicial ascendancy of *interpretive textualism.*[22] While not solely focused on the literal definition of a statute, judges display reluctance to deal with fuzzy principles, preferring not to deviate too far from the conventional meaning embodied in the statute [see Nelson, 2005].
4. As noted by Wallison [2007], there is the *safe haven* effect of a *rules-based* system. Rules, which are well specified and unambiguous, reduce the scope for discretionary interpretation by regulators. Compliance with such transparent rules, gives the regulated entities a sense of absolution, which is never fully present in a principles-based system, where the threat of interpretative issues arising ex-post is ever looming.
5. Finally, in many emerging market economies, such as India, there is a concerted move to involve regulated entities in the promulgation of financial legislation. In this new atmosphere of *collaborative governance,* there is a demand from regulated entities that the articulation of provisions be free of vagueness, explicitly stating exceptions, riders and qualifications. Such perceptions would favour a *rules based* system of regulation and supervision over a *principles-based* one.

Thus, while the distinction, between *principles* and *rules-based* systems is not as sharp in reality as made out in the FSLRC, on a balance of considerations, the case for a switchover of the Indian regulatory system to a *principles-based* one in the foreseeable future is far from clear.

The FSLRC also makes out a strong case for integrated regulation and supervision of the financial sector in which a single agency is responsible for regulating and supervising all financial transactions (except banking). The case for integrated regulation and supervision derives from the rapid pace of modern financial innovations, in which hybrid products (such as ULIPs in India)[23] often create inter-regulatory conflicts in a multiple regulatory system. The rise of financial

conglomerates also poses special regulatory and supervisory challenges in the traditional multiple regulatory model. Increasingly, therefore, a number of developed countries have opted for integrated financial regulation and supervision under a financial services supervisory agency [see e.g., Grunbichler and Darlap, 2003]. A priori, there is no reason why such an integrated agency be located outside the central bank [see Masciandaro, 2006]. However, pragmatic considerations argue against a central bank also taking over the regulation and supervision responsibility of the entire financial sector.[24] However, this argument needs to be balanced against two other considerations. Firstly, the lender of the last resort function requires for its judicious execution central bank's access not only to detailed bank-specific information but also to such information regarding other financial entities. Of course, in theory there is no difficulty in envisaging an arrangement under which the financial supervisory agency is required to share sensitive information with the central bank. However, such communication can often fail, as tellingly illustrated in the Northern Rock collapse in the U.K. in September 2007[25] [see The Economist, 2007] Secondly, it is often contended that the availability of overall financial sector supervisory information on an on-line basis enhances the efficiency of monetary policy, as non-bank financial companies are increasingly becoming important players in the forex, government securities and equity markets and thus constituting a key link in the transmission of monetary policy. Interestingly, Bimal Jalan and C. Rangarajan (both former Governors of the RBI) have expressed views disfavouring the introduction of a financial sector supra-regulator [see Jalan, 2012; Rangarajan, 2012].

Another important aspect emphasised by the FSLRC is the independence of regulators. Here the FSLRC seems to interpret Regulatory and Supervisory Independence (RSI)[26] in the narrower sense as independence from the government but not in the broader sense encompassing also independence from the industry and financial markets (regulatory capture). The neglect of RSI assumes importance when one considers the fact that almost all episodes of financial distress have been associated with a weak RSI.[27] While independence of the regulatory (and/or supervisory) agency is now recognised as the *sine qua non* of successful regulation in all spheres, the need for such independence is paramount for financial sector regulator(s), since financial stability partakes of the nature of a public good [Goodhart, 2008]. The received literature views RSI as spanning four dimensions [see Quintyn and Taylor, 2002], viz.:

(i) *Regulatory Independence:* This refers to the autonomy enjoyed by the agency in formulating regulations (which involve both prudential regulations as well as disclosure requirements) within the overall legal framework of the country.

(ii) *Supervisory Independence:* The supervisory functions of an agency involves several dimensions including on-site inspection, off-site monitoring, sanctions and their enforcement, granting and revoking of licenses , etc. Independence from government and market entities is particularly crucial in the discharge of this function for effective financial stability.

(iii) *Institutional Independence:* This refers to the status of the agency being independent of the executive and legislative branches of the government and is reflected in the manner and terms of appointment of senior executives, governance structure and transparency of decision making.

(iv) *Budgetary Independence:* This refers to the funding sources of the regulatory agency, viz., whether it is self-financing,

or supported through the general government budget, as well as the degree of control exercised by the agency over the disbursal of its funds.

Each of the above aspects of independence can be compromised to varying extent by interference from the government as well as market participants. While the FSLRC is quite right in stressing independence of regulators from the government, the other major dimension of regulatory and supervisory autonomy, viz., autonomy from the influence of financial markets is equally important but has not received the attention it deserves.[28] Independence from markets is more difficult to ensure than independence from the government, since the forces operative here are extremely subtle. The influence of markets on regulators and supervisors can be exerted through several channels, all of which have been operative to varying degrees in the Indian context. Firstly, we often have an over-representation of financial sector and corporate representatives in high-level official committees and bodies, concerned with the designing of regulatory and supervisory frameworks. This usually occurs with the ostensible purpose of taking on board the "financial industry" point of view.[29] Secondly, in India post-liberalisation, most media outlets are under corporate ownership, with editorial/broadcasting functions not sufficiently independent of proprietary control. As a result, large sections of the media are strongly aligned with corporate interests and are usually successful in setting up a *grading system* in which supervisors and regulators are routinely rated publicly on how friendly they are to markets. As a result, "the needs of investors, as opposed to investors and employees, appear to have been heard most loudly by those responsible for reform" [Armour and Lele, 2008, p. 31]. In addition, where regulators are funded through charges on their regulated constituents, this is likely to undermine their autonomy from markets at least to some extent, though blatant moral hazard may be curtailed if these charges are jointly determined by the regulators and the government,. Finally and perhaps most importantly, financial market institutions, industry bodies and corporate think tanks in India have, in the last two decades, increasingly become involved in regulatory agenda-setting by organising seminars, roundtables and workshops involving regulators, civil servants, academics and market participants with a view to achieve consensus on various issues of governance and regulation. This has resulted in both the private sector and regulators internalising an ideology favouring "light touch" regulation [Lall, 2009]. Inherent in such an arrangement is the danger of ultimately having a regulatory authority overtly sensitive to financial market demands to the relative neglect of prudential considerations of financial stability.

7. Reinforcing Prudential Standards

Improving the Quality of Bank Capital: Common equity (defined as *common* shares plus retained earnings minus *goodwill*) is generally regarded as higher quality capital than *preferred* equity. Hence, given the objective of helping banks recapitalise quickly in the event of stress, it may be desirable to increase the share of common equity in bank capital. Reflecting this logic, the Basel III proposals have increased the ratio of Tier 1 capital to total risk-weighted assets from 6 per cent under Basel II to 8.5 per cent, while simultaneously putting in place a staggered system of restrictions on distribution of earnings if the ratio of common equity in Tier 1 (to risk weighted assets) falls short of the minimum of 7 per cent. Additionally, Tier 2 capital has been strengthened while Tier 3 capital has been dropped altogether [see BIS, 2014]. The RBI has already agreed to move to a Basel III framework on the internationally agreed time line. In an important circular [RBI, 2014], it has been stipulated that the minimum Common Equity Tier 1 (CET1) of Indian scheduled commercial banks should be raised from the current (March 2014) level of 5%

to 5.5% by March 2015. A capital conservation buffer (CCB) of 0.625% is proposed to be introduced in March 2016, to be progressively raised to 2.5% by March 2019. Additionally, the minimum total capital (Tier 1 + Tier 2 + CCB) would be raised from the current 9% to 11.5% by March 2019.

Pro-cyclicality of Capital Requirements: That the capital standards imposed under Basel I and II tended to be pro-cyclical has been well-known to economists for quite some time (see Borio et al 2011, for an early critique of this feature). They can hence be a possible accentuating factor in any crisis, by leading to shrinkage in the size of bank balance sheets. As the current crisis runs its course, there is a greater realisation among central bankers globally that ways have to be found to counter this pro-cyclicality. At least three operational suggestions have been made in this context: (i) Requiring financial institutions to build-up *capital buffers* during economic expansions, (which could then be unwound in times of recession) [Ghosh and Nachane, 2003; Gordy and Howells, 2006, etc.] (ii) *Capital insurance* wherein a bank insures against a capital shortfall via a collateralised (insurance) policy (see Kashyap et al 2008 for a detailed exposition of this concept) and (iii) Introducing so-called *contingent convertibles* (securities that are issued as debt by a bank but which are automatically convertible into equity if regulatory capital of the bank falls below a certain threshold [see Flannery, 2005; French et al., 2010; Hanson et al., 2011, etc.]). As discussed in the previous paragraph, a Capital Conservation Buffer is proposed to be introduced for Indian banks within a well stipulated time frame.

Leverage of Financial Institutions: An important amplification factor for the recent crisis has been not only the high degree of leveraging of many financial institutions but also the fact that this leveraging has very often been quite opaque. [See Kalemli-Ozcan et al., 2011]. Reflecting the need for more accurate measures of balance sheet exposures, the following suggestions have emerged: (i) A stronger focus by regulators on loan-to-value ratios (LTVs). The RBI, for example, now insists on a cap of 75 per cent on the loan to value (LTV) ratio, with risk weights on exposures varied according to the LTV ratio. (ii) Limits on leverage ratios of banks. In tune with this thinking, Basel III proposes to introduce a minimum Tier 1 leverage ratio of 3 per cent defined as ratio of Tier 1 capital to total exposure (on and off balance sheet). It is interesting to note that as of March 2014, this ratio stood at 6.1% for scheduled commercial banks in India, while it stood considerably lower at 5.2% for public sector banks.

Devising Market Incentives for Prudent Behaviour: The issue of market *discipline* was brought into the forefront of debates on sound regulatory practices by the great emphasis laid on it by Basel II, as one of its three pillars (Pillar III) of sound prudential regulation. *Market discipline* is a generic term referring to the monitoring of financial institutions by market participants and in the Basel II schemata was sought to be achieved by imposing various kinds of disclosure requirements on financial institutions (most particularly banks) relating to their capital, assets, credit risk, market risk, operational risk, etc. The rationale for disclosures is to provide adequate information to enable counterparties (mainly depositors, shareholders and occasionally junior/subordinated debt holders) to assess whether the available capital is sufficient to meet measured and non-measured risks. To the extent that such disclosures are comprehensive and objective, it is expected to assist market participants in judging how a bank's management of its capital adequacy relates to its other risk management processes and its ability to withstand future volatility. The BIS has elaborated considerably on the recommendations of the Accord concerning the nature of information which should be disclosed under

this pillar. The salient components of this information (for a bank) comprise: (i) the structure and components of bank capital (ii) the terms and main features of its capital instruments (iii) the accounting policies used in the valuation of assets and liabilities and for provisioning and income recognition (iv) qualitative and quantitative information about risk exposures and strategies for risk management (v) capital ratio and other data related to capital adequacy on a consolidated basis and (vi) a breakdown of risk exposures. The information needs to be supplemented by an analysis of factors affecting the banks' capital position. Moreover, banks are encouraged to disclose ways in which they allocate capital among their different activities. The disclosures envisaged under this pillar are required to be made on a semi-annual basis.

Since Basel II Pillar III has gone into implementation in India in March 2009, the disclosure component of market discipline seems to be fairly in place. But it has to be remembered that while disclosures do contribute to greater transparency in financial sector operations, and to that extent to better monitoring by all counterparties, they constitute only a necessary condition for market discipline. Basel III more or less reiterates the Basel II approach to market discipline but emphasises more the regulators' role. On balance, such an assessment seems appropriate in a country like India, where financial markets are riddled with too many inefficiencies, and where excessive reliance on market discipline may prove of limited value.

Monitoring of banks and financial institutions by depositors in India is weak, primarily because of the prevalent flat-rate deposit insurance premium, which imposes a uniform premium on deposit insurance for all banks, irrespective of the riskiness of their loan and investment portfolios. Such a system subsidises high-risk, poorly run institutions at the cost of their well-run counterparts. An ideal deposit insurance premium pricing system would involve (a) banks paying premium indexed to their own levels of risks, and (b) a premium level that ensures a continually solvent insurance fund [see e.g., Demirguc-Kunt and Huizinga, 2004]. However, it is difficult to assess individual banks' risks accurately ex ante, i.e., before problems emerge. Thus, risk-based premium (RBP) systems should be viewed as a complement to, rather than a substitute for, other methods of checking excessive risk taking like risk-based capital requirement prescriptions, strong supervision and direct restraints on risky activities. There is an increasing move towards risk based premium systems (RBPs) across the globe and moving towards an RBP system could be an important move in the direction of strengthening market discipline in India.

Monitoring of banks by shareholders traditionally occurs via responses of equity values to changes in the perceived risks of banks. If market discipline is effective in improving bank governance, then we must have publicly listed banks (with constantly available market signals from their equity and bond prices) assuming less risk than similarly placed non-publicly traded banks. There have been several empirical tests of this and similar hypotheses [see e.g., Nier and Baumann, 2006; Park and Peristiani, 2006; Stephanou, 2010]. While the empirical conclusions vary somewhat, nevertheless there seems to be a fairly broad consensus around two propositions, viz. (i) lack of a significant difference in the risk profile between publicly traded and non-traded banks and (ii) publicly traded banks often tend to have worse supervisory ratings than non-publicly traded banks.[30] Little econometric evidence seems to be available in India in this regard, though bank stock indices do show a significant response to declaration of bank quarterly results. However, this effect is in most cases transitory, and overall shareholder apathy seems widely prevalent. It is highly doubtful whether shareholder discipline can operate in improving bank risk profiles in the Indian context.

An interesting additional way to strengthen market discipline is via the so-called Chicago Fed Plan [see Keehn, 1989], which proposes the inclusion of a mandatory subordinated debt, (i.e., debt that is unsecured and has lower order of claims than other debts in the event of closure) component in bank capital requirements [see also, Calomiris and Powell, 2000; Evanoff and Wall, 2000, etc.]. Interestingly subordinated debt can act as an important market disciplining factor, since as perceived risks of a bank increase, holders of subordinated liabilities will require a higher return to compensate for the extra perceived risk. Several studies [Jagtiani & Lemieux, 2001; Evanoff and Wall, 2002; Sironi, 2003, etc.] have noted that issuance and secondary market risk premia on traded subordinated debt are correlated positively with risk measures such as asset portfolio composition, credit ratings, probability of undercapitalisation and/or failure, etc. In India, as in other South Asian countries, as of now, there is no mandatory requirement for a subordinate debt component in regulatory capital, and it is a suggestion worth careful consideration as to whether such a mandatory requirement be imposed in the interests of market discipline.

Other Prudential Measures: Several other prudential measures have also been suggested and discussed in detail in the literature. An indicative list would comprise:

(i) Higher loan-loss provisioning norms [Saurina, 2009]. In India, for example, loan loss provisioning has been steeply raised by the RBI in the wake of the crisis. (It currently stands at 70 per cent).

(ii) Imposing higher capital requirements on *systemically important* financial institutions [see Pennacchi, 2010; Bullard et al., 2009, etc.). Once again referring to the Indian case, systemically important non-bank financial intermediaries are subject to a higher CRAR (capital to risk-weighted assets ratio) of between 12 per cent and 15 per cent, as opposed to the regularly applicable CRAR of 9 per cent for banks.

(iii) Stress testing exercises to be conducted periodically to monitor leveraging on an on-going basis [Lopez, 2005; Matsakh et al., 2010, etc.]. In India, stress testing for banks is being done regularly by the RBI since 2007. The tests are designed to test the resilience of the banking system against macroeconomic shocks. Two adverse scenarios are considered (medium and severe) around a baseline scenario involving 10 year historical data. The macro-variables included are the GDP, inflation, interest rate and merchandise exports (to GDP) ratio, with the two adverse scenarios being based, respectively, on 1 and 2 standard deviations around the baseline. The stress variables examined are the credit risk, foreign exchange risk, interest rate risk, liquidity risk and market (equity price) risk. The exercise is done separately for scheduled commercial banks, urban cooperative banks and non-bank financial companies.

(iv) Disclosure requirements for complex structured products and reducing procyclicality of accounting standards [Borio and Tsatsaronis, 2005; Novoa et al., 2009, etc.]. Accounting standards in India for financial entities are aligned with those of the Institute of Chartered Accountants of India (ICAI). Unfortunately these are not widely accepted internationally. Convergence to international standards (IFRS) has commenced from April 2013 and in the interim the RBI has been periodically issuing prudential guidelines on asset classification, income recognition, provisioning and investment valuation. The RBI also lacks access to external auditors' working papers and the power to rescind

auditors' appointments. These can and often do impose effective limits on the RBI's supervisory powers.

(v) Risk concentration limits involving ceilings on growth of particular types of exposures [BIS, 2006; Bonti et al., 2006, etc.]. As was pointed out by the FSAU of the IMF [2013] the current exposure limit (in India) for large loans of 55% of a banking group's capital is far in excess of global practices of 10% to 25% and should be brought down in stages.[31] The Report also observed (p. 49) that the issue of "connected exposures" was not getting enough attention in the case of the Indian financial system. More specifically "cross-guarantees" between financial entities should be sufficiently highlighted as these result in financial interdependency and commensurate concentration of risk and finally,

(vi) The establishment of clearing houses in OTC (Over the Counter) derivatives markets [see Norman, 2011; Pirrong, 2011, etc.]. About 75 per cent of the OTC derivative contracts in India are routed through a centralised exchange, viz., the Clearing Corporation of India Ltd. (CCIL).

8. Special Attention to Non-Performing Assets (NPAs)

NPAs constitute an important dimension of financial stability, apart from affecting the overall efficiency and profitability of the banking system. In India, the problem of NPAs, which had lain dormant in the high growth phase of the last decade, seems to have re-surfaced since the global crisis of 2008-09. Two trends are particularly worrisome - firstly, the fact that the problem has not subsided with the tapering off of the global crisis but instead accentuated especially in 2011-13; secondly, India is among the few countries in Asia to display such a trend, most other countries showing a moderation in NPAs over 2009-12.

As per the extant guidelines of the RBI, a loan/advance slips into the NPA category if the interest and/or instalment of principal repayment thereof remain overdue for a period exceeding 90 days. NPAs are further classified as (i) *substandard* (an asset with NPA status of up to 12 months) (ii) *doubtful* (an asset of more than 12 months' status as substandard) and (iii) *loss asset* (an asset on which loss has been identified by the bank, its auditors or an RBI inspection team).

Several issues come to the fore as soon as an asset is qualified as an NPA. (i) The first issue pertains to the accounting norms for recognising any income that may occur from the NPA either pre- or post- restructuring (*Income Recognition*). (ii) Since an NPA represents a potential (partial/total) loss asset, the accounts of the bank should be adjusted to take cognisance of this possible loss (*Provisioning*). (iii) The third and easily the most contentious issue pertains to the restructuring of an account, specifically under what circumstances an asset has claims to be so restructured and what should be its accounting status post such restructuring (*Restructuring*). (iv) Banks are always engaged in the recovery efforts on NPAs. These can either be through legal recourse or market-based sell-offs (*Recovery*). (v) Finally, banks need to take a decision on the write-off of NPAs which have been overdue for long, with a view to save provisioning costs and to economise on regulatory capital requirements (*Write-offs*).

Over the last few months, NPAs have emerged as an active area of concern for the RBI. As of end- March 2015, the gross NPA ratio is estimated at 4.5%, or Rs. 3,50,000 cr., while the total stressed assets [NPAs and All Special Mention

Account categories listed below] are estimated at about 12.5% of the total bank assets (see *Economic Times* 3 April 2015).

In a recent Report [RBI, 2012] the RBI has proposed a slew of measures to confront the various problems involved in NPA management. Briefly these may be classified as

1. *Early recognition of stressed assets:* A new asset category has been introduced, viz., SMAs (Special Mention Accounts) with three sub-categories (i) SMA-1 (Principal/or interest payment overdue between 31-60 days) (ii) SMA-2 (Principal/or interest payment overdue between 61-90 days) and (iii) SMA-NF (accounts which signal certain non-financial signs of stress, e.g., delays in submission of stock statements, devolvement of deferred payment guarantees, shortfalls in projected sales/profits, etc.). Additionally, a new entity called CRILC (Central Repository of Information on Large Credits) will be established to collect /disseminate data relating to large borrowers (exposures exceeding Rs. 50 million). Any account slipping into the SMA category will be immediately reported to CRILC by the concerned bank setting in motion the formation of Joint Lenders' Forum (JLF) among the creditors (including banks as well as systematically important NBFCs). The JLF will work out a Corrective Action Plan (CAP) and decide on the appropriate course of action, viz., rescheduling, restructuring, recovery or write-off.

2. *Modification of Restructuring Process:* Among the important new features being suggested for restructuring the following may be noted. (i) The corporate debt restructuring (CDR) mechanism will be made accessible also to non-members on a transaction to transaction basis. (ii) Time lags involved at various stages in the CDR decision making process to be drastically shortened. (iii) Restructuring of accounts with exposure exceeding Rs. 5 billion to be evaluated by an Independent Evaluation Committee (IEC) comprising experts fulfilling certain eligibility conditions. (iv) Greater emphasis than currently prevails on promoters either infusing fresh equity into the stressed company or transferring part of their equity to creditors. (v) Possibility of ushering in a shift in management control, if favoured by a majority of lenders.[32]

3. *Accelerated Provisioning Requirements:* With a view to forestalling the abuse of the asset restructuring facility by borrowers/creditors, *accelerated* provisioning norms are proposed to be applied where banks/financial institutions (FIs) do not intimate the SMA status of problem accounts to CRILC in a timely fashion. Creditors who renege on the terms of an agreed CAP, or retreat from agreements already negotiated under inter-creditor agreements (ICA) or debtor-creditor agreements (DCA) could also invite accelerated provisioning on their NPA exposures to the concerned borrowers.

4. *Greater Accountability of Directors/Promoters/Auditors:* Accelerated provisioning norms will also apply to exposures to companies whose directors/promoters figure more than once in the list of wilful defaulters. Similar treatment will apply to exposures to borrowers classified as *non-cooperative.* RBI will compile a list of such directors/promoters /borrowers to be disseminated to all lenders. Company auditors involved in falsification of accounts/mis-certification of stock statements will be reported to ICAI for disciplinary action, while their identity will be made public to all banks.

Contrary to a popular mis-conception, it is not the priority sector in which the NPA problem is rooted. Even though the Gross NPAs (GNPA) ratio stands uniformly higher for the priority sector compared to the non-priority sector, a closer look at the totality of stressed assets indicates that the problem lies elsewhere. In particular, big-ticket loans to highly leveraged corporates accounted for a large share of distressed assets. In recent years, both borrowers and creditors are taking increasing recourse to restructuring under the CDR mechanism. While not denying the case for genuine restructuring in times of distress conditions beyond the control of the borrower, evidence seems to be mounting that some large borrowers might be actively engaged in attempts at ever-greening of loans with the active connivance of the creditors. Recovery of NPAs through asset sales to securitisation companies/asset reconstruction companies (SCs/ARCs) is becoming increasingly popular in recent years, though the market in distressed asset sales is not really well developed. Write-offs are proving increasingly popular as a cosmetic device for cleansing balance sheets, though they impose the moral hazard of slackening the efforts at recovery. The silver lining, of course, is provided by the fact of the RBI being seriously seized of the problem and engaged in working out a series of effective measures aimed at addressing both the micro and macro dimensions of the NPA problem. However, these efforts may fall short of the mark unless banks/FIs as creditors respond with a greater sense of responsibility towards credit appraisal, credit monitoring, credit risk management and better information systems to quickly identify assets under stress and initiate remedial actions.

9. Reducing Costs of Financial Failures

The welfare costs of financial crises are generally severe and fall disproportionately on disadvantaged groups in any society, and the current crisis is hardly an exception [see Government of India, 2008; ILO, 2009; Nachane, 2009, etc.]. With a view to reducing such costs, the following two major suggestions have been proposed at various international policy forums.

Early Warning Diagnostic System: Early warning systems purport to detect underlying financial fragilities well in advance of a crisis, permitting central bankers to initiate pre-emptive action [see Bussiere and Fratzscher, 2006, Pp. 953-73, etc.]. The RBI introduced the Prompt Corrective Action (PCA) scheme in December, 2002, under which, the central bank would initiate *structured* as well as *discretionary* actions in respect of banks, which have hit certain trigger points (defined in terms of capital to risk weighted assets ratio (CRAR), net non-performing assets (NPA) and return on assets (ROA)).

Orderly Closure Rules: The instituting of Orderly Closure Rules for important financial institutions. In the U.S. under the Federal Deposit Insurance Corporation (FDIC) Improvement Act and the Competitive Equality Banking Act, apart from capital based triggers, there are stipulations ensuring that banks are closed before it is too late, (i.e., before they go into negative worth territory). The brunt of the loss is borne by shareholders and the FDIC becomes the receiver. A temporary bridge bank is set up to pay off depositors and creditors and organise the *fire-sale* of assets. In India, to date no such provision exists - failing banks are either merged with another stronger (public or private) bank or there is capital infusion from the government. Both courses have obvious drawbacks [see Goldstein, 2008]. Pending the initiation of such closure rules, suggestions have been made in the Indian context to raise the limits for deposit insurance [Nachane, 2009] and to replace the existing flat premium with a risk-sensitive premium [see Government of India, 2009].

In the Indian context, with the huge overhang of NPAs in the banking system, the recouping of bank losses lends an additional dimension to the financial failure problem.

Recouping of Bank Losses due to NPAs: As per the existing arrangements in India, recovery of losses on problematic loans can proceed via three channels, viz., (i) sale of assets to SCs/ARCs (established under the SARFAESI Act 2002) (ii) debt recovery tribunals (DRTs) and (iii) Lok Adalats.

Sale to SCs/ARCs: Under the SARFAESI Act, banks/ FIs can sell NPAs (and even standard assets under certain stipulated conditions) to SCs/ARCs. The sale can be on mutually agreed terms, though the selling banks/FIs have to show any shortfall in sale price below the net book value (NBW[33]) in their Profit & Loss account.

Debt Recovery Tribunals (DRTs): The Debts Recovery Tribunals have been established under an Act of Parliament (The Recovery of Debts Due to Banks and Financial Institutions Act, Act 51 of 1993) with a view to providing an avenue for banks and financial institutions to salvage a part of their losses on assets through a process of expeditious adjudication and recovery. Currently, there are about 33 DRTs across the country. Additionally, the DRTs can also function as a court of appeal for creditors seeking redress for sales of assets under the SARFAESI Act.

Lok Adalats: These were established under the Legal Services Authorities Act, 1987, and are basically designed to settle outstanding debt issues via arbitration between small borrowers[34] in distress and banks/FIs. Such borrowers are also entitled to receive legal services provided that the concerned authority is satisfied that the person involved has a prima-facie case to prosecute or to defend. The system is a multi-tiered one, comprising the National Legal Services Authority at the apex, and State, District and Taluk Legal Services Authorities at the lower rungs of the hierarchy. Lok Adalats within a Taluk are organised by the respective Taluk Legal Services Committee.

The dominant role in NPAs recovery is played by the SARFAESI channel [see RBI, 2013, p. 69]. Further, the share of this channel in total NPAs recovery increased from 70% in 2011-12 to 79% in 2012-13. The importance of this route is likely to increase even more in the future with the increased popularisation of the securitisation route. Given their very nature, the Lok Adalats deal with a large number of cases involving small amounts. But their role is essentially seen as supportive of the overall objective of financial inclusion. One modification which suggests itself is a more liberal regulatory treatment of asset sales to SCs/ARCs, with a view to encouraging banks/FIs to recover losses on NPAs via this route. Some progress in this direction is already evident. The RBI has promised to allow lenders to spread losses on such asset sales over two years (instead of one year as at present). Leveraged buy-outs will be permitted for acquisition of stressed assets. Further, greater leeway is proposed for private equity firms in the distressed asset sales market. Finally, the Finance Ministry has already raised the foreign investment limit in ARCs to 74% (from 49% earlier) in August 2013, and now intends to ease the norms for nominee directors in ARCs [Economic Times, 30 Jan. 2014].

10. A Shift from Micro-Prudential to Macro-Prudential Regulation

Financial stability as an explicit concern of central banks certainly antedates the recent global crisis in most advanced countries and several EMEs (including India). The crisis, however, has brought it into a much sharper focus. Even more importantly, the crisis brought about a shift of emphasis from *micro-prudential* regulation (essentially centred on a partial-equilibrium

approach to regulation aimed at preventing the costly failure of individual financial institutions (FIs)) to *macro-prudential* regulation (constituting a general-equilibrium approach to regulation aimed at safeguarding the financial system as a whole). The string of successive failures of financial institutions in the U.S. and Europe subsequent to the Lehman collapse, highlighted the inadequacy of a micro-prudential regulatory structure, geared to addressing *idiosyncratic* risks specific to individual FIs. Instead, it was becoming increasingly clear that financial crises tend to be typically characterised by a *Domino* scenario in which the collapse of a few key FIs is followed by a general collapse of the financial system and that only a regulatory and supervisory (R&S) framework designed to address *systemic risk*[35] provided a measure of insurance against a general "Minsky moment" [Minsky, 1986; Cassidy, 2009]. Inter-institutional linkages, accompanied by low capitalisation and an excessive reliance on short-term sources of funding (maturity mismatch) often lead to general rollover problems thus creating a potential for financial crises. As noted by Whelan [2009], systemic risk can often arise even with individual institutions having good risk-management systems in place. Further, such systemic episodes can be triggered by relatively minor impulses. It is often generated by individual institutions taking decisions in the interest of their own prudent risk management.

The Basel II framework [2004] did play an important role in putting (globally active) individual FIs (especially banks) on a sound footing, but with its emphasis on micro-prudential regulation it fell considerably short of forestalling the global financial crisis of 2007-2008. The proposed Basel III framework seeks to steer financial regulatory (and supervisory) structures towards macro-prudential regulation but several critiques have stressed its limitations. Acharya [2011, p. 17-19], for example, has indicated four pitfalls: (i) Firstly, the approach tends to be focused on individual FIs; (ii) Secondly, reduction of institution-specific risk can aggravate systemic risk, as in their attempts to diversify away *idiosyncratic* risk the portfolio holdings of FIs tend to get increasingly correlated; (iii) Thirdly, Basel III ignores the dynamic evolution of endogenous risks of FI portfolios, as asset quality can deteriorate by the very fact of increased holding of the asset class across various institutions; and (iv) Finally, over-leveraging on the favoured asset class could aggravate systemic liquidity risk, if and when the risk on this class turns adverse.[36]

In India, without awaiting cues from Basel III, the RBI in collaboration with the Sub-Committee of the FSDC, has been seriously engaged in identifying, anticipating and attempting to moderate systemic financial risks since 2011. This is being done at three levels:

(i) Firstly, a systemic risk survey is conducted six-monthly (the seventh in this series being concluded in October 2014) involving experts' and market participants' assessment of systemic risk spanning five dimensions - global risks, macro-economic risks, market risks, institutional risks and general risks (natural disasters, social unrest, etc.).

(ii) Secondly, stability maps are constructed for the macro-economy, the corporate sector and banking sector. The indices used are as follows: macro-economy (*global output growth, domestic output growth, inflation, current account deficit/GDP ratio, and fiscal and primary deficits*), corporate sector (*profitability, leverage, interest coverage ratio, liquidity and turnover*), and banking sector (*CRAR, net NPAs/total assets, net interest margin, liquidity and efficiency*) [RBI, 2014, Pp. 61-63].

(iii) Systemic risk posed by the interconnectedness of the financial system is sought to be ascertained via two approaches, viz., *solvency contagion analysis* and *liquidity contagion analysis.* In the first approach, the gross loss to the banking system owing to the domino effect of a bank failure is assessed, whereas in the second, the corresponding loss is calculated in the event of the failure of a net lender. A sophisticated network analysis methodology forms the basis of both approaches.

11. Overview of the Role of Select Multilateral Institutions in Financial Stability

Our paper has discussed at length the role of the national regulatory and supervisory authorities in ensuring financial stability in a world dominated by an over-arching financial super-structure. In the globally integrated world of today, emergent distress in one country can easily transmit itself to other countries, often with amplificatory effects. The role of global multilateral institutions becomes particularly relevant in containing such contagion. Of late, many of these institutions have also been active in striving for adoption of harmonised best global practices by national regulators. However, the rights of national authorities to adapt and modify these practices in consonance with their specific national circumstances, has often not been taken into consideration. As the oldest and also the most influential multilateral organisation, the role of the IMF is particularly crucial and to this we now turn.

Reforming the IMF: There has been a general feeling of dis-satisfaction with the role of the IMF in handling financial crises among LDCs and EMEs. It has long been felt that the IMF plays an asymmetric role in handling crises, being more interested in protecting the interests of international lenders/bankers and imposing conditionalities on crisis-afflicted countries which very often draw them into long-term structural problems. This has been a source of perennial concern among LDCs and EMEs about inadequate representation of their point of view. The main demands of these countries are three- fold:

(i) Radical changes in access, pricing and conditionality for IMF borrowers, with a particular emphasis on the introduction of *flexible credit lines* (FCL).
(ii) Raising quotas/votes of EMEs and LDCs as a group.
(iii) Negating the U.S. veto on crucial IMF decisions.

The Committee on IMF Governance Reform (under the Chairmanship of Trevor Manuel), which submitted its Report on 24 March 2009, makes an honest effort to address several of these concerns, though in what form these will be finally incorporated in the IMF Charter is as yet unclear. Among the major recommendations of the Report are the following:
(i) several changes in access, pricing & conditionality for IMF borrowers (with a more liberal use of Flexible Credit Lines)
(ii) with a lowering of threshold on critical decisions from 85% to 70-75%, the US veto is proposed to be annulled (as the US has 16.7% voting power)
(iii) doubling of quotas and shifting of 6% of voting power to dynamic EMEs.
(iv) a proposed tripling of basic votes (number of votes every country has qua member) which would increase developing country votes from 32.3% to 34.4% (the corresponding world bank figure is 42.6% proposed to be raised to 43.8%)
(v) Some countries have also argued for the adoption of a *double majority voting* process for major IMF decisions. Double majority implies both a majority of weighted votes (as prevails currently) as well as a majority of country votes.

The system prevails at the Inter-American Development Bank, ADB, African Development Bank , etc. in crucial matters such as the election of a new president/head [see Birdsall, 2009].

At its 2010 Seoul Meeting, the G20 pledged to implement an IMF governance reform centred on the following 3-point agenda:

(i) Shifts in quota shares to dynamic EMEs and LDCs of over 6%.
(ii) A doubling of quotas (the financial resources of the IMF) and a review of the quota formula by January 2014.
(iii) Greater representation for EMEs and LDCs at the Executive Board by reducing the number of advanced European chairs by two. Further, moving to an all-elected Board with a commitment to maintain the Board size at 24 chairs.

However, the Euro crisis distracted policy makers from the IMF governance agenda to more pressing intra-Eurozone issues. A complicating factor impeding progress on the IMF reforms is that in most IMF member countries, many of the proposed changes require parliamentary approval, which can be a very slow process. Currently, only about half of the G20 members have taken action on the approval process.

At the 14th General Review of Quotas (Dec. 2010) while the above three-point agenda was approved, three conditionalities were imposed before the provisions could become operational, viz., (i) the quota increases must have the consent of members with an aggregate quota holding of at least 70% of the total quotas (ii) the 2008 Amendment on Voice and Participation must have entered into force and (iii) the acceptance of the amendment to reform the Executive Board by three-fifths of the members with more than 85% of the total voting power.

As of April 2013, 146 of the 188 IMF members holding 77.07% of quotas had consented to the quota increases, while the 2008 Amendment on Voice and Participation entered into force in March 2011 [see IMF Annual Report, 2013]. Thus, of the three listed conditionalities, only the last conditionality remains to be fulfilled. But this cannot be done without the approval of the U.S. (as mentioned above, it holds 16.7% of the voting share). While President Obama has expressed support for the IMF reforms, a Republican-dominated U.S. Congress is reluctant to accord its approval. However, there is reason for optimism in the fact that the IMF Managing Director Christine Lagarde has called the "2010 governance and quota reforms a must" and expressed the hope that they will be completed in 2015.[37]

Financial Stability Forum (FSF)/Board: The FSF is a group consisting of major national financial authorities such as finance ministries, central bankers, and international financial bodies. The Forum was founded in 1999 to promote international financial stability. The Forum facilitates discussion and co-operation in supervision and surveillance of financial institutions, transactions and events.

FSF includes about a dozen industrialised nations (USA, Japan, Germany, UK, France, etc.) who participate through their central banks, financial ministries and departments, and securities regulators. It also includes several international economic organisations. The 2009 G-20 London Summit decided to establish a successor to the FSF, the Financial Stability Board (FSB), with the explicit mandate to address global vulnerabilities and to develop and implement strong regulatory, supervisory and other policies in the interest of financial stability. In this role, the FSB should alert international standard setting bodies about loopholes and structural deficiencies identified in existing national regulatory structures. The standard setting bodies like BCBS,

IOSCO (International Organisation of Securities Commissions), etc., can then devise specific operational guidelines for incorporation into national regulatory and surveillance frameworks. The FSB is also empowered to issue general warnings on emergent systemic risks in specific zones [Brunnermeier et al., 2009]. As pointed out by Ocampo and Griffith-Jones (2010), the FSB suffers from several limitations of which the most prominent seem to be (i) the total absence of representation of small and medium-sized economies (ii) the ad-hoc nature of the arrangement and the lack of a formal secretariat and (iii) the absence of accountability to a representative political body.

International Standard Setting Bodies: International standard setting bodies have also been fairly active in promoting financial stability around the globe and in redesigning the global financial architecture in response to specific episodes of global turbulence. The BCBS of BIS has been particularly active in promoting good governance in the financial sector especially the banking sector. In the aftermath of the recent global crisis, it put forth a new blueprint for bank regulation, supervision and governance, viz. Basel III, which goes considerably beyond its predecessors Basel I & II. The central feature of Basel III is its focus on "systemic risk" which was largely neglected in the earlier Basel accords. This is sought to be accomplished through several important measures including

(i) *Improvement of the "quality of capital"* (insisting that Tier I capital should include a mandatory "common equity" component)

(ii) *Raising the "Minimum capital" ratio* (from the current level of 8% under Basel II to 10.5%). The additional minimum capital of 2.5% constitutes the so-called capital conservation buffer.

(iii) *Additional capital requirements for* systematically important financial institutions (*SIFIs*) via the issuance of "Contingent capital"

(iv) *Reduction of pro-cyclicality of capital requirements* by introducing (in addition to the minimum capital ratio) a "counter-cyclical buffer" of between 0-2.5% (at the discretion of national regulator) of Risk Weighted Assets composed of Tier 1 capital

(v) *Introduction of a minimum leverage ratio (LR)* of 3% { LR = (Tier 1 Capital) / Total exposure (on and off-balance sheet))}

(vi) *In addition, a liquidity coverage ratio (LCR) of 100% is introduced* {LCR= (Stock of high-quality liquid assets)/ (Total net cash outflows expected over next 30 calendar days)}

G-20 and Its Role: The Group of 20 was formed in 1999 and comprises 19 individual nations and the European Union. There is general agreement that its initiatives played a key role in coordinating national stimuli measures in the wake of the post-Lehman crisis situation. Since then it has sought to transform itself from a "crisis-management forum" to an effective "global governance steering forum" [see Jorgensen, 2013]. At the London Summit of the G-20 in April 2009, an ambitious agenda was adopted to rejuvenate the global trading and investment system, while maintaining financial stability and moderating global imbalances. The main components of this agenda were:

1 A substantial increase in IMF resources ($750 bn + $250 bn SDR allocation) as also of the Multilateral Development Banks (MDBs) ($100 Bn).

2. Greater flexibility in IMF Support Programmes (Flexible Credit Lines)

3. Strengthening Financial Supervision & Regulation (Regulatory Oversight of Credit Rating Agencies, action against Non-cooperative Jurisdictions & Tax

Havens, Improving Accounting Standards, and Establishment of a New Financial Stability Board (FSB), etc.).

4. Supporting growth in EMEs and LDCs by helping to finance counter-cyclical spending, bank recapitalisation, infrastructure, etc.
5. Countering Rising Protectionism in response to the post-Lehman crisis
6. Reaffirmation of Millennium Development Goals
7. The establishment of an effective mechanism to monitor the impact of the crisis on the poorest and the most vulnerable.

Assessments of the G-20 show considerable variation. There seems to be general agreement that the Mutual Assessment Process (MAP) initiated under the G-20 auspices at its Pittsburg summit [2009] by ensuring greater co-operation among members on key post-crisis issues (such as fiscal stimulus, financial reform, etc.), prevented the world sliding into a repeat of the Great Depression. Similarly, the G-20 deserves credit for its repeated emphasis on inadequate supervision of "shadow banking" activities as the primary cause of the recent crisis. This set in train important improvements in the financial regulatory landscape such as Basel III and the Dodd-Frank Act. Additionally, the continual rhetoric at the G-20 against a renewal of protectionism fended off the kind of tariff conflicts witnessed in the post Depression era. However, the G-20 has not been able to make much headway in certain key dimensions of global stability such as (i) the design of an equitable and credible international debt resolution mechanism (ii) striking a proper balance between fiscal consolidation and the need to use fiscal policy as a component of counter-cyclical macroeconomic policies (iii) reducing the global dependence on US macroeconomic policies stemming from the use of the US dollar as a reserve currency (iv) recognition of the threats to financial stability of the LDCs posed by pro-cyclical cross-border capital flows and (v) removal of major impediments to international movement of labour.

12. Conclusion

This time is different is a common refrain in discussions following every major crisis (and is also the title of an interesting book written in response to the current one [see Reinhart and Rogoff, 2009]. However, in one essential regard, this crisis is indeed different from its predecessors, viz., that for the first time nations have come together to chalk out a coordinated global effort to fight the crisis instead of each country attempting to build walls of insulation around its own domestic economy. In the immediate wake of the crisis, certain facts emerged with stark clarity - in particular the inconsistencies in regulatory systems across countries and clear conflicts of interests between regulators across borders as well as between regulators and financial markets. The need was quite evident for a new era of global financial coordination to deal with global systemic risk. The major issues that seemed to call for inclusion in the agenda of such an endeavour were:

(i) Regulation of domestic financial markets and the coordination of regulations across jurisdictions to avoid *regulatory arbitrage*
(ii) Regulation of cross-border capital flows
(iii) To device global *lenders of last resort* mechanisms to supplement emergency liquidity financing of national central banks
(iv) To ensure adequate global debt-resolution mechanisms
(v) To ensure coordination of debt resolution tools as well as coordination in depositor and investor protection
(vi) To provide frameworks for enhanced information sharing among regulators and

(vii) To work towards an international financial architecture that addresses international stability considerations in a fair and forthcoming manner, with special attention to EMEs and LDCs.

The global co-ordination process was envisaged as involving five major partners (see Section 3 above), viz., (i) National Regulatory & Supervisory Authorities (ii) IMF (iii) Financial Stability Forum (FSF)/Board (FSB) (iv) International Standard Setting Bodies like the Basel Committee on Banking Supervision (BCBS) of Bank of International Settlements (BIS), (International Organisation of Securities Commissions IOSCO), etc., and (v) Globally influential organisations like G-20.

This paper has gone into an extended discussion of the range of tasks confronting each of these partners in the conduct of the overall mandate of global stability. Difficulties abound but significant signs of progress are also discernible. While it is premature to prognosticate on the likely success of this ambitious endeavour, one cannot but welcome the overall efforts at facilitating consensus building among the comity of nations.

NOTES

1. Detailed accounts of the crisis are available in several writings. Of particular relevance are Brunnermeier [2009], Gorton [2008, 2010] Giovanni & Spaventa [2008], etc. The impact of the crisis on India is described in Reddy [2009], Nachane [2009], etc.

2. Of course, apart from the FRB policies, there were other factors feeding the home price bubble including (i) a widely held belief in the robustness of U.S. growth (ii) the growing incidence of securitisation in the housing market and (iii) a herd instinct in asset markets.

3. Fair, Isaac & Co.

4. Acronym for "originate-to-distribute" model, as the original mortgages are now removed from the bank's books and the risk of default is correspondingly shifted from banks to investors in the MBS. Banks favoured the new arrangement as it released valuable capital for them to expand their loan base.

5. Under SIVA (stated income, verified assets) loans, proof of income was replaced with a "statement" on faith. NIVA (no income, verified assets) loans replaced proof of employment requirements with a proof of money in Borrowers' bank accounts, whereas "No Income, No Assets" (NINA) or Ninja ("no income, no job and no assets") loans were based only on credit scores with no proof of any owned assets.

6. Within the ARM there were further options. The *interest-only* ARM, allowed the homeowner to pay only the interest (not principal) of the mortgage during an initial "teaser" period. Even looser was the *payment option* ARM loan, in which the homeowner has the option to make monthly payment that do not even cover the interest for the first two or three year initial period of the loan.

7. Possibly to avert a general collapse of the financial system, however, on 16 September 2008, the Fed bailed out AIG via an $85 bn lifeline.

8. The NCM attitude to financial markets was that they posed no grave dangers of instability being generally self-equilibrating and further that, through several channels, financial development could play a defining role in promoting real growth [see e.g., Aghion et al., 2004]. As a natural consequence, *financialisation* became an important ingredient of the standard IMF prescription of *neo-liberalism* for the many countries that faced structural macro-economic crises in the 1980s and early 1990s.

9. The adaptive markets hypothesis put forth by Farmer and Lo [1999] and Farmer [2002] is an attempt to synthesise Simon's notion of "bounded rationality" and "satisfying behavior" with the theory of efficient financial markets using the new discipline of "evolutionary psychology" [see Rabin, 2002; Gigerenzer, 2000, etc.].

10. The theorem may be simply explained as follows. The foundations of neoclassical economics rest on the assumption that if individual demand functions satisfy Wald's [1936] WARP (weak axiom of revealed preference) (implying individual demand curves are downward sloping) then a unique stable market equilibrium exists. The DSM theorem asserts that whereas the WARP is sufficient to ensure the existence and *local uniqueness* (of a market equilibrium), global uniqueness and stability are not ensured by WARP (or by even stronger restrictions on individual demand functions).

11. Evidence lined up against the REH comes from behavioural scientists [Kahneman and Tversky, 1979; Kunreuther, 1978; Gleitman, 1996, etc.], from managerial professionals concerned with devising industry compensation packages [see Rock and Berger, 1991; Milkovich et al., 2007, etc.] as well as from economists [Shiller, 1997; Akerlof et al., 2000, etc.].

12. For example, should the target (or a target band) be set by the central bank, the Finance Ministry or the Parliament and what should be an appropriate incentive-cum-penalty system for success or failure on the part of the central bank in achieving the target? etc.

13. Among suggested TWs we may prominently mention (i) Ratio of official reserves to total short-term external obligations (foreign portfolio investment and total, -- i.e., private plus public-- short-term hard-currency denominated foreign debt) (ii) ratio of foreign currency denominated debt to domestic currency denominated debt (appropriately weighted by maturity) (iii) ratio of short-term debt to long-term debt and (iv) ratio of total cumulative foreign portfolio investment to gross equity market capitalisation.

14. SBs could take several forms including (i) requirements on borrowers to unwind positions involving locational/maturity mismatches (ii) curbs on foreign borrowings (iii) restrictions on certain types of FPI (foreign portfolio investment) and (iv) import curbs (in exceptional circumstances).

15. To give one leading example, Willem Buiter in the *Financial Times* (18 Feb. 2009) notes that "For countries with a minor-league currency (every currency except for the U.S. dollar, the euro and the yen) an open capital account will always be a mixed blessing. The joys of an open capital account - the undoubted benefits from decoupling domestic capital formation from national saving and from unrestricted portfolio diversification and risk trading - cannot be enjoyed without the pain: the risk of its domestic financial institutions, capital markets, non-financial enterprises, consumers and public finances becoming the flotsam and jetsam on massive and mindless killer waves propelled by an out-of-control global financial storm". Krugman [2009a & b] expresses similar sentiments.

16. For a brief history of the rationale for this merger and the chronology of events leading up to the merger see *The Economic Times* (30 June 2015, Article by D.Narayanan) and *Business Standard* (24 March 2015, Article by R. Bhayani)

17. Of the five apex regulatory bodies listed above, three have been established as statutory bodies via parliamentary enactments, viz., the RBI (via the RBI Act, 1934), SEBI (via the SEBI Act, 1992), IRDA (via the IRDA Act, 1999), while the remaining two are part of Government of India ministries. The FMC falls within the purview of the Ministry of Consumer Affairs, Food & Public Distribution, while the PFRDA is under the Ministry of Finance.

18. An important case in point is the recent controversy in India over ULIPs (or unit linked insurance plans), which are similar to mutual funds with an added insurance component. In August 2009, a turf war erupted between the SEBI and IRDA over an order issued by SEBI banning 14 insurance companies from issuing ULIPs, with the IRDA countermanding this order. The matter was ultimately decided in favour of the IRDA through government intervention in June 2010.

19. This proposal was dropped from the Finance Bill 2015 by the Finance Minister on 30 April 2015, though it may be revived again later. While the potential conflict between monetary policy making and public debt management cannot be ruled out *a priori*, there is considerable evidence that the RBI has acquitted itself creditably in the role of banker and debt manager to the government, without letting this impede its primary monetary policy mandate. As a matter of fact the RBI's continued efforts have resulted in the development of an orderly government securities market, which has streamlined its open market operations for monetary policy (Several other arguments for a more nuanced and graduated approach to the establishment of a separate PDMA (public debt management agency) have been recorded in an incisive article in the *Indian Express* [see R. Pattnaik, 12 May 2015]

20. Rules define boundaries ex ante, while principles define them ex-post [Kaplow, 1992]

21. Principles generally place more discretion at the hands of the regulator as compared to rules [Nelson, 2005].

22. According to Ghoshray (2006), "Anchored in the text, structure and history of the statute, textualism seeks the most literal meaning, free from the perceptive idealism of broader social purpose".

23. ULIPs (or unit linked insurance plans) are similar to mutual funds with an added insurance component. In August 2009, a turf war erupted between the SEBI and IRDA over an order issued by SEBI banning 14 insurance companies from issuing ULIPs, with the IRDA countermanding this order. The matter was ultimately decided in favour of the IRDA through government intervention in June 2010.

24. Firstly such an arrangement would overload the central bank with too many diffuse responsibilities. Secondly, since responsibility for the different market segments would most likely be vested in distinct departments of the central bank, old inter-regulatory rivalries and differing mindsets are likely to be now internalised interfering with the primary responsibilities of monetary and financial stability.

25. As is well known, the Financial Services Authority (FSA) was established in the UK in 1997, with the explicit purpose of supervising individual financial institutions, while the responsibility for overall financial stability continued to be vested with the Bank of England. The Northern Rock was the fifth biggest mortgage provider in the UK, shortly before the crisis in August 2007. The FSA was fully aware of the problems at the Northern Rock, viz., excessive securitisation, overwhelming reliance on wholesale deposit funding, falling share price, a rise in market share combined with a fall in profits, etc. Yet these problems were ignored and not communicated to the Bank of England till the money markets froze in mid-August. The lack of communication in the entire episode is best illustrated by two remarks - one by the Chairman FSA (in parliamentary testimony, 9 October 2007) that the money market situation was "Sunprecedented" and could not have been foreseen either by Northern Rock or the FSA, the other by the then Bank of England Governor that he was "concerned in a general way about the growth of wholesale lending" but was unaware of the details at Northern Rock.

26. RSI is often confused with central bank independence (CBI), though as stressed in the literature [see Lastra, 1996; Taylor & Fleming, 1999; Quintyn & Taylor, 2002], the two are conceptually distinct and need not necessarily co-exist even when the regulation & supervision functions and the monetary policy functions are vested in the same authority.

27 See De Krivoy [2000] for the Venezuelan experience of the mid-1990s, Lindgren et al., [1999] for the East Asian experience, Hartcher [1998] for Japan, etc.

28. In the words of a very famous US central banker " ..it is just as important for a central bank to be independent of markets as it is to be independent of politics" [see Blinder, 1997].

29. As a matter of fact, if this were the sole purpose, it could be easily accommodated by calling in such representatives as observers or witnesses and recording their testimonies.

30. In a typical moral hazard framework, bank management acts in the interest of shareholders that have voting power. If the shareholders of a bank are interested mainly in the dividend pay-out , the bank's management may be induced to oblige them by increasing the bank's risk profile -this is especially true in the absence of a risk-based deposit insurance system [see Flannery, 1998; Park and Peristiani, 2006, etc.], This tendency is counter-balanced by the fact that bank managements (as well as shareholders to some extent) are also concerned with the banks' charter value, (viz., the ratio of an organisation's market value of equity to its book value of equity) [see Keeley, 1990; Demsetz, Saidenberg and Strahan, 1996, etc.]. In the event of bank failure, bank managers lose prestige and shareholders forfeit charter value. Thus the consideration of preservation of charter value acts as a restraint on the risk assumption of banks. Depending on which tendency prevails, supervisory ratings will tend to be positively or negatively correlated with dividend pay-outs. The empirical evidence cited in the above and related papers seems to bear out that risk-averse banks tend to exhibit a positive correlation between bank share earnings and supervisory ratings while the opposite is true for banks with riskier portfolios (or lower bank capital).

31. As a prudential indicator, what is relevant is the ratio of the exposure limit to the size of the bank's capital, rather than the exposure limit per se.

32. As of 1 April 2015, all restructured loans will have to be treated as NPAs. The provisioning for such loans will accordingly be raised from 5% (as prevails currently for restructured assets) to 15%.

33. NBW of an asset is its book value minus the provisions held against it.

34. This category includes (a) a member of a Scheduled Caste or Scheduled Tribe (b) a victim of trafficking in human beings or beggar as referred to in Article 23 of the Constitution (c) a woman or a child (d) a mentally ill or otherwise disabled person (e)a person in receipt of annual income less than rupees nine thousand, etc.

35. There are several (closely related) definitions of systemic risk and we mention here the two most commonly used. The G-10 (2001) define systemic risk as "the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have adverse effects on the real economy", whereas the IMF [2009] definition runs somewhat parallel as "a risk of disruption to financial services that is (i) caused by an impairment of all or parts of the financial system and (ii) has the potential to have serious negative consequences for the real economy".

36. Acharya [2011] also illustrates these possibilities with several examples.

37. "2010 governance and quota reform is an absolute must. It has to be implemented and everybody knows that it is currently stuck before the U.S. Congress. We very much hope that the different branches of the U.S. authorities ... will understand the relevance of having an IMF that is representative of the global economy". Christine Lagarde quoted in *The Financial Times* [9 October 2014].

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COMMENTS ON SAFEGUARDING FINANCIAL STABILITY IN AN ERA OF FINANCIAL FRAGILITY: AN INDIAN PROSPECTIVE by Prof. D M Nachane

Deepak Mohanty

I consider this my honour to discuss this excellent paper by eminent economist and scholar Professor Dilip Nachane. I thank Prof. Vikas Chitre and the Indian School of Political Economy for this opportunity.

The paper has a wide canvass, and covers a number of complex issues. To be more specific: First, it dwells on the new paradigm for monetary policy that evolved in the run-up to the Great Moderation (from 1982 to 2007) and how it was negated during the crisis. In this context, it draws significantly from the reports of the Larosiere Group [February, 2009] and the Working Group of G20 [March, 2009].

Second, it discusses at length the regulatory and supervisory policy initiatives at the global level, by both policymakers (e.g., G-20) and standard setting bodies (e.g., Basel Committee on Banking Supervision (BCBS), Bank for International Settlement (BIS), Financial Stability Board (FSB) and International Organisation of Securities Commissions (IOSCO). In our domestic context, it draws significantly on the findings of the IMF [2013] "India: Financial System Stability Update" for identifying the shortcomings in the Indian financial system. Third, it reviews the governance of the emerging global economic and financial architecture, including IMF resources.

In order to keep the discussion contextual, it draws upon extant Indian evidence at every stage to provide the reader a sense of how policymakers in India have responded to the crisis and the subsequent developments. Thus, a whole host of issues that have a bearing on the evolving financial and supervisory architecture in India besides the monetary policy framework have been dealt with. Theoretical arguments have been buttressed with empirical evidence to provide readers with a sense of what's going on.

It needs no gainsaying that only someone of the stature of Prof. Nachane with his grounding in academics and experience regarding the policy discourse could have woven a common thread through a wide range of complex issues and yet made it comprehensible even to a general reader. While I am in broad agreement with the thrust of the paper, I propose to provide an update on some of the regulatory standards before drawing upon my experience as a practitioner to raise some issues.

Update on Key Financial Regulations

The global banking regulatory initiatives are built around the considerations of the quality and quantity of capital, adequacy of liquidity, systematically tackling the "too-big-to fail" syndrome and challenges of shadow banking.

First on capital, all the 27 jurisdictions that comprise the Basel Committee have started implementing Basel III capital regulations. India implemented Basel III from April 1, 2013. The minimum common equity tier 1 (CET1) (comprising common shares issued by the banks, share premium resulting from issue of shares, retained earnings, accumulated other comprehensive income and disclosed reserves and regulatory adjustments, according to Basel III norms) to risk weighted assets (RWAs) (a bank's assets or off-balance-sheet exposures, weighted according to risk) ratio has been set at 5.5 per cent, minimum tier 1 at 7 per cent, minimum total capital at 9 per cent and a capital conservation buffer (CCB)[1] at 2.5 per cent. Thus, the total minimum capital

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requirement including CCB would go up from 9 per cent of RWAs currently to 11.5 per cent, apart from layering the capital provision as indicated above, by March 2019 when Basel III is fully rolled out. Of course, this is without taking into account the capital requirement for total loss absorbing capacity (TLAC).[2] The point that I am making is that in the years to come, the capital requirement of Indian banks will go up sharply.

Second on liquidity, under Basel III, banks are required to maintain the Liquidity Coverage Ratio (LCR), where

$$\text{LCR} = \frac{\text{High quality liquid assets}}{\text{Total net liquidity outflows over 30 days}} \geq 100\%$$

The LCR aims to ensure that banks have an adequate stock of unencumbered high quality liquid assets (HQLA) that can be converted into cash at little or no loss of value in private markets to meet their liquidity needs for a 30 calendar day liquidity stress scenario. Banks in India are required to maintain a minimum LCR of 60 per cent from January 1, 2015, which will increase by 10 percentage points every year to reach 100 per cent from January 2019.

In this context, banks' investment in government securities (in India) has come handy. Banks have been permitted to include government securities held by them up to 5 per cent of their net demand and time liabilities (NDTL) within the mandatory Statutory Liquidity Ratio (SLR) requirement as level 1 HQLA in order to facilitate their meeting the LCR requirement in addition to 2 per cent under the marginal standing facility (MSF). Thus, the total SLR securities within the statutory stipulation that are now available to banks towards LCR comprise 7 per cent of banks' NDTL.

Third, with regard to the initiatives concerning too-big-to-fail, the FSB and the BCBS have identified 30 globally systemically important banks (G-SIBs) in November 2014. No Indian bank is a G-SIB, nor is there any likelihood of any Indian insurance company qualifying as a G-SII. Nonetheless, there are large complex financial entities, known as Financial Conglomerates (FCs)[3] in India which are subject to closer and continuous supervision by an Inter-Regulatory Forum (IRF). The IRF was set up under the aegis of the Financial Stability Development Council (FSDC) and undertakes coordinated supervision of FCs through off-site returns and periodic discussions. The RBI has, in the interim, come out with a framework for classifying Domestically SIBs (D-SIBs).[4] The methodology for classifying banks as D-SIBs is similar to that proposed for G-SIB, but suitably modified to the country-specific context and the operating environment of these banks.

In this context, gone-concern loss absorbing capacity (GLAC) concept is now changed to total loss absorbing capacity (TLAC).[5] To ensure that G-SIBs have adequate loss absorption capacity in resolution, the FSB[6] has developed a proposal for minimum TLAC for G-SIBs. Overall, the TLAC for G-SIBs could be in the range of 16-20 per cent of their total risk weighted assets (RWAs) and at least twice the minimum Basel leverage ratio requirement of 3 per cent. Though the proposed TLAC framework is applicable to G-SIBs, spillover impact on the emerging market economies (EMEs -) in terms of banks in EMEs maintaining higher than required capital under peer pressure thereby constraining credit flow - cannot be ruled out. Understandably, there is a concern among EMEs including India.

Fourth, regarding shadow banks, the FSB will begin reporting the progress on reforms from 2015. India's share is estimated to be around 0.4 per cent of the global exposure. The bulk of this sector covers NBFCs and Mutual Funds which

are already regulated. However, there are many entities/schemes like collective schemes, micro-financial institutions (MFIs), money lenders and pawn brokers which are largely outside the regulatory perimeter. In that sense, India's 'shadow banking' sector essentially pertains to the large number of such 'unregulated' entities of varying sizes and activity profiles. This raises concern also because of the public perception that they are regulated. Lack of easy access to formal financial instruments and inadequate financial literacy often tempts gullible investors towards unscrupulous elements which raise deposits in the penumbra of the regulatory perimeter. To deal with such issues, the State Level Coordination Committee (SLCC) has been strengthened under the initiative of the Financial Stability and Development Council (FSDC). The SLCC is presently being chaired by the state finance secretary so as to ensure better coordination between the government and the regulators in checking unlawful deposit mobilisation and minimise financial frauds.

Observations on the Paper

Let me now raise a few observations on some of the issues highlighted in the paper.

First, on the macroeconomic front, I think the author could have elucidated a bit more on the inverted triangle hypothesis - an otherwise small-sized real sector trying to support a ballooning financial sector. The experience of the EU economies where financial assets to GDP ratio zoomed during the years of the 'Great Moderation' is ample testimony. A stark manifestation of this was evidenced by Cyprus, where bank asset to GDP trebled from around 200 per cent prior to the crisis to over 600 per cent by 2011, finally leading to a crash of the economy. The case of Iceland was also not very much different, should I say! Even in the US, this inverted triangle played itself out in a slightly different form: innovative financial engineering embedded in mortgage-backed securities lulled investors into a false sense of security, giving the impression of significant wealth creation on a small quantum of real assets, which ultimately brought the economy to its knees.

Second, continuing on the macroeconomic aspect, I thought the author could have dwelt upon the issue of liquidity. As many of us would be aware, traditionally, liquidity has not been a major concern for either banks or regulators. If one looks at the initial Basel Accord, it contains very little documentation about liquidity or the possible risks it engenders. However, this strategy of liquidity management was called into question in the wake of the recent financial meltdown. The crisis also revealed that liquidity risk at financial institutions had significant consequences for financial stability and macroeconomic performance, in part through common asset exposures and their increased reliance on short-term wholesale funds. Management of liquidity risk, in turn, spilled over to other markets and institutions, contributing to each other's losses and exacerbating overall liquidity stress.

Not surprisingly therefore, recent research has veered towards making an explicit distinction between *funding liquidity* - ability to meet cash obligations when due - and *market liquidity* - ability of financial investors to literally liquidate a non-cash asset. These two liquidity risks are mutually reinforcing: shocks to funding liquidity can lead to asset sales and depress asset prices, with serious consequences for market liquidity. The loop is complete when lower market liquidity leads to higher margin calls (margins are typically higher in an illiquid market), which increases funding liquidity risk as outflows rise. Brunnermeier and Pedersen [2009, Pp. 2201-38], whom Prof. Nachane quotes in the paper, have documented significant episodes - the "Black Monday" of 1987, the Asian crisis of 1997, the long term capital market (LTCM) crisis in 1998 and more recently, the subprime crisis - when

weaknesses in one fed into the other, leading to an overall worsening of liquidity for both institutions and markets.

Third, it would have been useful to have some discussion on the interlinkages between monetary policy and bank risk-taking; this is popularly called as *the "risk-taking channel of monetary policy"*. Low interest rates can lead banks to assume excessive risks for several reasons. It might induce banks to search for yields' and thereby indulge in risky investments. Further, low interest rates also affect perceptions of valuations. In particular, as collateral values increase, banks' perceptions of risk decline, exacerbating greater risk-taking. Additionally, low interest rates lower banks' incentives to screen loan applicants. Considerable research has emanated over the last few of years highlighting the importance of this channel and its possible adverse consequences. I am sure Prof. Nachane would give some thought to this argument.

Fourth, more insight into the issue of central bank communication would have been very useful indeed. Yes, central bank communication was important prior to the financial crash, but has become more so during and even after the crisis. Many of us in the central bank would recollect how Fed communication (or mis-communication should I say!) on May 22, 2013 caused serious upheavals in bond and equity markets across the globe and led to a virtual financial meltdown.[7]

Even in the Reserve Bank, structured and continuous communication with market participants has become more prominent than earlier. As many would be aware, besides the Governor's monetary policy statement, we also have interactions with the media and other researchers and market participants to provide a better sense of what we are trying to do and why. The gist of discussion in the Technical Advisory Committee on Monetary Policy, in which Prof. Nachane was a member for several years, is placed in public domain with a lag. The Governor's policy statement itself has become more focused, providing confidence bands as to the future path of evolution of major macroeconomic variables such as GDP and inflation alongside the associated risks. Even a decade ago, some of this was as good as unthinkable!

Fifth, on the issue of supervision, Prof. Nachane indicates several deficiencies as pointed out by the IMF in their country assessment. Needless to state, some of these require legal changes (which are obviously time consuming), whereas in a number of other cases, we have made progress. For instance, the home-host coordination mechanism has been strengthened through the signing of bilateral Memoranda of Understanding (MoUs) with several countries. We have established 'supervisory colleges' to deal with supervisory issues for some of the large-sized banks and enhance cooperation for cross-border supervision.

Sixth, as regards regulation, given the tendency for pro-cyclicality of the financial system, there has been a lot of discussion that argues in favour of 'counter-cyclical' capital - raising bank capital requirements a lot in good times, while allowing them to fall somewhat in bad times - as a solution to this pro-cyclicality. Some time back, we issued guidelines for countercyclical capital buffers. However, there are analytical issues on which I would have liked to hear Prof. Nachane.

I am reminded of a paper by Governor Rajan [2009, Pp. 397-402] where he argues that, while sensible *prima facie*, these proposals might not be as effective as intended. This is because in boom times, the market requires banks to hold very low levels of capital, in part because euphoria makes losses seem remote. So when regulated firms are forced to hold more costly capital than what the market requires, they have an incentive to shift activity outside the regulatory perimeter. We are witnessing this at present with

the expansion of shadow banking both in advanced and emerging markets. Banks can, as a result, subvert capital requirements by taking on risks that the regulators do not foresee or do not penalise adequately.

Likewise, in situations of bust, attempts to increase capital requirements could be equally challenging. The market might want banks to hold more capital than what the regulators require. Therefore, to have a better chance of creating stability through the cycle - being cycle-proof - Rajan [2009] advocates that regulations be premised on 3-Cs: comprehensive, contingent and cost-effective.

The regulations should be comprehensive in the sense that they apply comprehensively to all leveraged financial firms so that it is less likely to encourage the drift from heavily regulated to lightly regulated institutions during the boom. Regulations should also be contingent so that they have greater force when the private sector is most likely to do itself harm, but impose fewer restrictions at other times. This will make regulations more cost-effective and as a result, less prone to arbitrage or dilution.

Seventh, Prof. Nachane also touches upon the issue of bank capital, on which I am aware that he has done extensive work. The sense I get from his arguments is that capital might be a *necessary* but not a *sufficient* condition to stave off bank failures. Notwithstanding Basel exhortations, I am sympathetic to this observation. Indeed, some recent research appears to suggest that regulatory capital is much less risk sensitive. Using a sample of internationally large banks, Vallascas and Hagendorff [2013, Pp. 1947-1988] find that regulatory capital requirements are only loosely related to portfolio risk, so that pronounced increases in the latter (a proxy for market risk) generate only small changes in capital. Although I am not aware of any research on this aspect for India and more so, given the pre-dominantly state-owned nature of our banking system, I am sure it is an area that may interest Prof. Nachane.

Eighth, on the issue of risk sensitivity of public and private banks, internationally there is evidence to suggest that depositors penalise banks for excessive risk taking. Although Prof. Nachane suggests little econometric evidence on this count for India, I am reminded of some work by my colleagues in the Reserve Bank, which suggests that riskier banks, proxied by higher non-performing loans, pay higher deposit rates.

Ninth, another issue of concern is the asset quality of the banking sector. The gross non-performing assets (NPAs) of commercial banks were 4.5 per cent of their gross advances as at end-September 2014. If we add to this the restructured standard advances, the stressed advances work out over 10 per cent of gross advances. For public sector banks, these numbers are even higher. Large quantum of NPAs acts as a 'double whammy': not only do they impair the ability of banks to recycle credit, since they have to set aside significant amount as provisions, but there is also an opportunity cost in terms of loss of interest income, both on the money not repaid as well as the amount set aside.

While the deterioration in asset quality could partly be attributed to the slowdown in the economy, there are also related issues of governance and credit culture. It is important to eschew forbearance and recognise loan impairments promptly and take corrective measures. In this regard, the Reserve Bank has come out with manifold measures, which include disincentives for 'wilful defaulters' and 'non-cooperative borrowers' as well as for 'auditors, advocates and valuers' who provide incorrect information about the borrowers. Improvement in credit culture is as much important as credit for ensuring better asset quality in banks.[8]

Tenth, we have the issues of reforms of IMF quota and governance. Yes, these are underway and are often time-consuming, given the large number of actors with widely divergent interests involved. Once the reform package is approved, there would be a doubling of quotas from about SDR 238.4 billion to about SDR 476.8 billion (about US$ 720 billion) with a more than 6 per cent shift in quota shares from advanced economies to emerging market and developing economies (EMDEs), besides reallocation of two additional chairs in the IMF Board for EMDEs. While the necessary majority (70 per cent of quota share) for quota increase has been achieved, the accompanying governance reform[9] requires 85 per cent voting. As is well-known, the final agreements have been held back in the absence of concurrence from the largest shareholder, the USA, which has 16.75 per cent of voting share. This is not because of lack of effort by the US administration, but due to lack of Congressional ratification. In this context, perhaps the author could have examined the implication of the recently constituted BRICS bank (which has been formally inaugurated recently) and how it is likely to shape the contours of the international monetary and financial arrangements, going forward. Broadly, could strong regional arrangements hasten reforms at global institution?

Finally, before I conclude let me say a few words about the changes to the RBI's monetary policy framework which Prof. Nachane refers to. The proposed change in the monetary policy framework from a 'multiple indicators' approach to a 'flexible inflation targeting' approach needs to be seen in the context of persistently high inflation in India when inflation has remained moderate in most part of the world, including our peer countries.

When one sieves through the numbers, the evidence suggests that, for the recent 6-year period 2009-14, the annual average consumer inflation in India has remained quite stubborn at nearly 8 per cent plus despite some negative output gap compared to an annual average of 5.0 per cent during the 5-year high growth phase of 2003-08. Persistence of high inflation makes it hard to dent inflation expectations despite significant growth sacrifice. Several countries have tackled this challenge by demonstrating a stronger commitment to price stability and adopting some form of inflation targeting.

The inflation targeting framework of central banks has also evolved over time. Modern day central banks are not merely inflation 'nutters': focused solely on bringing down inflation to the exclusion of everything else. The medium-term inflation targeting framework provides adequate flexibility to subsume other objectives, particularly financial stability. To exemplify, the Bank of England is an inflation targeting central bank, the Bank of Japan has turned to inflation targeting recently, and the US Fed now has an explicit inflation target. But their inflation-centric monetary policy does not make them any less committed to financial stability. In fact, they have vigorously responded, some would even say being 'hyperactive', to financial instability by using both conventional and unconventional policy tools. In fact, a couple of months back, the ECB unveiled a *Euro* 60 billion a month bond buying programme, far larger than what markets had envisaged. Even some purists have come to terms in accepting interest rate, the key monetary instrument in inflation targeting, as an instrument of financial stability in exceptional circumstances.

The inflation target of '4 per cent +/(-) 2 per cent' proposed by the Dr. Urjit R Patel Committee seems to provide reasonable scope for accommodating supply shocks. At the same time, the centre of the band at 4 per cent appears consistent with the recommendations of the Chakravarty Committee way back in the mid-1980s that suggested a 'tolerable level of inflation' for India around this number. Whether and to what extent

the proposed flexible inflation targeting approach, when fully formalised, will play itself out, is an aspect that will be closely watched as we go forward. The point that I am trying to emphasize is that the inflationary conditions in India provide ample justification for a rethink on the monetary policy framework with a greater emphasis on enduring price stability.

I am aware that I have gone on for too long and highlighted certain issues which are perhaps not directly germane to the paper, but the vast expanse and topicality of Prof. Nachane's lecture appears to have overwhelmed me with enthusiasm and zeal, that I could not resist the temptation to perhaps over-extend myself, just that extra bit. All in all, I greatly enjoyed reading this paper and feel privileged to be a discussant.

NOTES

1. Under Basel III norms, a mandatory 'capital conservation buffer', equivalent to 2.5% of risk-weighted assets, is required to be held by the banks. A capital conservation buffer is a cushion that banks have to build under no-stress scenarios so that these can be drawn upon whenever the banks start experiencing stresses.

2 TLAC is the amount to be held in addition to the Capital Adequacy Ratio requirements, by Global-Systematically Important Banks. This was mandated by the Financial Stability Board as a regulatory response to the 2008 crisis (https://en.wikipedia.org/wiki/List_of_systemically_important_banks).

3. In India, financial conglomerates are financial groups that have 'significant presence' in at least two of the five financial segments *viz.*, banking, insurance, securities, pension fund and non-bank business. The criteria for 'significance' of an entity in a sector are determined by the concerned sectoral regulator.

4. See https://www.rbi.org.in/scripts/bs_viewcontent.aspx?Id=2861 for details.

5. Every bank needs to have an overall Loss Absorbing Capacity that is a percentage of its risk weighted assets. This LAC is defined in terms of the regulatory capital as well as long term debt. However, when we are looking at "gone-concern", i.e., a stressed bank, the equity of a bank that is moving into stress is wiped out. And so the Gone-Concern Loss Absorbing Capacity that was given for G-SIBs focused on the capacity of debt to replenish equity when the bank moves into stress. However, in India, since none of the banks qualify as G-SIBs, the RBI has defined a Total Loss Absorbing Capacity rather than Gone-Concern.

6. The FSB has already published a consultative document on November 10, 2014 setting forth its proposal for TLAC.

7. Fed Chairman Ben Bernanke addressed Congress' Joint Economic Committee on 22nd May, 2013. He hinted that the QE taper "could happen over the next two FOMC meetings if warranted by the data". See http://www.forbes.com/sites/afontevecchia/2013/05/22/bernankes-qe-dance-fed-could-taper-in-next-two-meetings-tightening-would-collapse-the-market/. The markets reacted sharply and FIIs started moving to the dollar within minutes. Even though he had indicated in the earlier part of his speech that "premature tightening [would] carry a substantial risk of slowing or ending the economic recovery", market players in the US disregarded his previous remarks and went into a sharp rally.

8. RBI Circular dated February 26, 2014 on Framework to Revitalise the Distressed Assets https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=8754&fn=2&Mode=0. Also Circular dated December 22, 2014 on Non-Cooperative Borrowers https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=9420&fn=2&Mode=0.

9. The Fund's governance structure must keep pace with the rapidly evolving world economy to ensure it remains an effective and representative institution of all of its 188 member countries. To secure this objective, in December 2010 the Board of Governors of the IMF approved a package of far-reaching reforms of the Fund's quotas and governance. These include: an unprecedented doubling of quotas and a major realignment of quota and voting shares to emerging and developing countries; a comprehensive review of the current quota formula; a more representative, all-elected Executive Board. In order for the proposed amendment on Reform of the Executive Board to enter into force, acceptance by three-fifths of the Fund's 188 members (or 113 members) having 85 per cent of the Fund's total voting power is required. As of mid-March, 2015, 146 members having 77.1 per cent of total voting power had accepted the amendment, short of the required 85 per cent threshold. See http://www.imf.org/external/np/exr/facts/govern.htm

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FINANCIAL STABILITY: UNDERLINING CONTEXT

Comments on D. M. Nachane 'Safeguarding Financial Stability in an Era of Financial Fragility: An Indian Perspective'

Ashima Goyal*

The paper commendably manages the very difficult twin tasks of being comprehensive and up-to-date in an area where there are continuous new developments. It draws lessons from the global financial crisis and evaluates the success of Indian policies in following the seven point agenda identified by the G-20 as necessary for financial stability. In these comments, I will attempt to extend the analysis of some of these agenda items, by bringing in more issues relevant in the Indian context. This is very much in the spirit of the paper since its sub-title is 'An Indian perspective'.

We first discuss how macroeconomic paradigms and monetary policy issues point to the importance of introducing relevant market failures. In going to the core topic of financial reforms, we explore weaknesses in domestic and international reforms and ways of overcoming them, based on mitigating the fundamental failures finance is subject to, before taking up some special features of Indian reforms such as methods used to cap leverage, the evolution of non-performing assets (NPAs) and possibilities of inclusion.

Macroeconomic Paradigms

In arguing for a paradigm shift in macroeconomics Dr. Nachane makes a compelling case against what he labels the New Consensus Macroeconomics. Certainly, there is much to criticise in the package he puts under this label especially that it led to an advocacy of financialisation. I would, however, make four caveats. First, while new classical macroeconomics, with its belief in perfect market clearing, could certainly be said to have subscribed to the efficient market hypothesis (EMH), the neo-Keynesian view emphasised imperfections in markets, including financial markets. Many authors belonging to this school, for example, Stiglitz and Krugman, contributed to the analysis of financial crises, and studied persistent deviations from equilibria.

Second, a macroeconomic perspective differs fundamentally from an efficient markets one, because it is about markets failing to fully employ resources, and getting caught in vicious cycles of over- or under-shooting. Therefore, a consensus that includes the EMH cannot be called macroeconomic.

A major reason the global financial crisis (GFC) occurred was inadequate financial regulation. The latter was inadequate because of a belief in self-regulating markets. To attribute the GFC to macroeconomic theories is to give them more power than they had and to absolve the financial market view that caused the real problem. Neglect of the basic macroeconomic insight of market malfunction resulted in lax regulation, and led to the GFC.

Third, a common criticism made is that inflation targeting regimes did not internalise the effect of monetary policy on financial stability. This is true, but monetary policy should not be asked to give financial stability first priority either, since that would elevate the financial

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sector over the real sector. Growth and inflation must continue to be the priorities since supervision, rules and regulations are available to target the financial sector. These are often more effective against sectoral imbalances such as a housing bubble, in comparison with a general monetary tightening. The effect of monetary policies on the financial sector must, of course, also be kept in mind. The prevailing macroeconomic policy paradigm can rightly be blamed for neglecting this, but in doing so it was itself going against the basic imperfect markets macroeconomic insight.

Fourth, later on in the paper, Dr. Nachane shows why systemic failures require giving more weight to macro-prudential over micro-prudential policies. But systemic failures arise from feedbacks and contagion across markets, and therefore the analytical frame must include several markets - this is precisely what general equilibrium, that includes frictions and imperfections, tries to do, even as it provides the necessary discipline and framework of analysis. So, macroeconomics cannot dispense with general equilibrium, but must include the relevant market failures. In any complex system, her ability to include and emphasise the correct components tests the skill of the analyst or the policy maker. In this respect, there were failures in the pre-crisis paradigm. But whatever it was, the consensus was not macroeconomic.

In macroeconomics, progress has always consisted in learning from experience to fill in discovered gaps. For example, the Great Depression brought in the analysis of demand. The current slowdown comes as a reminder to those who were tending to once again focus too much on the supply-side, even bringing in the EMH. The GFC has led to a lot of work on including finance meaningfully in general equilibrium models. There is regression whenever there is a movement away from the relevant generality. For an emerging market (EM) like India generality requires including structural aspects that effect aggregate outcomes, such as the large share of food in the consumption basket [Goyal, 2011, Pp. 1392-1404]. We take up this issue in the next section.

Monetary Policy

The first point in the agenda list Dr. Nachane takes up is an overhaul of monetary policy. He criticises monetary policy's neglect of asset price bubbles, and therefore is wary of inflation targeting which can lead to a neglect of financial stability, and is correctly worried by the EMH on which many of the committees recommending inflation targeting for India are based.

But apart from EMH, to return to the theme running through these comments, the problem often is not inflation targeting but the ignoring of the relevant frictions and context. For example, the Urjit Patel report on inflation targeting uses the New Keynesian (NKE) framework to justify inflation targeting, but the presentation of that framework does not discuss the NKE analysis of supply-shocks. The omission is all the more glaring since such shocks played a major role in recent episodes of high Indian inflation.

NKE models have shown that under forward-looking behaviour there is no output cost of monetary tightening if demand is in excess. But policy has to choose the trade-off between current growth and inflation under supply shocks, and if there is excess capacity the growth sacrificed can be much larger compared to the effect on inflation. In the report's view there is no growth inflation trade-off. Rather, inflation beyond a threshold hurts growth. But any analysis of the trade-off should include supply shocks in Indian conditions. These raise inflation while growth falls under conventional tightening, thus explaining the negative relationship between inflation and growth. The RBI's explanation of a backward bending supply curve does not match

Indian data and excess capacity [Goyal and Tripathi, 2015, Pp. 93-103]. While their estimate of the threshold inflation is 5%, with their target range of 4-6%, other estimates are higher. Policy that reduces inflation expectations yet maintains demand is required—one such is supply-side measures to reduce food inflation.

A nuanced analysis of supply shocks, and the degree to which they are persistent, can identify if second round effects are occurring. Then policy must tighten, but if there are multiple supply shocks a subtler response is feasible. The most critical lacunae in the recent inflationary period was poor policy coordination between the government and the RBI, since what the government did raised food inflation and what the RBI did hurt industry and employment.

The report begins by discussing flexible inflation targeting, with the target to be reached over a two year business cycle. But then says in the Indian high inflation context the first priority must be the nominal anchor. Growth and financial stability can be considered only subject to its achievement. But true flexibility implies being able to give other objectives priority in the short-run and to the extent they affect inflation forecasts.

The report also takes away flexibilities given in a gradual glide path to reduce inflation, by asking that the real policy rate must always be positive. Policy rates should rise one-to-one with headline inflation above the target, even in the short term, without the smoothing central banks worldwide practice. This is not warranted in India where interest rate spreads are high and forward-looking behaviour is not extensive. Loan rates are much higher than policy rates. Headline inflation that is expected to persist and affect inflation forecasts should be reacted to, while temporary inflation spikes should be looked through.

The report justified raising the policy rate above a volatile headline inflation target because this is the inflation that is most visible to households and affects their expectations. But since severe external shocks buffeted the economy in recent periods, the report could not ignore these. So, it asks for a flexible set of interventions to deal with such shocks. But then it is intellectually inconsistent because the simplicity that was to anchor household expectations is lost. Then why is flexibility not possible for other types of supply shocks affecting headline inflation?

But even in the event of an external shock, first preference is to be given to the interest rate defense, in order to synchronise market expectations with the RBI. This, even though the interest rate defense did not work in 2013, hurt both the real and the domestic financial sector, increased fragility and is not applicable in Indian conditions where equity flows still dominate debt flows. What worked were the swaps with oil companies and banks, by smoothing peak dollar demand [Goyal, 2015a]. These also do not reduce domestic growth the way a rise in interest rates does. Genuine flexible inflation forecast targeting would be a good via media in India conditions, since it would allow consideration of multiple indicators, as is the current practice, but would more clearly communicate the expected path of inflation. As the understanding of what causes inflation in India deepens and is shared, it would credibly reduce inflation expectations [Goyal, 2014b], even while supply and external shocks relevant in the Indian context, and financial indicators relevant for financial stability can also be considered. Flexibility will enable the growth sacrifice necessary to be kept to the minimum. That the financial sector itself wants strict inflation targeting since that will allow it to pre-guess the RBI and take profitable but risky positions, should be taken as a warning by regulators to retain flexibilities. Flexibility is essential for real sector considerations to get greater weight over

financial sector interests. Flexible inflation targeting could meet Dr. Nachane's concerns about possible neglect of asset bubbles under inflation targeting.

In the international context, Dr. Nachane emphasises the neglect of asset price booms, recommending an early pricking. But the new factor is the deliberate use of quantitative easing (QE) to create asset booms in order to raise household wealth and spending, irrespective of the financial risks also building up, and without an adequate strengthening of prudential regulations. The next section examines what is required for such a strengthening.

Regulatory reform

'An Indian perspective' is part of the title of the paper, but the analysis of regulatory changes following the GFC, while admirably thorough, tends to follow the international literature. We add some more discussion of special Indian needs and experience keeping in mind the fundamental failures to which finance is subject, and which reforms have to therefore address. The fundamental failures are asymmetric information, leading to exclusion and to arbitrage across asset-types and markets; large systemically important financial institutions (SIFIs) that are too big to let fail; and excess volatility or pro-cyclicality [Goyal, 2013]. There are also regulatory failures that include delay, and either laxity or over zealousness. Improving transparency and reducing incentives for pro-cyclical excessive risk-taking are essential to mitigate the failures. Moreover, implementation, to the extent possible, should minimise regulatory discretion.

Dr. Nachane does systematically discuss shadow banking, improving the quality of bank capital, reducing pro-cyclicality of capital requirements and the leverage of financial institutions, and devising market incentives for prudent behaviour in the context of Indian reforms. Although the first topic he takes up is strengthening regulation and supervision, he does not discuss the Financial Sector Legislative Reforms Commission (FSLRC) which wants a restructuring of Indian regulators, and their way of functioning. The FSLRC unfortunately does not sufficiently emphasise the fundamental failures. These issues need to be debated.

Strengthening regulation and supervision

The FSLRC seeks to simplify financial laws and regulatory structure using a principle-based approach. It wants drastic regulatory restructuring, tending to ignore both domestic context and international post-crises learning [Goyal, 2014c].

Weeding out obsolete and conflicting laws should be made a national objective to be followed with vigour in a number of areas, not just in finance. The FSLRC did make an early start on this and offers many useful suggestions. The concept of deemed approval, if timelines are not met, should be adopted. But many of the simplifications the FSLRC promises are illusory. Sector-specific laws are to be replaced by a simpler principle-based unified financial code. This will guide regulators, who are to draft subordinate regulation as required, but subject to judicial oversight. So, the complexity of regulation does not go away, but is simply pushed down to a messy process of appeals, even against rules and policy decisions. This would harm the exercise of regulatory judgment, which is essential when financial contracts are incomplete and so cannot be proved in Court.

Moreover, the principles followed are arbitrary. In the financial system, as elsewhere in a democracy, a delicate balance has to be maintained between conflicting interests. The FSLRC seeks to tilt the balance towards financial firms, political representatives, and the legal community. This is dangerous because the first two have a short-run perspective, and the last has

severe capacity constraints in India. It follows the poor would remain unprotected while the rich would use the legal system to more easily avoid regulation.

Principles such as consumer protection and competitive neutrality in treatment, for example, of domestic and foreign firms are unexceptional. But qualifications to the principles tend to privilege firms by requiring, for example, that consumers take adequate responsibility for their decisions, while financial innovation, efficiency, access and competition are not compromised. Any obligation on a firm is expected to be consistent with the benefit expected from such obligation.

The key lacunae, however, is the FSLRC views a financial crisis as due to failures of large systemically important financial institutions (SIFIs), human errors and malfeasance more than to the type of behavioural aberrations that cause pro-cyclicality. It aims to protect firms from regulatory over-reach. Firms are provided with safeguards such as legal appeal even against micro-prudential regulations. Macro-prudential regulation and SIFIs are to be made the responsibility of the Financial Stability and Development Council (FSDC), even though this may increase response time.

In actuality, the FSDC is better suited to improve coordination among Indian financial regulators, which is poor, rather than to enact macro-prudential policy, where timing and detailed information are crucial. Better coordination would reduce the need for a unified regulator. The FSDC can homogenise compliance requirements to reduce transaction costs, introduce centralised reporting, and encourage innovation. In a country of India's size and complexity, some regulatory competition is healthier than an error-prone one-size-fits-all unified regulatory regime. Adequate democratic oversight can be imposed through transparency and accountability to Parliament.

Behavioural aspects are important in finance. Too much risk is taken in good times, without internalising negative spillovers on others. These risky strategies are widely copied, so SIFIs are not the only potential threats. Therefore, micro-prudential regulations, applying at the firm level, should work in tandem with macro-prudential regulation. Information acquired for the first helps in the design and timely application of the second. The FSLRC's proposed restructuring would result in a serious loss of information and hinder regulation.

The experience of the global financial crisis made most countries give more responsibility for financial stability to their central banks. The UK had shifted to a financial sector funded unified financial regulator. Its mandate required it to focus on supporting innovation rather than stability, when a balance is required between the two. The FSLRC wants to follow this experiment. But the UK found it to work poorly and returned powers to an independent Bank of England. The FSLRC is not able to establish the case for moving away from current system in which the RBI could implement innovative protective macro-prudential policies, to a design that proved unstable elsewhere.

Moreover, the regulatory division proposed with all trading to go to a new Unified Financial Agency will split regulation of debt products and of credit. The government securities market could be set back, and the conduct of monetary policy harmed.

It is in the short-run that financial risks build up. For a long time after independence the RBI was forced to help finance the government's development expenditure. It maintained financial

stability by squeezing the private sector. A measure of independent reforms established with great difficulty should not be reversed by giving more power to the Finance Ministry.

Cash-starved and growth-hungry governments are often tempted to ease foreign borrowing. Again, this is a soft short-term option that, without complementary domestic reforms, creates long-term risks. The FSLRC wants the Finance Ministry to decide on inflows and the RBI on outflows. But international agreements often make it difficult to restrict outflows of foreign capital, so the RBI will be asked to ensure a stable balance of payments without adequate instruments. Consider the recent experience of foreign investment in local currency debt. India followed a careful sequencing in capital account convertibility with risk sharing equity inflows liberalised before riskier debt inflows. But in the 2000s many EMs allowed local currency debt inflows, which at least shared currency risk.

Following these trends, and to finance widening current account deficits, the cap on debt inflows to India from institutional investors began to be expanded from 2007. In 2004, the cap was $1bn; in 2013, it reached $81bn. The larger debt exposure now impacted domestic interest rates, not just the exchange rate.

Ten per cent of the $6.6bn that had come in since 2011 left in June after the May 2013 taper-on announcement, popularly referred to as the 'taper tantrum'. The rupee depreciated from around 60 rupees to a dollar in July to a low of 68 rupees to a dollar in August. A 3% rise in short-term rates was aimed at retaining debt flows since zero open positions already prevented domestic banks from speculating against the rupee. But higher short rates did not stop debt outflows and by November 40% of the debt that had come in had left. Interest rate spreads and long-term rates also rose, hurting the domestic recovery and domestic financial markets, where turnover fell further. As is the case for equity flows, macroeconomic stability and low country risk, rather than interest differentials, proved more important in attracting debt flows. As stability improved, debt flows jumped up despite a partial reversal of the rise in short-rates.

The interest rate defense was motivated by applying mainstream thinking to a context where it was not applicable. That the interest rate defense did not work was not surprising since perhaps it was not even required as yet. In September 2013, the share of debt securities was still small at 36 per cent of equity securities and 6 per cent of total liabilities. Debt flows also revived after September 2013, but even so of the approximately USD 50bn FII inflows over 2013 and 2014, debt inflows were just a little over half. As IMF [2014] pointed out, bond mutual funds, especially retail funds are twice as sensitive as equity mutual funds to global sentiment. Domestic debt markets must be developed before allowing large scale entry so that volatility can be absorbed. Changing the existing balance of power towards politicians in search of soft options will only aggravate these issues. Only marginal changes are required in the Indian regulatory structure.

While the FSLRCC seeks to change the legal and institutional structure of the financial sector, banking sector reforms are influenced by changes in the international regime, such as Basel III. But international financial regulations also fail to address the fundamental failures outlined, and are sometimes especially inadequate in the Indian context.

Weaknesses in international financial reforms

Weaknesses are continuing gaps and exemptions that will invite arbitrage, encourage procyclicality, excessive leverage, and lead to delays. Dr. Nachane pays considerable attention to prudential regulation. We will revisit the issue to

bring out the trade-offs between types of regulation, and how a particular subset may better suit Indian conditions.

Arbitrage and shadow banking: Incompleteness shows up in many dimensions. It affects institutions and transactions, and also appears over time. Any kind of incompleteness gives rise to arbitrage. The Basel III and Dodd-Frank focus on banks will drive more financial intermediation to the shadow-banking sector. Shadow banks include a broad array of institutions engaged in bank-like activities, among them hedge funds, private equity groups and money market funds.

Therefore, the proposed reforms are in some ways too strict in focusing regulations on banks, but are too weak in leaving many gaps that enable escape from regulation.

Hanson et al. [2011] suggested imposition of a minimum haircut requirement at the level of asset-backed securities for all investors, not just on banks. Such a measure can constrain short-term leverage for all investors taking a position in credit assets, thus restraining shadow-banks also.

Transparency, including records of different types of transactions, is a pre-requisite for broader based regulations. There has been progress on improving reporting including creating what are called legal entity identifiers (LEIs). These give a unique number to each registered legal entity globally, and are overseen by the FSB. They have the potential to improve risk management for the individual firm and at the system-wide level. They help identify counterparties, and linkages among counterparties, all potential sources of default contagion, so that firms and regulators can take steps to reduce risk. By 2014, more than 320,000 LEIs had been issued to entities in 190 jurisdictions, but the system is still in process.

Systemic risks: Since individuals do not take into account systemic spillovers from their decisions, risks build up cyclically. Countercyclical macro prudential regulations that increase the long-term cost of giving credit during booms and reduce these costs during busts are therefore required.

Traders cluster in activities that appear to be low risk, but the clustering makes the activities risky. This endogenous creation of risk is one reason why the own-assessment-of-risk-based capital buffers of Basel II were inadequate.[1] But Basel III continues this approach. Risks also change for exogenous reasons—Euro sovereign debt had zero risk weights before the problems in Greece exposed underlying risks.

The primary purpose of capital adequacy or liquidity coverage-type regulation is often to provide a buffer to absorb shocks. While they should be countercyclical, loss-absorbing buffers are often built up in bad times, hurting recovery, and neglected in good times. De facto buffers tend to be pro-cyclical. Shin and Shin [2011] argue the focus should be on preventing risky behaviour rather than on the loss-absorbing or shock-insulating role of buffers.

For this, the quality of capital matters. Prudential regulation can align incentives by putting the entity's own equity capital at risk. Admati and Hellwig [2013] believe in the importance of equity buffers that create own liability for risk taken and suggest 20 units of equity must be held for 100 units of assets. In contrast, Basel III requires only 7% of equity (core or tier I capital) against risk-weighted assets. The latter can be strategically chosen to be much lower than total assets, so that leverage[2] over equity can be very high.

Basel III for the first time restricts total leverage through a leverage ratio[3] requiring 3% of equity against total assets. But this is still generous in capping leverage at 33.3 times. A 3%

fall in asset values would wipe out equity making the bank insolvent, or putting the burden on the tax-payer. Such a fall in value can come even from so called riskless assets such as government bonds as in the Greek case. It is useful to remember that the leverage in Lehman Brothers was 30 and in Bear Sterns 33 when they collapsed. The Admati and Hellwig suggestion would restrict total leverage to 5 times.

A given level of leverage can be achieved either by mandating the capital held (through a leverage ratio), or restricting leverage or bank asset creation (such as lending) itself. Thus, caps on total leverage can complement capital held, reducing total capital requirements, even as the share of high quality capital is raised. Caps on total leverage also prevent risky behaviour, thus reducing pro-cyclicality. Different types of broad pattern regulation such as loan to value ratios can cap leverage at a level below the leverage ceiling derived from the level of capital held and the leverage ratio.

The appendix systematically contrasts the two methods. A leverage cap may make the delays being negotiated in implementing full capital adequacy less harmful, by restricting leverage even though full capital adequacy is not yet attained Combined with more own capital at risk and sectoral lending restrictions it would not lead to a shift to higher risk activities, even while avoiding the concentration on low risk activities that then become high risk as happens with over reliance on internal risk assessments. Clustering on low risk activities reduces diversification and therefore increases risk.

Since the potential rise in leverage is much larger for large banks with large capital, a leverage cap more effectively reduces the leverage in large banks that could otherwise create systemic risk [Goyal, 2014a, Pp. 4-26]. Thus, it is another way of mitigating the risk from SIFIs, which has increased because of greater post-crisis concentration. There is an attempt to break them up by imposing higher capital adequacy requirements for SIFIs, but implementation has proved difficult. We explore below some direct ways that restrict leverage.

Direct measures that restrict leverage: Although the Basel framework continues to emphasise internal risk-based (IRB) capital adequacy measures, there does seem to be some movement towards more universal measures and effective caps. The Financial Stability Board (FSB), in January 2015 set out a framework imposing minimum requirements on the *collateral* needed when firms borrow money from banks through short-term loans secured by stocks or bonds. The repurchase, or "repo," market is a key segment of the shadow banking world. A "fire sale" of assets used as collateral for loans could impact the wider financial system. Tougher rules on collateral for short-term lending will affect both banks and non-bank players, reducing the build-up of liquidity risk and excessive leverage by non-banks during peaks in the credit and economic cycle.

The FSB wants a minimum 1.5 per cent "haircut" for corporate bonds with a maturity of between one and five years, and a 6 per cent haircut for equities. The latter implies a borrower would have to post $106 of equity collateral for a $100 loan. The haircut floors could in future be raised and lowered as part of efforts to lean against fluctuations in the financial cycle.

While the standards are also to apply to deals between non-banks, transactions that use government bonds as collateral are still exempt, in response to governments' worry about the potential impact on sovereign debt markets. There are also fears restricting the repo market could affect liquidity in many financial assets.

Other potential tools that restrict leverage are *taxes and margin requirements.* They are automatically counter-cyclical since the tax base expands in good times, and they can be designed to fall more on highly leveraged activities, thus providing good forward-looking incentives. International harmonisation could perhaps be feasible for a simple universal tax. Its mobility made finance under-taxed, but new technology is changing that. A low tax that matches transaction fees charged would not be burdensome since the same technology has substantially reduced transaction costs. A low Financial Transaction Tax (FTT) may be easier to impose. Taxes would have to fall in EMs and rise in the major financial centres where they tend not to exist.

Belgium, Germany, Estonia, Greece, Spain, France, Italy, Austria, Portugal, Slovenia and Slovakia agreed in 2013 to levy a financial transaction tax of 0.1 per cent on stock and bond trades and 0.01 per cent on derivatives transactions. The tax would apply to financial institutions with headquarters in the tax area, or who trade on behalf of a client in the tax area, or for an instrument issued in the tax area but traded anywhere in the world. There are exemptions for the trades of central banks and pension funds. The move is strongly resisted by the US and UK. Business groups fear double taxation.

Given resistance to a tax on transactions independent of profits made, a financial activities' tax (FAT) that falls on profits and therefore is not passed on to consumers of financial services, could be negotiated. From an EM perspective, an FTT has the advantage that it applies in the jurisdiction where a transaction is made, and potential profits earned, while at present a profits tax earns revenues only for the country of residence or the country of source depending on tax agreements to avoid double taxation. Most of these treaties have tax by residence clauses, so that tax is paid in the country of residence. These favour advanced economies (AEs), from where the majority of portfolio investments originate.

The OECD model tax convention implied only profits of a non-resident company with a 'permanent establishment' could be taxed. The aim was to prevent double taxation of the increasing number of firms with cross border business. Since this convention has been misused to escape taxes, there is a proposal to replace it by 'mutual agreement on place of residence'. This is part of the OECD and G-20 led initiative to counter base erosion and profit shifting (BEPS),[4] in a necessary course correction. At the 2013 G-20 meet in Petersburg, it was decided: 'Profits should be taxed where economic activities deriving the profits are performed and where value is created'.

Financial services, which tend anyway to be under-taxed, are often also able to unfairly escape taxes. It is easy to locate strategically, using treaties designed to avoid double taxation, to achieve double non-taxation. For example, the India-Mauritius treaty allows tax by domicile. Mauritius accepts registration as domicile so FIIs come into India through the Mauritius route, thus going against the spirit of the treaty. Another example is VAT on cross-border retail sales. Financial services are VAT exempt but self-assess input VAT; they are able to escape this using inputs from abroad or from related firms.

There is a requirement, therefore, for simple tax regimes that prevent both double taxation and double non-taxation. Thus, even if new taxes are not imposed, EMs should actively participate in the G-20 BEPS initiative to make sure foreign investors do not unfairly escape taxes. While one country acting alone can frighten away foreign capital, global co-ordination can reduce the under-taxation of finance, even while reducing the excess volatility that creates risk. G-20 has the potential to be very productive in areas that require co-ordination across countries.

Margin requirements and position limits are also not uniform across countries. There is evidence that short-term futures price bubbles were more pronounced in domains with lax regulation [Goyal and Tripathi, 2012], and contributed to the deviation of commodity prices from fundamentals.

Quantitative easing (QE), which consciously sought to drive up asset prices, also drove up oil prices hurting importers such as India. As restrictions on bank's proprietary trade led to the large investment banks exiting commodity trades, commodity market speculation reduced. Moreover, high oil prices brought about a sustained rise in supply, weakening OPEC's market power. Chinese demand also slowed, but was not the primary reason for the sharp 2014 fall in oil prices. Chinese growth had slowed to 7.7 in 2012 from 9.3 the previous year without reducing oil prices [Goyal, 2014e]. Better prudential regulation in commodity markets, such as position limits that were relaxed in the US in 2000 and are absent in the UK, could have mitigated the oil price bubble and its fallout.

Measures to restrict leverage in India: Leverage in EMs has always been much lower than in advanced countries. The RBI seeks to preserve this regulatory comfort by prescribing a higher leverage ratio of 4.5%, against the Basel III norm of 3%. This allows a leverage of 22:1, but the current leverage is lower at 10:1 for Indian banks (5:1 in PSBs) compared to 25:1 average for AE banks (the Basel cap is 33.3:1).

Indian bank leverage is lower than the regulatory cap because of strong broad pattern regulation such as counter-cyclical provisioning on credit to some sectors, position limits and limits on exposure to different types of risk, high statutory liquidity ratios to finance government debt, and other types of taxation. Prompt corrective action, that reduces regulatory delay, is easier in response to sectoral cycles than aggregate cycles. When Indian real estate prices rose, a counter-cyclical rise in provisioning for bank housing and commercial real estate loans was more effective than changing risk weights, since provisioning affects the profit and loss account of banks. There was scope for escaping the effect of rising risk weights since average capital adequacy ratios were above the minimum [Sinha, 2011].

The broad-pattern regulations outlined above reduce risk-taking without forcing large pro-cyclical capital buffers, or leaving open the possibility of arbitrage through strategic use of risk weights. A better combination of financial stability and financial innovation then results.

Moreover, financial systems in EMs tend to be bank dominated, and banks and their lending has to expand with development, even as other legal, governance, and market reforms occur. Therefore, a solely bank-focused reform programme hurts them disproportionately, while the neglect of shadow banking and liquidity creation hurts them again through volatile capital flows.

Despite the features contributing to financial stability, Indian regulators are implementing more than the required Basel III criteria, and advancing the implementation schedule, since they are concerned about the reputation of Indian banks. Although the BCBS is a 'comply or explain' not a 'comply or else' framework, markets may regard any deviation unfavourably [Sinha, 2011]. While burdening banks with these regulations they also allowed cyclical risks to rise, raising interest rates to retain foreign debt flows, although structural features such as a larger share of loans in assets make banks more vulnerable to such risks.

There is a case, therefore, for reducing required capital buffers in view of these other types of regulation. To prevent reputational fall-outs any exemptions or tradeoffs should be introduced into global regulations, not just for

India as a special case. It could fill gaps in global regulatory regimes, such as the re-negotiations and delays discussed in the section below. Lessons from EMs, where simpler regulations successfully restricted leverage and acted counter cyclically, should be followed rather than forcing them to follow international regulations that continue to have weaknesses. India should articulate these issues in G-20 and in the BIS.

Delays: Apart from incompleteness and lack of international harmonisation, Basel III and other proposed post-GFC regulatory changes are inadequate also because of delays. Although enhanced capital requirements under Basel III are only to kick in from 2018, countries are actively negotiating to weaken the standards. The Dodd-Frank Act is passed but its sheer size and complexity will create protracted legal wrangling aimed at expanding the ambit of the many exemptions given. It seeks to ban proprietary trading by deposit-taking banks in order to reduce their risk-taking. But exemptions include loans, spot foreign exchange or commodities, and also repurchase and reverse repurchase agreements or securities lending transactions required for liquidity management. It is inherently difficult to distinguish between trading on own account and that undertaken for clients.

In the EU, the 2012 Liikanen report proposed milder ring fencing, without full separation of investment and retail banking, in order to support the European universal banking model. Proprietary trading (with some exceptions to allow client servicing within narrow position risk limits) was to be hived off to a legally separate unit in the same bank holding company. But Europe is softening these proposals so banks do not have to separate out key market-making business. France and Germany are also diluting the capital requirements on their universal banks agreed under the Basel III framework. The outflow calculations determining the liquidity coverage ratio and the quality of liquid assets banks have to carry, in order for them to survive a possible future short-term funding freeze, were moderated in 2013 and the implementation date further postponed. Apart from the government bonds and top-quality corporate bonds required in the initial draft, even equities, BBB- corporate bonds and discounted top-quality mortgage-backed securities are now to be counted in liquidity buffers. This is a boost for the securitisation industry and has steeply reduced banks' liquidity shortfall. The collateral requirement for OTC derivatives has also been softened [Goyal, 2013].

International harmonisation is much more difficult to achieve and this failure also creates arbitrage gaps. The disagreements among US, UK and the EU originate from differing financial structures. The UK wants to preserve the current dominance of the city of London as a financial centre. The US and UK want reforms that do not hurt the market-based Anglo-Saxon model of finance. They are worried about competition from fledging Asian financial centres. Major EU countries have a more bank-based model and want to protect their banks, especially since the GFC and the Euro-debt crisis that followed has left them weak.

Simple regulatory or tax-based measures have a greater chance of being applied universally. They can prevent one jurisdiction stalling regulatory reform in order not to lose competition to another more liberal jurisdiction. Reforms that are simple yet improve market incentives are preferable also since the GFC demonstrated regulatory failure. Simple robust reforms are less vulnerable to regulatory capture, discretion and delays.

In addition to delays in the implementation and harmonisation of reforms, the new institutional structure being created may be inherently more subject to delays. Systemic concerns have been

left to systemic councils where problems of regulatory discretion and co-ordination may lead to critical delays in response.

Non-Performing Assets

Dr. Nachane brings out Indian weaknesses with respect to NPAs very well but there are also certain Indian strengths, given the continuing weaknesses in international financial systems.

The post-reform shift from micro intervention to a strategy of macro management in India included strengthening prudential (safety) norms and the supervisory framework. The Basel I Accord capital standards were implemented fully by March 1996. Indian capital adequacy norms, however, were kept higher than the Basel norms to make sure the risky exposures were not under-capitalised since the standardised approach to Basel norms was followed. It was feared the absence of accurate and detailed historical data for wholesale and retail, together with the absence of industry benchmarks to be used in calculation of internal parameters, could distort risk-based pricing. Given diverse capabilities, banks were allowed learning time for migrating to internal risk based capital buffers. BIS [2015] has recently recognised these risks by warning that banks in EMs and small economies could move to the internal risk based approaches without being ready and respond to higher capital requirements by not revealing and recognising all potential risks associated with their balance sheets.

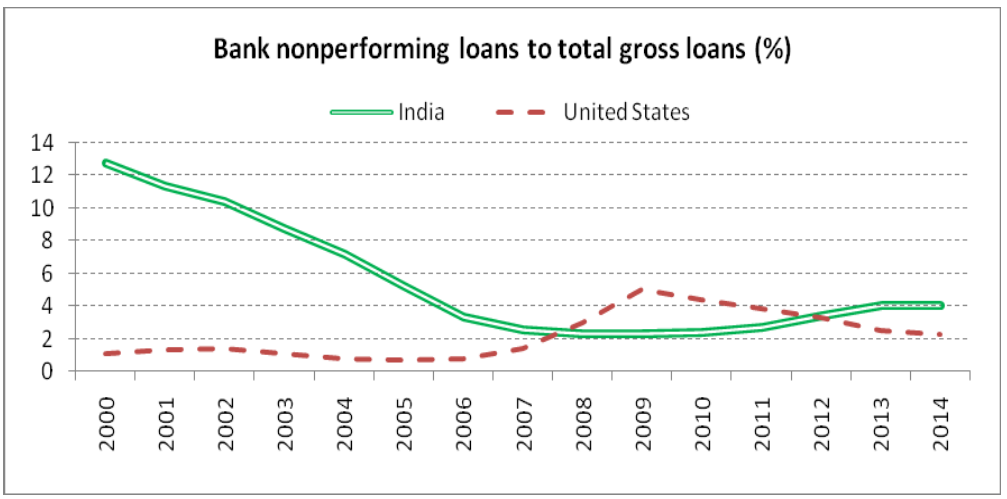
Standardised versions of Basel-type prudential norms were supplemented with broad pattern regulation, which turned out to have incentive features that reduced pro-cyclicality. Additional prudential (safety) norms included provisioning requirements that effectively moderated sectoral booms. Indian financial institutions were thought to be behind their global peers in modern risk management practices, but it should be recognised that a risk assessment methodology not based wholly on self-assessment helped them avoid many problems. Although the choices made originated in inadequacies, such as the lack of skills for complex risk-based assessment, they helped avoid systemic failures even through the GFC. Simpler regulation turned out to have good stability-enhancing incentives.

The new philosophy of regulation, together with high growth and legal reform that made debt recovery easier, led to non-performing assets falling to historic lows. Reforms reduced excessive government ownership and its draft on the finances with the banking sector. As a ratio to gross advances, NPAs fell to 2.4 per cent in 2009-10 from 12.8 per cent in 1991. There were structural improvements in the health of Indian banks.

The chart shows the steep fall in Indian gross NPAs.[5] US gross NPAs even rose above Indian during the GFC. Diversity lends strength to any eco-system—a mono-culture tends to be fragile, especially in the financial sector where following each other's strategies builds risks. So, even though public sector bank ownership is often attacked as a weakness, a diversified banking system may be a source of strength.

Freer post-reform entry resulted in an even split by ownership by 2009-10: 27 public sector banks (PSBs) with majority government ownership, 22 private sector banks, and 32 foreign banks. PSBs, however, still dominated with 75 per cent of the assets of the banking system. But this was less than their 1991 share of a little over 90 per cent. With diverse ownership in place —policy now aims to diversify by activity-type.

Changes in relative competitiveness illustrate the benefits from diversity. The public sector did unexpectedly well after the reforms of the nineties, and even overtook private banks on some parameters. It also outperformed during and immediately after the GFC.



Features such as high leverage, short-term market-based funding, risky endogenous expansion of balance sheets, and exposure to cross-border risks, which had led to massive bank failures in the West, were limited. Most banks followed a retail business model. Loans dominated market investments in bank balance sheets. But this varied by bank type. In 2010-11, contingent liabilities as a percentage of the group's total liabilities were 41.4 per cent for PSBs, 167.9 per cent for private banks and 1892.7 per cent for foreign banks. Although technology and skills improved, PSBs lagged behind private banks in systems, fee based services, retail banking, and in use of sophisticated products and derivatives. Or, this may reflect choice of a different business model. Business contracted for private banks after the GFC — some were in trouble.

PSBs heeded the government's post crisis call and participated much more than private banks in infrastructure financing. Meanwhile, private banks concentrated on retail. They used their more flexible hiring patterns to design effective services for the growing middle class, overtaking foreign banks who concentrated on high-net worth accounts. The paralysis in many large infrastructure projects, and interest rate hikes hit PSBs. A loan-based system is highly sensitive to a rise in interest rates. But again regulations, such as position and sectoral exposure limits, were protective although these limits need to be brought down further as industry diversifies. In 2011, banks had reached the exposure limit in financing infrastructure.

NPAs rose again, reaching 4.45 in 2015 but are not expected to rise much above this level. They showed some signs of stabilisation as the economy bottomed out in 2014 and projects started moving. While some PSBs may have made non-commercial decisions, external shocks also were responsible for outcomes. Errors are always possible, but stronger boards and improved governance mechanisms can ensure that independent decisions are made on purely commercial grounds. Private parties must, of course, be prevented from gaming the system and passing on bankruptcies to the tax payer. Processes in debt recovery tribunals must be redesigned to prevent the delays that allow debtors to escape repayment. But disincentives from taxpayer support are not limited to PSBs since no large bank is allowed to fail for fear of systemic spillovers.

Diversity helped again, since private banks did well in this period. In 2011, the market capitalisation of 24 listed public sector banks, still controlling 73 per cent of bank deposits, fell below that of the 15 listed private sector banks for the first time. The latter also tended to have more foreign investment.

The recent emphasis on technology driven financial inclusion and on mobile banking, may again give some surprise reversals. SBI has the highest number of mobile banking accounts, more than double those of ICICI bank, which is in the second place. PSBs tend to follow government directions, but this need not be harmful so long as social purposes are consistent with viable business decisions, such as in new financial inclusion initiatives discussed in the section below.

Inclusion and financial stability

Any discussion of financial stability in India must also include an analysis of financial inclusion, and a sustainable expansion of financial services, beyond just credit, to the poor. An RBI survey (2012-13) showed while 74% of villagers had savings accounts, only 34% used loan facilities, 24% sent remittances, 12% used overdraft facilities, and 15% electronic transfers. The rural share of ATMs was 14.6% while business correspondents (BCs) covered 50% in 2.21 lakh villages. A large under-banked population implies a huge potential market for a well-designed set of banking services.

The 2014 Jan Dhan Yojana may be more sustainable than the earlier credit and farm loan waiver based initiatives that stressed banks' balance sheets, precisely because it offers a bouquet of services meeting customer needs. These include conditional overdraft; insurance; direct benefit transfer and RuPay credit cards. It may not lead to a rise in NPAs down the road, since along with lower transaction costs, and supporting technological advances, these accounts may actually be used and generate revenue. The UID link will enable direct benefit transfers (DBT) and make KYC easier. By December 2014, 100.8 million accounts had been opened under the scheme, and 72.8 million RuPay cards issued.

Proposed diversity in types of banks, and easier entry, may lead to a new phase of beneficial competition. In August 2015, 11 new payments banks were licensed. These include mobile telephone companies and the Indian Postal service, whose wide spread will make financial inclusion easier. Payment banks can accept deposits and remittances, but cannot make loans, so their capital and regulatory requirements are lower. Bricks and mortar banks are difficult to scale up. Mobile telephones, however, have large penetration, and there is great potential in mobile banking, which has done very well in some EMs.

India and Pakistan both started mobile banking in 2008. Both had bank linked models unlike the African model, whose success was attributed partly to mobile service providers (MSPs) being allowed to go it alone. In South Asia, regulations did not permit monetary value to be stored in mobiles, in order to protect customers. Banks were responsible for security, stability and data records. Each transaction had to be through a customer account.

Even so, expansion was much faster in Pakistan than in India. Goyal [2015b] analyses the crucial differences to be in more flexibilities and functions, such as higher initial levels and limits; more income categories; a wider Business Correspondent universe; lower transaction costs, such as no mandatory physical presence for customer registration. All this brought in all classes, allowed customisation, expanded market size, and led to a virtuous cycle of cumulative

inclusive innovation and use, without compromising on security and stability. Since encouraging relevant content creation was critical, the new initiatives may finally lead to a rapid expansion of mobile banking with the emphasis on bank led mobile banking paying off in the ability to provide a wider range of services. As MSPs become payment banks they will be able to accept deposits.

Cooperation between MSPs and banks may be helped also by new trends such as the greater use of digital money in retail, migration of customers to e-commerce, technological changes such as near field communication, the cloud and cheap smart phones, whose sales in India are expected to cross 650m. The entry of large non-bank players such as Google and Apple in the payment space will provide competition and push innovation.

Global financial architecture and regional alternatives

Dr. Nachane discusses the role of multilateral institutions comprising the global financial architecture in financial stability, and notes the paralysis in IMF quota reform leading to dissatisfaction in EMs. The comprehensive reform list G-20 produced relies on international institutions to monitor or implement. Therefore, governance reform at these institutions is a pre-condition for full credibility. There are some improvements. The membership of the Bank of International Settlement (BIS), and the FSB, has been made more representative. But asymmetric power continues to result in asymmetric adjustment.

After the East Asian crisis, EMs reformed, but developed countries did not. The global financial architecture (GFA) was also not modified. If some of the ideas such as more transparency and prudential regulation of cross border capital flows, had been adopted, risk-taking would have reduced, the GFC could have been avoided, making AEs also better off.

Post- GFC QE-led easy liquidity tended to depreciate AE and appreciate EM currencies as large capital flows entered EMs in search of yield. As part of raising asset prices it also contributed to a sharp rise in oil prices even though global demand remained low. This hit oil importing EMs such as India, whose current account deficit (CAD) of the balance of payments widened as a consequence. Outflows of foreign portfolio investment that occurred in risk-off periods whenever global financial fragility rose, due to events such as the European debt crisis, made it difficult to finance the CAD. Episodes of rupee depreciation increased the import bill, given inelastic demand for commodities such as oil and gold.

AEs take the position that commodity price rise was not due to QE but to EM demand, again putting the onus on EMs. Another argument is if EMs benefit from inflows they cannot complain about outflows. But inflows are like a drug that weakens domestic muscle, making a country more vulnerable to outflows. A third argument is if QE weakens domestic currency it is alright since it is a side-effect of increasing demand for all countries while EM exchange rate interventions are trade distorting. But, in many AEs, now the only aim of QE is to weaken their currencies since at zero interest rates it is the only monetary transmission channel left.

While EMs allowed currency appreciation and stimulated domestic demand to correct global imbalances, fiscal deficit reduction in AEs was indefinitely postponed. In the Toronto G-20 meet June, AEs committed to at least reduce deficits to half by 2013 and by 2016 to begin reducing government debt GDP ratios that were expected to have stabilised. But at the 2012 summit in Mexico City, it was admitted this target would not

be achieved. Moreover, it was said to be not advisable to reduce deficits given low demand with continued global fragilities. Instead, AEs only committed to sufficient fiscal consolidation to support the recovery [Goyal, 2013], even as monetary policy continued to be highly accommodative. The argument that in a balance sheet recession when the private sector is deleveraging, and there is a possibility of a debt deflation trap, the government must spend has some validity. Reducing debt and deficits is easier when growth is higher. But EM deficits are treated very differently.

A IMF staff discussion paper takes the position that while a country can give greater weight to domestic concerns over international spillovers, where the latter impose costs on other countries there is a case for multilateral coordination that can either ask for a reduction in capital controls or ask lenders to partially internalise the risks of volatile capital flows [Ostry et. al., 2012]. It says the latter is 'much thornier'! It will be a major step towards symmetry if the onus for capital flow volatility is put on source countries also instead of the current system where the entire burden of adjustment is borne by recipient countries. But it is unlikely to be accepted.

Advice given to EMs, even if not motivated, is often not appropriate since it is based on inadequate frameworks designed for mature markets. Rajan [2015] calls this 'cognitive capture'. Since internalising spillovers may be difficult for them, he suggests large central banks could reinterpret their domestic mandate to take into account other country reactions over time. This weak "coordination" of policy could be supplemented with improvement of global safety nets. In the absence of such a global response, domestic policy in EMs may have no choice but to move in directions that limit opportunities for other countries.

The analysis of financial reforms suggests EMs should also press for measures that reduce financial over-leverage, which makes capital flows more volatile. The strength of the G-20 forum lies in coordination on measures that it is difficult for one country to do alone. That is why BEPS has been one of its more successful initiatives, and the success could be extended to other types of coordination. Another alternative is to develop regional safety nets. Participating in regional initiatives may contribute to a better balance of power and more symmetric sharing of the costs of adjustment, even while reducing the dependence on costly self-insurance forced on EMs.

Conclusion

Dr. Nachane ably discusses many features essential for a stable Indian financial system. In these comments, we underline the context by further developing the 'Indian perspective'. We show why only marginal changes are required in India's financial regulatory structure, bring out a possible trade-off between capital adequacy and leverage caps following from special features of Indian regulations some of which need to be preserved, give the history behind the rise in NPAs, point to technological changes that may make financial inclusion more compatible with financial stability, and suggest that regional initiatives could help to correct current skews against EMs in the global financial architecture.

The arguments indicate points that could be emphasised in the global dialogue to further develop an EM perspective. First, the effectiveness of direct restraints in reducing leverage and a possible trade-off with capital buffers; second, the possibility of coordinating on simple leverage reducing measures with good incentive possibilities; third, supporting regional alternatives as a corrective for asymmetries in bargaining power.

In domestic policy, the arguments point to a better alignment of international prescriptions to domestic needs whether in monetary policy, restructuring financial regulators, capital adequacy criteria, or action against NPAs, rather than just blindly keeping up with the Joneses.

NOTES

1. The measure of risk can also be selected strategically. For example, one reason banks' capital varies widely for similar exposures is strategic use of number of years' data in their VAR models used to calculate risk (BIS, 2013).

2. Accounting conventions that affect the measurement of assets also affect leverage. Economic leverage is actually a broader measure. Off balance sheet assets also need to be captured.

3. A leverage ratio of 0.03 implies 3 units of capital must be held against 100 units of the asset, that is the accounting or balance sheet leverage is limited to 1/0.03 or 33.3 to 1. Accounting leverage is the inverse of the leverage ratio and is also known as the leverage multiple.

4. These remarks are based on my presentation on 'Taxation Issues in the G 20' at the 2014 annual G20 ICRIER conference.

5. Thus, as pointed out below, it was only after the GFC that the gross NPAs of Indian banks (particularly, public sector banks) began to increase because of increased lending to infrastructure sector, as commonly talked about and as referred to by Prof. Rakshit, in his Observations.

6. This is adapted from Goyal [2014a].

7. Economic leverage is a broader measure that captures off balance sheet assets. The capital buffer C, or what is known as Tier I capital, is the fraction of bank assets held in the form of a liquid liability such as high class equity.

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APPENDIX

In the Figure,[6] the 45 degree line shows outcomes where change in bank capital buffers (δC) equals that in assets (δA) such as bank loans. The line rotates inwards as the degree of leverage rises—the same level of assets is possible for a lower capital buffer. The dashed line denotes the combination of δA and δC for any given leverage ratio[7] [or, capital adequacy norm] α (=δC/δA), 0<α<1. The Figure shows the change in assets for a given change in capital (δA =δC/α) as leverage rises (α falls below 1) is much higher at high asset levels (HAL) compared to low asset levels (LAL). That is ab > cd. Commonly advanced country banks have much higher assets levels compared to EMs. The vertical distance between the 45^0 line and the dashed line gives the difference between the minimum ($\underline{\delta A}$) and the maximum ($\overline{\Delta A}$) change in assets possible for a given $\underline{\delta}$C, where the dashed line gives the lowest possible ? that permits the maximum leverage allowed.

Second, a given leverage can be achieved either by mandating the capital required for a given leverage (through the leverage ratio), or restricting the leverage itself. Therefore, a trade-off is possible between the level of capital and a leverage cap. If leverage itself is restricted (through different types of broad pattern regulation such as loan to value ratios found in emerging markets), capital held can be reduced. For example if $\underline{\delta}$A is restricted to the EM line in Figure 1, leverage is below the ceiling $\overline{\Delta A}$ possible, given capital held $\underline{\delta}C_L$. So capital can fall below $\underline{\delta}C_L$ consistent with the dashed sloped line.

Moreover, the potential rise in leverage is much larger for large banks with large capital so a leverage cap is a more effective instrument for large banks that could otherwise create systemic risk.

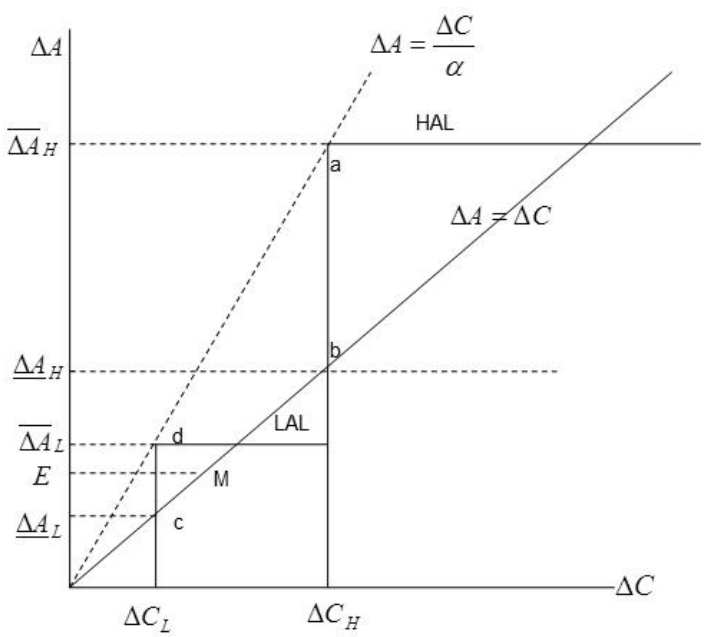

Figure 1: Regulation and fragility in banks

SAFEGUARDING FINANCIAL STABILITY - SOME ISSUES IN MARKET DESIGN
Comments on Prof. Nachane's Paper

Gangadhar Darbha*

Dr. Nachane's paper is an outstanding survey of various issues concerning a very complex problem. I would say that financial crises are a social problem. These definitely are recognised more as macro problems and are being increasingly recognised as political problems. But I think there is insufficient recognition of the social ramifications of the issue, which is a very serious dimension to financial crisis episodes. I would like to present some supporting stories to this thought as we go ahead.

As an admiring student of Dr. Nachane, it would be indeed preposterous on my part to find faults in the paper. But I would like to use this paper as a guiding light to tell an important story. This story would relate to the vantage point of a market participant sitting at the New York, London trading desks, as an observer, if not as a culprit, of the crisis itself. Whilst maintaining this view, I have tried to look at the crisis as an academically trained person and, in that sense, I do hope that my comments will complement the extensive issues that Prof. Nachane has already covered.

Financial Stability in an Era of Financial Fragility:

Now, the issues raised in the paper as well as the general issues concerning discussions on global financial crises can be categorised into three broad categories (Figure 1).

One category is about the academic consensus on New Consensus Macroeconomics (NCM) versus Post Keynesian, which Prof. Nachane comments about extensively. The second is a public policy block. This largely concerns itself with regulation. What should the regulation do? How should you respond to future crises - pre and post the event? How should the public policy response be, in terms of mopping up the bubble or blowing up the bubble or preventing the bubble from forming? So here, the control variable is Government reaction. How should the Governments react?

And third block or category, on which basically I would like to spend some time, is the one that is totally neglected, or at best is treated with only a partial response, and has to do with design of internal organisations. How do we design internal organisations that are relatively failure proof? I have not seen this third category being discussed in any regulatory documents or academic research. And that would be akin to missing an important part of the story. In spite of best intentions and best intellectual input, if you deal with the first two blocks, and if the third block is not addressed, you will again get the similar crises, albeit in a different form, because the internal organisational structure has not really developed sufficiently. I will tell this story from the vantage point of global investment banks of which I have been a part.

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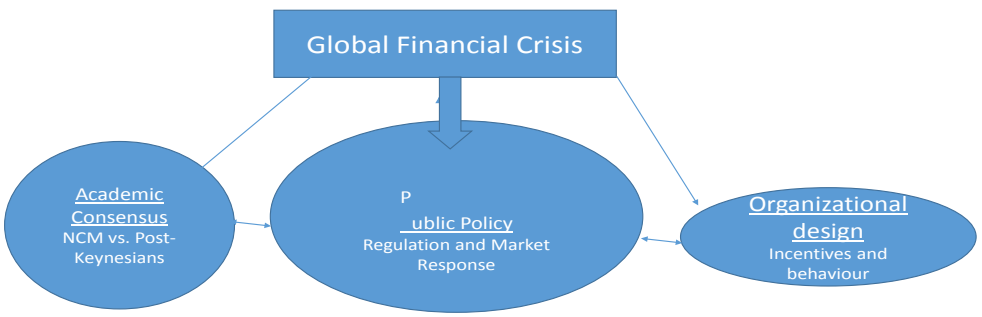
*Dr. Gangadhar Darbha had just resigned the post of Executive Director, Nomura Securities, to join as Consultant to Reserve Bank of India, on an important two-year assignment. It is with great sadness that we report his most shocking and untimely demise very recently on September 11, 2015. See Dedication on p. in this issue. As Dr. Darbha became extremely busy and pre-occupied with his new assignment after delivering his lecture to present his comment on Professor Nachane's paper, we prepared the text of this paper, based on the transcription of the recording of his lecture and sent it to him for finalisation. Dr. Darbha wrote back that the text was alright but that there were a few gaps still remaining which he would address. Unfortunately, he never got around to doing that. We have tried to revise the text as well as we could by once again listening to the recorded tape of his lecture and inserting in the text some points from his Power Point Presentation. Unfortunately and sadly, now there is nothing better that we can do.

Figure 1: Overview

The issues raised in the paper can be categorised as



I want to present an interesting counter view here. Prof. Nachane mentioned earlier how economic thoughts are driven by the events that unfold. But, while there is academic consensus built up over years around crisis events, there is a limit to the relevance of academic consensus in the process of development of the event itself.

Academic "models" are, by definition, incomplete description of more complex reality. To put it lightly, arriving at academic consensus is a limited participation, high visibility event. The Washington consensus and the Jackson Hole consensus are cases in point. As I always jocularly say, these events are a bit like the Cricket World Cup. It's called the World Cup in which only 8 countries dominate and 300 are left out. So, there is this aspect that there are obvious limits to academic consensus.

The second issue is that most of the private market participants (such as Risk-takers, Risk-monitors and Risk-controllers) operate under "heuristics" that are NOT necessarily driven by "consensus". Most of the private market participants are risk takers. Even whilst working under the risk controllers such as the Central Banks, the risk taking banks are not driven by any consensus. Each person is his own master for doing things and, in that process, they develop their own bench marks.

The most famous example is that of Fisher Black. At his trading desk at Goldman Sachs, he used to joke that he never traded the Black Scholes option. It is the rest of the world which traded using Fisher Black's option pricing model, but he personally never believed in it. However, he wrote a brilliant paper and made a career out of it! The point I am making is that the heuristics that are developed by the practitioners or by the people in the market are almost orthogonal to academic consensus. I am not saying that the academic consensus is not relevant, but for understanding the process or the behaviour aspect of the market participants, I think that academic consensus or agreement is far lesser an element

than it generally ought to be. Of course, academic consensus is relevant and I will later talk about where exactly it can become relevant.

We now go to the next part, which is basically the public policy dilemma about how regulation works and what form it needs to take. Dr. Nachane has touched upon the different issues concerning regulation brought forward by the global financial crises in his seven-point agenda, but the main dilemma is, of course, what form the regulation should take.

Before I go there, however, I want to make one statement on the point Dr. Nachane makes on inflation targeting. As the co-culprit in the Urjit Patel Committee Report, let me tell you my response to the point that Dr. Nachane made about inflation targeting. We tried to work out the cost of a financial targeting framework. When a Central Bank puts in an inflexible or non-flexible inflation targeting regime into operation, this has a side effect on financial markets, which is also the point Dr. Nachane makes when he mentions the cost of a financial facility in his paper. The view that we have taken or at least I have taken as a committee member is that these costs have to be compared to an appropriate counterfactual. And the appropriate counterfactual in this case would be the cost of unbridled commodity inflation on the society at large. The society is vulnerable to this inflation. Further, there is a build-up in asset prices that gets created due to the inflation that is going on. So, inflationary expectations also get fundamentally altered to a higher level.

It is hence important that the Central Bank take a view. So, we came up with the argument that the very process of the Central Bank declaring a transparent framework would smoothen our inflation in terms of bringing down the risk. It would help reduce the transactional costs in international markets. Hence, the notion that not targeting inflation has no financial costs is incorrect. So, we have to be careful here about how we interpret Dr. Nachane's view on cost of inflation targeting.

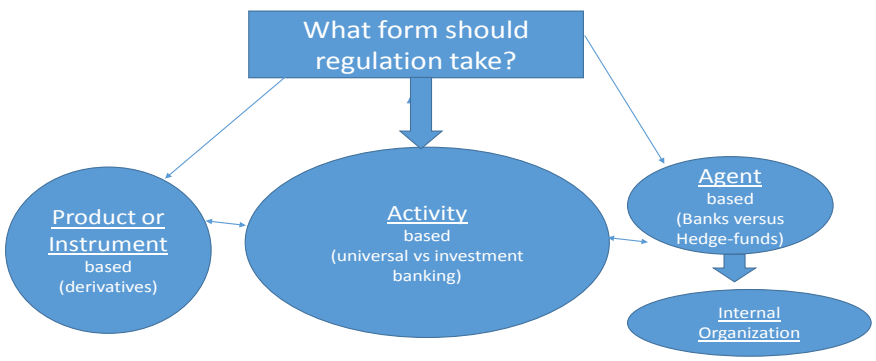
When we talk about cost of inflation targeting, we should compare it with cost of inflation non-targeting. That is an appropriate counterpoint factor bench mark. And this was decided in the committee not based on any particular school of thought but often based on our practical experiences.

Let me get back to the comment on the public policy response issue (Figure 2).

What form should public policy response take? Should its form be product or instrument based? Or should it be activity based? This is an issue on which I have lot of disagreement with many officers at the RBI. For example, it is perceived that derivatives such as CDOs, CLOs, Credit Default Swaps and other products are not good. Regulation of these is a product based regulation. But we don't have to go to instrument based regulation; we can instead just do activity based regulation.

Here I would like to talk about Universal Banking versus Investment Banking. Banks holding deposits as the principal agency should not do trading. This is an activity based response. The global crisis threw up this challenge of whether we should take an activity based approach or we should take an agent based approach. Banks versus hedge funds; high frequency trading versus low frequency trading; whether trading should be over the counter or it should be an exchange driven market; these are some of the dilemmas of public policy regulation.

Figure 2: Public Policy Dilemma vis a vis Regulation



I am not saying that Dr. Nachane's paper needs to extend into that area, but we need to have more understanding of what the optimal combination of policy response should be. An easy way out is to simply disallow derivatives, but in the process of non-allowance of derivatives, there would be someone else paying for hedging the risks. Because, there is after all, no free lunch.

I have often felt of the RBI that by not allowing hedging instruments in markets, the RBI itself has to provide the final hedge. Far from being the lender of the last resort, it becomes a lender of the first resort. By creating a whole universe of structures, we are not allowing private agents to settle their risks against each other. So, instead of coming to the RBI on a net basis, they come to the RBI at a gross basis level.

Disallowing futures instruments because some of them have failed elsewhere, for example, does not work. All these risks, some explicit, some implicit, will end up on the RBI balance sheet. So, the RBI is itself becoming the net hedger of the entire system. This kind of regulation is far more subtle than what is being pursued across the globe in the wake of the financial crisis.

Incentives and Organisational Structures:

I observed the global financial crisis unfolding in front of me virtually, both, in my capacity as a member of a research department as well as that of a desk trader reporting to the head of trading of both Morgan Stanley in New York and then Royal Bank of Scotland in London, essentially thereby covering North American and European Trading Desks. These two desks did, in fact, significantly contribute to the entire global financial crisis episode.

My trading desk experience suggests that the way that organisational incentives are designed within these teams itself creates a bias towards promoting fragility in financial organisations. So, if a bank is fundamentally prone to a cyclical shock and if the incentives are located such that

you are going to create a response which is going to be financially fragile anyway, then these systematic failures cannot be avoided.

The Dilemma:

How does a major multinational bank fail? A major multinational bank, which is a major participant in a financial crisis, is not a small organisation. There are complex layers of checks and balances. Transactions pass through a global investment trading hub. There is a Chief Risks Officer, there is a Trading Desk, and there are thousands of employees across the organisation with well diversified views. Yet, the one important question remains unanswered. How is it that an organisational structure which is so meticulously built over 100 years collapses?

For a hundred years we built these organisation structures to precisely protect us in the event of great crisis episodes and the organisational structure failed to do so. How did this happen? That's a very important question. This is where I say the incentives within organisations become very important. Let me present an organisational perspective. Between 2003 and 2008, in the golden years of investment banking before the crisis began, all CEOs of 30 major world banks were CEOs who had been promoted from the trading desks. How is it that not a single Chief Risk Officer or officer from any other desk got promoted? If we look at manufacturing firms, what do we observe? We get great diversities in the backgrounds of the CEOs. CEOs are chosen from Human Resources (HR), Marketing and from other diverse backgrounds. Yet, in the banking sector alone, the risk takers, the traders are seen as Gods and get promoted to CEOs. These Universal Gods eventually became the Gods of Nothing, as these risk takers are now referred to. In his much praised 2005 article about credit defaults, "Has Financial Development Made the World Riskier?", Dr. Raghuram Rajan was talking about these issues. This was a great revelation to lot of academicians though it was an obvious thing for bankers and traders. The market had sensed that a liquidity crisis could happen, but the problem was human bias. Everybody knew that the market would come down, but they thought they were smarter than others and would be able to land safely.

Once I asked in Indian School of Business "How many of you think that you are above average?" Around 80% of the students lifted their hands! By definition, 80% can't be above average of the class. They will have to be above or below 50. But 80% put up their hands. So, it was human bias that actually aggravated the financial crises.

Thus, the chief point here is that the key decision making areas in commercial banks, the favourite banks, went unduly to risk takers and not to the risks managers. The risk managers were shouting from the roof tops to the stake holders that this is a wrong decision, do not put your investments in this place, this will hurt in the long run; yet they were overruled.

Let us say a company doesn't make 20% return but makes 10% return, but the world and the company are stable and there is no crisis. Has the Chief Risks Officer's bonus gone up? It doesn't go up, because he didn't make money and so the company does not pay bonus to the chief risks officer. So, what is the risk officer's incentive? Basically what should the risks managers maximise? Under the 2008 scenario, these officers were only paid for the profits they actually made by taking risks.

The key question is: How to *empower* "Risk-managers" versus "Risk-takers"? Alternatively, how should the risk-takers' compensations be designed? Is it right that their compensations are based on "profits in a year" which makes them consider "Returns now and Risks later"? Would it not make for socially better outcomes if the

risk-takers' compensations are based on maximising "average" profits "over N-years", something which might be achieved by introducing bonuses with "claw-back options".

So, here is a thought experiment. Can this bonus payment be made a function of the losses that you did not make instead of always making it function of the profits that you actually made? So, this is the dilemma basically in my view. Academic literature needs to contribute here more.

In all these discussions, we need to understand whether a bank can define optimal risk for itself. To give a parallel example, when the RBI does inflation targeting, it is not trying to say that inflation should be zero, but rather that it should be between 2% and 6%. Can a similar risk ratio be worked out for banks? Could we say that return on equity for a commercial bank holder should be around 8%; 6% is too low and above 10% is totally unacceptable because you are going to increase risks? Can we apply such logic to risk designs of the financial institutions?

All financial institutions are public in a sense, and hence should be driven on the broader principles of public utilities (because of their systemic consequences). Can "public" utility model of maximising in a limited way work for the design of sound financial system?

And this brings us back to academic research. We need to understand academically whether private interests can drive us towards optimal social outcome when choices made by financial institutions are involved. Fundamental welfare theorems present this kind of a view wherein people driven by private agenda can generate socially optimal outcomes. I think that this is an area where academic research and consensus should focus more. Rather than focus only on correlations that we witness at macro levels, it would be very fruitful to also focus on the structure that is generating this correlation.

SOME NOTES ON SAFEGUARDING FINANCIAL STABILITY

Mihir Rakshit

Among the issues raised by Prof. Nachane in his exhaustive and thought-provoking discussion of the post-2008 thinking on financial stability, I shall consider only those that mark a major departure from the pre-crisis conventional wisdom. The most important of these issues relate to macro-prudential policies and may be classified, following Prof. Nachane, under these groups:

(a) monetary policy response to asset price bubbles;
(b) pro-cyclicality of bank credit; and
(c) international policy coordination.

Monetary Policy and Asset Prices

Before the outbreak of the global financial crisis, central bank policies were directed towards keeping inflation low and the output gap close to zero. However, as the experience of the USA, the UK and a number of other advanced countries during the 2000s suggests, even though the general price level remains stable or does not show a significantly rising trend, bank-financed speculative purchases may raise asset prices to unsustainable heights and end up, when the bubble bursts, in a severe financial crisis and a prolonged economic downturn. This has now produced a universal agreement among economists on the urgent need for central banks to respond effectively to not only sharp increases in the general price level, but to the asset price inflation as well. For preventing formation of asset price bubbles, monetary tightening, it is often advocated, may be supplemented by stricter capital requirements for banks and other financial institutions: high capital requirements, it is presumed, would moderate the flow of funds for speculative investments and hence reduce the excess demand in the asset market.

That asset price bubbles tend to engender serious, long-lasting financial troubles and economic slowdown is not difficult to appreciate. But the remedies suggested in this regard are unlikely to be effective in most instances. Note first that the effects of central bank policies are macroeconomic in nature and operate through aggregate demand for goods and services as well as for all types of assets; in fact, response of asset prices to central bank policies constitutes an important vehicle of the monetary transmission mechanism. Since galloping prices of *all* assets are generally accompanied with high CPI inflation, monetary tightening would be effective in moderating both the CPI and the asset price inflation. But what if prices of *some* particular asset go up by leaps and bounds while the CPI inflation remains moderate, as happened in the USA over 1997-2006 when house prices were characterised by a speculative bubble, but neither prices of other assets nor the CPI showed any sharp northern movement? Galloping home prices and expectations of its continuance led, to be sure, to a sharp rise in loan-financed investment in housing and created acute imbalances in both the real and financial sectors of the US economy. As we have noted elsewhere,[1] during 1995-2007 the aggregate investment ratio in the USA was fairly stable at 19.5 percent. Over 1995-2000 the ratio of residential investment to total capital formation was also stable at 22.95 percent. However, with rising house price inflation the share of residential investment in the total registered a steep rise from 2001, reaching 27.3 percent by Q3 2003 and remained at an elevated level thereafter until the home price inflation started slowing down in mid 2007. The resulting real sector imbalance consisting in disproportionately large stock of housing in relation to other capital stocks and vulnerability of banks due to their exposure to the housing market and the liquidity mismatch in their balance sheets, led to a financial meltdown

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followed by a prolonged recession as house prices tumbled, there was a scramble for liquidity, and a vertiginous fall in net assets of households and banks reduced private consumption expenditure and turned bank lending into a trickle.

But the question is, could the aforementioned imbalances be avoided through a timely monetary tightening? The answer, contrary to the widely held view, is in the negative. The reason is that, a dear money policy would have had a negative impact on aggregate capital formation, but not investment in housing, driven as it was by speculative excesses; the result, as per our analysis, would thus have been counterproductive, with a larger shortfall of the actual from the potential output, inflation declining below the target level, a greater distortion in the ratio of non-residential to residential investment and a more acute financial fragility.

It cannot be sufficiently emphasised that for containing sectoral bubbles and imbalances the central bank needs to curb financial flows to the overheated asset market, not impose restrictions on credit in general. For this purpose it is necessary that (a) the risk-weight of an asset be raised progressively whenever its share in an individual bank's balance sheet or in assets of all banks taken together exceeds some limits; and (b) the central bank prevents any significant maturity mismatch in the asset-liability position of banks, either individually or collectively. In other words, the corrective measures are required to be sector-specific, not macroeconomic.

The aforesaid reasoning also suggests that stricter capital requirements for banks and other financial institutions can dampen the supply of *aggregate* flow of credit, but are unlikely to be effective in moderating or tackling sectoral bubbles. This is apart from the fact that an exorbitant hike in the capital adequacy ratio can seriously impede financial intermediation and have an adverse effect on productivity and growth.

Real and financial sector imbalances sans asset price bubbles

A major deficiency of the post-crisis literature on financial fragility consists in its neglect of the role of real and/or financial sector imbalances even when they are not accompanied with a cumulative rise in asset prices. Such imbalances tend to erode resilience of banks and end up in systemic financial problems, the resolution of which is often difficult and long-drawn. For example, there was no asset price bubble in India during 2000-11 when investment in infrastructure, financed through bank loans and external commercial borrowing (ECB), especially by infrastructure companies operating under the public private partnership (PPP), went up by leaps and bounds. Since other types of investments were growing at a much slower pace during this period (from FY 2005 till FY 2011, gross fixed capital formation (GFCF) in infrastructure increased by nearly 230 per cent, compared to nearly 160 per cent increase in total GFCF) and infrastructural investments last for 30-40 years, there was a growing imbalance in the composition of capital stock along with a serious maturity mismatch in the balance sheet of the banking sector. It is these imbalances that lie at the heart of large scale debt defaults and banking woes in the wake of the global financial crisis and slowdown of the Indian economy. The important point to note in this connection is that, since the investment-cum-lending boom was sectoral, not economy-wide, monetary tightening would have done little in tackling these imbalances. Hence central banks, apart from remaining wary of formation of asset price bubbles, need to closely monitor indications of imbalances in (a) the portfolio of individual commercial banks as well as of the financial sector as a whole; (b) the

balance-sheet and cash flow-position of non-financial firms; and (c) the composition/structure of aggregate capital stock. The imbalances, our earlier analysis suggests, are required to be addressed through sector-specific rather than macroeconomic monetary measures.

Macro-prudential Regulations

The most important lesson of the crisis relates perhaps to the inadequacy of micro-prudential norms for banks for guarding against systemic financial upheavals. With the benefit of hindsight it is not difficult to appreciate that close interdependence of the operation of the real and the financial sector, both domestic and international, often gives rise to serious risks despite banks' adherence to capital adequacy and other prudential norms, however stringent. Unfortunately, the lesson has not prompted any significant improvement in framing rules or policies at the micro or macro level. Thus, the stress tests conducted by the authorities in the USA and other countries for assessing the vulnerability/robustness of a bank's balance sheet do not factor in the macroeconomic ramifications of the shocks, their feed-backs and their dynamic implications for the stability of the financial system. The reason is that stress tests consider only the first-round impact of a shock on banks, but abstracts from effects operating through fire sale of assets, severe contagion when financial entities are closely interconnected, cumulative decline in the level of economic activity as there is a flight to liquidity and sources of credit dry up.[2] Again, there appears to be an inadequate appreciation of how viability of the financial sector is crucially dependent on macroeconomic policies. The fact that even seven years after the outbreak of the global financial crisis in most countries GDP growth remains muted and the banking system relatively weak casts serious doubts on efficacy of changes in the post-crisis policy rules and regulations, supposed to be guided by considerations of (microeconomic) behaviour of economic agents on the one hand and of interlinkages between the real and financial sectors on the other.

International Policy Coordination

Given the sharp rise in cross-border trade and capital flows since the mid 1980s, financial crises have become highly contagious and tend to engulf all (open) economies irrespective of their economic fundamentals. In this context, the post-crisis literature on financial stability, as Prof. Nachane documents, has focused on two policy imperatives. The first relates to international policy coordination, the second to reforms of global financial institutions like the IMF and the World Bank.

The case for international policy coordination is in fact based on the Keynesian logic concerning the large spillover effects of domestic macroeconomic measures, through changes in trade, capital transfers and exchange rates, on aggregate demand, balance-sheets of firms and the economy's external asset-liability position *vis-à-vis* other countries. This perspective underlines the importance of policy coordination among countries for an early resolution of the crisis and effecting a robust economic recovery. Indeed, on the heels of the outbreak of the global crisis in 2008 there was an unprecedented cooperation among world's major central banks and governments in formulating policies for reversing the financial meltdown and the sharp slide in the level of economic activity. There can be little doubt this coordinated policy intervention was instrumental in preventing another Great Depression and effecting a turnaround in practically all economies by the second half of 2009.

However, the (Keynesian) lessons of the financial crisis were soon forgotten and by the late 2010s almost everywhere there was a reversal to new classical orthodoxy in framing macroeconomic policies. While the central bank policy by

and large remained loose,[3] reduction of budget deficit through fiscal squeeze (euphemistically called "fiscal consolidation") became the top priority of advanced as well as emerging economy governments. There was little appreciation of the fact that such policies posed serious obstacles to both recovery of the world economy and improvement of fiscal balance in individual countries. Since chains of financial intermediation remain seriously impaired in the wake of a major crisis, expansionary impact of easy money policy operates primarily through exchange rate depreciation - something which does little to boost global demand for goods and services. Much more damaging was the failure to appreciate how the mutually reinforcing effects of fiscal consolidation everywhere magnify the loss of employment and output and tend to widen budget deficit in all countries.[4] No wonder, from 2011 onward, performance of the world economy has remained lacklustre, with little sign of any sustained and robust recovery.

Reforming the International Financial System

Attempts at overhauling the global financial architecture in the post-crisis period have been mostly in two areas: (a) cooperation among regulatory/supervisory authorities in different countries for strengthening the shock-absorptive capacity of the system; and (b) reforms of the international financial institutions in general and the IMF in particular.

In view of their operation in several countries, transnational banks, insurance companies and other financial firms constituted a veritable source of cross-border contagion during the financial crisis. A major problem in taking timely, remedial measures was the inadequate information individual supervisory authorities had concerning the overall risk profile of these firms. Again, while rapid resolution of transnational firms' balance-sheet problems is imperative for revival of the global economy, in shoring up their portfolios, banks in individual countries are liable to be guided by their own cost-benefit calculus. Such policies tend to make the outcome grossly suboptimal for the world economy. These considerations have prompted cooperation among G20 countries in a number of areas. Attempts at formulating consensus programmes of remedial and corrective measures for tackling financial crises have not always been satisfactory. Nevertheless, as Prof. Nachane notes, since 2008 considerable progress has been made in putting in place a system of information sharing among supervisory agencies for tracking the health/ vulnerability of transnational financial entities; in harmonising rules across different jurisdictions in order to prevent regulatory arbitrage; in regular consultation among countries for coordinating their policies; in regulation of cross-border capital flows; and in devising effective and fair global-debt resolution mechanisms.

There has also been a large measure of agreement among G20 countries concerning the structural changes in the IMF to make it better suited for dealing with financial crises and addressing the serious liquidity problems EMEs are often faced with due to large capital movements, driven by speculative or/and herd behaviour. Since 1944 the share of EMEs in world output, trade and finance has risen enormously and so has the amount of funds needed by them in times of financial troubles. But with no significant change in the share of their quotas and votes in the IMF since its inception and with the near-veto power wielded by the USA in major IMF decisions, developing countries often face serious problems in accessing timely and adequate IMF loan for tiding over troubles. Again, in most cases availing of IMF assistance by EMEs involves considerable but needless/avoidable loss of income and employment due to the monetary and fiscal squeeze insisted on as a condition for granting loans. The East Asian crisis during 1997-99 constituted perhaps the most egregious example such avoidable suffering. An unintended

fallout of the conditionalities attached to the IMF bailout programmes has been that since the late 1990s practically all EMEs have started piling up huge war-chests of foreign exchange reserves - something which seriously distorts resource allocation in the world economy and was a major source of build-up of vulnerability in the US financial system before the outbreak of the global crisis.

The case for a major reorganisation of the IMF and a radical change in its policy stance for addressing financial turmoils thus appears open and shut. But the progress in reforming the IMF has been glacial. The reason is basically the same as what prevented adoption of the Keynes Plan at Bretton Woods: when reforms involve some sacrifice on the part of the privileged and powerful, they are unlikely to be implemented in a hurry.

For global financial stability much more important than IMF reforms, it should however be noted, is adequate appreciation on the part of the policy makers of the effects of fiscal, monetary and financial initiatives at the national as well as the international level. We have noted how lack of such a perspective has led to adoption of counterproductive macroeconomic measures since late 2010. Particularly notable in this connection have been the policies implemented for resolving the euro crisis. Not only the European Central Bank (ECB) did not deem it necessary to go in for quantitative easing (QE) until recently, but all the countries in the euro zone, especially those facing acute financial difficulties, adopted (or were forced to adopt) considerable fiscal retrenchment. Thus, it is not so much the structural deficiency of the IMF, but adherence to inappropriate economic orthodoxy that seems to lie at the root of policy ineffectiveness in dealing with the financial crisis. It is difficult to overestimate the power of "ideas of economists and political philosophers, both when they are right and when they are wrong" [Keynes, 1936].

NOTES

1. Rakshit, "Subprime Crisis : A Primer", *Money & Finance*, May, 2008.

2. See Brunnermeier, Markus K. and Martin Oehmke [2012], "Bubbles, Financial Crises and Systemic Risk", Princeton University, Economic Theory Centre, Research Paper No. 47, June 6.

3. Except in the euro zone and some developing countries including India.

4. The important point to note in this connection is that, ceteris paribus, a fiscal squeeze in a country improves its budgetary balance, but impairs that of others through transmission of the contractionary impulse. By the same logic, a coordinated fiscal expansion in all nations raises output and effects a reduction in budget deficit everywhere.

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D.M. NACHANE'S RESPONSES

RESPONSE TO DEEPK MOHANTY

Deepak Mohanty (DM for short) has raised a number of issues both from a general macroeconomic perspective as well as from a more specific perspective of central banking policy making. Below, I have tried to respond to his queries at some length.

DM: First on the macroeconomic front, I think, the author could have elucidated a bit more on the inverted triangle hypothesis - an otherwise small sized real sector trying to support a ballooning financial sector. (p. 397)

D.M. Nachane ***(DMN):*** The "inverted triangle" hypothesis is a very important issue meriting a detailed response. Prior to the 1980s, the prevailing view among development economists seemed to be that finance was incidental to economic development [Robinson, 1952; Lucas, 1988; Seers, 1983, etc.]. McKinnon [1973] and Shaw [1973] in their influential contributions developed an anti-thesis to this position and assigned a key role to financial intermediation and innovation in overall development reminiscent of Schumpeter [1912]. They (McKinnon and Shaw) stressed the role of finance in (i) efficient resource allocation (ii) mobilisation of savings for investment (iii) expanding goods & services markets (iv) facilitation of pooling, hedging and diversification of risk (v) monitoring managers and exercising corporate control and (one may add in the EME context) (vi) providing credit to informal sector (microfinance).

Undeniably, the McKinnon-Shaw thesis supplied the intellectual basis for the wave of financial liberalisation that rose in the 1980s in the developing world. The recent global crisis, however, seems to have cast considerable doubt on the premises of this thesis. In recent years, a number of influential economists have raised serious doubts about the perceived benefits of financial liberalisation (beyond a point) [see e.g., Friedman, 2013; Cecchetti & Kharroubi, 2012; Shiller, 2012, etc.]. This post-crisis critique, of course, recognises that financial development can be conducive to growth but sees definite limits to this process. Beyond a point, financial developments can be detrimental to growth, mainly through a process of diversion of physical and human capital. In effect, the relationship between financial development and economic growth is postulated to have an inverted-U shape. The critique essentially rests on four pillars:

1. Firstly, a stylised fact about the Western Capitalist economies evident in recent years (post-1980s) is that whereas the share of profits (including interest) in Value Added of the manufacturing sector has been steadily rising (with a corresponding fall in the wage share), the ratio of investment to profits has been declining. The "profits-investment" disconnect means that the aggregate national income identity has to be satisfied by a rise in domestic consumption and imports.
2. In the post-war years, regulations were in place in various countries, (e.g., the Glass-Steagall Act in the U.S.) which insulated the real sector from the financial sector. This led to the critique [see e.g., Jensen & Meckling, 1976] of the conflict between management and shareholders (so-called principal-agent problem), which led to "lack of shareholder control over management, and the pursuit of market share and growth at the expense of profitability". The onset of financial liberalisation led to the emergence of new financial instruments, (e.g., junk bonds) which provided a convenient means for hostile takeovers, by groups of shareholders who were dissatisfied with the performance of the management. Thereby, an increasing proportion of profits was distributed as dividends to keep shareholders satisfied, instead of being reinvested. Frequent buybacks of shares became a popular method to keep share

prices buoyant. As retained profits decline and shareholder payouts increase, investment shift from "real investment" in machinery, etc., to investment in consumer durables or real estate.

3. Hostile takeovers were often preceded by substantial "downsizing" of the enterprise, so that financialisation marked a shift from the earlier "retain and reinvest" philosophy of the firm to "downsize and distribute".
4. The financial sector is skill-intensive and as it expands it draws talent from other sectors especially those using high skilled personnel (R&D intensive sectors like pharmaceuticals or micro-electronics).

Apart from its adverse consequences for growth, "financialisation" can increase systemic risk and financial instability through several channels such as (i) furnishing avenues for excessive leveraging (ii) introducing weak links in the securitisation chain (shift from "originate and hold" model to "originate and distribute" model) via the emergence of new financial instruments (iii) by encouraging the growth of "shadow banking" institutions especially hedge funds (iv) via increased inter-linkages across institutions (v) by increasing co-movements of risks across different financial institutions (domino effect) and (vi) generally, by creating pressures for lighter regulatory oversight and instead placing greater reliance on "market discipline" especially shareholder discipline.

The natural question posing itself in the wake of this discussion is how to decide whether a cusp actually exists for a specific economy, and if existence is reasonably gauged, how to know on which side of the cusp that economy is currently located. This issue can only be decided via nonlinear econometric methods and not much empirical research seems to be as yet in evidence. One very general indication about the level of financialisation of an economy is afforded by the ratio of financial services in the national GDP (current prices). In India, the ratio has been around 5.85% for the last five years (2010-2014). This seems modest when compared to some of the OECD countries (UK 9.5%, U.S. 8%, Ireland 10.5%, Australia 11%), though there are advanced countries like France (5.5%), Japan (6.3%), Germany (4.9%), etc., compared to which the Indian ratio starts appearing significant. Thus, this issue of *whether the finance sector is really serving the Indian economy well* needs a very thorough investigation looking into the broad components of financial services such as banks' fees and commissions receivable, net spread earnings, other operating income, financial intermediation services indirectly measured (FISIM), etc.

DM: The crisis also revealed that liquidity risk at financial institutions had significant consequences for financial stability and macroeconomic performance, in part through common asset exposures and their increased reliance on short-term wholesale funds. Management of liquidity risk, in turn, spilled over to other markets and institutions, contributing to each other's losses and exacerbating overall liquidity stress. (p. 397)

DMN: I am most thankful to DM for drawing the important role played by liquidity risk in perpetrating the latest global financial crisis, into the discussion. In this context, the distinction between *market liquidity and funding liquidity* suggested by Garleanu, and Pedersen [2007], to which DM makes reference is crucial. To reiterate, *market liquidity* is an indicator of the "ease" with which a security is traded on the market (its bid-ask spread, price impact, resilience, etc.) whereas *funding liquidity* is with reference to the availability to a bank or investor sources of funding from its own capital or from (collateralised) loans. Correspondingly, *market liquidity* risk is the risk that the market liquidity worsens precisely when you need to trade and funding liquidity risk refers to the probability of

a trader/investor being forced to unwind his positions due to funds shrinkage. In the recent global crisis, the mutually reinforcing nature of the two types of liquidity risk set up a downward liquidity spiral which climaxed as one of the biggest busts of recent years. The main steps in this spiral are discussed in several major works [Cornett, et al., 2011; Gorton and Metrick, 2011; Ivashina and Scharfstein, 2010; Strahan, 2012, etc.] and may be briefly summed up as follows:

(i) The bursting of the housing bubble started it all.
(ii) Highly leveraged financial institutions and banks with large exposures to mortgage based securities (MBS) faced appreciable losses with associated funding liquidity problems.
(iii) As banks' balance sheets deteriorated, they suddenly turned risk averse and had to de-leverage by selling assets or hoarding cash or becoming risk averse.
(iv) Risk aversion led to minimising counterparty exposures subjecting the interbank funding market to severe stress.
(v) The funding risk now spread to other investors, such as hedge funds, who rely heavily on bank funding as banks become less willing to lend and raised margins.
(vi) This funding liquidity crisis brought in its wake market illiquidity with bid-ask spreads widening in several markets, with quotes becoming sparse or even disappearing. This market illiquidity raised the spectre of a general liquidity crisis, scaring investors with crashing prices, especially for illiquid assets with high margins.
(vii) Finally with Bear Stearns, AIG and Lehman episodes, there was a general unwinding and panic.

The natural question arising out of the foregoing discussion would be: What is being done now to deal with liquidity risk? In this context, the Basel III Accord assumes importance, as central banks the world over benchmark their regulatory standards in the light of those stipulated by the successive Basel Accords. In sharp contrast to the earlier two Basel Accords which had paid little attention to liquidity risk, Basel III addresses liquidity concerns in a detailed manner. Three types of risks are distinguished as bearing on macroeconomic liquidity, viz., (i) solvency risk (ii) market liquidity risk and (iii) funding liquidity risk.

These risks are sought to be countered via two stipulations (in addition to capital requirements), viz., (i) A "simple" minimum leverage ratio LR of 3% where LR = (Tier 1 Capital) / Total exposure (on and off-balance sheet) and (ii) A "liquidity coverage ratio" LCR of 100% defined as LCR = (Stock of high-quality liquid assets)/ (Total net cash outflows expected over next 30 calendar days).[1]

The RBI initiated the process of implementation of Basel III Capital Regulations with effect from April 1, 2013 in a phased manner. They are expected to be fully implemented by March 31, 2018.

DM: ... it would have been useful to have some discussion on the inter-linkages between monetary policy and bank risk-taking; this is popularly called as the "*risk-taking channel of monetary policy*". (p. 398)

DMN: I have made some reference to low interest rates feeding the "disaster myopia" psychology of speculative investors [Rajan, 2005] (p. 13 of my article). However, I did not elaborate on the *bank-risk taking channel*. In recent years, a number of papers have devoted considerable attention to both the theoretical and empirical aspects of the bank risk-taking channel [see in particular Borio and Zhu, 2008; Adrian and Shin, 2009; Gambacorta, 2009; Bomfin and Soares, 2014, etc.]. The two most important avenues of this channel are the following:

(i) Firstly, in a low-interest rate environment, there is the "hunt for yields" by asset managers of banks, insurance companies, pension funds and other finance companies, as yields on risk-free assets (such as government securities) turn unattractive. This happens particularly with institutional investors under contractual or regulatory restraints to provide a guaranteed *nominal* return on their liabilities.[2] It can also happen with private funds, where manager competence is judged via short-term returns. With safe asset yields considerably below the contractual guaranteed returns, funds may be driven to invest in high-yielding risky assets.

(ii) Secondly, low interest rates create a reassuring macroeconomic atmosphere for credit sanctioning as they are usually associated with low inflation and future prospects of robust growth. More immediately, asset values and collaterals of borrowers get a boost. Lenders typically now reassess the probabilities of default and loss-given -default more favourably [see Gambacorta, 2009, p. 44]. On the whole, banks tend to relax their lending criteria and increase the total quantum of risky loans. Additionally, their internal VaR assessment models may underestimate the riskiness of their portfolios, besides prompting them to increase their leverage [see Danielsson et al., 2004].

Empirical work for the US [Paligorova and Santos, 2012], for Spain [Jimenez et al., 2014]; Bolivia [Ioannidou et al., 2009] and Portugal [Bonfim and Soares, 2014] seems to indicate the strong presence of a bank risk-taking channel. I am not aware of any similar work for India.

DM: .. more insight into the issue of central bank communication would have been very useful indeed. (p. 398).

DMN: I absolutely agree that the paper should have touched upon the issue of central bank communication (henceforth CBC). By way of amends, I discuss the issue here in some detail.

Traditional central banking has always had a "mystique" attached to it, operating under the firm belief that only "unanticipated" monetary policy can have real effects but the NAIRU (non-accelerating inflation rate of unemployment) changed this perception. As the NAIRU hypothesis gained momentum in the 1980s monetary policy started taking on a more transparent hue. This was further consolidated by the rational expectations "evolution" and the distinct shift in central bank thinking in favour of "rules-based/oriented" rather than purely "discretionary" monetary policy [see Ball and Mankiw, 2002]. Today, several advantages are claimed for monetary policy transparency and increased CBC (or to use a more fashionable term effective forward guidance (EFG)). By providing market participants with its own perspectives on the fundamental factors that shape monetary policy and the likely scenarios for the future paths of such factors, the central bank can (i) improve monetary policy transmission [Woodford, 2005; Carney, 2012], (ii) reduce uncertainty in investment decisions [Barwell, 2013] (iii) make monetary policy more credible [Blinder et al., 2008] (iv) contribute to central bank independence [Cukierman, 2007] (v) manage expectations [Jansen and de Haan, 2013; Tomuleasa, 2015] and so on.

While the use of CBC for monetary policy effectiveness has become fairly well established, its use for financial stability purposes is relatively recent. The latter phenomenon is largely attributable to the unconventional monetary policies deployed by the US Fed, and to some extent the Bank of England, ECB, Japan and some OECD countries during the recent global crisis. Most of these economies (the US being a notable exception till at least very recently), have had a history

of inflation targeting and were operating at near-zero interest rates (the ELB or effective lower bound for the nominal interest rate). Such economies faced with the recent prolonged recessions had limited scope for further interest rate cuts but found that they could operate on the "expectations channel" by a well-managed CBC strategy, promising for example that the interest rate would remain at the current level for the next few quarters, or that QE (quantitative easing) or other credit-relaxation policies, would not be discontinued for a specific period of time. The crisis also brought out other valuable uses of CBC for monetary policy as well as for financial stability. In the latter context, especially, CBC has been proving extremely useful in many advanced countries for helping financial institutions and markets, as well as the general public to intelligently anticipate the central bank response to emerging and identified risks, thus to some extent moderating speculative behaviour of financial market participants and forestalling destabilising behaviour on their part [Nier, 2009; Born et al., 2011; Siklos, 2014, etc.]. Done with finesse, CBC can strengthen the public support for extensive macro-prudential measures and stricter surveillance, which might otherwise flounder for lack of popular support [see Geraats, 2010; Vayid, 2013, etc.]. Of course, CBC/EFG can be of various types [see Rudebusch, 2008; Vayid, 2013, etc.] - first generation EFG in which only *qualitative* statements are made by the central bank, second generation or *quantity* based EFG and third generation or *data-contingent* EFG. The ECB for example, relies mostly on qualitative guidance, the Bank of Canada and the central banks of New Zealand, Norway and Sweden are good examples of quantitative EFG, whereas the US Fed now seems to have gone into the third generation EFG.[3]

In the Indian context (see also DM's comments, p. 7) over the last few years EFG has been increasingly resorted to for monetary policy. But it must be considered as first generation EFG. The monetary policy statements accompanying the announcements provide a very lucid analysis of the rationale for monetary policy actions but there is little guidance about the future evolution of monetary policy or even about the likely duration of the current policy stance. In particular there are no "fan charts" of the expected inflation levels over the medium term or of long term interest rates. The deliberations of the Technical Advisory Committee on Monetary Policy (released with a lag) can, of course, be informative on these and related aspects, but these essentially reflect views of the individual members and not necessarily those of the RBI.

The EFG for financial stability is limited to the Financial Stability Reports released by the RBI bi-annually. These are extremely detailed assessments of the various components of the financial system and their interactions. There is also a profiling of the systemic risks in the system.

It is to be expected that as the RBI moves to the proposed *flexible inflation targeting regime* we will see greater and more sophisticated use of EFG both for monetary policy and financial stability.

DM: The regulations should be comprehensive in the sense that they apply comprehensively to all leveraged financial firms so that it is less likely to encourage the drift from heavily regulated to lightly regulated institutions during the boom. Regulations should also be contingent so that they have greater force when the private sector is most likely to do itself harm, but impose fewer restrictions at other times. This will make regulations more cost-effective and as a result, less prone to arbitrage or dilution. (p. 399)

DMN: There is almost universal agreement on the comprehensiveness of regulations. However, opinions differ on how this is to be done and the pace at which this ideal is to be achieved. Given the scale of the problem, the global political

lobbying and the strength of the shadow banking institutions, any meaningful solution appears infeasible in the medium term.

On the issue of contingent regulations, some progress is achievable if the central bank can furnish EFG with finesse and flexibility. However, if EFG is lacking in finesse or where the central bank lacks sufficient credibility, such a move would prove politically unpopular. There is also the danger of asymmetry -tighter regulations can be eased without difficulty but lighter regulations can become entrenched and resistant to change even if the situation so warrants.

DM: Notwithstanding Basel exhortations ... regulatory capital requirements are only loosely related to portfolio risk ...(p. 399)

DMN: This is essentially an empirical observation and the study quoted is essentially a cross-section study. Apart from the well-known problems of interpreting the conclusions from panel data models, I think there is an additional problem here. Regulatory bank capital requirements change in a discrete fashion whereas portfolio risks are in continual motion. Thus, only if the portfolio risks show a continual drift will the capital requirements respond and that too in a step-wise fashion. Risk weights also respond with a certain lag to emerging portfolio risks. Hence, portfolio risk changes will not be adequately reflected in changes in capital requirements.

DM: ... on the issue of risk sensitivity of public and private banks, internationally there is evidence to suggest that depositors penalise banks for excessive risk taking. Although Prof. Nachane suggests little econometric evidence on this count for India, I am reminded of some work by my colleagues in the Reserve Bank, which suggests that riskier banks, proxied by higher non-performing loans, pay higher deposit rates. (p. 399)

DMN: I think depositor disciplining of bank behaviour will be inoperative in a public sector dominated banking system, since ultimately deposits (in public banks) are underwritten by the state. Hence, depositors have no incentive to monitor risk taking in such banks. Private sector banks occasionally do fail and cooperative banks fail far too often. A study confined to a sample of domestic private banks and cooperative banks could possibly throw more light on this issue (of depositor discipline).

DM: In this context, perhaps the author could have examined the implication of the recently constituted BRICS bank (which has been formally inaugurated recently) and how it is likely to shape the contours of the international monetary and financial arrangements, going forward. Broadly, could strong regional arrangements hasten reforms at global institution? (p. 400)

DMN: The idea of regional integration as a counterweight to global dominance by the Western advanced economies and international financial institutions goes back at least to the 1960s. Its most systematic manifestation, however, comes in the wake of the East Asian crisis when there was widespread dissatisfaction in East Asia over the IMF's crisis-resolution performance [(Wade & Veneroso, 1998]. This supplied the trigger to a long-felt sense of dissatisfaction over the under-representation of East Asia in the G-7 centred international financial institutions such as the Financial Stability Forum (FSF),[4] IMF, IBRD and BIS. The FSF was heavily dominated by G7 representation and excluded key emerging Asian Economies such as China, Indonesia, Korea, Malaysia and Thailand. Although G20 included 3 non-G7 Asian countries (China, Indonesia and Korea) unlike the G7, the G20 remains a non decision-making body.

My own view is that regional integration is an idea whose time has come, as the traditional economic hegemony of the Western advanced economies is being increasingly challenged by East Asia and the fast-growing EMEs of BRICS. From India's perspective, an important issue is whether our search for regional partners should be guided by geographical contiguity or economic similarity. I think in this regard a regional integration programme centred around BRICS members has much to recommend itself. What could be the objectives of such a regional bloc? Minimally, it could be a self-insurance against shocks by provision of liquidity support for member countries that experience short-run balance-of-payments difficulties or excessive currency volatility. A prerequisite for this would be the building up of regional forex reserves pool and conducting policy surveillance and dialogue. The Chiang Mai Initiative (CMI) launched in 2000, has a pool of US $ 240 bn with contribution in the proportion 20:80 between ASEAN and +3 members.[5] In successive stages (as was done in the CMI) bilateral currency swaps and repurchase agreements may be launched to provide greater short-term liquidity.[6] Of course the extent to which regional integration should go would depend on the future evolution of the economies involved. Further integration could involve better coordination of macro-economic policies among the countries and perhaps (looking into the distant future) in the ultimate stage a common central bank and even a common currency.

NOTES

1. *High -quality liquid assets* = [cash + central bank reserves + sovereign debt (Level 1)] + 0.85 [Govt. backed mortgage-based securities + corporate bonds rated at least AA- (Level 2)]. Level 2 assets to comprise no more than 40% of the Numerator in LCR.

2. In India, mention may be made of the PPF, LIC's New Jeevan Nidhi and HDFC Life Guaranteed Pension Plan.

3. The following quotation from a recent FOMC press release [FOMC, 2012] may be taken as a typical instance of third-generation EFG "as long as the unemployment rate remains above 6.5%, inflation between 1 and 2 years ahead is projected to be no more than half a percentage point above the Committee's 2 percent longer-run goal".

4. The Financial Stability Forum has since then changed to the Financial Stability Board (FSB)

5. The CMI members are the 10 ASEAN members Indonesia, Malaysia, Thailand, Singapore, Brunei, Philippines, Lao PDR, Cambodia, Vietnam, Myanamar and the + 3 members Japan, China And Korea.

6. Under these arrangements, borrowing countries typically receive dollars in exchange for a local currency for a fixed period of time (usually three months), after which the borrower can renew the swap or pay it back to the lending country's central bank. Swap agreements can be reciprocal or unidirectional, depending on a country's reserves of foreign currency.

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RESPONSE TO ASHIMA GOYAL

Ashima Goyal (AG for short) has raised a number of critical issues in reference to my paper. Of these, I have focused on the following which I believe to be of special relevance.

AG: First, while new classical macroeconomics, with its belief in perfect market clearing, could certainly be said to have subscribed to the efficient markets hypothesis (EMH), the neo-Keynesian view emphasised imperfections in markets, including financial markets (p.403).

DMN: I certainly recognise that the neo-Keynesians emphasised market imperfections. My contention is that the NCM is a hybrid --incorporating selectively certain features of both new classical economics as well as neo-Keynesianism. However, the NCM builds its "micro-foundations" on the assumption of a representative agent basing his consumption decisions on an inter-temporal utility maximising framework, in which expectations about the future are formed rationally, i.e., by making best use of all available resources. It also incorporates important neo-Keynesian insights flowing from the extensive discussion on state dependent or Calvo pricing which attempts to model temporary wage and price stickiness in terms of transaction and menu costs, staggered price setting, etc. [see Calvo, 1983; Yun, 1996; McAdam and Willman, 2007 etc.]. However, the major failing of the NCM was the assumption of the "transversality condition" [Blanchard & Fisher, 1989, Appendix 2A], which postulates that in the inter-temporal optimisation of the representative individual, all debts are paid in full, thus effectively leaving no space for money, finance and liquidity to enter the model in a meaningful way. This renders the model particularly inappropriate to analyse the real world problems of credit risk and default. The transversality condition, by closing the inter-temporal utility maximisation model of the representative agent so as to rule out liquidity constraints, fails to allow for the endogenous build-up of banking/financial crises [see Buiter, 2009; Goodhart, 2010 etc.]. As such, the NCM models can only treat crises as exogenous shocks. There is some controversy as to whether the sub-prime crisis was a random shock or an endogenous development [Lucas, 2009; and Fama, 2010 argue for the former viewpoint, whereas Allington et al., 2011, take the opposite view]. The unfolding of the sequence of events leading up to the collapse of the LTCM [1997], Northern Rock [2007] and Lehman Brothers [2008] seem, however, to strongly suggest that banking and financial crises are usually the outcomes of institutional changes, financial innovations and regulatory shortcomings which are path dependent and which, therefore, cannot be analysed within the framework of the NCM.

AG: Later on in the paper, Dr. Nachane shows why systemic failure requires giving more weight to macro-prudential over micro-prudential policies. But systemic failures arise from feedbacks and contagion across markets, and therefore the analytical frame must include several markets-this is precisely what general equilibrium that includes frictions and imperfections, tries to do, even as it provides the necessary discipline and framework of analysis. So, macroeconomics cannot dispense with general equilibrium, but must include the relevant market failures. In any complex system, her ability to include and emphasise the correct components tests the skill of the analyst or the policy maker. (p. 404)

DMN: I think the entire focus on understanding macroeconomics through micro-foundations and general equilibrium of markets is misplaced. If general equilibrium theories were sufficiently developed to take full account of the externalities and disequilibria that typically occur in a modern world financial crisis, then perhaps this route to macroeconomic analysis could have been

appropriate and would have yielded useful policy guidelines. However, general equilibrium theory still continues to be based on the paradigm of the representative agent and an overall economic equilibrium, arrived at by aggregating over individual demand/supply curves to arrive at their market counterparts. Such a procedure is valid under very restricted assumptions [see Fisher, 1992] and is also subject to the "fallacy of composition" critique [see Kirman, 1992]. A more formal criticism comes from the successive writings of Debreu [1974], Sonnenschein [1972] and Mantel [1974], and goes by the name of the DSM theorem. In spite of Hahn's [1975] admission that the DSM results are "most damaging to neoclassical theory" (and by implication, the representative agent model), the mainstream economics profession seems to have largely ignored these implications, (plausible reasons for this neglect are discussed in Hodgson [1997] and Rizvi [1994]). From the regulatory point of view, what is being maintained in my paper is not that macro-prudential regulation should be pursued without any micro-prudential norms but simply that an overt and excessive focus on micro-prudential regulation could at times be counter-productive in inducing a sense of false complacency among regulators. Putting it simply, idiosyncratic risk influences systemic risk but systemic risk is not a simple aggregator of idiosyncratic risks in various parts of the system. The relation between the two is nonlinear and complex.

AG: He (DMN) criticises monetary policy's neglect of asset price bubbles, and therefore is wary of inflation targeting which can lead to a neglect of financial stability, and is correctly worried by the EMH on which many of the committees recommending inflation targeting for India are based. (p. 404)

DMN: The entire section on Monetary Policy in AG's paper expresses her major points of differences with the Urjit Patel Committee Report and its emphasis on inflation targeting. As such, there is little disagreement between us on this point. Her reservations about the "interest rate defense" are justified but the solutions that she advocates, viz., reserves and swaps may only work in limited contexts. As a matter of fact, long before the current global crisis set in, it was becoming increasingly evident that the profound institutional changes set in motion by the successive globalisation waves of the 1980s and 1990s, had considerably reduced both the manoeuvrability space and the efficacy of monetary policy. Several factors seem to be responsible, including, most prominently (i) rapid financial innovation which led to the emergence of several new near substitutes for money (ii) a relative decline in the role of banks in credit creation (iii) the switch-over from a reliance on direct monetary policy instruments, such as Cash Reserve Ratio (CRR), Statutory Liquidity Ratio (SLR), credit ceilings, etc., to indirect measures such as open market operations (OMO) and repo rates (iv) the rapid growth of securitisation and (v) unrestricted global capital flows. The mechanics via which such developments weakened the link between monetary policy and the credit market have been detailed, for example, in D'Arista [2009] (to whom we also owe the term "slipping transmission belt"), Friedman [1999], Disyatat [2010], etc. Basically, what seems to have happened is that the above developments have emasculated the direct effects of OMOs (open market operations) on the quantum and direction of credit flows, retarding monetary transmission and making it less reliable. The primary reason for monetary policy slippage seems to stem from the diminishing roles of commercial banks as entrecotes of savings and credit. If the transmission of monetary policy impulses to the macro-economy is to be strengthened then these transmission channels have to be extended to cover all major financial institutions interfacing in the savings-credit nexus (and not confined only to deposit accepting institutions, as at present).

In this context, an important suggestion made by a prominent group of macro-economists led by Palley [2004, 2006, 2008, and 2010] deserves serious attention.1i They recommend an entire overhaul in monetary policy thinking via a four-pronged strategy

(i) Abandoning the current practice of levying reserve requirements on the deposits of a bank.

(ii) Instead imposing reserve requirements on the loans, differentiated according to the characteristics (purpose, geographical location, risk profile, etc.), of the loan, i.e., shifting the reserve requirements from the liability side to the asset side.

(iii) Imposing such ABRRs on all important financial institutions (especially savings and mortgage institutions, pension funds, insurance and leasing companies, hedge funds, etc.).

(iv) Retaining all other current features of regulation such as the system of capital requirements, loan loss provisioning, etc. but expanding their scope to all financial institutions.

The system of ABRRs being proposed here differs from selective credit controls in one important regard. Selective credit controls essentially restrict the quantum of credit extended by banks against certain commodities by reducing the value of the collateral. They are thus a rationing device and hence as a tool of allocation of credit inferior to ABRRs, which are a price-based measure.

AG: "An Indian Perspective" is part of the title of the paper, but the analysis of regulatory changes following the GFC (global financial crisis), while admirably thorough, tends to follow the international literature (p. 406).

DMN: *I am very grateful to AG for this criticism, which did apply to the earlier version of my paper. I have now revised the later sections of my paper (Sections 6 to 9) and discuss several issues specific to the Indian context, especially the recommendations of the FSLRC. Our respective critiques of the FSLRC (though written independently) are in broad agreement, except that on the issue of principles-based versus rules-based regulation her critique of the FSLRC is somewhat more moderate than mine. One particular aspect to which I have drawn specific attention in my paper is the FSLRC recommendation regarding independence of regulators. Here the FSLRC seems to interpret Regulatory and Supervisory Independence (RSI)2 in the narrower sense as independence from the government but not in the broader sense encompassing also independence from the industry and financial markets (regulatory capture). The neglect of RSI assumes importance when one considers the fact that almost all episodes of financial distress have been associated with a weak RSI.3 While independence of the regulatory (and/or supervisory) agency is now recognised as the sine qua non of successful regulation in all spheres, the need for such independence is paramount for financial sector regulator(s), since financial stability partakes of the nature of a public good [Goodhart, 2008].*

AG: Any discussion of financial stability in India must also include an analysis of financial inclusion and a sustainable expansion of financial services, beyond just credit, to the poor. (p. 416)

DMN: *I must thank AG for bringing this key point to my attention. It had somehow escaped my attention in the earlier draft of the paper. I have now added a separate section which studies the interrelationship between financial inclusion and financial stability.*

NOTES

1. There have been several notable precursors to this suggestion including most prominently Thurow (1972), Pollin (1993), Friedman (1999), Reati & Toporowski (2004) etc. But Palley (op. cit) has been persevering with the idea for a

considerable time and seems to have worked out most of the important micro and macro-economic aspects. Hence, ABRRs are closely associated with his name.

2. RSI is often confused with central bank independence (CBI), though as stressed in the literature (see Lastra (1996), Taylor & Fleming (1999), Quintyn & Taylor (2002)), the two are conceptually distinct and need not necessarily co-exist even when the regulation & supervision functions and the monetary policy functions are vested in the same authority.

3 See De Krivoy [2000] for the Venezuelan experience of the mid-1990s, Lindgren et al., [1999] for the East Asian experience, Hartcher [1998] for Japan, etc.

i. There have been several notable precursors to this suggestion including most prominently Thurow (1972), Pollin (1993), Friedman (1999), Reati & Toporowski (2004), etc. But Palley (op. cit) has been persevering with the idea for a considerable time and seems to have worked out most of the important micro and macro-economic aspects. Hence, ABRRs are closely associated with his name.

RESPONSE TO GANGADHAR DARBHA

Dr. Gangadhar Darbha tragically expired a few weeks prior to the completion of my response to his comments. I have known him for the last two decades as an extremely intelligent and incisive scholar with deep interests in economic theory as well as their policy fall-outs. In his death the profession has lost an economist of great potential and those of us who knew him personally have lost a warm and wonderfully generous friend.

A part of the responses below was prepared after Gangadhar's demise. However in the interest of honest academic debate, I have discussed the issues raised by him purely on their merit, distancing them appropriately from my personal sorrow at his premature departure.

Let me begin by complimenting Gangadhar Darbha (henceforth GD) for so neatly categorising the issues raised in my paper under the three-fold taxonomy: (i) academic consensus (ii) public policy and (iii) organisational design. He has offered a number of interesting observations on each of these three sets of issues and I will try to respond to the most significant of these below.

GD: ...while there is academic consensus built up over years around crisis events, there is a limit to the relevance of academic consensus in the process of development of the event itself. (p. 422)

DMN: I am equally convinced about the veracity of this assertion. Market participants act in blissful unawareness of current academic controversies. And perhaps as GD later observes the *market heuristics* are almost surely orthogonal to the academic consensus. Equally true is the fact that academics in their actions as economic agents rarely display much faith in their textbook theories (GD quotes the example of Fisher Black). But what GD overlooks is that the regulatory response to market developments is very strongly informed by the current academic consensus. As two prime examples one may think of the IMF structural adjustment programmes so strongly influenced by the Washington consensus and the strong hold of the Jackson Hole consensus on Fed monetary policy making in the era of the Great Moderation. Thus, the academic consensus has to bear its share of responsibility in the unfolding of the recent global crisis. And this is precisely my reason for discussing the limitations of the New Consensus Macroeconomics at some length in my paper.

GD: When we talk about the cost of inflation targeting we should compare it with the cost of inflation non-targeting. (p. 423)

DMN: This statement I find very difficult to support. Advocates of a particular viewpoint often slip into a philosophical solecism. The idea that is being supported is presented under the most idealised set of circumstances, whereas the contra-view is presented under the worst-case scenario (thus GD seems to imply non-inflation targeting as an invitation to "unbridled commodity inflation", when the *empirical record on inflation* of countries like the US (a non-targeter till very recently) has been fairly impressive. As a matter of fact, what is required is a comparison of the two proposals under their most plausible scenarios. Admittedly, this may be difficult to accomplish empirically. In the absence of empirical evidence, too strong a case need not be made for either viewpoint. And if the existing arrangement has worked out well so far, there is no point to launch a new experiment guided purely by non-contextual experience. This was the underlying theme of my critique of the Urjit Patel Committee Report (which I have developed in detail elsewhere [see Nachane, 2014]).

GD: The RBI is itself becoming the net hedger of the entire system. (p. 424)

DMN: This statement possessed considerable force a few years ago, but in the last five years or so, the RBI has progressively introduced hedging instruments in the market such as Interest Rate Swaps (3 months to 5 years), Forward Rate Agreements, Currency Options (up to 2 years), Currency Swaps (1 - 5 years), Commodity Derivatives, Equity Derivatives, etc. [see Das, 2015]. Regulators are often blamed for being hesitant in the introduction of new hedging instruments. The RBI in particular has been at the receiving end of much criticism in this regard from financial market participants and financial analysts. But the fact of the matter is that most hedging instruments can also be used for speculation, and unless proper safeguards are in place a mere multiplication of such instruments can aggravate rather than mitigate systemic risk. The critical role played by the credit default swaps in the recent global crisis should serve as a cautionary tale.

GD: ...if the incentives are located such that you are going to create a response which is going to be financially fragile anyway, then these systematic failures cannot be avoided. (p. 424)

DMN: This is a very important point and even though I had taken note of it in my paper (see page 5, Section 1) I had not developed the theme fully. As a matter of fact, a considerable literature exists on precisely how the pay levels and pay structures in banks created a skewed incentive system that favoured excessive risk-taking. Firstly, as detailed in Bebchuk and Fried [2004], Jenkins and Masters [2009], etc., in most banks executives' pay-outs were strongly linked to short-term results and virtually delinked from long-term shareholder value. Secondly, executive compensation was insulated from losses to contributors of capital other than ordinary shareholders such as debenture holders, bond holders, guarantors of capital, etc. [See Bhattacharyya and Purnanandam, 2011; Chesney et al, 2011, etc.].

While the fact that these perverse incentives do encourage risk-taking by banks beyond the optimal level seems unquestionable and borne out by several recent empirical studies, [e.g., Spindler, 2011; Tung, 2010, etc.], the more interesting question is how such a system of incentives gets perpetuated in a modern economy. Sharma [2012] in his detailed analysis, locates the causes of this persistence in four factors[1] (i) Failure of shareholder discipline to curb excessive risk taking by banks, hedge funds and mutual funds. (ii) Growing concentration in the finance industry leading to increasing lobbying power with regulators and governments and in extreme cases leading to "regulatory capture". (iii) The "closed" and specialised nature of the market for finance professionals and (iv) as a special factor for the US the prolonged boom of the 1990s which seemed to encourage a philosophy of the financial sector being a leading sector in the prosperity of a nation.

Various suggestions have been proposed to align financial pay structures with an incentive scheme that does not encourage excessive risk-taking. Such suggestions include the following [see Bebchuk and Fried, 2010; FSB, 2009; Larcker et al., 2014, etc.]: (i) Modifying financial sector pay structures to take into account long-term shareholder value (ii) Rewarding financial executives not only for profit making but also for managing risk (as GD suggests) (iii) Linking pay levels to the level of capital holdings of a firm (iv) Paying attention to long-term returns of other contributors to capital (apart from shareholders) of financial firms.

However, the difficulties in the implementation of such a modified pay structure may be illustrated by a case study from our own country . Some time in May 2007 in an address to the Confederation of Indian Industry (CII) the then Prime Minister Manmohan Singh had cautioned the business community against "excessive remuneration to promoters and senior executives"

[see Dasgupta, 2007, for more details]. Immediately there was a hue and cry from the corporate sector [see Times of India, 27 May, 2007]. In the teeth of such determined opposition, nothing further seems to have emerged on this matter. It appears that the most sacred of cows in a traditionally cow-worshipping country is the salary of corporate executives!!

NOTE

1 I only list these factors here. Reference may be made to Sharma (2012) for details.

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RESPONSE TO MIHIR RAKSHIT

Prof. Mihir Rakshit (henceforth MR) has raised three key issues in his commentary on my paper. Let me try to respond to these in succession.

MR: It cannot be sufficiently emphasised that for containing sectoral bubbles and imbalances the central bank needs to curb financial flows to the overheated asset market, not impose restrictions on credit in general. (p. 428)

DMN: *MR is absolutely right in claiming that asset price bubbles are often sectoral, and hence merit a sector-based response rather than a blunt overall response of monetary restraint. MR's* critique is possibly provoked by the *following statement in my paper "Firstly monetary policy could be made responsive to asset price developments, either by using asset prices as explicit targets (as originally suggested by Goodhart* [1995]) or minimally as *indicators" (p. 13). I must acknowledge that I should have clarified better my own position in this regard, viz., that asset prices (and their sectoral distribution) should be used as "indicators" in deciding the monetary policy stance and not as explicit "targets" à la Goodhart [1995]. Elsewhere [Nachane, 2013], I have indeed drawn attention to this problem in detail. ".... as noted by Palley [2008, p. 6], raising interest rates to moderate a bubble build-up can have "blunderbuss" effect. Firstly, higher interest rates may adversely affect the investment component of aggregate demand. Secondly, in a world of free international capital mobility, higher* interest rates by attracting capital inflows c*an lead to exchange rate appreciation thus having an adverse effect on the balance of payments. Thirdly, bubbles can be confined to particular sectors or geographical regions, and a blanket rise in the overall interest rate may inflict long-term damage on these non-affected sectors or regions. ... ...asset based reserve requirements (ABRRs), offer a possible way out of both the debt footprint and the blunderbuss effects". [Nachane, op. cit., p. 97]. The concept of ABRRs is discussed in detail in my response to one of Ashima Goyal's comments. Thus, all in all, my views run very close to those of MR on this issue, though this escaped a very precise articulation in my paper under discussion.*

MR: A major deficiency of the post-crisis literature on financial fragility consists in its neglect of the role of real and/or financial sector imbalances even when they are not accompanied with a cumulative rise in asset prices. Such imbalances tend to erode resilience of banks and end up in systemic financial problems, the resolution of which is often difficult and long-drawn (p. 428)

DMN: *I agree with MR that relatively little attention has been paid in the literature to the role of the build-up of real and financial sector imbalances in the precipitation of crises. The historical paradigm of banks as purveyors of short term credit has prevented a proper appreciation of the changing reality of universal banking, wherein banks are losing their pristine commercial/merchant character and are increasingly taking on the role of investment vehicles. Section 7 of my paper presents a broad overview of prudential standards currently in effect, which do pay a great deal of attention to issues such as quality of capital of financial institutions and banks, pro-cyclicality of capital requirements, leverage, loan-loss provisioning norms, etc. But admittedly more needs to be done on this front. Basel III has been strongly informed with this concern and has several provisions to deal with additional issues not hitherto considered by regulators such as (i) Minimum Core liquidity ratios (core funding=time deposits + other sources of long-term funding /total liabilities) (ii) Establishment of central counter-parties for interbank lending (iii) Putting in place a*

risk-based *deposit insurance system (iv) Regulatory code of conduct for Credit Rating Agencies, etc. As India is expected to switch over to Basel III progressively from 2017 onwards, it is to be expected that the issues raised by MR will be dealt with more adequately.*

MR: Thus the stress tests conducted by the authorities in the USA and other countries for assessing the vulnerability/robustness of a bank's balance sheet do not factor in the macroeconomic ramifications of the shocks, their feed-backs and their dynamic implications for the stability of the financial system. (p. 429)

DMN: *At one level, MR's statement sounds a bit too severe, since most central banks in their systemic risk surveys pay considerable attention* to *macroeconomic risks (along with several other risk parameters). To quote from the June 2015 Financial Stability Report of the RBI*

"The systemic risk survey (SRS), the eighth in the series was conducted in April 20151 to capture the perceptions of experts, including market participants, on the major risks the financial system is facing. The results indicate that global risks and macroeconomic risks continued to be perceived as major risks affecting the financial system. ...Within global risks, the risk of a global slowdown and global funding risks remained unchanged at an elevated mode in the current survey. While the sovereign risks increased to medium risk category in this survey, the global inflation risk indicated upward shift to high risk category among the global risk factors ...Within the macroeconomic risk category, risks from deterioration in the domestic economic outlook increased into t*he high risk category in the current survey. The risks on account of domestic inflation, current account deficit and fiscal risks have declined considerably in the current survey. The risks emanating from slow pace of infrastructure development, capital inflows/outflows and corporate sector, though marginally receded, were still perceived to remain in the high risk category" [RBI, op. cit. p. 64].*

But if MR's statement is taken to imply that central banks do not have an adequate modeling framework to factor in macroeconomic risks to bank balance sheets, the statement assumes full force. The existing dynamic stochastic general equilibrium (DSGE) models constituting the central banks' single weapon to analyse a variety of regulatory policy issues are singularly ill-adapted to accommodate detailed impact analysis of macroeconomic shocks on individual bank balance sheets. Some of the alternatives suggested include: (1) Network Approach which tracks the transmission of financial stress across the banking system via linkages in the interbank market (2) Co-Risk Model in which market data on credit default swaps (CDS) is used to assess how default risk is transmitted across institutions (3) Distress Dependence Matrices in which a select group of institutions is assessed and for each pair of institutions, distress probabilities are worked out conditional on the status in other institutions and (4) Default Intensity Modes to assess the likelihood of default of a large fraction of financial institutions, which is calculated through their linkages. I am not sure how far EME central banks are equipped to handle the data base requirements of such approaches.

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 High-Level Group on Financial Supervision in the EU*, (Chairman: Jacques de Larosière) Chapters 1, 2, 3 and 4.
2. Report of International Monetary Fund, *Global Financial Stability Report*, April 2015, Chapter 1.
3. Ibid., *Navigating Financial Challenges Ahead, October 2009*, Annex 1.1. Global Financial Stability MAP: Construction and Methodology
4. Reserve Bank of India, *Financial Stability Report*, June 2015.

THE HIGH-LEVEL GROUP ON FINANCIAL SUPERVISION IN THE EU
Brussels, 25 February 2009
The de Larosihre Group Jacques de Larosihre Chairman

AVANT-PROPOS

I would like to thank the President of the European Commission, Josi Manuel Barroso, for the very important mandate he conferred on me in October 2008 to chair an outstanding group of people to give advice on the future of European financial regulation and supervision. The work has been very stimulating. I am grateful to all members of the group for their excellent contributions to the work, and for all other views and papers submitted to us by many interested parties.

This report is published as the world faces a very serious economic and financial crisis.

The European Union is suffering.

An economic recession.

Higher unemployment.

Huge government spending to stabilize the banking system - debts that future generations will have to pay back.

Financial regulation and supervision have been too weak or have provided the wrong incentives. Global markets have fanned the contagion. Opacity, complexity have made things much worse.

Repair is necessary and urgent.

Action is required at all levels - Global, European and National and in all financial sectors.

We must work with our partners to converge towards high global standards, through the IMF, FSF, the Basel committee and G20 processes. This is critical. But let us recognize that the implementation and enforcement of these standards will only be effective and lasting if the European Union, with the biggest capital markets in the world, has a strong and integrated European system of regulation and supervision.

In spite of some progress, too much of the European Union's framework today remains seriously fragmented. The regulatory rule book itself. The European Unions' supervisory structures. Its crisis mechanisms.

This report lays out a framework to take the European Union forward.

Towards *a new regulatory agenda* - to reduce risk and improve risk management; to improve systemic shock absorbers; to weaken pro-cyclical amplifiers; to strengthen transparency; and to get the incentives in financial markets right.

Towards *stronger coordinated supervision* - macro-prudential and micro-prudential. Building on existing structures. Ambitiously, step by step but with a simple objective. Much stronger, coordinated supervision for all financial actors in the European Un ion. With equivalent standards for all, thereby preserving fair competition throughout the internal market.

Towards *effective crisis management procedures* - to build confidence among supervisors. And real trust. With agreed methods and criteria. So all Member States can feel that their investors, their depositors, their citizens are properly protected in the European Union.

In essence, we have two alternatives: the first *"chacun pour soi"* beggar-thy-neighbour solutions; or the second - enhanced, pragmatic, sensible European cooperation for the benefit of all to preserve an open world economy. This will bring undoubted economic gains, and this is what we favour.

We must begin work immediately.

Jacques de Larosihre
Chairman

DISCLAIMER

The views expressed in this report are those of the High-Level Group on supervision. The Members of the Group support all the recommendations. However, they do not necessarily agree on all the detailed points made in the report.

INTRODUCTION

1) Since July 2007, the world has faced, and continues to face, the most serious and disruptive financial crisis since 1929. Originating primarily in the United States, the crisis is now global, deep, even worsening. It has proven to be highly contagious and complex, rippling rapidly through different market segments and countries. Many parts of the financial system remain under severe strain. Some markets and institutions have stopped functioning. This, in turn, has negatively affected the real economy. Financial markets depend on trust. But much of this trust has evaporated.
2) Significant global economic damage is occurring, strongly impacting on the cost and availability of credit; household budgets; mortgages; pensions; big and small company financing; far more restricted access to wholesale funding and now spillovers to the more fragile emerging country economies. The economies of the OECD are shrinking into recession and unemployment is increasing rapidly. So far banks and insurance companies have written off more than 1 trillion euros. Even now, 18 months after the beginning of the crisis, the full scale of the losses is unknown. Since August 2007, falls in global stock markets alone have resulted in losses in the value of the listed companies of more than ∈ 16 trillion, equivalent to about 1.5 times the GDP of the European Union.
3) Governments and Central Banks across the world have taken many measures to try to improve the economic situation and reduce the systemic dangers: economic stimulus packages of various forms; huge injections of Central Bank liquidity; recapitalising financial institutions; providing guarantees for certain types of financial activity and in particular inter-bank lending; or through direct asset purchases, and **"Bad Bank"** solutions are being contemplated by some governments. So far there has been limited success.
4) The Group believes that the world's monetary authorities and its regulatory and supervisory financial authorities can and must do much better in the future to reduce the chances of events like these happening again. This is not to say that all crises can be prevented in the future. This would not be a realistic objective. But what could and should be prevented is the kind of systemic and inter-connected vulnerabilities we have seen and which have carried such contagious effects. To prevent the recurrence of this type of crisis, a number of critical policy changes are called for. These concern the European Union but also the global system at large.
5) Chapter 1 of this report begins by analysing the complex causes of this financial crisis, a sine qua non to determine the correct regulatory and supervisory responses.

CHAPTER I: CAUSES OF THE FINANCIAL CRISIS

Macroeconomic issues

6) Ample liquidity and low interest rates have been the major underlying factor behind the present crisis, but financial innovation amplified and accelerated the consequences of excess liquidity and rapid credit expansion. Strong macro-economic growth since the mid-nineties gave an illusion that permanent and sustainable

high levels of growth were not only possible, but likely. This was a period of benign macroeconomic conditions, low rates of inflation and low interest rates. Credit volume grew rapidly and, as consumer inflation remained low, central banks - particularly in the US - felt no need tighten monetary policy. Rather than in the prices of goods and services, excess liquidity showed up in rapidly rising asset prices. These monetary policies fed into growing imbalances in global financial and commodity markets.

7) In turn, very low US interest rates helped create a widespread housing bubble. This was fuelled by unregulated, or insufficiently regulated, mortgage lending and complex securitization financing techniques. Insufficient oversight over US government sponsored entities (GSEs) like Fannie Mae and Freddie Mac and strong political pressure on these GSEs to promote home ownership for low income households aggravated the situation. Within Europe there are different housing finance models. Whilst a number of EU Member States witnessed unsustainable increases in house prices, in some Member States they grew more moderately and, in general, mortgage lending was more responsible.
8) In the US, personal saving fell from 7% as a percentage of disposable income in 1990, to below zero in 2005 and 2006. Consumer credit and mortgages expanded rapidly. In particular, subprime mortgage lending in the US rose significantly from $180 billion in 2001 to $625 billion in 2005.
9) This was accompanied by the accumulation of huge global imbalances. The credit expansion in the US[1] was financed by massive capital inflows from the major emerging countries with external surpluses, notably China. By pegging their currencies to the dollar, China and other economies such as Saudi Arabia in practice imported loose US monetary policy, thus allowing global imbalances to build up. Current account surpluses in these countries were recycled into US government securities and other lower-risk assets, depressing their yields and encouraging other investors to search for higher yields from more risky assets...
10) In this environment of plentiful liquidity and low returns, investors actively sought higher yields and went searching for opportunities. Risk became mis-priced. Those originating investment products responded to this by developing more and more innovative and complex instruments designed to offer improved yields, often combined with increased leverage. In particular, financial institutions converted their loans into mortgage or asset backed securities (ABS), subsequently turned into collateralised debt obligations (CDOs) often via off-balance special purpose vehicles (SPVs) and structured investment vehicles (SIVs), generating a dramatic expansion of leverage within the financial system as a whole. The issuance of US ABS, for example, quadrupled from $337 billion in 2000 to over $1,250 billion in 2006 and non-agency US mortgage-backed securities (MBS) rose from roughly $100 billion in 2000 to $773 billion in 2006. Although securitisation is in principle a desirable economic model, it was accompanied by opacity which camouflaged the poor quality of the underlying assets. This contributed to credit expansion and the belief that risks were spread.

1. Evidenced by a current account deficit of above 5% of GDP (or $700 billion a year) over a number of years.

11) This led to increases in leverage and even more risky financial products. In the macro conditions preceding the crisis described above, high levels of liquidity resulted finally in risk premia falling to historically low levels. Exceptionally low interest rates combined with fierce competition pushed most market participants - both banks and investors - to search for higher returns, whether through an increase in *leverage* or investment in *more risky financial products.* Greater risks were taken, but not properly priced as shown by the historically very low spreads. Financial institutions engaged in very high leverage (on and off balance sheet) - with many financial institutions having a leverage ratio of beyond 30 - sometimes as high as 60 - making them exceedingly vulnerable to even a modest fall in asset values.
12) These problems developed dynamically. The rapid recognition of profits which accounting rules allowed led both to a view that risks were falling and to increases in financial results. This combination, when accompanied by constant capital ratios, resulted in a fast expansion of balance sheets and made institutions vulnerable to changes in valuation as economic circumstances deteriorated.

Risk management

13) There have been quite fundamental failures in the assessment of risk, both by financial firms and by those who regulated and supervised them. There are many manifestations of this: a misunderstanding of the interaction between credit and liquidity and a failure to verify fully the leverage of institutions were among the most important. The cumulative effect of these failures was an overestimation of the ability of financial firms as a whole to manage their risks, and a corresponding underestimation of the capital they should hold.
14) The extreme complexity of structured financial products, sometimes involving several layers of CDOs, made proper risk assessment challenging for even the most sophisticated in the market. Moreover, model-based risk assessments underestimated the exposure to common shocks and tail risks and thereby the overall risk exposure. Stress-testing too often was based on mild or even wrong assumptions. Clearly, no bank expected a total freezing of the inter-bank or commercial paper markets.
15) This was aggravated further by a lack of transparency in important segments of financial markets - even within financial institutions ^V and the build up of a "shadow" banking system. There was little knowledge of either the size or location of credit risks. While securitised instruments were meant to spread risks more evenly across the financial system, the nature of the system made it impossible to verify whether risk had actually been spread or simply re-concentrated in less visible parts of the system. This contributed to uncertainty on the credit quality of counterparties, a breakdown in confidence and, in turn, the spreading of tensions to other parts of the financial sector.
16) Two aspects are important in this respect. First, the fact that the Basel 1 framework did not cater adequately for, and in fact encouraged, pushing risk taking off balance-sheets. This has been partly corrected by the Basel 2 framework. Second, the explosive growth of the Over-The-Counter credit derivatives markets, which were supposed to mitigate risk, but in fact added to it.

17) The originate-to-distribute model as it developed, created perverse incentives. Not only did it blur the relationship between borrower and lender but also it diverted attention away from the ability of the borrower to pay towards lending - often without recourse - against collateral. A mortgage lender knowing beforehand that he would transfer (sell) his entire default risks through MBS or CDOs had no incentive to ensure high lending standards. The lack of regulation, in particular on the US mortgage market, made things far worse. Empirical evidence suggests that there was a drastic deterioration in mortgage lending standards in the US in the period 2005 to 2007 with default rates increasing.
18) This was compounded by financial institutions and supervisors substantially underestimating liquidity risk. Many financial institutions did not manage the maturity transformation process with sufficient care. What looked like an attractive business model in the context of liquid money markets and positively sloped yield curves (borrowing short and lending long), turned out to be a dangerous trap once liquidity in credit markets dried up and the yield curve flattened.

The role of Credit Rating Agencies

19) Credit Rating Agencies (CRAs) lowered the perception of credit risk by giving AAA ratings to the senior tranches of structured financial products like CDOs, the same rating they gave to standard government and corporate bonds.
20) The major underestimation by CRAs of the credit default risks of instruments collateralised by subprime mortgages resulted largely from flaws in their rating methodologies. The lack of sufficient historical data relating to the US sub-prime market, the underestimation of correlations in the defaults that would occur during a downturn and the inability to take into account the severe weakening of underwriting standards by certain originators have contributed to poor rating performances of structured products between 2004 and 2007.
21) The conflicts of interests in CRAs made matters worse. The issuer-pays model, as it has developed, has had particularly damaging effects in the area of structured finance. Since structured products are designed to take advantage of different investor risk appetites, they are structured for each tranche to achieve a particular rating. Conflicts of interests become more acute as the rating implications of different structures were discussed between the originator and the CRA. Issuers shopped around to ensure they could get an AAA rating for their products.
22) Furthermore, the fact that regulators required certain regulated investors to only invest in AAA-rated products also increased demand for such financial assets.

Corporate governance failures

23) Failures in risk assessment and risk management were aggravated by the fact that the checks and balances of corporate governance also failed. Many boards and senior managements of financial firms neither understood the characteristics of the new, highly complex financial products they were dealing with, nor were they aware of the aggregate exposure of their companies, thus seriously underestimating the risks they were running. Many board members did not provide the necessary oversight or control of management. Nor did the owners of these companies - the shareholders.

24) Remuneration and incentive schemes within financial institutions contributed to excessive risk-taking by rewarding short-term expansion of the volume of (risky) trades rather than the long-term profitability of investments. Furthermore, shareholders' pressure on management to deliver higher share prices and dividends for investors meant that exceeding expected quarterly earnings became the benchmark for many companies' performance.

Regulatory, supervisory and crisis management failures

25) These pressures were not contained by regulatory or supervisory policy or practice. Some long-standing policies such as the definition of capital requirements for banks placed too much reliance on both the risk management capabilities of the banks themselves and on the adequacy of ratings. In fact, it has been the regulated financial institutions that have turned out to be the largest source of problems. For instance, capital requirements were particularly light on proprietary trading transactions while (as events showed later) the risks involved in these transactions proved to be much higher than the internal models had expected.

26) One of the mistakes made was that insufficient attention was given to the liquidity of markets. In addition, too much attention was paid to each individual firm and too little to the impact of general developments on sectors or markets as a whole. These problems occurred in very many markets and countries, and aggregated together contributed substantially to the developing problems. Once problems escalated into specific crises, there were real problems of information exchange and collective decision making involving central banks, supervisors and finance ministries.

27) Derivatives markets rapidly expanded (especially credit derivatives markets) and off-balance sheet vehicles were allowed to proliferate^V with credit derivatives playing a significant role triggering the crisis. While US supervisors should have been able to identify (and prevent) the marked deterioration in mortgage lending standards and intervene accordingly, EU supervisors had a more difficult task in assessing the extent to which exposure to subprime risk had seeped into EU-based financial institutions. Nevertheless, they failed to spot the degree to which a number of EU financial institutions had accumulated - often in off balance-sheet constructions- exceptionally high exposure to highly complex, later to become illiquid financial assets. Taken together, these developments led over time to opacity and a lack of transparency.

28) This points to serious limitations in the existing supervisory framework globally, both in a national and cross-border context. It suggests that financial supervisors frequently did not have and in some cases did not insist in getting, or received too late, all the relevant information on the global magnitude of the excess leveraging; that they did not fully understand or evaluate the size of the risks; and that they did not seem to share their information properly with their counterparts in other Member States or with the US. In fact, the business model of US-type investment banks and the way they expanded was not really challenged by supervisors and standard setters. Insufficient supervisory and regulatory resources combined with an inadequate mix of skills as well as different national systems of supervision made the situation worse.

29) Regulators and supervisors focused on the micro-prudential supervision of individual financial institutions and not sufficiently on the macro-systemic risks of a contagion of correlated horizontal shocks. Strong international competition among financial centres also contributed to national regulators and supervisors being reluctant to take unilateral action.
30) Whilst the building up of imbalances and risks was widely acknowledged and commented upon, there was little consensus among policy makers or regulators at the highest level on the seriousness of the problem, or on the measures to be taken. There was little impact of early warning in terms of action - and most early warnings were feeble anyway.
31) Multilateral surveillance (IMF) did not function efficiently, as it did not lead to a timely correction of macroeconomic imbalances and exchange rate misalignments. Nor did concerns about the stability of the international financial system lead to sufficient coordinated action, for example through the IMF, FSF, G8 or anywhere else.

The dynamics of the crisis

32) The crisis eventually erupted when inflation pressures in the US economy required a tightening of monetary policy from mid-2006 and it became apparent that the sub-prime housing bubble in the US was going to burst amid rising interest rates. Starting in July 2007, accumulating losses on US sub-prime mortgages triggered widespread disruption of credit markets, as uncertainty about the ultimate size and location of credit losses undermined investor confidence. Exposure to these losses had been spread among financial institutions around the world, including Europe, inter alia via credit derivative markets.
33) The pro-cyclical nature of some aspects of the regulatory framework was then brought into sharp relief. Financial institutions understandably tried to dispose of assets once they realised that they had overstretched their leverage, thus lowering market prices for these assets. Regulatory requirements (accounting rules and capital requirements) helped trigger a negative feed-back loop amplified by major impacts in the credit markets.
34) Financial institutions, required to value their trading book according to mark-to-market principles, (which pushed up profits and reserves during the bull-run) were required to write down the assets in their balance sheet as markets deleveraged. Already excessively leveraged, they were required to either sell further assets to maintain capital levels, or to reduce their loan volume. "Fire sales" made by one financial institution in turn forced all other financial institutions holding similar assets to mark the value of these assets down "to market". Many hedge funds acted similarly and margin calls intensified liquidity problems.
35) Once credit rating agencies started to revise their credit ratings for CDOs downwards, banks were required to adjust their risk-weighted capital requirements upwards. Once again, already highly leveraged, and faced with increasing difficulties in raising equity, a range of financial institutions hastened to dispose of assets, putting further pressure on asset prices. When, despite the fear of possible negative signalling effects, banks tried to raise fresh capital, more or less at the same time, they were faced by weakening equity markets. This obliged them to look for funding from sovereign wealth funds and,

in due course, from heavy state intervention. What was initially a liquidity problem rapidly, for a number of institutions, turned into a solvency problem.

36) The lack of market transparency, combined with the sudden downgrade of credit ratings, and the US Government's decision not to save Lehman Brothers led to a wide-spread breakdown of trust and a crisis of confidence that, in autumn 2008, practically shut down inter-bank money markets, thus creating a large-scale liquidity crisis, which still weighs heavily on financial markets in the EU and beyond. The complexity of a number of financial instruments and the intrinsic vulnerability of the underlying assets also explain why problems in the relatively small US sub-prime market brought the global financial system to the verge of a full-scale dislocation. The longer it took to reveal the true amount of losses, the more widespread and entrenched the crisis of confidence has become. And it remains largely unresolved to this day.

37) The regulatory response to this worsening situation was weakened by an inadequate crisis management infrastructure in the EU, both in terms of the cooperation between national supervisors and between public authorities. The ECB was among the first to react swiftly by provide liquidity to the inter-bank market. In the absence of a common framework for crisis management, Member States were faced with a very difficult situation. Especially for the larger financial institutions they had to react quickly and pragmatically to avoid a banking failure. These actions, given the speed of events, for obvious reasons were not fully coordinated and led sometimes to negative spill-over effects on other Member States.

CHAPTER II: POLICY AND REGULATORY REPAIR

I. INTRODUCTION

The present report draws a distinction between financial regulation and supervision.

38) Regulation is the set of rules and standards that govern financial institutions; their main objective is to foster financial stability and to protect the customers of financial services. Regulation can take different forms, ranging from information requirements to strict measures such as capital requirements. On the other hand, supervision is the process designed to oversee financial institutions in order to ensure that rules and standards are properly applied. This being said, in practice, regulation and supervision are intertwined and will therefore, in some instances, have to be assessed together in this chapter and the following one.

39) As underlined in the previous chapter, the present crisis results from the complex interaction of market failures, global financial and monetary imbalances, inappropriate regulation, weak supervision and poor macro-prudential oversight. It would be simplistic to believe therefore that these problems can be "resolved" just by more regulation. Nevertheless, it remains the case that good regulation is a necessary condition for the preservation of financial stability.

40) A robust and competitive financial system should facilitate intermediation between those with financial resources and those with investment needs. This process relies on confidence in the integrity of institutions and the continuity of markets. *"This confidence, taken for granted in well-functioning financial systems, has* been lost in the present crisis in substantial part due to its recent *complexity and opacity,^Eweak credit standards, misjudged maturity mismatches, wildly*

excessive use of leverage on and off-balance sheet, gaps in regulat*ory oversight, accounting and risk management practices that exaggerated cycles, a flawed system of credit ratings and weakness of governance*".[2]

All must be addressed. (para 41 omitted here)

42) What should be the right focus when designing regulation? It should concentrate on the major sources of weaknesses of the present set-up (e.g. dealing with financial bubbles, strengthening regulatory oversight on institutions that have proven to be poorly regulated, adapting regulatory and accounting practices that have aggravated pro-cyclicality, promoting correct incentives to good governance and transparency, ensuring international consistency in standards and rules as well as much stronger coordination between regulators and supervisors). Over-regulation, of course, should be avoided because it slows down financial innovation and thereby undermines economic growth in the wider economy. Furthermore, the enforcement of existing regulation, when adequate (or improving it where necessary), and better supervision, can be as important as creating new regulation.

II. THE LINK BETWEEN MACROECONOMIC AND REGULATORY POLICY

43) The fundamental underlying factor which made the crisis possible was the ample liquidity and the related low interest rate conditions which prevailed globally since the mid-nineties. These conditions fuelled risk taking by investors, banks and other financial institutions, leading ultimately to the crisis.

44) The low level of long term interest rate over the last five years - period of sustained growth - is an important factor that contrasts with previous expansionary periods.

45) As industrial economies recovered during this period, corporate investment did not pick up as would have been expected. *"As a result, the worldwide excess of desired savings over actual investment ... pushed its way into the main markets that were opened to investment, housing in industrial countries, lifting house prices and rising residential construction*".[3] This phenomenon, which affected also financial assets, took place in the US but also in the EU, where significant housing bubbles developed in the UK, Ireland and Spain.

46) This explanation is not inconsistent with the one focusing on excessive liquidity fuelled by too loose monetary policy. Actually the two lines of reasoning complement each other: too low interest rates encouraged investment in housing and financial assets, but had monetary policy been stricter, there would have been somewhat less expansion in the US, more limited house prices increases and smaller current account deficits. By the same token, if countries with big surpluses had allowed their currencies to appreciate, smaller current account deficits and surpluses would have been the consequence. This raises the question of what competent authorities can do in order to at least mitigate the risks of bubbles building up, instead of simply intervening ex-post by injecting liquidity to limit the damage from a macro-economic standpoint.

2. G30 report, Washington, January 2009.

3. See "the global roots of the current financial crisis and its implications for regulation" by Kashyap, Raghuram Rajan and Stein.

47) The lack of precise and credible information on whether a given state of asset markets is already a bubble is not a sufficient argument against trying to prevent a serious bubble.

48) It is commonly agreed today that monetary authorities cannot avoid the creation of bubbles by targeting asset prices and they should not try to prick bubbles. However, they can and should adequately communicate their concerns on the sustainability of strong increases in asset prices and contribute to a more objective assessment of systemic risks. Equally, they can and should implement a monetary policy that looks not only at consumer prices, but also at overall monetary and credit developments, and they should be ready to gradually tighten monetary policy when money or credit grow in an excessive and unsustainable manner. Other competent authorities can also use certain tools to contain money and credit growth. These are of particular importance in the context of the euro zone, where country-specific monetary policies tailored to countries' positions in the economic cycle, and especially in the asset market cycle, cannot be implemented. The following are examples of regulatory tools which can help meet counter-cyclical objectives:
   - introducing dynamic provisioning or counter-cyclical reserves on banks in *"good times"* to limit credit expansion and so alleviate pro-cyclicality effects in the *"bad times";*
   - making rules on loans to value more restrictive;
   - modifying tax rules that excessively stimulate the demand for assets.

49) These tools were not, or were hardly, used by monetary and regulatory authorities in the run-up to the present crisis. This should be a lesson for the future. Overall cooperation between monetary and regulatory authorities will have to be strengthened, with a view to defining and implementing the policy-mix that can best maintain a stable and balanced macro-economic framework. In this context, it will be important for the ECB to become more involved in over-seeing the macro-prudential aspects of banking activities (see next chapter on supervision). Banks should be subject to more and more intense scrutiny as the bubble builds up.

50) Finally, a far more effective and symmetric *"multilateral surveillance"* by the IMF covering exchange rates and underlying economic policies is called for if one wants to avoid the continuation of unsustainable deficits (see chapter on global issues).

III. CORRECTING REGULATORY WEAKNESSES

Reforming certain key-aspects of the present regulatory framework

51) Although the relative importance assigned to regulation (versus institutional incentives - such as governance and risk assessment, - or monetary conditions...) can be discussed, it is a fact that global financial services regulation did not prevent or at least contain the crisis as well as market aberrations. A profound review of regulatory policy is therefore needed. A consensus, both in Europe and internationally, needs to be developed on which financial services regulatory measures are needed for the protection of customers, the safeguarding of financial stability, and the sustainability of economic growth.

52) This should be done being mindful of the usefulness of self-regulation by the private sector. Public and self-regulation should complement each other and supervisors should check that where there is self-regulation it is being properly implemented. This was not sufficiently carried out in the recent past.

The following issues must be addressed as a matter of urgency.

a) The Basel 2 framework

53) It is wrong to blame the Basel 2 rules per se for being one of the major causes of the crisis. These rules entered into force only on 1 January 2008 in the EU and will only be applicable in the US on 1 April 2010. Furthermore, the Basel 2 framework contains several improvements which would have helped mitigate to some extent the emergence of the crisis had they been fully applied in the preceding years. For example, had the capital treatment for liquidity lines given to special purpose vehicles been in application then they might have mitigated some of the difficulties. In this regard Basel 2 is an improvement relative to the previous "leverage ratios" that failed to deal effectively with off-balance sheet operations.

54) The Basel 2 framework nevertheless needs fundamental review. It underestimated some important risks and over-estimated banks' ability to handle them. The perceived wisdom that distribution of risks through securitisation took risk away from the banks turned out, on a global basis, also to be incorrect. These mistakes led to too little capital being required. This must be changed. The Basel methodology seems to have been too much based on recent past economic data and good liquidity conditions.

[Para 55 to 58 omitted here]

59) Against this background, the Group is of the view that the review of the Basel 2 framework should be articulated around the following elements:

- The crisis has shown that there should be more capital, and more high quality capital, in the banking system, over and above the present regulatory minimum levels. Banks should hold more capital, especially in good times, not only to cover idiosyncratic risks but also to incorporate the broader macro-prudential risks. The goal should be to increase minimum requirements. This should be done gradually in order to avoid pro-cyclical drawbacks and an aggravation of the present credit crunch.
- The crisis has revealed the strong pro-cyclical impact of the current regulatory framework, stemming in particular from the interaction of risk-sensitive capital requirements and the application of the mark-to-market principle in distressed market conditions. Instead of having a dampening effect, the rules have amplified market trends upwards and downwards - both in the banking and insurance sectors.

60) How to reduce the pro-cyclical effect of Basel 2? Of course, it is inevitable that a system based on risk-sensitivity is to some extent pro-cyclical: during a recession, the quality of credit deteriorates and capital requirements rise. The opposite happens during an upswing. But there is a significant measure of "excessive" pro-cyclicality in the Basel framework that must be reduced by using several methods.[4]

- concerning the banking book, it is important that banks, as is the present rule, effectively assess risks using "through the cycle" approaches which

4. See Lord Turner, The Financial Crisis and the Future of Financial Regulation, Economoist's inaugural city Lecture, 21 January 2009.

would reduce the pro-cyclicality of the present measurement of probability of losses and default;

- more generally, regulation should introduce specific counter-cyclical measures. The general principle should be to slow down the inherent tendency to build up risk-taking and over-extension in times of high growth in demand for credit and expanding bank profits. In this respect, the "dynamic provisioning" introduced by the Bank of Spain appears as a practical way of dealing with this issue: building up counter-cyclical buffers, which rise during expansions and allow them under certain circumstances to be drawn down in recessions. This would be facilitated if fiscal authorities would treat reserves taken against future expected losses in a sensible way. Another method would be to move capital requirements in a similar anti-cyclical way;
- this approach makes sense from a micro-prudential point of view because it reduces the risk of bank failures. But it is also desirable from a macro-prudential and macro-economic perspective. Indeed, such a measure would tend to place some restraint on over rapid credit expansion and reduce the dangers of market over-reactions during recessionary times;
- with respect to the trading book of banks, there is a need to reduce pro-cyclicality and to increase capital requirements. The present statistical VaR models are clearly pro-cyclical (too often derived, as they are, from observations of too short time periods to capture fully market prices movements and from other questionable assumptions). If volatility goes down in a year, the models combined with the accounting rules tend to understate the risks involved (often low volatility and credit growth are signs of irrational low risk aversion and hence of upcoming reversals). More generally, the level of capital required against trading books has been well too low relative to the risks being taken in a system where banks heavily relied on liquidity through "marketable instruments" which eventually, when liquidity evaporated, proved not to be marketable. If banks engage in proprietary activities for a significant part of their total activities, much higher capital requirements will be needed.

It is important that such recommendations be quickly adopted at international level by the Basel committee and the FSF who should define the appropriate details.

61) Measuring and limiting liquidity risk is crucial, but cannot be achieved merely through quantitative criteria. Indeed the "originate-and-distribute" model which has developed hand in hand with securitisation has introduced a new dimension to the liquidity issue. That dimension has not sufficiently been taken into account by the existing framework. The assessment by institutions and regulators of the "right" liquidity levels is difficult because it much depends on the assumptions made on the liquidity of specific assets and complex securities as well as secured funding. Therefore the assets of the banking system should be examined in terms not only of their levels, but also of their quality (counterparty risk, transparency of complex instruments^E) and of their maturity transformation risk (e.g. dependence on short term funding). These liquidity constraints should be carefully assessed by supervisors. Indeed a "mismatch ratio" or increases in liquidity ratios must be consistent with the nature of assets and the time

horizons of their holdings by banks.
The Basel committee should in the future concentrate more on liquidity risk management. Even though this is a very difficult task, it should come forward with a set of norms to complement the existing qualitative criteria (these norms should cover the need to maintain, given the nature of the risk portfolio, an appropriate mix of long term funding and liquid assets).
[para 62 omitted here]

63) The EU should agree on a clear, common and comprehensive definition of own funds. This definition should in particular clarify whether, and if so which, hybrid instruments should be considered as Tier 1. This definition would have to be confirmed at international level by the Basel committee and applied globally. Consideration should also be given to the possibility of limiting Tier 1 instruments in the future to equity and reserves.

Recommendation 1: The Group sees the need for a fundamental review of the Basel 2 rules. The Basel Committee of Banking Supervisors should therefore be invited to urgently amend the rules with a view to:

- ***gradually increase minimum capital requirements;***
- ***reduce pro-cyclicality, by e.g. encouraging dynamic provisioning or capital buffers;***
- ***introduce stricter rules for off-balance sheet items;***
- ***tighten norms on liquidity management; and***
- ***strengthen the rules for bank's internal control and risk management, notably by reinforcing the "fit and proper" criteria for management and board members.***

Furthermore, it is essential that rules are complemented by more reliance on judgement.

Recommendation 2: In the EU, a common definition of regulatory capital should be adopted, clarifying whether, and if so which, hybrid instruments should be considered as tier 1 capital. This definition should be confirmed by the Basel Committee.

b) Credit Rating Agencies

66) Given the pivotal and quasi-regulatory role that they play in today's financial markets, Credit Rating Agencies must be regulated effectively to ensure that their ratings are independent, objective and of the highest possible quality. This is all the more true given the oligopolistic nature of this business. The stability and functioning of financial markets should not depend on the opinions of a small number of agencies - whose opinions often were proven wrong, and who have much too frequently substituted for rigorous due diligence by firms.

67) The Commission has made a proposal for a Regulation on CRAs. However, the system of licensing and oversight contained in this proposal is too cumbersome. The allocation of work between the home and host authorities, in particular, is likely to lack effectiveness and efficiency. The Group is of the view that it would be far more rational to entrust the Committee of European Securities Regulators (CESR) with the task of licensing CRAs in the EU, monitoring their performance, and in the light of this imposing changes (as is proposed in the new supervisory framework proposed in the next chapter).

68) Beyond this proposal for a Regulation, a fundamental review of CRAs economic model should be conducted, notably in order to eliminate the conflicts of interests that currently exist. One drawback of the present model is that CRAs are entirely financed by the issuers and not by the users, which is a source of conflict of interest. The modalities of a switch from the current "issuer pays" model to a "buyer pays" model should be considered at international level. Furthermore, and even though this may well be a difficult task in practice, consideration should be given to the ways in which the formulation of ratings could be completely separated from the advice given to issuers on the engineering of complex products.

69) The use of ratings required by some financial regulations raises a number of problems, but is probably unavoidable at this stage. However, it should be significantly reduced over time.

[para 70 omitted here]

71) Finally, the rating of structured products should be transformed with a new, distinct code alerting investors about the complexity of the instrument.

[para 72 omitted here]

Recommendation 3: Concerning the regulation of Credit Rating Agencies (CRAs), the Group recommends that:

- ***within the EU, a strengthened CESR should be in charge of registering and supervising CRAs;***
- ***a fundamental review of CRAs' business model, its financing and of the scope for separating rating and advisory activities should be undertaken;***
- ***the use of ratings in financial regulations should be significantly reduced over time;***
- ***the rating for structured products should be transformed by introducing distinct codes for such products.***

It is crucial that these regulatory changes are accompanied by increased due diligence and judgement by investors and improved supervision.

c) **The mark-to-market principle**

73) The crisis has brought into relief the difficulty to apply the mark-to-market principle in certain market conditions as well as the strong pro-cyclical impact that this principle can have. The Group considers that a wide reflection is needed on the mark-to-market principle. Whilst in general this principle makes sense, there may be specific conditions where this principle should not apply because it can mislead investors and distort managers' policies.

[para 74 omitted here]

75) Differences between business models must also be taken into account. For example, intermediation of credit and liquidity requires disclosure and transparency but not necessarily mark-to-market rules which, while being appropriate for investment banks and trading activities, are not consistent with the traditional loan activity and the policy of holding long term investments. Long-term economic value should be central to any valuation method: it may be based, for instance, on an assessment of the future cash flows deriving from the security as long as there is an explicit minimum holding period and as long as the cash flows can be considered as sustainable over a long period.

[para 76 and 77 omitted here]

78) The valuation of impaired assets is now at the centre of the political debate. It is of crucial importance that valuation of these assets is carried-out on the basis of common methodologies at international level. The Group encourages all parties to arrive at a solution which will minimise competition distortions and costs for taxpayers. If there are widely variant solutions - market uncertainty will not be improved.

79) Regarding the issue of pro-cylicality, as a matter of principle, the accounting system should be neutral and not be allowed to change business models - which it has been doing in the past by "incentivising" banks to act short term. The public good of financial stability must be embedded in accounting standard setting. This would be facilitated if the regulatory community would have a permanent seat in the IASB (see chapter on global repair).

Recommendation 4: With respect to accounting rules the Group considers that a wider reflection on the mark-to-market principle is needed and in particular recommends that:

- ***expeditious solutions should be found to the remaining accounting issues concerning complex products;***
- ***accounting standards should not bias business models, promote pro-cyclical behaviour or discourage long-term investment;***
- ***the IASB and other accounting standard setters should clarify and agree on a common, transparent methodology for the valuation of assets in illiquid markets where mark-tomarket cannot be applied;***
- ***the IASB further opens its standard-setting process to the regulatory, supervisory and business communities;***
- ***the oversight and governance structure of the IASB be strengthened.***

d) Insurance

80) The crisis originated and developed in the banking sector. But the insurance sector has been far from immune. The largest insurance company in the world has had to be bailed out because of its entanglement with the entire financial sector, inter alia through credit default swaps activities. In addition, the failure of the business models of monoline insurers has created significant market and regulatory concern. It is therefore important, especially at a time where Europe is in the process of overhauling its regulatory framework for the entire insurance sector, to draw the lessons from the crisis in the US insurance sector. Insurance companies can in particular be subject to major market and concentration risks. Compared to banks, insurance companies tend to be more sensitive to stock market developments (and less to liquidity and credit risks, even if the crisis has shown that they are not immune to those risks either).

81) Solvency 2 is an important step forward in the effort to improve insurance regulation, to foster risk assessments and to rationalise the management of large firms. Solvency 2 should therefore be adopted urgently.

Recommendation 5: The Group considers that the Solvency 2 directive must be adopted and include a balanced group support regime, coupled with sufficient safeguards for host Member States, a binding mediation process between supervisors and the setting-up of harmonised insurance guarantee schemes.

e) Supervisory and sanctioning powers

83) A sound prudential and conduct of business framework for the financial sector must rest on strong supervisory and sanctioning regimes. Supervisory authorities must be equipped with sufficient powers to act when financial institutions have inadequate risk management and control mechanisms as well as inadequate solvency of liquidity positions. There should also be equal, strong and deterrent sanctions regimes against all financial crimes - sanctions which should be enforced effectively.

84) Neither of these exist for the time being in the EU. Member States sanctioning regimes are in general weak and heterogeneous. Sanctions for insider trading range from a few thousands of euros in one Member State to millions of euros or jail in another. This can induce regulatory arbitrage in a single market. Sanctions should therefore be urgently strengthened and harmonised. The huge pecuniary differences between the level of fines that can be levied in the competition area and financial fraud penalties is striking. Furthermore, Member States should review their capacity to adequately detect financial crimes when they occur. Where needed, more resources and more sophisticated detection processes should be deployed.

Recommendation 6: The Group considers that:

- ***Competent authorities in all Member States must have sufficient supervisory powers, including sanctions, to ensure the compliance of financial institutions with the applicable rules;***
- ***Competent authorities should also be equipped with strong, equivalent and deterrent sanction regimes to counter all types of financial crime.***

Closing the gaps in regulation

a) The "parallel banking system"

85) In addition to the weaknesses identified in the present regulatory framework, and in particular in the Basel 2 framework, it is advisable to look into the activities of the "parallel banking system" (encompassing hedge funds, investment banks, other funds, various off-balance sheet items, mortgage brokers in some jurisdictions). The Group considers that appropriate regulation must be extended, in a proportionate manner, to all firms or entities conducting financial activities which may have a systemic impact (i.e. in the form of counterparty, maturity, interest rate risks^E) even if they have no direct links with the public at large. This is all the more important since such institutions, having no deposit base, can be very vulnerable when liquidity evaporates - resulting in major impacts in the real economy.

86) Concerning hedge funds, the Group considers they did not play a major role in the emergence of the crisis. Their role has

largely been limited to a transmission function, notably through massive selling of shares and short-selling transactions. We should also recognise that in the EU, unlike the US, the great bulk of hedge fund managers are registered and subject to information requirements. This is the case in particular in the UK, where all hedge funds managers are subject to registration and regulation, as all fund managers are, and where the largest 30 are subject to direct information requirements often obtained on a global basis as well as to indirect monitoring via the banks and prime brokers.

87) It would be desirable that all other Member States as well as the US adopt a comparable set of measures. Indeed, hedge funds can add to the leverage of the system and, given the scale at which they can operate, should a problem arise, the concentrated unwinding of their positions could cause major dislocation.

88) There is a need for greater transparency since banks, the main lenders to hedge funds, and their supervisors have not been able to obtain a global view of the risks they were engaging in. At the very least, supervisors need to know which hedge funds are of systemic importance. And they should have a clear on-going view on the strategies, risk structure and leverage of these systemically important funds. This need for supervisory information requires the introduction of a formal authority to register these funds, to assess their strategies, their methods and their leverage. This is necessary for the exercise of macro-prudential oversight and therefore essential for financial stability.

89) Appropriate regulation in the US must also be redesigned for large investment banks and broker dealers when they are not organised as bank holding companies.

90) In this context, particular attention has to be paid to institutions which engage in proprietary trading to create value for their shareholders, i.e., investment banks and commercial banks who have engaged in these activities (that are not essentially different from some hedge funds). The conventional wisdom has been that light regulatory principles could apply to these because they were trading "at their own risk". Evidence has shown that the investment banks were subject to very thin capital requirements, became highly leveraged and then created severe systemic problems. Furthermore, it turned out that these institutions were subject to only very weak supervision by the Securities and Exchange Commission (SEC), which meant that no one had a precise view on their involvement with hedge funds and SPVs; nor had the competent authorities a view on the magnitude of the proprietary investments of these institutions, in particular in the US real estate sector.

91) While these institutions should not be controlled like ordinary banks, adequate capital requirements should be set for proprietary trading and reporting obligations should be applied in order to assess their degree of leverage. Furthermore, the wrong incentives that induced excessive risk taking (in particular because of the way in which bonuses are structured) must be rectified.

92) Where a bank actually owns a hedge fund (or a private equity fund), the Group does not believe that such ownership should be necessarily prohibited. It believes however that this situation should induce very strict capital requirements and very close monitoring by the supervisory authorities.

Recommendation 7: Concerning the "parallel banking system" the Group recommends to:

- ***extend appropriate regulation, in a proportionate manner, to all firms or entities conducting financial activities of a potentially systemic nature, even if they have no direct dealings with the public at large;***
- ***improve transparency in all financial markets - and notably for systemically important hedge funds - by imposing, in all EU Member States and internationally, registration and information requirements on hedge fund managers, concerning their strategies, methods and leverage, including their worldwide activities;***
- ***introduce appropriate capital requirements on banks owning or operating a hedge fund or being otherwise engaged in significant proprietary trading and to closely monitor them.***

b) Securitised products and derivatives markets

93) The crisis has revealed that there will be a need to take a wide look at the functioning of derivative markets. The simplification and standardisation of most over-the-counter (OTC) derivatives and the development of appropriate risk-mitigation techniques plus transparency measures could go a long way towards restoring trust in the functioning of these markets. It might also be worth considering whether there are any benefits in extending the relevant parts of the current code of conduct on clearing and settlement from cash equities to derivatives.

94) In the short-run, an important goal should be to reduce the counterparty risks that exist in the system. This should be done by the creation in the EU of at least one well-capitalised central clearing house for over-the-counter credit-default swaps (CDS), which would have to be simplified and standardized. This clearing house should be supervised by CESR and by the relevant monetary authorities, and notably the ECB (about 80% of the CDS market is denominated in euros[5]). This is vital to realize the highly needed reduction from gross to net positions in counterparty risks, particularly in cases of default such as Lehman Brothers.

95) To restore confidence in securitized markets, it is important to oblige at the international level issuers of complex securities to retain on their books for the life of the instrument a meaningful amount of the underlying risk (non-hedged).

Recommendation 8: Concerning securitised products and derivatives markets, the Group recommends to:

- ***simplify and standardise over-the-counter derivatives;***
- ***introduce and require the use of at least one well-capitalised central clearing house for credit default swaps in the EU;***
- ***guarantee that issuers of securitised products retain on their books for the life of the instrument a meaningful amount of the underlying risk (non-hedged).***

5. Use of central bank money should be made for securities settlement, as proposed by Target 2 securities.

c) Investment funds

i) Money market funds issues

96) Another area which deserves attention is the regulation of the investment fund industry. A small number of investment funds in the EU have faced temporary difficulties in meeting investor redemption demands because of the unexpected contraction of liquidity in previously highly liquid markets, (e.g., asset backed commercial paper, short-term banking paper).

97) This highlights in particular the need for a common EU definition of money market funds, and a stricter codification of the assets in which they can invest in order to limit exposure to credit, market and liquidity risks.

ii) Depository issues

98) The Madoff case has illustrated the importance of better controlling the quality of processes and functions in the case of funds, funds of funds and delegations of responsibilities. Several measures seem appropriate:

- delegation of investment management functions should only take place after proper due diligence and continuous monitoring by the "delegator";
- an independent depository should be appointed, preferably a third party;
- The depository institution, as custodians, should remain responsible for safe-keeping duties of all the funds assets at all times, in order to be able to perform effectively its compliance-control functions. Delegation of depository functions to a third party should therefore be forbidden. Nevertheless, the depositary institution may have to use sub-custodians to safe-keep foreign assets. Sub-custodians must be completely independent of the fund or the manager. The depositary must continue to perform effective duties as is presently requested. The quality of this duties should be the object of supervision;
- delegation practices to institutions outside of the EU should not be used to pervert EU legislation (UCITS provides strict "Chinese walls" between asset management functions and depositary-safe-keeping functions. This segregation should be respected whatever the delegation model is used).

Recommendation 9: With respect to investment funds, the Group proposes to further develop common rules for investment funds in the EU, notably concerning definitions, codification of assets and rules for delegation. This should be accompanied by a tighter supervisory control over the independent role of depositories and custodians.

IV. EQUIPPING EUROPE WITH A CONSISTENT SET OF RULES

99) While the above areas for regulatory repair are relevant for all major jurisdictions in the world, and should be addressed internationally, Europe suffers from an additional problem in comparison to all single jurisdictions: the lack of a consistent set of rules.

100) An efficient Single Market should have a harmonised set of core rules.

[para 101 to 109 omitted here]

V. CORPORATE GOVERNANCE

110) This is one of the most important failures of the present crisis.

111) Corporate governance has never been spoken about as much as over the last decade. Procedural progress has no doubt been achieved (establishment of board committees, standards set by the banking supervision committee) but looking back at the causes of the crisis, it is clear that the financial system at large did not carry out its tasks with enough consideration for the long-term interest of its stakeholders. Most of the incentives - many of them being the result of official action - encouraged financial institutions to act in a short-term perspective and to make as much profit as possible to the detriment of credit quality and prudence; interest rates were low and funding plentiful; the new accounting rules were systematically biased towards short-term performance (indeed these rules led to immediate mark-to-market recognition of profit without allowing a discount for future potential losses). As a result of all this, the long-term, "through the cycle" perspective has been neglected.

112) In such an environment, investors and shareholders became accustomed to higher and higher revenues and returns on equity which hugely outpaced for many years real economic growth rates. Few managers avoided the "herd instinct" - leading them to join the competitive race even if they might have suspected (or should have known) that risk premia were falling and that securitisation as it was applied could not shield the financial system against bad risks.

113) This is a sombre picture and not an easy one to correct; much of this behaviour was ingrained in the incentive structure mentioned above.

114) There should be no illusion that regulation alone can solve all these problems and transform the mindset that presided over the functioning (and downward spiral) of the system.

115) However, good, well-targeted measures could help mitigate or eliminate a number of misled incentives; the Group believes that several recommendations put forward in this report would be useful in this respect. They are:
- reform of the accounting system;
- a building-up of buffers in the form of dynamic provisioning or higher capital requirements in the good times;
- closing of regulatory gaps, (e.g., off-balance sheet operations, oversight of hedge funds).

116) The Group however wishes to stress two further aspects of corporate governance that require specific attention: remuneration and risk management.

Remuneration issues

117) The crisis has launched a debate on remuneration in the financial services industry. There are two dimensions to this problem: one is the often excessive level of remuneration in the financial sector; the other one is the structure of this remuneration, notably the fact that they induce too high risk-taking and encourage short-termism to the detriment of long-term performance. Social-political dissatisfaction has tended recently to focus, for understandable reasons, on the former. However, it is primarily the latter issue which has had an adverse impact on risk management and has thereby contributed to the crisis. It is therefore on the structure of remuneration that policy-makers should concentrate reforms going forward.

118) It is extremely important to re-align compensation incentives with shareholder interests and long-term, firm-wide profitability. Compensation schemes must become fully transparent. Industry has already come up with various sets of useful principles to try and achieve this. The principles agreed in 2008 by the Institute of International Finance, for example, are a first step.

119) Without dealing with remuneration in financial institutions that have received public support, nor impinging on the responsibility of financial institutions in this field, it seems appropriate to outline a few principles that should guide compensation policies. Such principles include:
   - the assessment of bonuses should be set in a multi-year framework. This would allow, say over five years, to spread out the actual payment of the bonus pool of each trading unit through the cycle and to deduct any potential losses occurring during the period. This would be a more realistic and less short-term incentivised method than present practice;
   - these standards should apply not only to proprietary trading but also to asset managers;
   - bonuses should reflect actual performance and therefore should not be "guaranteed" in advance.

120) Supervisors should oversee the adequacy of financial institutions' compensation policies. And if they consider that these policies conflict with sound underwriting practice, adequate risk management or are systematically encouraging short-term risk-taking, they should require the institutions concerned to reassess their remuneration policies. If supervisors are not satisfied by the measures taken they should use the possibility opened by pillar 2 of the Basel framework to require the financial institutions concerned to provide additional capital.

121) Of course the same guidelines should apply in relation to other financial institutions in order to avoid competitive distortions and loopholes. As suggested in the "global repair" chapter of this report, consistent enforcement of these measures at global level should be ensured to avoid excessive risk-taking.

Recommendation 11: In view of the corporate governance failures revealed by the current financial crisis, the Group considers that compensation incentives must be better aligned with shareholder interests and long-term firm-wide profitability by basing the structure of financial sector compensation schemes on the following principles:

- ***the assessment of bonuses should be set in a multi-year framework, spreading bonus payments over the cycle;***
- ***the same principles should apply to proprietary traders and asset managers;***
- ***bonuses should reflect actual performance and not be guaranteed in advance.***

Supervisors should oversee the suitability of financial institutions' compensation policies, require changes where compensation policies encourage excessive risk-taking and, where necessary, impose additional capital requirements under pillar 2 of Basel 2 in case no adequate remedial action is being taken.

Internal risk management

122) In many cases, risk monitoring and management practices within financial institutions have dramatically failed in the crisis.

123) In the future, the risk management function must be fully independent within the firms and it should carry out effective and not arbitrarily constrained stress testing exercises. Firms should organise themselves internally so that incentives are not too much tilted towards risk taking - neglecting risk control. To contribute to this, the Senior Risk Officer in an institution should hold a very high rank in the hierarchy (at senior management level with direct access to the board). Changes to remuneration structures will also be needed: effective checks and balances are indeed unlikely to work if those who are supposed to control risk remain under-paid compared to those whose job it is to take risks.

124) But all this must not be construed as exonerating issuers and investors from their duties. For issuers, transparency and clarity in the description of assets put on the market is of the essence as this report has often stressed; but investors and in particular asset managers must not rely (as has too often been the case) on credit rating agencies assessments; they must exercise informed judgement; penalties should be enforced by supervisors when this is not applied. Supervisory control of firms' risk management should be considerably reinforced through rigorous and frequent inspection regimes.

Recommendation 12: With respect to internal risk management, the Group recommends that:

- ***the risk management function within financial institutions must be made independent and responsible for effective, independent stress testing;***
- ***senior risk officers should hold a very high rank in the company hierarchy, and***
- ***internal risk assessment and proper due diligence must not be neglected by overreliance on external ratings.***

Supervisors are called upon to frequently inspect financial institutions' internal risk management systems.

VI. CRISIS MANAGEMENT AND RESOLUTION

125) As a general observation, it has been clearly demonstrated that the stakes in a banking crisis are high for Governments and society at large because such a situation has the potential to jeopardise financial stability and the real economy. The crisis has also shown that crisis prevention, crisis management and crisis resolution tools should all be handled in a consistent regulatory framework.

126) Of course, crisis prevention should be the first preoccupation of national and EU authorities (see chapter on supervision). Supervisors should act as early as possible in order to address the vulnerabilities identified in a given institution, and use all means available to them to this effect, (e.g., calling on contributions from shareholders, fostering the acquisition of the institution concerned by a stronger one). In this respect, the role of central banks which are by essence well placed to observe the first signs of vulnerability of a bank is of crucial importance. Therefore in countries where supervision is not in the hands of the central bank, a close collaboration must be ensured between supervisors and central

banks. But crises will always occur and recent experiences in managing crises have shown that many improvements to the present system are called for.

a) Dealing with the moral hazard issue

127) "Constructive ambiguity" regarding decisions whether or not public sector support will be made available can be useful to contain moral hazard. However, the cure for moral hazard is not to be ambiguous on the issue of public sector involvement as such in crisis management. Two aspects need to be distinguished and require different treatment. On the one hand, a clear and consistent framework for crisis management is required with full transparency and certainty that the authorities have developed concrete crisis management plans to be used in cases where absence of such public sector support is likely to create uncertainty and threaten financial stability. On the other hand, constructive ambiguity and uncertainty is appropriate in the application of these arrangements in future individual cases of distressed banks.[6]

b) Framework for dealing with distressed banks

128) In the management of a crisis, priority should always be given to private-sector solutions, (e.g., restructuring). When these solutions appear insufficient, then public authorities have to play a more prominent role and the injection of public money becomes often inevitable.

129) As far as domestic national banks are concerned, crisis management should be kept at the national level. National supervisors know the banks well, the political authorities have at their disposal a consistent legal framework and taxpayers' concerns can be dealt with in the democratic framework of an elected government. For cross-border institutions at EU level, because of different supervisory, crisis management and resolution tools as well as different company and insolvency laws, the situation is much more complex to handle. There are inconsistencies between national legislation preventing an orderly and efficient handling of an institution in difficulty.

130) For example, company law provisions in some countries prevent in times of crisis the transfer of assets from one legal entity to another within the same group. This makes it impossible to transfer assets where they are needed, even though this may be crucial to safeguard the viability of the group as a whole. Another problem is that some countries place, in their national laws, emphasis on the protection of the institution while other countries attach a greater priority to the protection of creditors. In the crisis resolution phase, other problems appear: for example, the ranks of creditors are different from one Member State to the other.

131) The lack of consistent crisis management and resolution tools across the Single Market places Europe at a disadvantage *vis-à-vis* the US and these issues should be addressed by the adoption at EU level of adequate measures.

6. This approach is recommended by Charles Goodhart and Dirk Schoenmaker, "Fiscal Burden Sharing in Cross Border Banking Crises", in International Journal of Central Banking, to be published early 2009.

c) Deposit Guarantee Schemes (DGS)

132) The crisis has demonstrated that the current organisation of DGSs in the Member States was a major weakness in the EU banking regulatory framework.[7] The Commission recent proposal is an important step to improve the current regime, as it will improve the protection of depositors.

133) A critical element of this proposal is the requirement that all Member States apply the same amount of DGS protection for each depositor. The EU cannot indeed continue to rely on the principle of a minimum coverage level, which can be topped-up at national level. This principle presents two major flaws: first, in a situation where a national banking sector is perceived as becoming fragile, there is the risk that deposits would be moved to the countries with the most protective regime (thus weakening banks in the first country even further); second, it would mean that in the same Member State the customers of a local bank and those using the services of a third country branch could enjoy different coverage levels. As the crisis has shown, this cannot be reconciled with the notion of a well-functioning Single Market. [para 134 and 136 omitted here]

137) There is a specific case (of the Icelandic type) when a supervisory authority allows some of its banks to mushroom large branches in other EU countries, whilst the home Member State is not able to honour the deposit guarantee schemes which are inadequate for such exposures. The guarantee responsibilities then de facto fall into the jurisdiction of the host country. This is not acceptable and should at least be addressed, for example, in the following way: the host Member State should have the right to inquire whether the funds available in the DGS of the home Member State are indeed sufficient to protect fully the depositors in the host Member State. Should the host Member State not have sufficient guarantees that this is indeed the case, the only way to address this kind of problem is to give csufficient powers to the host supervisory authorities to take measures that would at the very beginning curtail the expansive trends observed.

[para 138-143 omitted here]

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7. The Commission's recent proposal is an important step to improve the current DGS-regime, as it strengthens harmonisation and improves the protection of depositors. However, the directive still leaves a large degree of discretion to member states, particularly in relation to funding arrangements, administrative responsibility and the role of DGS in the overall crisis management framework. Leaving these issues unresolved at EU-level implies that significant weaknesses remain in the DGS-framework, including inter alia:

- *Unsustainable funding* - the current lack of sophisticated and risk sensitive funding arrangements involves a significant risk that governments will have to carry the financial burden indented for the banks, or worse, that the DGS fails on their commitments (both of which illustrated by the Icelandic case). In particular, in relation to the any of the 43 European LFCIs identified earlier in the chapter, no current scheme can be expected to have the capacity to make reimbursements without involving public funds.
- *Limited use in crisis management* - Even if DGS' had that capacity, the pay box nature of most schemes makes it unlikely that they ever will be utilised for LFCIs, because of the large externalities associated with letting such institutions fail.
- *Negative effects on financial stability* - reliance on ex-post funding and lack of risk sensitive premiums weakens market discipline (moral hazard), distort the efficient allocation of deposits, as well as it may be a source of pro-cyclicality.

Obstacle to efficient crisis management - due to incompatible schemes (trigger points, early intervention powers, etc.), and diverging incentives among member.

Recommendation 13: The Group calls for a coherent and workable regulatory framework for crisis management in the EU:

- ***without pre-judging the intervention in future individual cases of distressed financial institutions, a transparent and clear framework for managing crises should be developed;***
- ***all relevant authorities in the EU should be equipped with appropriate and equivalent crisis prevention and crisis intervention tools;***
- ***legal obstacles which stand in the way of using these tools in a cross-border context should be removed, with adequate measures to be adopted at EU level.***

Recommendation 14: Deposit Guarantee Schemes (DGS) in the EU should be harmonised and preferably be pre-funded by the private sector (in exceptional cases topped up by the State) and provide high, equal protection to all bank customers throughout the EU.

The principle of high, equal protection of all customers should also be implemented in the insurance and investment sectors.

The Group recognises that the present arrangements for safeguarding the interests of depositors in host countries have not proved robust in all cases, and recommends that the existing powers of host countries in respect of branches be reviewed to deal with the problems which have occurred in this context.

Recommendation 15: In view of the absence of an EU-level mechanisms for financing cross-border crisis resolution efforts, Member States should agree on more detailed criteria for burden sharing than those contained in the existing Memorandum of Understanding (MoU) and amend the MoU accordingly.

CHAPTER III: EU SUPERVISORY REPAIR

I. INTRODUCTION

144) The previous chapter proposed changes to the European regulation of financial services. This chapter examines the policies and practices of supervision of financial services within the EU and proposes both short and longer term changes. Regulation and supervision are interdependent: competent supervision cannot make good failures in financial regulatory policy; but without competent and well designed supervision good regulatory policies will be ineffective. High standards in both are therefore required.

Macro and Micro prudential supervision

145) The experience of the past few years has brought to the fore the important distinction between micro-prudential and macro-prudential supervision. Both are clearly intertwined, in substance as well as in operational terms. Both are necessary and will be covered in this chapter.

146) Micro-prudential supervision has traditionally been the centre of the attention of supervisors around the world. The main

objective of micro-prudential supervision is to supervise and limit the distress of individual financial institutions, thus protecting the customers of the institution in question. The fact that the financial system as a whole may be exposed to common risks is not always fully taken into account. However, by preventing the failure of individual financial institutions, micro-prudential supervision attempts to prevent (or at least mitigate) the risk of contagion and the subsequent negative externalities in terms of confidence in the overall financial system.

147) The objective of macro-prudential supervision is to limit the distress of the financial system as a whole in order to protect the overall economy from significant losses in real output. While risks to the financial system can in principle arise from the failure of one financial institution alone if it is large enough in relation to the country concerned and/or with multiple branches/subsidiaries in other countries, the much more important global systemic risk arises from a common exposure of many financial institutions to the same risk factors. Macro-prudential analysis therefore must pay particular attention to common or correlated shocks and to shocks to those parts of the financial system that trigger contagious knock-on or feedback effects.

148) Macro-prudential supervision cannot be meaningful unless it can somehow impact on supervision at the micro-level; whilst micro-prudential supervision cannot effectively safeguard financial stability without adequately taking account of macro-level developments.

The objective of supervision

149) The prime objective of supervision is to ensure that the rules applicable to the financial sector are adequately implemented, in order to preserve financial stability and thereby to ensure confidence in the financial system as a whole and sufficient protection for the customers of financial services. One function of supervisors is to detect problems at an early stage to prevent crises from occurring. However, it is inevitable that there will be failures from time to time, and the arrangements for supervision have to be seen with this in mind. But once a crisis has broken out, supervisors have a critical role to play (together with central banks and finance ministries) to manage the crisis as effectively as possible to limit the damage to the wider economy and society as a whole.

150) Supervision must ensure that all supervised entities are subject to a high minimum set of core standards. When carrying-out their duties, supervisors should not favour a particular institution, or type of institution, to the detriment of others. Competition distortions and regulatory arbitrage stemming from different supervisory practices must be avoided, because they have the potential of undermining financial stability - *inter alia* by encouraging a shift of financial activity to countries with lax supervision. The supervisory system has to be perceived as fair and balanced. Furthermore, a level playing field is vital for the credibility of supervisory arrangements, their acceptance by market operators big and small and for generating optimal cooperation between supervisors and financial institutions. This is of particular importance in the context of the Single Market, built as it is, *inter alia*, on the principles of undistorted competition, freedom of establishment and the free flow of capital. Confidence will be gained in the European Union from common approaches by all Member States.

151) The supervisory objective of maintaining financial stability must take into account an important constraint which is to allow the financial industry to perform its allocative economic function with the greatest possible efficiency, and thereby contribute to sustainable economic growth. Supervision should aim to encourage the smooth functioning of markets and the development of a competitive industry. Poor supervisory organisation or unduly intrusive supervisory rules and practices will translate into costs for the financial sector and, in turn, for customers, taxpayers and the wider economy. Therefore supervision should be carried-out as effectively as possible and at the lowest possible cost. This, again, is crucial if the Single Market is to deliver all its benefits to customers and companies.

II. LESSONS FROM THE CRISIS: WHAT WENT WRONG?

152) Chapter 1 examined in detail the causes of the crisis. These were many; often with a global dimension. Although the way in which the financial sector has been supervised in the EU has not been one of the primary causes behind the crisis, there have been real and important supervisory failures, from both a macro and micro-prudential standpoint. The following significant problems have come to light:

a) **Lack of adequate macro-prudential supervision**

153) The present EU supervisory arrangements place too much emphasis on the supervision of individual firms, and too little on the macro-prudential side. The fact that this failing is duplicated elsewhere in the world makes it a greater, not a lesser, issue. The Group believes that to be effective macro-prudential supervision must encompass all sectors of finance and not be confined to banks, as well as the wider macro-economic context. This oversight also should take account of global issues. Macro-prudential supervision requires, in addition to the judgements made by individual Member States, a judgement to be taken at EU level. The Group believes that this requires that an Institution at EU level be entrusted with this task. It recommends that the ECB/ESCB[8] be explicitly and formally charged with this responsibility in the European Union.

b) **Ineffective Early Warning mechanisms**

154) Insofar as macro-prudential risks were identified (and there was no shortage of comments about worrying developments in both macroeconomic imbalances and the lowering price of risk, for example) there was no mechanism to ensure that this assessment of risk was translated into action. The Group believes, if the responsibility it proposes to be given to the ECB/ESCB is to work, that there must be an effective and enforceable mechanism to check that the risks identified by the macro-prudential analysis have resulted in specific action by the new European Authorities (see below) and national supervisors. The Group therefore recommends a formal process to give teeth to this.

c) Problems of competences

155) There have been a significant number of instances of different types of failure in the supervision, by national supervisors, of particular institutions, i.e., in their oversight duties supervisors failed to perform to an adequate standard their

ESCB is the European System of Central Banks. It includes all the national central banks of the EU.

responsibilities. One of these instances - the supervision of Northern Rock by the UK Financial Services Authority - has been examined in detail, but other, less well documented examples abound, (e.g., IKB, Fortis). The Group believes there is advantage in analysing and publishing the circumstances of those failures, so that lessons can be learnt and future supervisory behaviour improved. Although the Group does not believe that any system can avoid errors of judgment occurring, it considers that the supervisory experience of the crisis points to the need for well staffed, experienced and well trained supervisors in all Member States, and the Group accordingly makes recommendations designed to achieve this.

d) Failures to challenge supervisory practices on a cross-border basis

156) The present processes and practices for challenging the decisions of a national supervisor have proven to be inadequate; for example the embryonic peer review arrangements being developed within the level 3 committees proved ineffective. At present (and until any practical arrangements for supervision on an EU basis are both agreed in principle and translated into practice), extensive reliance is and will be placed on the judgements and decisions of the home supervisor. This is particularly important when a financial institution spreads its activities into countries other than its home base by branching from its home country. This can, as occurred with the Icelandic banks, create significant risks in countries other than that of the home regulator, yet the ability of the host countries affected to challenge the decisions of the home regulator do not sufficiently recognise these risks.

157) The Group believes that an effective means of challenging the decisions of the home regulator is needed, and therefore makes recommendations designed both to achieve a step change in the speed and effectiveness of the present arrangements for peer review (which are at a very early stage of development), and to give force to a considered decision (if arrived at), that a home regulator has not met the necessary supervisory standards. The Group considers that a binding mediation mechanism is required to deal with such cross-border supervisory problems. Without such an effective and binding mechanism, pressure will build up and some Member States might in the future try to limit the branching activities of any firm supervised by a supervisor which has been judged to have failed to meet the standards. Such fragmentation would represent a major step backwards for the Single Market.

158) Equally, the Group believes that an effective mechanism is needed to allow home supervisors to challenge decisions made by host supervisors.

e) Lack of frankness and cooperation between supervisors

159) As the crisis developed, in too many instances supervisors in Member States were not prepared to discuss with appropriate frankness and at an early stage the vulnerabilities of financial institutions which they supervised. Information flow among supervisors was far from being optimal, especially in the build-up phase of the crisis. This has led to an erosion of mutual confidence among supervisors. Although the Group recognises the issues of commercial confidentiality and legal constraints involved in candid discussions, it believes that much more frank exchange of information is called for and makes recommendations to achieve this.

f) Lack of consistent supervisory powers across Member States

160) There are substantial differences in the powers granted to national supervisors in different Member States, both in respect of what they can do by way of supervision and in respect of the enforcement actions (including sanctions) open to them when a firm is in breach of its duties. The Group recommends an urgent review of these differences in powers and subsequent action to bring all supervisors up to a high level minimum standard. This will involve substantial increase in the powers of a number of Member States supervisors.

g) Lack of resources in the level 3 committees

161) The resources available to the level 3 committees severely limited the work which they could undertake, and their speed of reaction. This, combined with the heavy workload required of them in implementing the Financial Services Action Plan, meant that they were unable to perform very much either by way of peer review or by way of identifying sector wide risk issues. The Group therefore believes that the resources available to the three committees should be significantly increased, and makes recommendations to that end.

h) No means for supervisors to take common decisions

162) There are a number of reasons why the level 3 committees have been unable to contribute to the effective management of the crisis, notably their inability to take urgent decisions. For example, they were not able to agree and implement common decisions in relation to money-market funds or short-selling. The basic reason for this problem is that the level 3 committees do not have the legal powers to take decisions. As a consequence, they understandably have failed to develop either the attitude or the procedures needed to respond rapidly to the emerging crisis. If their legal powers are expanded, changes in both will be required.

163) The above diagnosis is of course easy to establish with hindsight. It is not the Group's intention to blame the supervisory community in the EU for a crisis which is the result of the interaction of a number of complex and global factors - many of which, (i.e., global imbalances, excess liquidity, too low interest rates...) were beyond the remit of micro-prudential supervisors. We should also recognise that some regulation applied by supervisors played a negative role in fuelling the crisis. In the previous chapter on regulation, we noted that some "public" regulation may well have aggravated things, generated perverse effects and contributed to the excesses of securitisation. In addition, in some instances, the absence of clarity of some rules, (e.g., pillar 2 of Basel) led supervisors to be passive, rather than proactive.

164) It remains however the case that the evidence clearly shows that the crisis prevention function of supervisors in the EU has not been performed well, and is not fit

for purpose.[9]

165) This chapter will not enter into the details of recent trends that have resulted in an increasingly integrated European financial market (see annex 3) nor into the description of the present supervisory arrangements (see annex 4).

166) What is proposed here is basically a new structure to make European supervision more effective and so improve financial stability in all the member countries of the EU. There are two elements to this: strengthening the quality of both national supervision and European supervision. The evidence given to the" Group by the level 3 committees was clear that, under their existing mandate as advisory committees to the Commission and with their present working methods, their ability to develop their work further will be severely constrained.

III. WHAT TO DO: BUILDING A EUROPEAN SYSTEM OF SUPERVISION AND CRISIS MANAGEMENT

a) The role of the ECB

167) A number of people, including representatives of the ECB, have suggested that the ECB could play a major role in a new European supervisory system in two respects: a role in macro-prudential supervision and a role in micro-prudential supervision.

168) In the area of macro-prudential supervision, the suggested responsibilities could cover financial stability analysis; the development of early warning systems to signal the emergence of risks and vulnerabilities in the financial system; macro-stress testing exercises to verify the degree of resilience of the financial sector to specific shocks and propagation mechanisms with cross-border and cross-sector dimensions; as well as the definition of reporting and disclosure requirements relevant from a macro-prudential standpoint.

169) In the area of micro-prudential supervision, the views have been put forward to the Group that the ECB could become responsible for the direct supervision of cross-border banks in the EU or only in the euro zone. This could cover all cross-border banks or only the systemically important ones. In such a scenario, the competences, currently assigned to national supervisory authorities, would be transferred to the ECB which would, *inter alia*, licence the institutions concerned, enforce capital requirements, carry-out on-site inspections.

170) Alternatively, the ECB could be granted a leading oversight and coordination function in the micro-supervision of cross-border banks in the EU. Whilst the colleges composed of national supervisors would continue to directly supervise cross-border banks, the ECB could play a binding mediation role to resolve conflicts between national supervisors, define supervisory practices and arrangements to promote supervisory convergence and become responsible for regulation related to issues such as pro-cyclicality, leverage, risk concentration or liquidity mismatch.

This general statement does not reflect the fact that some banks in the EU fared better than others. Was this related to differences in national supervision? It could be that some banks' supervisors had a more "prudent" approach than others (see for example the Spanish approach to off-balance sheet transactions which was the most rigorous and also their requirement for dynamic provisioning which provided cushions to the banks when the crisis erupted). It could be also that some financial institutions had developed, by tradition, better internal controls and risk management which led, for example, to a more cautious behaviour to securitisation than had been the case in others (the US investment bank model was less used by EU banks). Those European banks which held to the universal banking model have been to some extent better protected although a number of them, in their investment capacities, were caught by buying toxic securities.
All this shows that the context in which the crisis developed is complex and that there is no single explanation.

171) These ideas have been carefully appraised by the Group. While the Group supports an extended role for the ECB in macro-prudential oversight (as discussed below), it does not support any role for the ECB for micro-prudential supervision. The main reasons for this are:
- the ECB is primarily responsible for monetary stability. Adding micro-supervisory duties could impinge on its fundamental mandate;
- in case of a crisis, the supervisor will be heavily involved with the providers of financial support (typically Ministries of Finance) given the likelihood that tax payers money may be called upon. This could result in political pressure and interference, thereby jeopardising the ECB's independence;
- giving a micro-prudential role to the ECB would be extremely complex because in the case of a crisis the ECB would have to deal with a multiplicity of Member States Treasuries and supervisors;
- conferring micro-prudential duties to the ECB would be particularly difficult given the fact that a number of ECB/ESCB members have no competence in terms of supervision;
- conferring responsibilities to the ECB/Eurosystem which is not responsible for the monetary policy of a number of European countries, would not resolve the issue of the need for a comprehensive, integrated system of supervision;
- finally, the ECB is not entitled by the Treaty to deal with insurance companies. In a financial sector where transactions in banking and insurance activities can have very comparable economic effects, a system of micro-prudential supervision which was excluded from considering insurance activities would run severe risks of fragmented supervision.

172) For all these reasons, the Group takes the view that the ECB should not become responsible for the micro-supervision of financial institutions. However, the Group considers that the ECB should be tasked with the role in ensuring adequate macro-prudential supervision in the EU.

b) Macro-prudential supervision: the case for reform

173) A key lesson to be drawn from the crisis, as noted above, is the urgent need to upgrade macro-prudential supervision in the EU for all financial activities.

174) Central banks have a key role to play in a sound macro-prudential system. However, in order for them, and in particular the ECB/ESCB, to be able to fully play their role in preserving financial stability, they should receive an explicit formal mandate to assess high-level macro-financial risks to the system and to issue warnings where required.

175) Within the EU, the ECB, as the heart of the ESCB, is uniquely placed for performing this task: i.e. identifying those macro-prudential risks which all national supervisors should take account of. The ECB/ESCB therefore should be able to require from national supervisors all the information necessary for the discharge of this responsibility.

176) In view of the integrated financial market in the EU and the geographical distribution of financial activities, it is essential that within the ESCB all national central banks are associated to this process, not merely those of the euro area.

177) This could be achieved in the following way. A new group, replacing the current Banking Supervision Committee (BSC) of the ECB, called the European Systemic Risk Council (ESRC) should be set up

under the auspices and with the logistical support of the ECB. Its task will be to form judgements and make recommendations on macro-prudential policy, issue risk warnings, compare observations on macro-economic and prudential developments and give direction on these issues.

178) As the responsibility for conducting macro-prudential supervision is proposed to be allocated to the ECB/ESCB, it is logical to compose the ESRC with the central banks of the ESCB. It would therefore be composed of the members of the ECB/ESCB General Council (the President of the ECB, the vice-president of the ECB and the Governors of the 27 central banks), plus the Chairpersons of CEBS, CEIOPS and CESR and one representative of European Commission. The President of the ECB would chair the ESRC. The ESRC should be supported by a secretariat provided by the ECB.

179) But given the importance of having this group interact closely with those supervisors who are not part of central banks, it should be clearly stated that whenever the subject discussed justifies a wider presence of insurance and securities supervisors (as well as banking supervisors for those countries where banking supervision is carried-out outside the central bank), it would be assured. In such cases, a Governor could choose to be represented by the Head of the appropriate national supervisory authority.

180) For a new system of macro-prudential supervision to work effectively, two main conditions must be met:
- A proper flow of information between national supervisors and the ECB/ESCB must be mandatory. Appropriate procedures will have to be put in place so that all relevant information can be transmitted to the ECB/ESCB in a way which guarantees confidentiality. In this context, ECB/ESCB staff could be invited to attend meetings - and ask questions- between supervisors and the systemically important financial groups in order to receive first-hand relevant information. ECB/ESCB staff could be invited to participate in the relevant colleges of micro-prudential supervisors. But the ECB/ESCB would not be responsible for micro-prudential supervision;
- It is crucial that there is an effective early warning mechanism as soon as signs of weaknesses are detected in the financial system. And a graduated risk warning framework for ensuring that, in the future, the identification of risks translates into appropriate action.

181) Depending on the nature of the risks detected, a proper action has to be taken by the relevant EU authorities. Different types of actions could be required. For example:
- if credit expansion appeared to become excessive in one or several member countries, the ESRC would liaise with the relevant central bank (and/or banking supervisor), give advice on the appropriate measures to be taken, (e.g., triggering dynamic provisions). Central banks would be expected to take into account the findings of the ESRC. If the ESRC has issued a specific risk warning calling for a response by national supervisors, the ESRC should review their responses, and, if necessary, indicate whether and what further action it judged necessary, by reporting to the Economic and Financial Committee (EFC), on the basis described below;
- if the issue is more related to a global dysfunction of the system, (e.g., too high maturity transformation, abuse of off-balance sheet transactions, abuse of regulatory arbitrage by non-banks), the ESRC would have to warn the global

supervisory system (see chapter 4 on global repair) in order to define appropriate and coherent actions at both the EU and global levels. If the problems pertain to prudential issues in the EU, then the level 3 committees should be required to address them;

- If the concerns were related to fiscal matters (e.g. excessive deficits or the accumulation of debt), the ESRC would immediately relate to the EFC.

182) As soon as the risks detected would appear to have a potentially serious negative impact on the financial sector or the economy as a whole, the ESRC should inform the Chairman of EFC. In such circumstances, the EFC, working with the Commission, could play an essential role by developing an action-oriented strategy to deal with serious risks requiring political or legislative action. It must be clear to everyone who should act and according to which timetable. Furthermore, a process should be established to regularly evaluate the effectiveness of the supervisory/regulatory actions that have been agreed and decide whether other actions are necessary. A "rendez-vous clause" should be set to check that the actions taken have actually been effective. It would be the responsibility of the Chairman of the EFC to decide if and when the EFC (in its full composition, i.e., with the central banks) and/or the ECOFIN Council should be informed or associated in the deliberations. The EFC should also advise on how to relate with the European Parliament and on whether the information needs to be made public - which can be helpful in certain circumstances.

Recommendation 16: A new body called the European Systemic Risk Council (ESRC), to be chaired by the ECB President, should be set up under the auspices and with the logistical support of the ECB.

- ***The ESRC should be composed of the members of the General Council of the ECB, the chairpersons of CEBS, CEIOPS and CESR as well as one representative of the European Commission. Whenever the subject discussed justifies the presence of insurance and securities supervisors, the Governor could choose to be represented by the Head of the appropriate national supervisory authority;***
- ***The ESRC should pool and analyse all information, relevant for financial stability, pertaining to macro-economic conditions and to macro-prudential developments in all the financial sectors.***
- ***A proper flow of information between the ESRC and the micro-prudential supervisors must be ensured.***

Recommendation 17: an effective risk warning system shall be put in place under the auspices of the ESRC and of the Economic and Financial Committee (EFC).

- ***The ESRC should prioritise and issue macro-prudential risk warnings: there should be mandatory follow up and, where appropriate, action shall be taken by the relevant competent authorities in the EU.***
- ***If the risks are of a serious nature, potentially having a negative impact on the financial sector or the economy as a whole, the ESRC shall inform the chairman of the EFC. The EFC, working with the Commission, will then implement a strategy ensuring that the risks are effectively addressed.***
- ***If the risks identified relate to a global dysfunction of the monetary and financial system, the ESRC will warn the IMF, the FSF and the BIS in order to define appropriate action at both EU and global levels.***
- ***If the ESRC judges that the response of a national supervisor to a priority risk warning is inadequate, it shall, after discussion with that supervisor, inform the chairman of the EFC, with a view to further action being taken against that supervisor.***

c) **Micro-supervision: moving towards a European System of Financial Supervision (ESFS)**

183) After having examined the present arrangements and in particular the cooperation within the level 3 committees, the Group considers that the structure and the role bestowed on the existing committees are not sufficient to ensure financial stability in the EU and all its Member States. Although the level 3 committees have contributed significantly to the process of European financial integration, there are a number of inefficiencies which can no longer be dealt with within their present legal structure, (i.e., as advisory bodies to the Commission).

This is why the Group proposes the establishment of a European System of Financial Supervision (ESFS).

184) The ESFS should constitute an integrated network of European financial supervisors, working with enhanced level 3 committees ("Authorities"). Therefore the ESFS would be a largely decentralised structure, fully respecting the proportionality and subsidiarity principles of the Treaty. So existing national supervisors, who are closest to the markets and institutions they supervise, would continue to carry-out day-to-day supervision and preserve the majority of their present competences (see annex 3).

185) But in order to be in a position to effectively supervise an increasingly integrated and consolidated EU financial market (and especially the large cross-border institutions, which pose systemic risks), the Authorities will carry-out a defined number of tasks that are better performed at the EU level. The supervisor of the home Member State will continue to function as the first point of contact for the firm, whilst the European centre should coordinate the application of common high level supervisory standards, guarantee strong cooperation with the other supervisors, and, as importantly, guarantee that the interests of host supervisors are properly safeguarded.

186) As far as cross-border institutions are concerned, the ESFS should continue to rely heavily on the colleges of supervisors to be introduced by the revised CRD and the Solvency 2 directives. However, these colleges of supervisors should be

strengthened by the participation of representatives of the secretariat of the level 3 committees as well as of ECB/ESCB observers.

187) The ESFS must be independent from possible political and industry influences, at both EU and national level. This means that supervisors should have clear mandates and tasks as well as sufficient resources and powers. In order to strengthen legitimacy and as a counterpart for independence, proper accountability to the political authorities at the EU and national levels should be ensured. In short, supervisory work must be independent from the political authorities, but fully accountable to them.[10]

188) The ESFS must work with a common set of core harmonized rules and rely on high-quality and consistent information. This means proper, primary, timely information exchange among all supervisors to enable complete assessment - from the national to European to global levels.

189) Finally, the ESFS should be neutral with respect to national supervisory structures: national supervisory structures have been chosen for a variety of reasons and it would be impractical to try to harmonise them - even though it may well be that the current trend could continue towards the emergence of a dual "twin peaks" system (banks, insurance companies and other financial institutions being covered by the same authority and markets/conduct of business by another one).

10. Based on various internationally recognised standards and codes, (i.e., the G10 Basel Core Principles for Effective Banking Supervision (BCP), the IAIS Insurance Core Principles and the IOSCO Objectives and Principles of Securities Regulation), supervisory independence can be defined as a situation in which the supervisor is able to exercise its judgment and powers independently with respect to the enforcement of prudential and/or conduct of business rules, i.e., without being improperly influenced or overruled by the parties under supervision, the government, the Parliament, or any other interested third party. As such, the supervisory authority must be empowered and able to make its own independent judgements, (e.g., with respect to licensing, on-site inspections, off-site monitoring, sanctioning, and enforcement of the sanctions), without other authorities or the industry having the right or possibility to intervene. Moreover, the supervisor itself must base its decisions on purely objective and non-discriminatory grounds. However, supervisory independence differs from central bank independence, (i.e., in relation to monetary policy), in the sense that the government (usually the Finance minister) remains politically responsible for maintaining the stability of the financial system, and the failure of one or more financial institutions, markets or infrastructures can have serious implications for the economy and tax payer's money10. Consequently, the supervisory authority should operate within a certain scope of responsibilities and under an explicit delegation of powers in the form of legislation passed by Parliament and the government should not exercise immediate powers on the supervisory authority and interfere directly in its day-to-day activities. Independence should be balanced and strengthened by proper accountability arrangements and transparency of the regulatory and supervisory process, consistent with confidentiality requirements. National authorities should however relinquish control mechanisms such as having government representatives, chairing or actively participating in the management board of the supervisory authority, or giving the government the right to intervene in the day-to-day operations of the supervisory authority. Their influence should be limited to the possibility of amending the legal framework, imposing long-run strategic goals, and monitoring performance, on the condition that this is done in an open and transparent manner.

Recommendation 18: A European System of Financial Supervisors (ESFS) should be setup. This ESFS should be a decentralised network:

- ***existing national supervisors would continue to carry-out day-to-day supervision;***
- ***three new European Authorities would be set up, replacing CEBS, CEIOPS and CESR, with the role coordinate the application of supervisory standards and guarantee strong cooperation between the national supervisors;***
- ***colleges of supervisors would be set up for all major cross-border institutions.***

The ESFS will need to be independent of the political authorities, but be accountable to them.

It should rely on a common set of core harmonised rules and have access to high-quality information.

IV. THE PROCESS LEADING TO THE CREATION OF A EUROPEAN SYSTEM OF FINANCIAL SUPERVISION

190) The goal set out above is an ambitious one. It will require important institutional, legislative and operational changes. It will also require the emergence of the broadest possible political consensus on the necessity to move in this direction and the steps that must be taken to do so. The Group hopes that all Member States will aspire to these changes. If not, a variable geometry approach based on the mechanisms of Enhanced Cooperation or an intergovernmental agreement provided for in the Treaty may be required.

191) The Group proposes a two stage process, to strengthen the supervision of the European financial sector, thereby rebuilding confidence in the market. The process should be as swift as possible, whilst giving sufficient time to all stakeholders involved to converge towards the goal of a strengthened and more integrated system.

192) Whilst the transformation of current EU supervisory arrangements lie at the very heart of this process, the Group considers that improvements in the organisation of supervision cannot be looked at in isolation from the rules which supervisors have to implement and from the crisis management and resolution arrangements that they have to implement (together with finance ministries) when needed. Regulation, supervision and crisis management/resolution arrangements are intertwined. They form a continuum. There is no point in converging supervisory practices, if the basic financial regulations remain fragmented. And it will be impossible to revamp the organisation of European supervision, without clarity as to how a crisis, should it break-out, will be managed and resolved by the relevant authorities.

193) The two stage process proposed below therefore brings together regulation, supervision and crisis management/resolution.

A) Stage 1 (2009-2010): Preparing for a European System of Financial Supervision

a) Preparing for the transformation of the level 3 committees into European Authorities.

194) The Commission, the Council and the Parliament should immediately start the necessary legislative work building a consensus to transform the level 3 committees into three European Authorities: a European Banking Authority, a European

Insurance Authority and a European Securities Authority. The actual transformation should be completed at the start of the second phase (see below).

Concurrently, work should start in the following areas:

b) Upgrading the quality of supervision

195) The Member States and the level 3 committees should, as a matter of urgency, find practical ways to strengthen the national supervisors. At national level, consideration should be given to the following issues: aligning supervisors' competences and powers on the most comprehensive system in the EU; increasing supervisors' remuneration; facilitating exchanges of personnel between the private sector and supervisory authorities; ensuring that all supervisory authorities implement a modern and attractive personnel policy. At European level, the level 3 committees should intensify their efforts in the areas of training and personnel exchanges to create a strong European supervisory culture.

196) The European Commission should carry-out, in cooperation with the level 3 committees, an examination of the degree of independence of all national supervisors. This examination should lead to concrete recommendations for improvement, including the ways in which national supervisory authorities are funded.

197) The level 3 committees should prepare the modalities with the ESRC for a legally binding mechanism, including for the transfer of information, whereby the identification of risks by the ESRC translates into expeditious regulatory, supervisory or monetary policy examination at EU level.

Recommendation 19: In the first stage (2009-2010), national supervisory authorities should be strengthened with a view to upgrading the quality of supervision in the EU.

- ***Member States should give consideration to the following reforms: aligning supervisors' competences and powers on the most comprehensive system in the EU, increasing supervisors' remuneration, facilitating exchanges of personnel between the private sector and supervisory authorities, ensuring that all supervisory authorities implement a modern and attractive personnel policy.***
- ***The level 3 committees should intensify their efforts in the areas of training and personnel exchanges. They should also work towards the creation of a strong European supervisory culture.***
- ***The European Commission should carry-out, in cooperation with the level 3 committees, an examination of the degree of independence of all national supervisors. This should lead to concrete recommendations, including on the funding of national authorities.***

In this first stage, the European Commission should immediately begin the work to prepare legal proposals to set up the new Authorities.

c) Moving towards harmonised rules, powers and sanctions

198) The European Institutions and the level 3 committees should initiate a determined and concerted effort to equip the EU financial sector with a consistent set of core rules by the beginning of 2013. A process should be set-up, whereby the key-differences in national legislation will be identified and removed.

199) These differences stem from exceptions, derogations, additions made at national level,[11] or ambiguities contained in directives which have a material impact on the market; are laxer than the minimum core standards; or which may induce competition distortions or regulatory arbitrage will be identified and removed. In its efforts to remove these differences, the European Commission should concentrate its first efforts on the main problems.

200) This process may not lead to identical rules in every case. However, the core harmonised rules should be sufficiently comprehensive. To that effect, the level 3 committees will examine the differences that exist and propose to the Commission new or further developments of level 1 and level 2 rules, (e.g., harmonisation of the sanctions regimes, definition of core capital rules, harmonisation in the areas of short-selling, controls for security settlement systems).

201) The European Institutions should also set in motion a process which will lead to far more consistent sanctioning regimes across the Single Market. Supervision cannot be effective with weak, highly variant sanctioning regimes. It is essential that within the EU and elsewhere, all supervisors are able to deploy sanctions regimes that are sufficiently convergent, strict, resulting in deterrence. This is far from being the case now. The same exercise should be initiated with respect to supervisory powers. These also differ greatly from one Member State to another.[12] This cannot be conducive to coherent and effective supervision in the Single Market.

Recommendation 20: In the first stage, EU should also develop a more harmonised set of financial regulations, supervisory powers and sanctioning regimes.

- ***The European Institutions and the level 3 committees should initiate a determined effort to equip the EU with a far more consistent set of rules by the beginning of 2013. Key differences in national legislation stemming from exceptions, derogations, additions made at national level or ambiguities contained in current directives should be identified and removed, so a harmonized core set of standards is defined and applied throughout the EU.***

- ***The European Institutions should set in motion a process leading to far stronger and consistent supervisory and sanctioning regimes in the Member States.***

11. A practice sometimes referred to as "goldplating".

12. For the time being, for example, only 10 insurance supervisors are empowered to approve internal risk models; only 6 of them can increase capital requirements within firms; and 2 of them are not empowered to grant licences.

d) Immediate strengthening of the level 3 committees

202) The level 3 committees should be subject to a number of changes which should be implemented rapidly:

i) Reinforcement of the resources of the these committees, to be able to employ more people, with a larger budget;

ii) Development of the presently embryonic peer review processes within each committee, with a view to becoming binding mediation processes;

iii) Redefinition of their work and priorities to become more pro-active in identifying problems and proposing solutions. The use of qualified majority voting should be put into practice;

iv) Cooperation between the level 3 committees should be further intensified and codified.

e) Supervisory colleges

203) The present relatively restricted use of supervisory colleges should be expanded immediately. The Group believes that by the end of 2009 colleges for all major cross-border firms should be established in the EU.[13] By mid-2009, the level 3 committees should make proposals for all major cross border financial firms within the EU to have supervisory colleges and they should define clear supervisory norms for them.

Recommendation 21: The Group recommends an immediate step-change in the working of the level 3 committees which can be dealt with at once. The level 3 committees should therefore:

- ***benefit from, under the Community budget, a significant reinforcement of their resources;***
- ***upgrade the quality and impact of their peer review processes;***
- ***prepare the ground, including through the adoption of adequate supervisory norms, for the setting-up of supervisory colleges for all major cross-border financial firms in the EU by the end of 2009.***

f) Crisis management and resolution

204) Legislative changes covering in particular aspects of company and insolvency laws, (e.g., winding-up, transferability of assets, bankruptcy), should be proposed by the Commission as soon as possible if the EU is to deal with future crises in a more effective and cost-efficient manner (see section VI of chapter 2).

B) Stage 2 (2011-2012): Establishing the European System of Financial Supervision

a) Role of the new European Authorities

205) As early as possible during this second phase, the level 3 committees would be transformed legally into the three Authorities mentioned above.

206) These Authorities would continue to perform all the current functions of the level 3 committees (advising the Commission on regulatory and other issues, defining overall supervisory policies, convergence of supervisory rules and practices, financial stability monitoring, oversight of colleges).

207) National authorities would continue to remain responsible for the supervision of domestic institutions. Cross-border insti-

13. As an order of magnitude, this could encompass at least 50 financial institutions having a significant market share in another Member State.

tutions would continue to be supervised by home and host supervisors. Disputes between home and host supervisors would be subject to decisions by the relevant Authority.

208) But, in addition, the new Authorities would carry-out a number of new, specific tasks which, in full conformity with the principle of subsidiarity, the Group considers would be more effectively carried-out at the European level. These tasks would be the following:

i) In relation to cross-border institutions:

- A legally binding mediation role, allowing the new Authorities to solve disputes between national supervisors. They should be able to, when no agreement can be found between the supervisors of a cross-border institution, take certain supervisory decisions directly applicable to the institution concerned, (e.g., approval of risk internal models, capital add-ons, licence withdrawal, resolving disputes about different legal interpretations relating to supervisory obligations...);
- The designation of Group supervisors (in cases where the process laid down in the relevant directives has not led to an agreement on this question);
- The aggregation of all relevant information emanating from national supervisors and pertaining to cross-border institutions;
- Staff from the Authorities could take part in on-site inspections carried out by national supervisors;
- The Authorities would ensure a true level playing-field for all cross-border institutions and facilitate the monitoring of the systemic threats they pose;
- The Authorities would be tasked to ensure the consistency of prudential supervision for all actors (and in particular between cross-border and smaller institutions), thereby avoiding the risk of unfair competition between supervised entities. To guarantee this, any financial institution (including purely domestic ones) should be able to submit complaints to the Authority when they consider that they suffer from any discrimination *vis-à-vis* a cross-border institution which has its home supervisor in another Member State;
- The prudential assessment of pan-EU mergers and acquisitions (in combination with the assessment made by the relevant Member States).

ii) In relation to specific EU-wide institutions:

- The Authority concerned would be responsible for the licensing and direct supervision of some specific EU-Wide institutions, such as Credit Rating Agencies and post-trading infrastructures.

iii) In the area of regulation:

- The Authorities should play a decisive role in the technical level 3 interpretation of level 1 and level 2 measures and in the development of level 3 technical standards. A legal mechanism should be put in place so as to ensure that, once an Authority has decided on a given interpretation (through guidance, recommendations etc), this interpretation becomes legally valid throughout the EU.

iv) In relation to supervisory standards and practices:

- The Authorities would be responsible for defining common supervisory practices and arrangements for the functioning of the colleges of supervisors;
- The Authorities should evaluate the organisation, processes, competences and independence of the national supervisory authorities through peer reviews. These evaluations should lead to concrete recommendations for improvements and should take place frequently, without any scruples;
- The Authorities would have a significant new responsibility of ensuring that all national supervisors meet necessary standards, by being able to challenge the performance by any national supervisor of its supervisory responsibilities, whether for domestic or cross-border firms, and to issue rulings aimed at ensuring that national supervisors correct the weaknesses that have been identified. In the event of the national supervisor failing to respond to this ruling, a series of graduated sanctions could be applied, including fines and the launch by the Commission of infringement procedures. In exceptional circumstances, where serious issues of financial stability are at stake, the Authorities should be able on a temporary basis to acquire the duties which the national supervisor is failing to discharge.

v) In relation to macro-prudential issues:

- The Authorities would have binding cooperation and information sharing procedures with the ESRC to allow the latter to perform its macro-prudential supervision task;
- The Authorities should create and lead groups of national supervisors to deal with specific events affecting several Member States, (e.g., bankruptcy of a third country systemic group).

vi) In the area of crisis management:

- In crisis situations, the Authorities should have a strong coordinating role: they should facilitate cooperation and exchange of information between competent authorities, act as mediator when that is needed, verify the reliability of the information that should be available to all parties and help the relevant authorities to define and implement the right decisions.
- Annex 5 to this chapter shows how supervisory competences could be shared between national supervisors and the Authorities.

vii) In relation to international matters:

- The Authorities would prepare (and in some cases could adopt) equivalence decisions pertaining to the supervisory regimes of third countries;
- They would represent the EU interests in bilateral and multilateral discussions with third countries relating to supervision.

b) Governance and budget of the new Authorities

209) From a governance standpoint, each Authority would have a board structure comprised of the highest-level representatives from national authorities. Their chairpersons and director generals should be full-time independent professionals.

These professionals would be chosen and appointed by the board. This should not exclude recruiting an independent external personality of the highest calibre. In addition, the appointment of the chairs should be confirmed by the Commission, the Council of Ministers and the European Parliament and should be valid for a period of 8 years.

210) The Authorities' decisions would be taken collectively, through the board structure composed of the Heads of national supervisors, by qualified-majority. However, other arrangements could be considered when dealing with binding mediation cases (e.g. decisions by the chairpersons and director generals). The Authorities would have their own autonomous budget, which could be financed by the industry and/or contributions from the public sector (including the EU budget). These budgets would have to be commensurate with their responsibilities.

211) The Authorities would have the highest degree of independence *vis-à-vis* the European institutions, which should in not interfere in the internal processes and decisions of the Authorities. However, the Authorities would be accountable to the Council, the European Parliament and the Commission. They should report formally to these three institutions on a frequent basis.

c) Crisis management and resolution

212) As soon as possible in this second phase, the legislative changes recommended in the previous chapter would need to enter into force. An equal and high level of protection to all depositors, investors and policy-holders should be guaranteed, avoiding competition distortions between institutions and between sectors.

213) The changes recommended above are ambitious and will be complex to implement. It is nevertheless vital to do so in order, in particular, to seriously tackle the issue of confidence that affects the present relationship between home and host countries. Recent developments in this crisis have strengthened this distrust. Fears of most countries have deepened in terms of the ability of their own supervisors to prevent crises, stop withdrawals by parent companies of liquidity held in local subsidiaries or branches. The Group believes that the reforms described above could do a lot to reduce such suspicions and provide effective, practical and legally binding mechanisms to resolve disputes. We believe that this is probably the only way at this stage to combine the efficiency and needs of large groups on the one hand and the necessary safeguards for host countries on the other.

214) The following diagram illustrates how the ESRC and the ESFS would interact with each other.

Recommendation 22: In the second stage (2011-2012), the EU should establish an integrated European System of Financial Supervision (ESFS).

- ***The level 3 Committees should be transformed into three European Authorities: a European Banking Authority, a European Insurance Authority and a European Securities Authority.***
- ***The Authorities should be managed by a board comprised of the chairs of the national supervisory authorities. The chairpersons and director generals of the Authorities should be full-time independent professionals. The appointment of the chairpersons should be confirmed by the Commission, the European Parliament and the Council and should be valid for a period of 8 years.***
- ***The Authorities should have their own autonomous budget, commensurate with their responsibilities.***

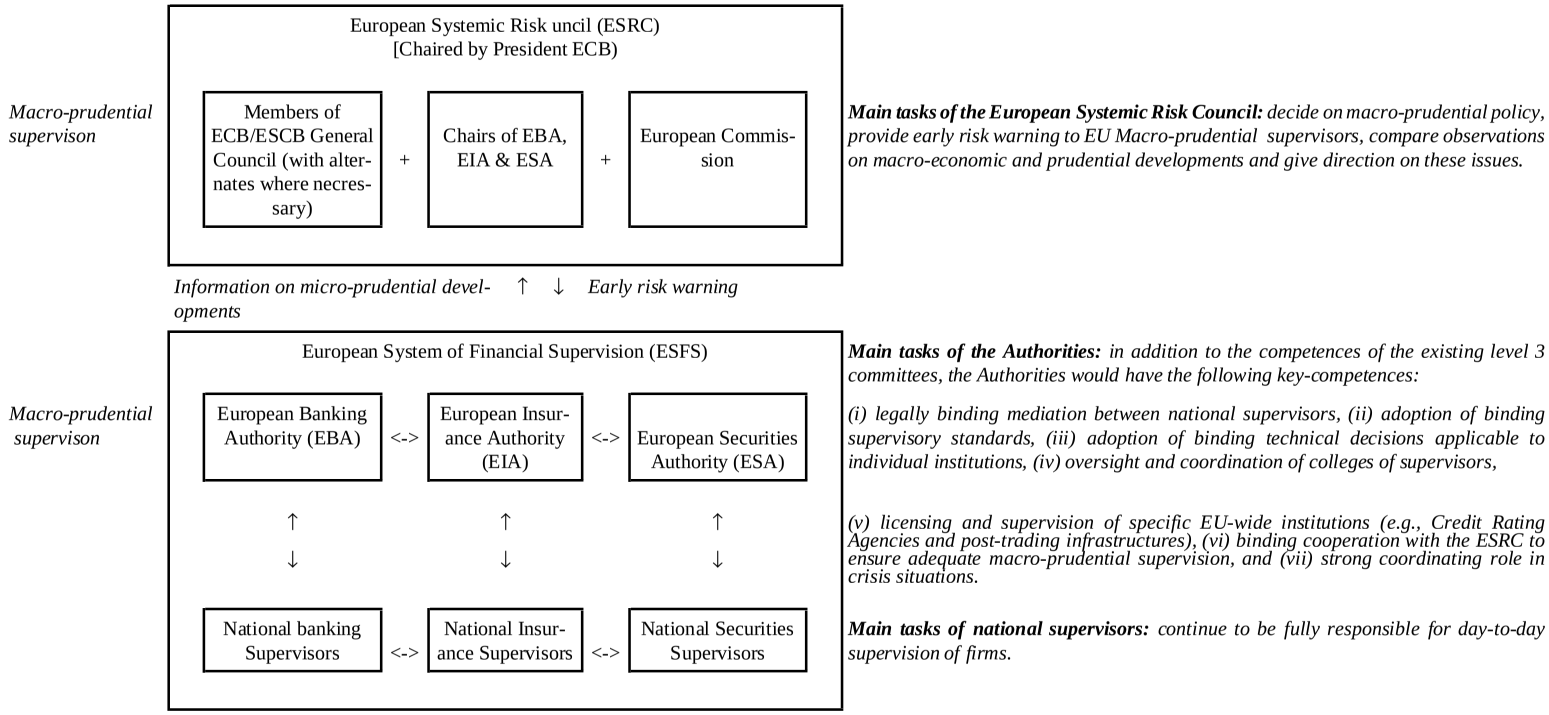
- In addition to the competences currently exercised by the level 3 committees, the Authorities should have, inter alia, the following key-competences:

i) ***legally binding mediation between national supervisors;***
ii) ***adoption of binding supervisory standards;***
iii) ***adoption of binding technical decisions applicable to individual financial institutions;***
iv) ***oversight and coordination of colleges of supervisors;***
v) ***designation, where needed, of group supervisors;***
vi) ***licensing and supervision of specific EU-wide institutions, (e.g., Credit Rating Agencies, and post-trading infrastructures);***
vii) ***binding cooperation with the ESRC to ensure adequate macro-prudential supervision.***

- National supervisory authorities should continue to be fully responsible for the day-to-day supervision of firms.

Recommendation 23: The Group recommends that planning for the 2 stages of the new system be started immediately. To this effect, a group of high-level representatives of the Finance Ministries, the European Parliament, the Level 3 Committees, and the ECB to be chaired by the Commission, should come forward before the end of 2009 with a detailed implementation plan.

A new European Framework for Safeguarding Financial Stability



Main tasks of the European Systemic Risk Council: *decide on macro-prudential policy, provide early risk warning to EU Macro-prudential supervisors, compare observations on macro-economic and prudential developments and give direction on these issues.*

Main tasks of the Authorities: *in addition to the competences of the existing level 3 committees, the Authorities would have the following key-competences:*

(i) legally binding mediation between national supervisors, (ii) adoption of binding supervisory standards, (iii) adoption of binding technical decisions applicable to individual institutions, (iv) oversight and coordination of colleges of supervisors,

(v) licensing and supervision of specific EU-wide institutions (e.g., Credit Rating Agencies and post-trading infrastructures), (vi) binding cooperation with the ESRC to ensure adequate macro-prudential supervision, and (vii) strong coordinating role in crisis situations.

Main tasks of national supervisors: *continue to be fully responsible for day-to-day supervision of firms.*

V. REVIEWING AND POSSIBLY STRENGTHENING THE EUROPEAN SYSTEM OF FINANCIAL SUPERVISION (ESFS)

215) The implementation of the arrangements described above will have to be monitored, and their effectiveness carefully assessed. A full-review should take place no later than three years after the entry into force of stage 2. Whilst it would be premature at this stage to make detailed recommendations as to how the ESFS could be strengthened beyond stage 2, if stage 2 proves to be insufficient, the following observations can be made.

216) There may be merit, over time, in evolving towards a system which would rely on only two Authorities: The first would be responsible for banking and insurance issues, as well as any other issue which is relevant for financial stability, (e.g., systemically important hedge funds, systemically important financial infrastructures). The second Authority would be responsible for conduct of business and market issues, across the three main financial sectors. Combining banking and insurance supervisory issues in the same Authority could result in more effective supervision of financial conglomerates and contribute to a simplification of the current extremely complex institutional landscape.

217) Furthermore, given the speed at which financial markets evolve, it is important to maintain a consistent set of technical rules applying to all financial firms. If it appeared, after the review mentioned above, that wider regulatory powers of horizontal application were needed, such a strengthening of the Authorities should be envisaged.

218) Concerning one idea, that often appears, suggesting the unification of all supervisory activities for cross-border institutions at the pan-EU level, the Group considers that this matter could only be considered if there were irrefutable arguments in favour of such a proposal. The complexities and costs entailed by such a proposal (which would result in a two-tier supervisory system, one for cross-border institutions and one for domestic institutions), its political implications and the difficulty of resolving cross-border burden-sharing are such that the Group has doubts of it being implemented at this juncture. This scenario could become more viable, of course, should the EU decide to move towards greater political integration.

Recommendation 24: The functioning of the ESFS should be reviewed no later than 3 years after its entry into force. In the light of this review, the following additional reforms might be considered:

- ***Moving towards a system which would rely on only two Authorities: the first Authority would be responsible for banking and insurance prudential issues as well as for any other issue relevant for financial stability; the second Authority would be responsible for conduct of business and market issues;***
- ***Granting the Authorities with wider regulatory powers of horizontal application;***
- ***Examining the case for wider supervisory duties at the EU level.***

CHAPTER IV: GLOBAL REPAIR
I. PROMOTING FINANCIAL STABILITY AT THE GLOBAL LEVEL

219) Although Europe was not at the root of the current financial crisis, it has nevertheless both contributed to it and been hit severely by it. Global economic and financial integration has by now reached a level where no country or region can any longer insulate itself from developments elsewhere in the world. This points to the need for a co-ordinated, global policy response not only in the area of financial regulation and supervision, but also in the macroeconomic and crisis management field.

220) Since the financial crisis has started to unfold, the EU has played a pro-active role in international efforts, trying to contain the economic fall-out from the financial crisis and to reform the international financial architecture. The EU was at the origin of the G20 process launched at the Washington Summit in November 2008 and is contributing to the political orientations agreed at that summit. However, beyond managing the current crisis, attention must now be devoted to drawing the lessons from the weaknesses of the current international financial architecture that have been revealed by the recent events.

221) A variety of international institutions and informal groups currently deal with financial regulatory and supervisory issues, often in a segmented way despite the interactions and risk transfers between different parts of the financial system.[14] However, at present there is an evident lack of a coherent framework for designing and enforcing minimum regulatory standards, for identifying risks to financial stability and for coordinating supervisory policies at the global level. Moreover, there are practically no arrangements for cross-border financial crisis management at the global level and for enforcement. What is needed now is a strengthened, more coherent and streamlined international financial regulatory and surveillance system, building on the better use of existing international institutions.

222) A start in addressing the weaknesses of the existing international financial architecture has been made at the G20 Summit in Washington on 15 November 2008. By agreeing on an action plan based on the need to strengthen transparency, to enhance sound regulation, to promote integrity in financial markets and to reinforce international cooperation, G20 leaders have set out the main priorities for the months and years to come. However, international cooperation will not work without a proper representation of the main players and key emerging market economies in each international organisation or body.

223) It is clearly in the EU's interest to try to shape the reform of the international financial architecture. The EU should take the lead by improving its own regulatory and supervisory system, which, necessary in its own right, is also required for international convergence. In other words, international convergence and agreement on high standards needs strong EU enforceability through strong EU institutions. The EU has, after all, a large share of world capital markets. The EU's policy development should dovetail with international developments. Furthermore,

14. These include the Basel Committee on Banking Supervision, other Basel-based Committees such as the Committee on the Global Financial System and the Committee on Payment and Settlement Systems, the Bank for International Settlements (BIS), the Financial Stability Forum (FSF) as well as bodies like the International Organisation of Securities Commissions (IOSCO), the International Accounting Standards Board (IASB) and the International Association of Insurance Supervisors (IAIS).

convergence in international regulatory and supervisory standards would ensure a level playing field for the highly competitive globally integrated financial services sector.

II. REGULATORY CONSISTENCY

224) Chapter 2 of this report has set out the Group's recommendations for regulatory reform. While some of the required improvements specifically refer to the legislative framework in the EU, most of the recommended reforms either concern existing rules agreed at the international level (Basel 2; international accounting standards) or new initiatives that should preferably be implemented internationally, (e.g., the regulation of credit rating agencies, strengthened derivatives market rules or corporate governance rules). The EU has a clear interest in promoting worldwide consistency of regulatory standards towards the high level benchmarks.

225) Such moves towards to international consistency of regulatory standards will also avoid unacceptable regulatory loopholes and regulatory arbitrage which could undermine financial stability. It would moreover reduce the compliance burden associated with cross-border economic activity and avoid distortions of competition. Finally, seen from the point of view of public authorities, enhanced regulatory convergence would avoid regulatory friction between jurisdictions and facilitate the supervision of globally active firms.

226) International regulatory convergence towards a consistent set of rules could be promoted by pursuing two parallel avenues. Firstly, a strengthening and broadening of bilateral regulatory dialogues between the main financial centres. Secondly, a clear mandate, including precise objectives and timetables, for international standard-setters as currently discussed in the G20 context.

227) Who should be in charge of coordinating the international standard setting process? Given its experience and track record as a standard-setter in the field of banking, the Basel Committee would seem well placed to play an important role in developing adequate standards in some of the abovementioned areas. However, as a number of international standard setters other than central banks are concerned by the regulation of the different aspects of financial activity, the Group considers that a reformed FSF would, in view of the broader range of its participants and expertise, be in the best position for coordinating the work of the various international standard setters in achieving international regulatory consistency.

228) However, the FSF in its current form would not be able to fulfil this task. It is therefore proposed to strengthen the FSF by providing it with more resources and a stronger governance structure (including a full-time chairperson). Moreover, the FSF should become more accountable by reporting to the IMF and, like other international standard-setters, (e.g., Basel Committee) should swiftly enlarge its membership to all systemically important countries. Clearly, all international standard-setters will need to combine independence from political interference with political accountability. Furthermore, it will be essential to prepare such international financial standards transparently and in close cooperation with market participants in order to be sufficiently close to market realities.

229) It would also be important to report regularly (at least once or twice a year) to the IMF's International Monetary and Finance Committee (IMFC) in order to maintain the political momentum and to ensure accountability. In this context, it would be advisable to activate the Articles of Agreement of the IMF in order to transform the IMFC into a decision making Council.

230) Over the medium term, thought might be given to establishing a full international standard-setting authority, established by a treaty. The objective should be to put in place an international standard setting process which would be binding on jurisdictions and which would ensure implementation and enforcement of international standards. This would have to be supplemented by providing the IMF with the tasks of surveying (in the framework of Article IV Reviews) the enforcement of these standards.

Recommendation 25: The Group recommends that, based on clear objectives and timetables, the Financial Stability Forum (FSF), in conjunction with international standard setters like the Basel Committee of Banking Supervisors, is put in charge of promoting the convergence of international financial regulation to the highest level benchmarks.

In view of the heightened role proposed in this report for the FSF, it is important that the FSF is enlarged to include all systemically important countries and the European Commission. It should receive more resources and its accountability and governance should be reformed by more closely linking it to the IMF.

The FSF should regularly report to the IMF's International Monetary and Financial Committee (IMFC) about the progress made in regulatory reform implementing the lessons from the current financial crisis.

The IMFC should be transformed into a decision-making Council, in line with the Articles of the IMF agreement.

III. ENHANCING COOPERATION AMONG SUPERVISORS

231) In order to address the serious supervisory failures experienced in the past, strengthened international collaboration in the supervision of large complex cross-border financial groups is of crucial importance. For this purpose, international colleges of supervisors should be set up before summer 2009 for all the largest financial institutions along the lines prepared by the FSF. Pragmatic solutions must be found on host supervisor involvement, striking the right balance between efficiency and adequate representations and information. As agreed by the G20 summit, major global banks should meet regularly and at least once per year with their supervisory college for comprehensive discussions on the assessment of their risks.

232) With a view to ensuring consistency and to identify potential systemic risks, in addition to the participation of macro- and micro-prudential authorities, the participation of an official from an international body like the Basel Committee in these colleges would be highly desirable. On this basis, best practices could also be

identified and promoted and coherence could be ensured.

233) The emergence over the last few years of financial conglomerates who are very large in size and active in many different business segments (including in proprietary trading) throughout the world represents a particular supervisory challenge. There is a risk that this trend will intensify as a result of the crisis, (e.g., the merger between commercial banks and investment banks), as ailing institutions are being acquired by others. If the system is not going to move towards a clear separation between pure commercial banking activities (and some investment activities carried-out for the clients) and banks that basically act like an investment fund, then the world is moving towards a more complex setting where both activities will be mingled.

234) Such complex institutions, as well as conglomerates combining banking and insurance, pose indeed specific challenges both for their managers and their supervisors: most frequently, increasing size goes hand in hand with increased complexity and increased cross-border activity. Such financial giants are so vast and complex that it is a huge challenge to assess in an adequate way the risks to which they are exposed or the risks that they may represent for the wider economy. Given their size and the structural function they have for the financial system as a whole, they are, to some extent, *"too big to manage"* and *"too big to fail"* - which means that they can expose the rest of society to major costs and are subject to acute moral hazard; in some instances, these institutions can even be *"too big to save"*, for example when they are head-quartered in a relatively small country or when the organisation of a rescue package is simply too complex to implement. However, although this may be desirable in instances of excessive market dominance under anti-trust law, it is unlikely that large financial institutions will be broken up into component parts.

235) All this calls for a particularly stringent supervision of these institutions. Supervisors should be particularly attentive to them, step up international cooperation to ensure the best possible oversight and carry-out robust comprehensive risk assessments. The extent to which these institutions are leveraged and how they are funded should in particular be closely scrutinised on an on-going basis. The way in which they allocate and price capital within the firm is crucial to their risk management. Anti-trust authorities will also have to enhance their vigilance in relation to these institutions and be ready to take any appropriate measure.

236) Faulty risk management has played a key role in the run-up to the current crisis. International firm supervisors should therefore pay greater attention to banks' internal risk management practices and insist on proper stress tests.

237) In the light of the corporate governance weaknesses witnessed over the past few years, supervisors will also need to pay greater attention to the incentive effects of corporate remuneration schemes. Here as well, a common global approach would be optimal in order to avoid regulatory arbitrage. Supervisors should therefore agree on a common assessment of incentive alignment in financial institutions and apply such common criteria under pillar 2 of Basel 2.

238) The IMF should play a significant role in surveying (in the framework of Article IV assessments) the enforcement by member countries of international standards.

Recommendation 26: Barring a fundamental change in the ways that banks operate, the Group recommends that the colleges of supervisors for large complex cross-border financial groups currently being set up at the international level should carry out robust comprehensive risk assessments, should pay greater attention to banks' internal risk management practices and should agree on a common approach to promoting incentive alignment in private sector remuneration schemes via pillar 2 of Basel 2.

The Financial Stability Forum (FSF), working closely with other relevant international bodies, should ensure coherent global supervisory practice between the various colleges and promote best practice.

IV. MACROECONOMIC SURVEILLANCE AND CRISIS PREVENTION

239) As has been described in chapter 1 of this report, international macroeconomic developments and global imbalances have played a major role in leading to the current crisis. While many were observing the emergence of at least some of these developments and imbalances, only few rang the alarm bells. While the lack of relevant aggregate data of a reliable nature admittedly rendered any such warnings less precise and thus less effective, this is no excuse for the fact that, where concerns were actually voiced, corrective action has been totally inadequate. Macroeconomic surveillance therefore needs to be significantly improved and needs to get more teeth.

240) The experience of the last few years has highlighted the importance of establishing a more robust macroeconomic framework for the global economy. To this end, the surveillance of macroeconomic policies, exchange rates and global imbalances needs to be reinforced. Central banks, on their side, should more closely monitor the growth in monetary and credit aggregates.

241) Beyond the strengthening of the IMF's existing macroeconomic surveillance mechanisms one of the priorities in crisis prevention should be the strengthening of international early warning mechanisms building on the swift identification of systemic vulnerabilities. A comprehensive early warning system, jointly run by the IMF and the FSF, could build on the existing analytical framework for bilateral and multilateral macroeconomic surveillance, but would have to give greater emphasis to macro-prudential concerns. The existing financial reviews are not designed to provide an assessment on macro-prudential risks or vulnerabilities ahead of crises. Drawing the lessons from the past, it will moreover be important to ensure that any effective early warning system is able to deliver clear and unambiguous messages to policymakers and recommend pre-emptive policy responses. The key failure in the past was not so much a lack of surveillance, although the messages emerging from the surveillance could have been sharpened, but a lack of policy action. Thus, the follow-up to any such financial system assessments needs to be strengthened significantly.

242) A comprehensive early warning system could also usefully be complemented by the creation of an international risk map and an international credit register. The purpose of such a risk map would be to build up a common data base containing relevant information on risk exposures of financial institutions and markets, both at the national and the international level. The

risk map should contain all the information needed for identifying systemic risks on a global scale. Clearly, in order to be effective, the risk map should go beyond the banking sector and include major other financial institutions like insurance companies and hedge funds. It should also include all major financial products. Subject to suitable rules for protecting confidentiality of firm-level data, such a risk map would close the information gap revealed in the current crisis and could become an essential tool for everybody interested in assessing risks to financial stability.

243) An international credit register could be instrumental when preparing, on a regular basis, a global financial risk map. Such a credit register, to be set up by the BIS in cooperation with other relevant bodies like national central banks and the IMF, would consist of a database compiling a coherent set of interbank and customer-specific credit data (above a certain threshold and collected at regular intervals) for the major creditors. It would therefore allow to better assess the risk exposure of key financial players. Complementing existing national credit registers, an international credit register, accompanied by a comparable securities register, would be a useful tool for all bodies concerned about assessing risks to financial stability - provided this can be achieved without excessive bureaucracy.

244) The International Monetary Fund (IMF) is in principle uniquely placed for playing an over-arching role in ensuring high-quality macroeconomic and macro-prudential surveillance even if it may need to further deepen its analysis of financial market developments. The IMF has already, in collaboration with the FSF, undertaken substantial work on setting up an early warning system (including a possible early warning list) and on procedures for a future Early Warning Exercise (EWE). The purpose of such a EWE should be to increase peer pressure in order to trigger timely corrective action. The IMF, in cooperation notably with central banks, would also seem to be the international institution best suited for preparing a global risk map.

245) In addition, the IMF/World Bank Financial Sector Assessment Programmes (FSAP) should in the future become compulsory for all IMF member countries, based on a fixed schedule particularly for systemically important countries. It should be at the same level as macroeconomic surveillance and be fully integrated into the Art. IV consultation process. Furthermore, the FSAP results should be published and countries should be obliged to set out their reasons for not following IMF recommendations, similar to the "comply or explain" procedure now used in the EU's level 3 committees.

246) When reinforcing global early warning mechanisms concerning risks to financial stability, close cooperation between the IMF with its expertise in macro-prudential matters, the FSF and the BIS/Basel Committee with their knowledge of micro-prudential supervision will be required. These different tasks and warnings would be regularly reported to the IMFC or to the IMF Council as suggested above. Moreover, in order to build up an international credit risk map and credit register, market participants and national regulators will need to be involved.

247) However, allowing the IMF to play its full role in addressing global macroeconomic imbalances and in promoting financial stability will require a strong political will to accept its independent professional advice. Too often in the past, the IMF was hindered by the (large) member countries concerned either from undertaking the

necessary analysis, (e.g., Financial Sector Assessment Programme, FSAP) or from voicing publicly its concerns. It is therefore particularly important that the IMF reinforces its surveillance over systemically important countries in an even-handed manner and that member countries increase their commitment to implementing the IMF's precise policy recommendations. Even acknowledging that there may always remain legitimate intellectual disagreements, the objective must be to effectively address domestic policies in systemically important member countries of the IMF which present a serious risk to the stability of the international economic and financial system. The IMF's recommendations - discussed and endorsed by the IMFC ^V should therefore become internationally shared macroeconomic policy objectives. In this context, the IMF could also usefully resume its multilateral consultations with key member countries.

248) As the experience of the last few years has demonstrated, analysis alone is not enough. Corrective action is required. Although a high-level ex ante political commitment to the implementation of IMF recommendations would help, more ambitious steps should be taken. In particular, when thrashing out the early warning system, thought should be given to the possibility of identifying "danger zones" for key variables, the entry of which would be to trigger the presumption of the need for intervention, thus reversing the "burden of proof".

Recommendation 27: The Group recommends that the IMF, in close cooperation with other interested bodies, notably the FSF, the BIS, central banks and the European Systemic Risk Council (ESRC), is put in charge of developing and operating a financial stability early warning system, accompanied by an international risk map and credit register.

The early warning system should aim to deliver clear messages to policy makers and to recommend pre-emptive policy responses, possibly triggered by pre-defined "danger zones".

All IMF member countries should commit themselves to support the IMF in undertaking its independent analysis (incl. the Financial Sector Assessment Programme). Member countries should publicly provide reasons whenever they do not follow these recommendations.

The IMFC/Council should receive a report, one or twice a year, on this matter.

249) Any efforts to reduce the risks to financial stability are in danger of being undermined by systemically relevant jurisdictions that refuse to use internationally agreed standards. The international community therefore has to deal with jurisdictions that have weak regulatory and governance standards, lack transparency or are not cooperating in exchanging information, like certain offshore financial centres. Leaving aside money laundering and tax issues, and focusing only on financial regulation, offshore financial centres can pose a risk to financial stability and also create a substantial level playing field problem: registration of financial institutions can be weak; initial capital requirements (for services to non-residents) are low; and supervision substandard or even inexistent.

250) In order to correct the associated risks to the global financial system, different measures have been proposed. These range from added financial statement disclosure rules (requiring the disclosure of off-balance sheet structures on a jurisdiction by jurisdiction basis in a separate annex to the financial statement, accompanied by a risk statement for assets held in poorly regulated, and in some cases, "uncooperative" financial centres) to more far-reaching rules prohibiting regulated financial institutions from transacting with entities located in these jurisdictions.

251) Without judging the merits of these proposals at this time, which should be examined in more detail, the Group considers that, already today, group supervisors have the possibility of increasing capital requirements for those financial institutions that take higher risks by holding assets in poorly regulated financial centres or where supervisors feel hindered in getting pertinent information. Where necessary, these existing powers should be used to the full.

252) The effectiveness of these arrangements should be monitored on a regular basis under the auspices of the IMF. More generally, a transparent evaluation and benchmarking process should be set up by the IMF and the FSF, in cooperation with the World Bank, the Financial Action Task Force (FATF) and the OECD, in order to regularly assess the regulatory framework in off-shore centres and other financial centres, the results of which would be made public.

Recommendation 28: The Group recommends intensifying co-ordinated efforts to encourage currently poorly regulated or "uncooperative" jurisdictions to adhere to the highest level international standards and to exchange information among supervisors.

In any event, in order to account for the increased risks, group supervisors should increase capital requirements for those financial institutions investing in or doing business with poorly regulated or supervised financial centres whenever they are not satisfied by the due diligence performed or where they are unable to obtain or exchange pertinent information from supervisors in these offshore jurisdictions.

The IMF and the FSF, in cooperation with other relevant international bodies, should assess the existing regulatory standards in financial centres, monitor the effectiveness of existing mechanisms of enforcing international standards and recommend more restrictive measures where the existing applied standards are considered to be insufficient.

V. CRISIS MANAGEMENT AND RESOLUTION

253) Even improved crisis prevention will not completely avoid crises from happening. However, the current crisis has revealed a lack of effective crisis management and coordination framework at the international level. There are no clear multilateral arrangements for coordinating national responses to financial crises. Furthermore, the difficulties in separating liquidity from solvency crises have again become apparent.

254) The experiences of the last twelve month have demonstrated the need for close coordination between supervisory, monetary and fiscal authorities. Effective information sharing and close cooperation are essential not only for efficient crisis

management, but they are also indispensable for avoiding negative spillovers, distortions to competition and regulatory arbitrage.

255) In this context, strengthening the IMF's capacity to support countries facing balance of payment problems in a financial crisis is critical. The Fund currently has insufficient resources for assisting its members. EU Member States should therefore show their readiness to contribute to increasing IMF resources.

Recommendation 29: The Group recommends that EU Member States should show their support for strengthening the role of the IMF in macroeconomic surveillance and to contribute towards increasing the IMF's resources in order to strengthen its capacity to support member countries facing acute financial or balance of payment distress.

VI. EUROPEAN GOVERNANCE AT THE INTERNATIONAL LEVEL

256) While the European Union is one of the key international players, its representation in international organisations and other international bodies is fragmented and lacks coherence and continuity. In some cases, the EU's representation is incomplete (e.g. the FSF or G20 at Ministerial level), while in other cases the EU as a whole - i.e., including its Member States - is even perceived as being over-represented, to the detriment of emerging market economies. This weakens the possibility of the EU speaking with a single voice, and it is something that is also increasingly criticised by the EU's international partners. It is therefore essential to organise a coherent European representation in the new global economic and financial architecture. In the context of a more ambitious institutional (and quota) reform of the IMF, this could imply rearranging constituencies and reducing the number of Executive Board members for the EU to not more than two. A similar consolidation of the EU's representation should be installed for other multilateral fora. Recommendation 30: The Group recommends that a coherent EU representation in the new global economic and financial architecture be organised. In the context of a more ambitious institutional reform, this could imply a consolidation of the EU's representation in the IMF and other multilateral fora.

VII. DEEPENING THE EU'S BILATERAL FINANCIAL RELATIONS

[Para 257 omitted here]

Recommendation 31: In its bilateral relations, the EU should intensify its financial regulatory dialogue with key partners.

This report sets out the regulatory, supervisory and global reforms that the Group considers are needed. Work must begin immediately.

INTERNATIONAL MONETARY FUND
GLOBAL FINANCIAL STABILITY REPORT, 2015
Navigating Monetary Policy Challenges and Managing Risks

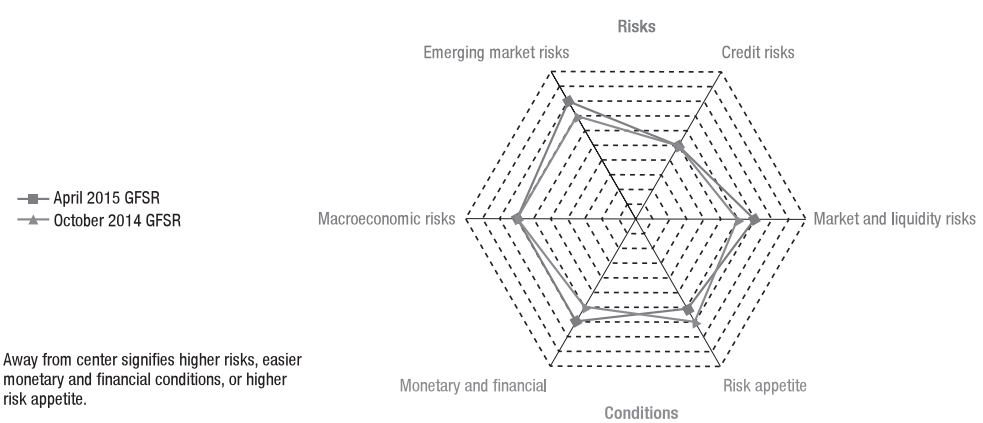
CHAPTER 1
ENHANCING POLICY TRACTION AND REDUCING RISKS

Financial Stability Overview

Developments over the past six months have increased global financial stability risks. Risks have also rotated from advanced economies to emerging markets, from banks to shadow banks, and from solvency to market liquidity risks. The global financial system is being buffeted by a series of changes in financial markets, reflecting diverging growth patterns and monetary policies as global growth prospects have weakened. Disinflationary forces have strengthened as oil and commodity prices have dropped. Although the latter has benefited commodity- and oil-importing countries and increased the room to maneuver for monetary policy in countries with higher inflation, it has increased financial risks in some exporting countries and in the oil sector. As a result of these developments, inflation expectations and long-term bond yields have fallen. Bold monetary policy actions have been taken in both the euro area and Japan to arrest and reverse this disinflation pressure, while the pull of expectations for rising U.S. policy rates and the push of additional monetary stimulus by other major economies have sparked rapid appreciation of the U.S. dollar. Emerging markets are caught in these global crosscurrents and face higher financial stability risks, as companies that borrowed heavily on international markets could face balance sheet strains. Additional policy measures are needed to enhance the effectiveness of monetary policies, address crisis legacies, and facilitate sustainable economic risk taking while containing financial excesses across global markets.

Financial stability risks have increased since the October 2014 *Global Financial Stability Report* and are reflected in the Global Financial Stability Map (Figure 1.1) and in its components (Figure 1.2). As discussed in the April 2015 *World Economic Outlook* (WEO), the distribution of risks to global growth is now more balanced, but still tilted to the downside. Weaker inflation and greater uncertainty are weighing on the macroeconomic outlook. But these forces are broadly offset by favorable developments in high-frequency indicators, reflecting the expected benefits of lower oil prices and additional monetary accommodation, leaving *macroeconomic* risks broadly unchanged since October.

Figure 1.1. Global Financial Stability Map: Risks and Conditions

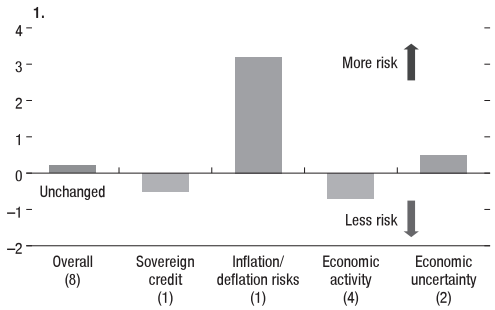


Away from center signifies higher risks, easier monetary and financial conditions, or higher risk appetite.

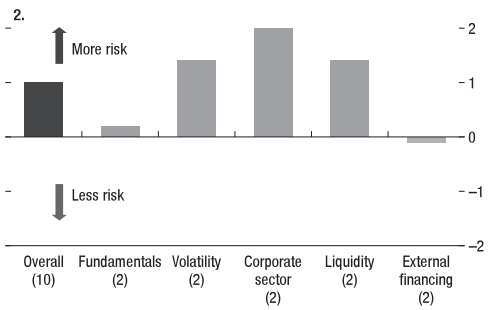
Source: IMF staff estimates.
Note: GFSR = *Global Financial Stability Report.*

Figure 1.2. Global Financial Stability Map: Components of Risks and Conditions
(Notch changes since the October 2014 Global Financial Stability Report*)*

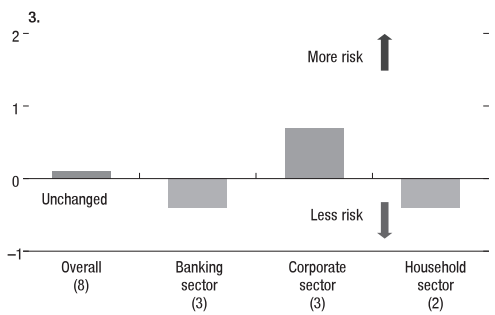
Macroeconomic risks are unchanged, as improved economic activity offsets weaker inflation and greater uncertainty.



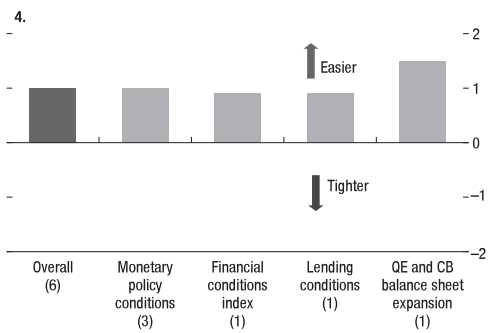
Emerging market risks have increased, driven by elevated volatility and worsening corporate sector and liquidity risks.



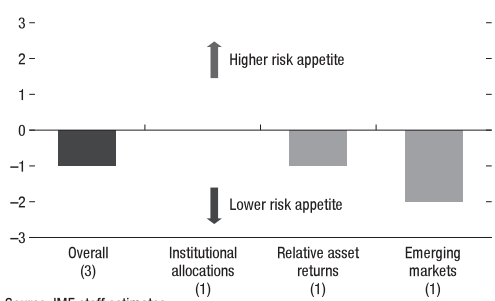
Credit risks are unchanged, as worsening in corporate sector is offset by improvements in banking and household indicators.



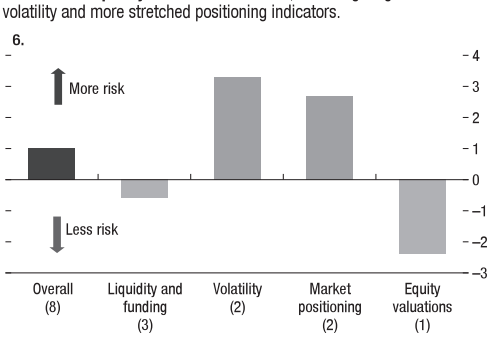
Monetary and financial conditions have been accommodative, with lending conditions easing.



Risk appetite has declined, reflecting lower relative asset returns and rapid outflows from emerging markets.



Market and liquidity risks have increased, reflecting heightened volatility and more stretched positioning indicators.



Source: IMF staff estimates.
Note: Changes in risks and conditions are based on a range of indicators, complemented with IMF staff judgment (see Annex 1.1 in the April 2010 *Global Financial Stability Report* and Dattels and others (2010) for a description of the methodology underlying the Global Financial Stability Map). Overall notch changes are the simple average of notch changes in individual indicators. The number below each legend indicates the number of individual indicators within each subcategory of risks and conditions. For lending conditions, positive values represent slower pace of tightening or faster easing. CB = central bank; QE = quantitative easing.

The U.S. economy is expanding, with rising employment and an improving investment outlook, as economic risk taking has taken hold. U.S. monetary authorities have clearly communicated that a process of monetary normalization could begin this year with an increase in policy rates. The bad news is that lower growth prospects elsewhere, relative to October 2014, and disinflationary forces have continued to exert a strong influence on the global economy. The number of countries with low or negative rates of headline inflation, and their share of global output, increased significantly through 2014 (Figure 1.3, panels 1 and 2). Falling commodity prices, particularly oil prices, amplified this disinflation pressure, and the inflation rate in many advanced economies fell below inflation objectives. More emerging market economies than advanced economies have headline inflation above their inflation goals, although many major Asian economies are at their inflation cycle lows (Figure 1.3, panels 3 and 4).

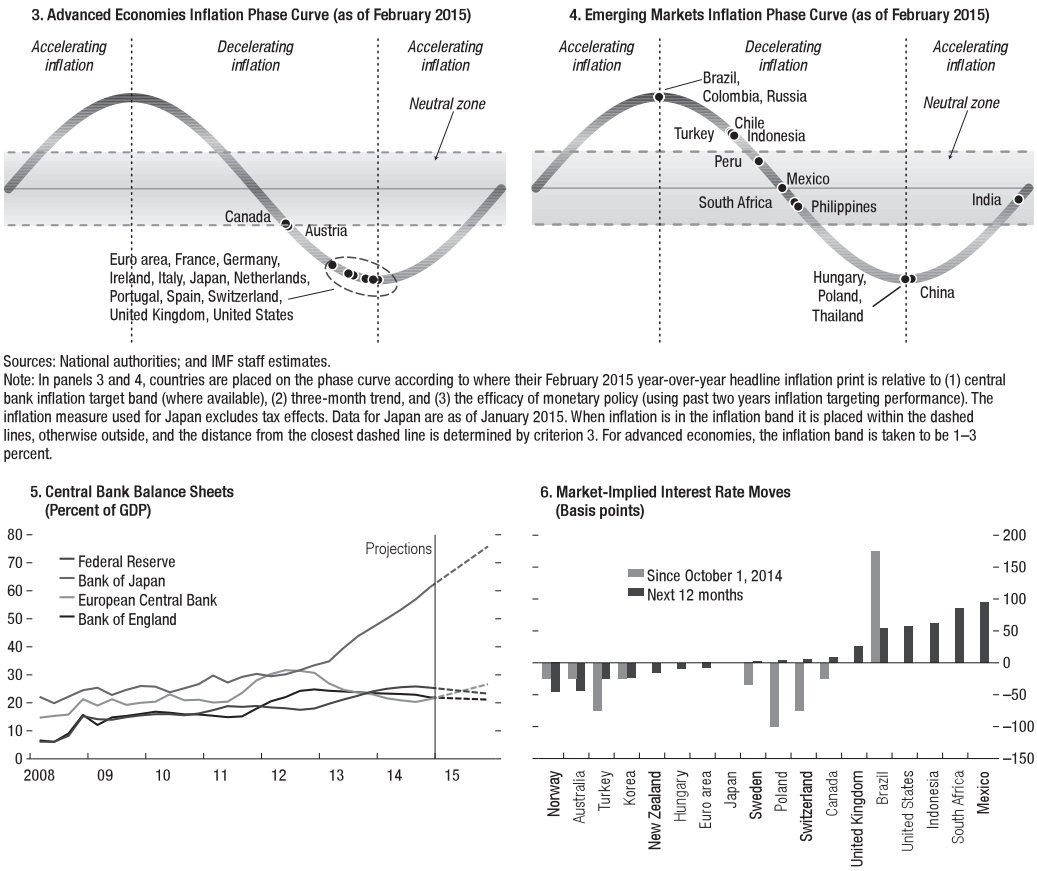
Central banks have responded to increased downward risks to price stability. Since October, the Bank of Japan (BOJ) and the European Central Bank (ECB) have announced bold new monetary measures designed to ward off deflation pressure and move their economies closer to their inflation objectives (Figure 1.3, panel 5). Other central banks have cut rates or loosened their monetary policy stances, and markets are generally pricing in lower policy rates by the end of 2015 for a number of countries (Figure 1.3, panel 6). The policy easing has offset modestly tighter real interest rates and thus loosened *monetary and financial conditions* overall. This report examines some of the financial channels through which quantitative easing (QE) works-and how to maximize its benefits while mitigating the risks to financial stability.

Emerging market financial stability risks have increased. The easing of inflation pressure is benefiting many emerging market economies, giving them monetary policy space to combat slowing growth. However, recent global shocks-including higher political risks- leave several emerging market economies more vulnerable. Oil and commodity price declines have hurt commodity exporters and sectors faced with overcapacity, while companies that borrowed heavily on international markets face balance sheet strains from revalued foreign currency liabilities. In China, the disinflationary force of property price declines could strain bank and shadow bank balance sheets and spill over more broadly. ... Reflecting the challenges facing emerging markets, *risk appetite* is lower as currency volatility and adjustments have prompted a pullback of capital flows by foreign investors. Lower allocations of global funds to risky assets and lower excess returns also point to slightly lower risk appetite compared to October, although appetite remains above its historical average.

Credit risks are broadly unchanged. Although the macroeconomic benefits of lower energy prices should have a favorable impact on household balance sheets, the immediate credit impact of oil and commodity price declines on firms in the energy sector is negative. ...

These developments have created various tensions in global financial markets, raising *market and liquidity risks.* Asynchronous monetary policies have led to a sharp increase in volatility in foreign exchange markets amid a rapid appreciation of the U.S. dollar. Despite the prospect of gradual U.S. policy rate tightening, longer-term U.S. bond yields and term premiums remain compressed as the ECB and BOJ ramp up their asset purchases. Asset valuations remain elevated relative to the past 10 years as monetary policies continue to exert downward pressure on spreads (Figure 1.4, panel 1 not included here). ... Market volatility (Figure 1.2, panel 6) has increased across the asset

Figure 1.3. Panel 3, 4, 5 and 6.



Sources: National authorities; and IMF staff estimates.
Note: In panels 3 and 4, countries are placed on the phase curve according to where their February 2015 year-over-year headline inflation print is relative to (1) central bank inflation target band (where available), (2) three-month trend, and (3) the efficacy of monetary policy (using past two years inflation targeting performance). The inflation measure used for Japan excludes tax effects. Data for Japan are as of January 2015. When inflation is in the inflation band it is placed within the dashed lines, otherwise outside, and the distance from the closest dashed line is determined by criterion 3. For advanced economies, the inflation band is taken to be 1–3 percent.

Sources: Bloomberg, L.P.; and IMF staff estimates.

Sources: Bloomberg, L.P.; and IMF staff estimates.

spectrum, rising from the record lows at the time of the October 2014 *Global Financial Stability Report* (Figure 1.4, panel 2) [not included here].

This report takes a closer look at recent challenges to the global economy and central banks' policy responses to these challenges. The report discusses how to maximize the effectiveness of these accommodative monetary policies while minimizing the financial stability side effects, with a particular focus on QE. [Figure 1.3 Panels 1 and 2 omitted here.]

Box 1.1. The Oil Price Fallout-Spillovers and Implications for the Financial Sector

The recent steep decline in oil prices reflects to a significant extent supply factors, providing a net benefit to the global economy. Nevertheless, the speed and magnitude of the movement in oil prices raise questions about how stress can be transmitted through the financial sector. This box addresses several channels through which lower oil prices could spawn financial vulnerabilities: a self-reinforcing cycle of rising credit risk and deteriorating refinancing conditions for countries and companies, a decline in oil surplus recycling in world funding markets, and strains on the financial market infrastructure's ability to accommodate prolonged heightened energy price volatility.

Background: As one of the steepest on record (Figure 1.1.1, panel 1), the recent decline in oil prices appears to reflect supply factors, a net benefit to the global economy over the medium term.[1] Nevertheless, the speed and magnitude of the movement in oil prices may produce financial strains in selected areas as markets adjust to a new pricing environment. This box discusses three channels through which such an adjustment could potentially contribute to an increase in market volatility.

Amplification of credit risk: Countries and companies dependent on oil revenues have already been significantly repriced by investors since summer 2014, as reflected in bond spreads, equity prices, and currency movements (Figure 1.1.1, panel 2). ... These effects include refinancing risk for energy-producing sovereigns and firms, and the reduction in bank funding lines to energy companies in response to breaches in lending covenants.

Country refinancing risk: Fiscal breakeven prices vary widely across oil-producing countries in emerging markets, from $54 a barrel for Kuwait to as much as $184 a barrel for Libya. Barring spending cuts, new sources of revenue, or tapping fiscal buffers, the loss in oil revenue will require new sources of financing. U.S. dollar-based bond spreads for emerging market oil-exporting countries have already doubled since summer 2014, which suggests that refinancing conditions are now more problematic. Local currency depreciation may also put upward pressure on inflation where domestic inflation expectations are not well anchored, further raising the risk premium on sovereign debt.

Corporate refinancing in the energy sector: Scaled-back energy sector exposure by banks and corporate bond investors could amplify strains associated with falling revenue and higher funding costs. Historically, corporate defaults in the energy sector have tended to pick up in response to falling oil prices, with a lag of about 12 months, (Fitch 2015b) likely reflecting a typical one-year hedging horizon by producers. Since the downdraft in oil prices did not begin to accelerate until September 2014 (at which point Brent and West Texas Intermediate prices were still higher than $100 a barrel), aftershocks for the corporate sector may not yet have fully filtered through.

The outstanding worldwide notional value of bank loans and corporate debt extended to the energy sector amounts to about $3 trillion,[2] $247 billion of which is attributable to the U.S. high-yield bond market alone (Fitch 2015a) ... The majority of global systemically important banks have about 2 to 4 percent of their total loan book exposures devoted to the energy sector.[3] Available data suggest that there are higher exposures by selected banks in emerging markets and among some U.S. regional banks (although firm estimates are difficult to determine). A prolonged period of low oil prices will jeopardize the debt-servicing capacity of exploration and production firms that have high cost bases.

Oil surpluses and global liquidity: Foreign exchange reserves accumulated by net oil-exporting countries have increased $1.1 trillion, or almost fivefold, over the past decade. Accounting for about 15 percent of the cumulative rise in world foreign exchange reserves since 2004, these funds have been an important source [Figure 1.1.1 Omitted here] of funding for the global banking sector and capital markets more broadly. Deposits from oil-exporting countries in Bank for International Settlements- reporting banks have doubled to $972 billion since 2004, and this group of countries (private and public sector) now holds more than $2 trillion in U.S. assets spread across equities ($1.3 trillion), Treasuries ($580 billion), credit ($230 billion), and agency debt ($21 billion).[5] Following the $88 billion contraction in oil-exporter reserves in 2014, sensitivity analyses point to further significant declines in 2015 if oil prices follow the path implied by futures markets. In principle, the decline in investable oil surpluses is part of global rebalancing and ought to be counterbalanced-at least to some extent-by wealth gains on the part of oil importers. But such redistribution between agents with potentially varying savings and portfolio preferences may also have market repercussions, particularly if the pace of adjustment creates market dislocations.

Strains on financial infrastructure: Oil and other commodity markets have attracted much greater focus from the institutional investment community over the past decade. For example, noncommercial (that is, speculative) investors held about 45 percent of West Texas Intermediate futures contracts in 2014, about triple the level held during the 1990s. Banks have also retreated from their market-making and structuring roles in energy markets, with a shift in trading activity to centrally cleared contracts (as desired by regulators) and physical commodity trading houses. With such major changes in market structure, questions have been raised as to whether an additional wave of selling pressure might destabilize markets. There has already been substantial selling-net investment exposure is nearly what it was at its peak in early 2014 and mutual fund data suggest that U.S. high-yield bond funds are already underweight in energy compared with the benchmark. Assets under management in commodity funds, combined with commodity-linked exchange-traded products, are nearly half their 2010 peak. Implied volatility (a measure of insurance value) has increased, but only to levels recorded in 2011-12 and well shy of levels reached in 2008. On balance, few indicators point to severe dislocations in oil markets. Commodity exchanges have a long history of managing counterparty risk during heightened volatility (through changes in margining requirements and circuit breakers). Nevertheless, financial intermediaries should remain on the alert for threats to efficient market functioning.

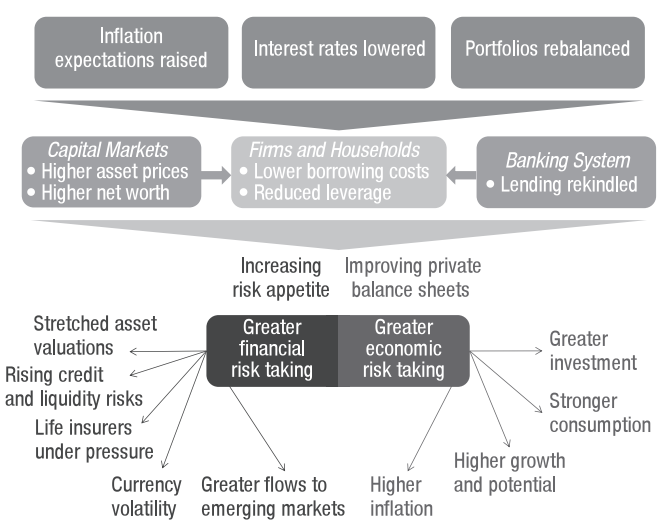
The authors of this box are Bradley Jones, Gabriel Presciuttini, Peter Breuer, Peter Lindner, Tsuyoshi Sasaki, and Fabio Cortes.

1. See the April 2015 World Economic Outlook.
2. Bank for International Settlements (BIS), Dealogic.
3. Bernstein Research; Bloomberg, L.P., industry reports; and IMF staff.
5. We concentrate here on assets held in U.S. dollars given this is the currency in which oil revenues are denominated.

In principle, QE can durably boost inflation and growth through several key transmission channels (Figure 1.5). First, the QE program itself-and an associated commitment to a significant expansion of the central bank's balance sheet-should help raise *expectations* of higher inflation and build confidence in the economy. Second, central bank purchases of government bonds will *lower risk-free interest rates* in the economy, which has a direct impact on real interest rates and triggers various transmission channels to real activity (see also Draghi 2015 and Box 1 in ECB 2015).1 Among these transmission channels, investors selling government bonds will seek to *rebalance portfolios* toward other higher-yield assets; higher asset prices and lower risk-free rates will drive down borrowing costs in capital markets. This should, in turn, help rekindle *bank lending* as banks pass on lower funding costs by reducing interest rates on their loans. These channels, in combination, will also lead to a depreciation of the exchange rate, particularly if there is a strong rebalancing toward foreign assets, lifting inflation and boosting competitiveness. QE should then lead to greater economic risk taking, with firms investing more and households increasing their consumption. This should also help improve the financial position of households and firms as a stronger economy and increased asset values help improve balance sheet health.

QE is appropriate for addressing disinflationary pressures in the euro area and Japan, and some of the key transmission channels are already working. Financial markets have responded swiftly and positively, appreciably lowering sovereign and private borrowing costs and weakening currencies. This has helped to significantly reduce fragmentation and lift demand for loans in the euro area. Inflation expectations have improved, and strong gains in equity markets underscore further progress through portfolio rebalancing channels, laying the basis for positive wealth effects.

Figure 1.5. Quantitative Easing Impact Channels



Source: IMF staff.

However, to maximize the benefits of QE in boosting real activity through higher credit growth, additional measures are needed to restore balance sheet health in the private sector, particularly policies aimed at comprehensively tackling the burden of nonperforming assets in the euro area. Moreover, steps should be taken to mitigate some of the challenges that arise with QE. By design, QE encourages greater financial risk taking, yet monitoring and eventually addressing any ensuing financial excesses and other undesirable financial side effects is necessary. Although a *wealth effect* is a benefit of increased asset prices, there is also a risk of stretched asset prices. Lower interest rates also place strains on the profitability of financial institutions that derive interest income by exploiting the slope of the yield curve. Life insurers with guaranteed payouts on their liabilities are at particular risk in a low-interest-rate environment. Low interest rates may also lead to a search for yield by investors, prompting them to take on greater credit and liquidity risks to generate more income. A sharp depreciation of the domestic exchange rate from significant portfolio rebalancing into foreign assets could increase volatility in currency markets.

This report examines the risk landscape as the BOJ and ECB augment their expanded asset purchase programs while the Federal Reserve is expected to start gradually raising policy rates. A key message of this report is that additional policy measures are required to enhance the effectiveness of accommodative central bank policies. These measures are needed to facilitate sustainable economic risk taking, contain the resulting financial excesses, address crisis legacies, and engineer a successful exit from the global financial crisis.

Macroeconomic Versus Balance Sheet Deleveraging: What Is in the Mix?

Accommodative monetary policies in advanced economies have helped reduce private nonfinancial debt ratios by supporting inflation and growth and increasing asset prices. Balance sheet deleveraging through CHAPTER 1 EnhancIng polIcy tractIon and rEducIng rIsks debt repayment and write-offs has reduced debt levels in a number of euro area countries, while macroeconomic deleveraging through growth and inflation has played a larger role in the United Kingdom and the United States. But private sector leverage remains elevated in many economies. Looking forward, expected growth and inflation under existing monetary policies will likely be insufficient to reduce debt levels significantly. A more complete set of policy actions is required to complement accommodative monetary policies and address the debt overhang in the private sector.

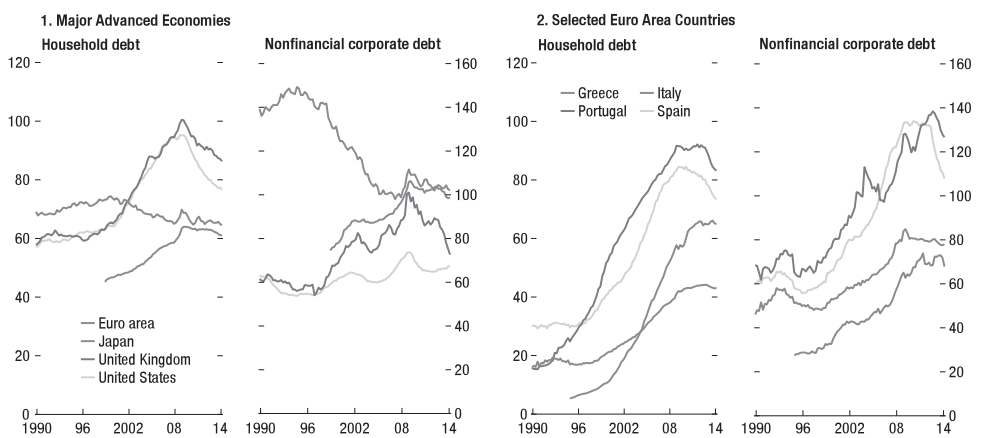
In the years leading up to the global financial crisis, the private sector in many advanced economies, including in the euro area, the United Kingdom, and the United States, increased leverage on the strength of rising growth expectations and favorable financial conditions (Figure 1.6). The crisis exposed the fragil ity of this credit-driven growth model and the risks to growth associated with high debt. In particular, high private debt levels raise the sensitivity of borrowers to adverse shocks, reduce profitability, and put upward pressure on nonperforming loans and corporate bankruptcies, increasing risks to bank asset quality and broader financial stability.[1] Furthermore, when highly indebted private agents are unable to benefit from lower funding rates to increase their borrowing, high debt also undermines monetary policy transmis sion mechanisms. This hampers private balance sheet cleanup and economic recovery, as is discussed in the section "Disinflationary Risk and Financial Stability". In countries where private balance sheets remain over extended, debt reduction necessary to reduce financial stability risks, but debt reduction must be handled in a way that is

1. High debt can impede growth, which in turn can undermine financial stability. Studies have shown that high debt is generally associated with low medium-term growth, although at different debt thresholds (see references in Chen and others 2015). Other studies have shown that high private sector leverage has been detrimental to postcrisis economic performance (see Bornhorst and Ruiz Arranz 2013; ECB 2012).

consistent with the recovery. The pace and composition of deleveraging have important macroeco nomic implications.

Major advanced economies have made mixed progress in deleveraging private nonfinancial sector balance sheets. Households-especially in the United Kingdom and the United States-have sharply reduced their gross debt as a share of GDP, but gross household debt is still high in many countries. Although leverage among nonfinancial firms is down from its peak in many advanced economies, the corporate sector in some euro area countries is still highly leveraged, in part because resolution of impaired assets has progressed slowly. In the United States, where corporate leverage is relatively low, companies have stepped up borrowing in recent years amid favorable financing conditions and increased financial risk taking.

Figure 1.6. Private Nonfinancial Sector Gross Debt
(Percent of GDP)



Sources: Bank for International Settlements; and IMF staff estimates.

Sources: Bank for International Settlements; and IMF staff estimates.

What factors have contributed to deleveraging?

Reductions in gross debt ratios can come from two sources: macroeconomic deleveraging (through growth and inflation) and balance sheet deleveraging (through debt repayment and write-offs). Countries that have been able to generate higher growth and inflation have been able to minimize the need for balance sheet deleveraging and the associated credit contraction [Figure 1.7 is omitted here]. But the deleveraging process has varied substantially across countries.

Write-offs can play an important role in tackling high debt burdens where efficient debt resolution mechanisms are in place. In particular, the cleanup of impaired assets on balance sheets can contribute to private sector deleveraging as long as countries have efficient mechanisms for debt restructuring [Figure 1.8 omitted here]. These mechanisms may allow countries to limit the macroeconomic costs of debt restructuring and restart credit flows more rapidly. A key lesson from the crisis is that addressing weak balance sheets early on can improve the financial and economic responses to unconventional

monetary policies.

Asset price appreciation due to accommodative monetary policies (conventional and unconventional) can also contribute to deleveraging. The appreciation of household and corporate financial assets can help reduce the net financial debt of the private sector, even if gross debt remains unchanged. This is an important channel for policy, especially for countries in which central bank asset purchases have helped to lower the risk-free rate. Asset-side deleveraging has not operated much in the euro area so far, but it has played an important role in Japan, the United Kingdom, and the United States. Since 2007, the net financial debt of households and firms in these economies has declined by about 10 percentage points of GDP or more solely as a result of asset price gains (Tables 1.1 and 1.2, asset revaluation columns). In contrast, euro area countries such as France, Greece, Portugal, and Spain have not benefited as much from this channel so far.

How much more deleveraging could be achieved through unconventional monetary policies?

Macroeconomic deleveraging through 2020 could reduce corporate and household indebtedness, but in a number of economies it would not be sufficient to eliminate high debt loads. Although it is difficult to define a threshold for a safe level of debt, a number of major advanced economies whose debt increased sharply are still likely to have debt above their precrisis average.[2] For example, gross corporate debt in France, Italy, Portugal, and Spain would remain above or near 70 percent of GDP by 2020 under current World Economic Outlook projections for growth and inflation, higher than their precrisis averages and higher than those of other major advanced economies (Table 1.2; Figure 1.7, panel 4). Similarly, under current World Economic Outlook projections for growth and inflation, by 2020, gross household debt in Portugal and the United Kingdom would remain relatively high compared with that of other major advanced economies (Table 1.1).[3]

Policies to facilitate further private sector deleveraging

High private sector debt levels can continue to pose obstacles to growth and financial stability. Contributions may be needed from all three deleveraging sources: macro deleveraging (growth and inflation), balance sheet deleveraging (debt repayment and restructuring), and asset revaluation (for net indebtedness). A complete set of policies is necessary to return debt to safer levels:

* First, accommodative monetary policies (including QE) should help support private sector deleveraging, including by boosting asset prices and generating wealth effects. But these will likely not be sufficient if potential growth remains low. In such cases, countries need to enhance their longer-term growth potential through a comprehensive program of structural reforms.
* Second, debt restructuring and write-offs can improve the financial and economic response to unconventional monetary policies by unclogging the monetary transmission mechanism.
* Third, minimizing the negative impact of debt restructuring on the economy requires efficient legal and institutional mechanisms for the prompt cleanup of impaired assets.
* Finally, countries with high public debt must improve their fiscal frameworks, as highlighted in the April 2015 Fiscal Monitor. High debt and deleveraging in all three sectors (public, corporate, household) has been shown to be especially deleterious to growth (see Bornhorst and Ruiz Arranz 2013). Fiscal frameworks with better

2. High debt is generally associated with low medium-term growth (see Cecchetti, Mohanty, and Zampolli 2011; Kumar and Woo 2010; Baum, Checherita, and Rother 2013; Reinhart and Rogoff 2010), albeit at different thresholds (Chen and others 2015).

3. The projections for growth and inflation are based on the latest WEO forecasts and assume no new debt and no debt write-offs.

guidance on the medium-term objectives can provide more flexibility on the conduct of fiscal policy over the economic cycle.

Disinflationary Risks and Financial Stability Quantitative Easing in the Euro Area and Japan: What Are the Channels and Risks?

While the U.S. Federal Reserve is expected to start gradually raising policy rates, the euro area and Japan have recently embarked on further asset purchases (QE) to significantly strengthen their responses to persistent disinflationary pressures. Some key transmission channels of QE are already beginning to work. Financial markets have responded swiftly and positively, appreciably lowering sovereign and private borrowing costs and weakening currencies. To maximize the impact of QE, it is necessary to complement central bank actions with measures to restore balance sheet health in the private sector, including through expeditious debt write-downs and restructuring, enhance the soundness of nonbank institutional investors, and promote structural reforms. Failure to support current monetary policies will leave the economy vulnerable and risks tipping it into a downside scenario of increased deflation pressure, a still-indebted private sector, and stretched bank balance sheets. Finally, QE-by design-entails a continued low-interest-rate environment. While this should help the macro economy, it will pose severe challenges to institutional investors, particularly weak European life insurers, further weighing on their ability to rerisk their balance sheets in support of QE.

Central banks have embarked on further monetary easing in the euro area and Japan

In October 2014, amid weak demand and continuing downward price pressures, the BOJ introduced an expanded program of quantitative and qualitative easing (QQE2). The BOJ announced that it was accelerating the pace of Japanese government bond purchases from an annual pace of %50 trillion to about %80 trillion, and extending the average remaining maturity of government bond purchases to about 7 to 10 years. The BOJ's balance sheet is expected to exceed 70 percent of GDP by the end of 2015.

Figure 1.9. Quantitative Easing and Financial Markets

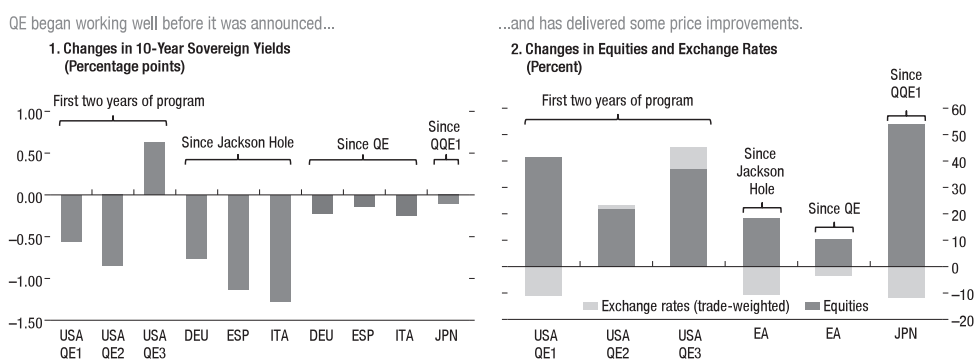


Table 1.1. Household Debt in the Euro Area, Japan, the United Kingdom, and the United States (Percent of GDP)

	Gross Debt		Net Financial Debt			Contributing Factors						Expected Deleveraging from Growth and inflation by 2020	Gross Debt	
	2007	2014	2007	2014	Change from 2007 (per centage points	Growth	(Infla-tion	Net Debt Issuance	Debt Write-Offs	Asset Accumu-lation	Asset Revalu-ation		2020 (with growth and inflation only	Precisis average (1999-2006)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Euro area														
Austria	51.9	50.5	-81.6	-83.4	-1.8	-2.1	-5.9	3.3	3.3	3.9	-4.2	7.6	43.0	47.7
France	45.5	55.6	-76.3	-71.9	4.4	-1.2	-3.8	13.2	0.9	-3.0	-1.7	8.4	47.1	37.4
Germany	61.2	54.4	-55.4	-56.7	-1.3	-2.7	-5.6	1.2	0.2	0.7	4.9	8.5	45.9	69.1
Greece	46.0	63.8	-89.3	-60.7	28.6	17.9	-0.9	-2.6	3.4	-44.2	55.1	14.2	49.5	23.5
Italy	38.2	42.8	-149.4	-151.4	-2.0	3.8	-4.0	5.3	-0.5	-9.6	2.9	4.8	38.0	27.4
Latvia	43.6	26.9	-4.0	-34.7	-30.6	4.6	-4.5	-12.1	-4.7	-20.4	6.5	7.5	19.5	29.4
Lithuania	26.5	22.0	-25.2	-39.4	-14.2	0.1	-4.8	1.4	-1.2	2.3	-11.9	6.2	15.8	14.4
Portugal	86.9	82.6	-53.7	-68.3	-14.6	7.0	-5.5	-4.9	-0.9	-15.6	5.2	12.2	70.4	69.2
Slovenia	24.5	28.6	-62.1	-58.3	3.9	1.2	-2.6	4.5	1.0	-24.7	24.5	4.6	24.1	17.6
Spain	81.1	72.0	-61.6	-77.5	-15.9	4.3	-2.5	-8.3	-2.7	-12.1	5.3	10.9	61.2	56.4
Japan	63.1	62.2	-143.3	-174.1	-30.8	-0.4	3.7	-3.2	-1.0	-28.7	-1.2	5.4	56.8	67.2
United Kingdom	96.2	87.1	-23.8	-34.9	-11.1	-2.9	-14.3	11.3	-3.2	18.5	-20.5	18.1	69.0	80.0
United States	95.5	76.9	-84.5	-118.2	-33.7	-6.1	-9.3	3.7	-7.0	13.0	-28.0	17.3	59.5	79.2

[Colour coding omitted here.]

Sources: Bank of Japan flow of funds; Eurostat financial accounts and consolidated debt statistics; Federal Reserve flow of funds; and IMF staff estimates.

Note: Figures for 2014 are preliminary and as of 2014:Q3. Gross debt includes securities and loans. Net financial debt is defined as gross debt minus financial assets in the forms of cash and deposits, debt security holdings, and equity and mutual fund shares. For euro area countries, debt figures are on a consolidated basis as of end-2013 (that is, netting out intrasectoral borrowing). Growth contribution is derived as $-g/(1+g+\pi+g\pi)$ times previous period debt ratio; inflation contribution is derived as $-\pi/(1+\pi)$ times previous period debt ratio in which π = growth rate of GDP deflator and g = real GDP growth rate. Net debt issuance and debt write-off contributions come from flow of funds. Debt write-offs reflect "other" changes in debt unexplained by flows and may also capture revaluation of marketable debt. Asset accumulation indicates changes in asset-to-GDP ratios, excluding asset revaluation effects, which come from flow of funds. Expected deleveraging estimates are based on latest *World Economic Outlook* projections of growth and inflation. For Latvia and Lithuania, the precrisis averages are from 2004 to 2006; for Slovenia the precrisis average is from 2001 to 2006.

Table 1.2. Corporate Debt in the Euro Area, Japan, the United Kingdom, and the United States (Percent of GDP)

	Gross Debt		Net Financial Debt			Contributing Factors						Expected Deleveraging from Growth and inflation by 2020	Gross Debt	
	2007	2014	2007	2014	Change from 2007 (per centage points	Growth	(Infla-tion	Net Debt Issuance	Debt Write-Offs	Asset Accumu-lation	Asset Revalu-ation		2020 (with growth and inflation only	Precisis average (1999-2006)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Euro area														
Austria	15.3	73.9	21.5	7.4	-14.1	-2.9	-8.6	9.4	0.8	-7.4	-5.3	11.1	62.9	75.1
France	69.1	84.4	-10.0	-3.7	6.4	-1.8	-5.6	20.0	2.7	-10.2	1.3	12.8	71.6	66.4
Germany	49.7	47.3	-20.5	-30.6	-10.1	-2.2	-4.7	4.7	-0.3	4.5	-12.1	7.4	39.9	51.2
Greece	55.9	63.0	23.3	22.5	-0.8	20.3	-1.6	11.2	-22.7	2.0	-10.0	14.1	49.0	44.9
Italy	71.5	76.7	23.2	26.0	2.7	7.0	-7.2	5.3	0.1	-7.7	5.2	8.6	68.1	58.1
Latvia	59.6	59.8	41.4	39.3	-2.1	4.2	-7.9	0.9	2.9	-5.5	3.3	16.6	43.2	53.1
Lithuania	48.1	35.5	30.4	-1.2	-31.6	0.8	-7.9	-2.9	-2.7	-4.9	-14.0	10.0	25.5	36.5
Portugal	98.2	108.5	62.7	66.0	3.3	8.7	-6.8	17.7	-9.3	-5.3	-1.7	16.0	92.5	86.2
Slovenia	71.8	69.4	46.1	50.1	4.0	4.0	-7.4	8.9	-7.8	-1.5	7.9	11.1	58.4	51.8
Spain	110.7	94.4	43.5	19.3	-24.1	6.2	-3.4	-10.0	-9.1	-7.7	-0.1	14.2	80.2	71.1
Japan	100.2	103.0	3.2	-22.9	-26.0	-0.6	6.1	-2.6	-0.1	-20.6	-8.2	9.0	94.1	113.9
United Kingdom	87.8	75.4	6.7	3.6	-3.1	-2.5	-13.7	-0.2	4.0	-1.7	10.9	15.7	59.7	79.2
United States	69.8	67.5	58.7	56.9	-1.8	-4.9	-7.2	11.1	-1.3	0.6	-0.1	15.2	52.3	63.3

[Colour coding omitted here.]

Sources: Bank of Japan flow of funds; Eurostat financial accounts and consolidated debt statistics; Federal Reserve flow of funds; and IMF staff estimates.

Note: Figures for 2014 are preliminary and as of 2014:Q3. Gross debt includes securities and loans. Net financial debt is defined as gross debt minus financial assets in the forms of cash and deposits, debt security holdings, and equity and mutual fund shares. For euro area countries, debt figures are on a consolidated basis as of end-2013 (that is, netting out intrasectoral borrowing). Growth contribution is derived as $-g/(1+g+\pi+g\pi)$ times previous period debt ratio; inflation contribution is derived as $-\pi/(1+\pi)$ times previous period debt ratio in which π = growth rate of GDP deflator and g = real GDP growth rate. Net debt issuance and debt write-off contributions come from flow of funds. Debt write-offs reflect "other" changes in debt unexplained by flows and may also capture revaluation of marketable debt. Asset accumulation indicates changes in asset-to-GDP ratios, excluding asset revaluation effects, which come from flow of funds. Expected deleveraging estimates are based on latest *World Economic Outlook* projections of growth and inflation. For Latvia and Lithuania, the precrisis averages are from 2004 to 2006; for Slovenia the precrisis average is from 2001 to 2006.

Similarly, the ECB increased its monthly asset purchases to ∈60 billion, after averaging about ∈12 billion under the existing asset-backed securities and covered bond purchase programs, to address the risks of persistently low inflation. This will result in a total program of about ∈1.1 trillion by September 2016 and will [Note to copy editor: All country name abbreviations may be given together only once at the outset and omitted in the footnotes to all charts, in order to save space]. largely be accommodated in sovereign markets, with a small portion also coming from European Union (EU) institutions. If fulfilled, QE will take the ECB's balance sheet from an estimated 22 percent to 31 percent of GDP, in line with the initial QE programs of the Federal Reserve and the BOJ, which each subsequently increased their programs to about 20 percent and 45 percent of respective GDP.

Although at different stages, QE programs in Japan and the euro area have already had a significant impact on financial markets. In the euro area, much of this was achieved in the wake of ECB President Draghi's speech at Jackson Hole in August 2014-a date widely taken as the trigger for QE. Ten-year sovereign yields in Germany, Italy, and Spain, among others, declined before the implementation of QE by as much as 10-year U.S. Treasury bonds did during the first two years of the Federal Reserve's QE programs (Figure 1.9, panel 1). Positive market impacts were reinforced following the official announcement of QE in January (Figure 1.9, panel 2). As of late March 2015, more than 30 percent (or ∈2.4 trillion) in short- and long-term euro area government bonds had negative yields. These improvements and associated positive ripple effects through credit markets have helped significantly to reduce fragmentation, improve credit conditions, and raise demand for loans. More-over, strong gains in equity markets in both Japan and the euro area underscore progress through the portfolio rebalancing channel, laying the basis for positive wealth effects. There has also been a positive impact on inflation expectations in the euro area, as measured by inflation swaps. In Japan, different measures of inflation expectations, which steadily rose until mid-2014, have fallen recently and converged to about 1 percent.

The ECB's QE program complements a broader set of measures to address tail risks and safeguard monetary transmission, for example, the lowering of policy rates to historic levels-including negative territory, in line with some other European countries. Progress toward banking union, including the Single Supervisory Mechanism, has helped strengthen the health of banks through enhanced and harmonized regulation and supervision.

A strong portfolio rebalancing channel will be key to the transmission of QE

A strong portfolio rebalancing channel is a key trans- mission channel for QE. Rebalancing could occur in three central ways. First, rebalancing lowers risk-free rates, which translates into lower funding costs. Second, rebalancing from sovereign bonds into more risky assets should reduce lending spreads and thus credit costs. However, this is most likely to benefit large com panies that have access to markets, with limited direct support for small and medium-sized enterprises. Third, there could be portfolio outflows from the economies engaging in QE, primarily to the United States, but also increasingly to emerging markets.

Institutional investors are key to the transmission of QE to the private sector in the euro area. European life insurers, which hold about 20 percent of EU government bonds, may have limited incentive to sell bond portfolios to the ECB, partly because of regulatory considerations, but also as a result of their weak balance sheets (as discussed later in this chapter).

In Japan, the government bond maturity extension under QQE2 is expected to lead to more portfolio rebalancing at life insurers and pension funds. Life insurers and pension funds are now the largest holders of Japanese government bonds

and are in a better position to rerisk their balance sheets, including toward higher-yielding securities.

Bank lending may take time to fully recover

In previous episodes of QE, bank credit has taken time to fully recover. Bank lending has accelerated only modestly in Japan and the United Kingdom since the launch of their QE programs (Figure 1.11, panel 1).[7] Even in the United States, where bank credit is now growing quickly, it took at least a year after the launch of its third QE program before lending started to pick up. Past experience suggests that bank lending in the euro area and Japan may pick up with a lag.

Furthermore, the ability and willingness of banks to supply more credit will depend on the business environment and regulatory conditions they are facing. Before the global financial crisis, banks were primarily concerned about meeting risk-weighted capital regulations. However banks now need to operate their businesses under a multidimensional set of regulatory and economic targets that they need to meet simultaneously, including regular supervisory stress testing and the new Total Loss-Absorbing Capacity requirement for global systemically important banks (Figure 1.11, panel 2)

Even if banks have the capacity to expand their loan portfolios, there is a risk that they may reallocate their portfolios toward more profitable strategies. Table 1.3 provides some stylistic examples of possible alternative investment choices. According to these estimates, banks may have incentives to invest in higher-yielding bonds, such as U.S. and emerging market sovereign bonds.

In the euro area, improving asset quality is important to boost bank lending

In the euro area, improving asset quality at some banks could further bolster bank credit. Asset quality continued to deteriorate in the euro area as a whole in 2014, although at a slowing pace, with total nonperforming loans now standing at more than €900 billion (Figure 1.12, panel 1). Furthermore, the stock of nonperforming loans in the euro area is unevenly distributed, with about two-thirds located in six euro area countries.[9] In Cyprus, Greece, Ireland, Italy, Portugal, and Slovenia, a majority, if not all, of the banks involved in the ECB's Asset Quality Review were found to have nonperforming assets of 10 percent or more of total exposure (Figure 1.12, panel 2). These bad assets are large relative to the size of the economy (Figure 1.12, panel 3), even net of provisions. Euro area banks have lagged the United States and Japan in the early 2000s in their write-offs of these bad assets, suggesting less active bad debt management and more limited improvement in corporate indebtedness.

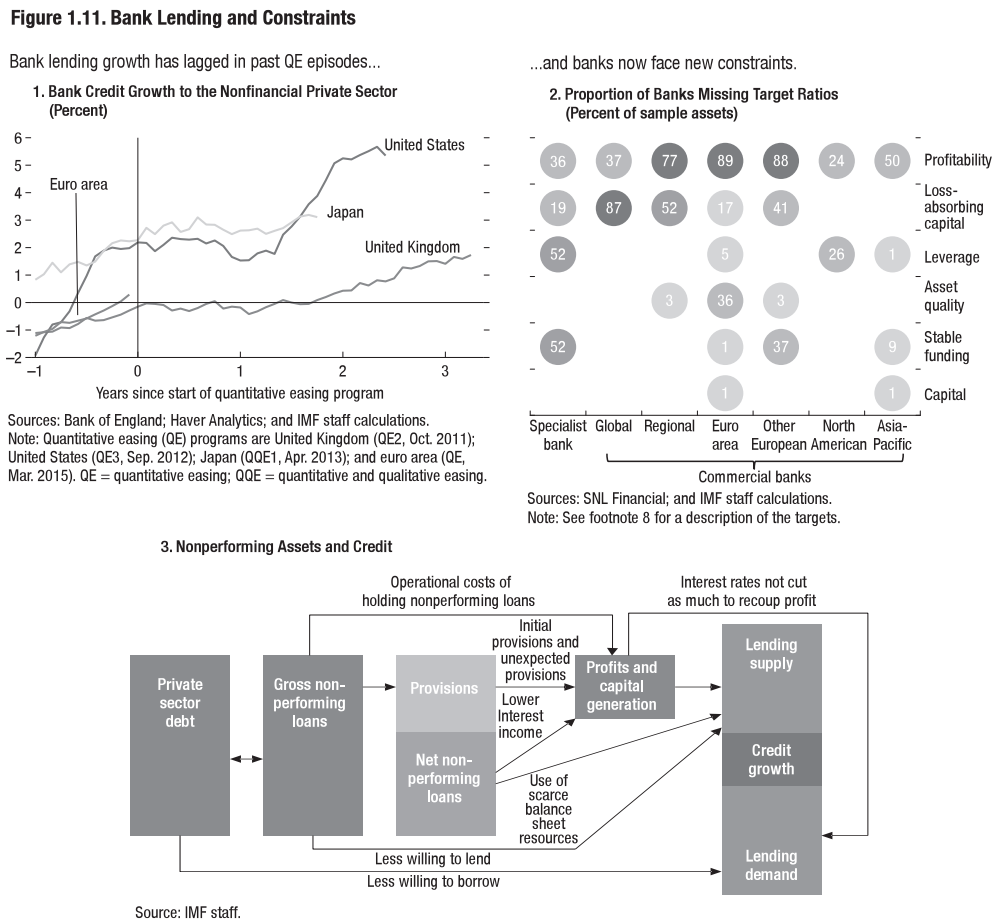
Nonperforming assets reduce banks' willingness and ability to supply credit (Figure 1.11, panel 3) in three key ways. First, nonperforming assets are a drag on profitability because they require provisioning and generate less interest income than performing assets (Figure 1.12, panel 4).[10] There are also operating costs to holding nonperforming assets on balance sheets (including administrative expenses, legal costs,

7. This, however, does not imply that there has been no impact on bank lending from QE. For example, Saito and Hogen (2014) find that a decrease in the interest rate risk at major Japanese banks under QQE1 has been associated with higher bank lending, after controlling for loan demand, interest rate spreads, and the nonperforming loan ratio.]

9. The stock of nonperforming loans in Cyprus, Greece, Ireland, Italy, Portugal, and Spain in total amounts to more than €600 billion.

10. Banks with large nonperforming loan portfolios may also face higher funding costs, although banks may seek to offset this by charging a higher interest rate on new loans.

Figure 1.11. Bank Lending



and maintenance of repossessed property). And even if banks appear adequately provisioned at a given point in time, additional provisioning may be needed over time if economic conditions do not improve. Second, nonperforming assets-net of provisions-use scarce resources on bank balance sheets. Net nonperforming assets need to be backed by capital. They are particularly costly for risk-weighted capital because net nonperforming loans on average have a significantly higher risk weight than do performing loans. Third, banks with high levels of nonperforming loans on their

balance sheets may be less willing to lend to borrowers with borderline credit quality. While many banks are chasing the same good-quality firms-often in competition with capital markets-other weaker companies are finding it more difficult to obtain loans.

As a result, banks with high levels of nonperforming assets may hamper the transmission of QE via banks. Figure 1.12, panel 4 shows that banks with a higher ratio of nonperforming loans have tended to lend less recently, even relative to average lending by banks in the same economy that have faced similar demand conditions. This negative relationship between bank lending and nonperforming loans was also illustrated in the April 2014 *Global Financial Stability Report.*

Policy actions are needed to support bank lending capacity

These observations suggest that policy actions are needed to further help bank lending in the euro area and Japan. This can be illustrated through a simulation, which is based on the assumption that necessary actions are not taken. The simulation is estimated using more than 100 banks in the euro area and about 80 banks in Japan.

... The results suggest that without corrective policy actions, outlined later in this chapter, median bank lending capacity could be limited to a meager 1 to 3 percent on average a year, though some individual institutions may be able to increase lending by more. For banks that have excess capital and are willing to run down their capital buffers, bank lending growth could be higher than suggested by these simulations.

Table 1.3. Reallocating Assets: Stylized Investment Choices (Percent)

	Sovereign Bond					Corporate Loan			SME Loan	
	DEU	ITA/ESP	JPN	USA	EM IG	DEU	ITA/ESP	JPN	DEU	ITA/ESP
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Investment Return	0.4	1.4	0.4	2.1	3.9	1.0	1.7	0.9	2.4	3.7
Foeign Exchange hedge	-	-	-	-0.3	-0.3	-	-	-	-	-
Credit Risk	-	-0.2	-	-	-0.2	-0.1	-0.3	-0.2	-0.5	-1.0
Operations	-	-	-	-	-0.1	-0.3	-0.3	-0.3	-0.4	-0.4
Pretax Return	0.4	1.2	0.4	1.9	3.3	0.6	1.1	0.4	1.5	2.3
Required Capital	3	3	3	3	5	6	6	8	10	10
Pretax Return on Required Capital	13	40	13	62	67	10	19	5	15	23

Sources: Bank of America Merrill Lynch; Bank of Japan; European Central Bank (ECB); and IMF staff estimates.

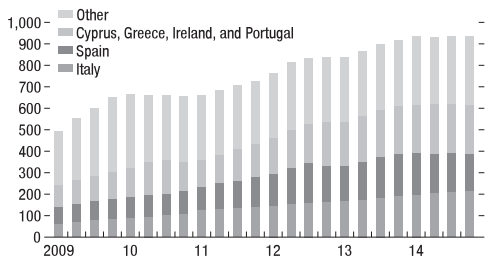
Note: Investment returns using current yields for 10-year sovereign bonds and an index of emerging market investment-grade sovereign bonds. Corporate loan rates proxied using broad bond indices for large European firms, ECB (interest rate on all new loans), and Bank of Japan (average contracted interest rate on new loans). SME loan rates are proxied using ECB data (interest rate on new loans under €1 million). The foreign exchange (FX) hedge has a one-year roll-over period; hedging costs are currently comparable for European and Japanese banks. Credit risk is based on the probability of default for an investment-grade loan rated A/BBB+ and for an SME loan rated BBB-/BB, using sovereign credit risk as a floor. Operational costs are based on usual cost-to-income ratios for corporate and SME loans. Emerging market credit risk assumed for a sovereign rated BBB-. Capital requirements are the maximum of a leverage requirement of 3 percent and a Common Equity Tier 1 target of 10 percent with risk-weighted assets of 50 percent for emerging market sovereign bonds, 60 percent for corporate loans, 100 percent for SME loans, and 80 percent for loans to Japanese firms. DEU = Germany; EM IG = emerging market investment grade; ESP = Spain; ITA = Italy; JPN = Japan; SME = small- and medium-sized enterprise; USA = United States.

Figure 1.12. Bank Nonperforming Loans and Lending Conditions

Figure 1.12. Bank Nonperforming Loans and Lending Conditions

Nonperforming loans remain at high levels...

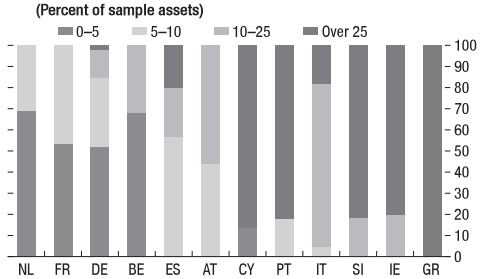
1. Nonperforming Loan Stock (Billions of euros)



Sources: National central banks; IMF Financial Soundness Indicators; and IMF staff estimates.
Note: National definitions have been adjusted according to Barisitz (2013). Other comprises Austria, Belgium, France, Germany, and the Netherlands.

...concentrated in a few economies.

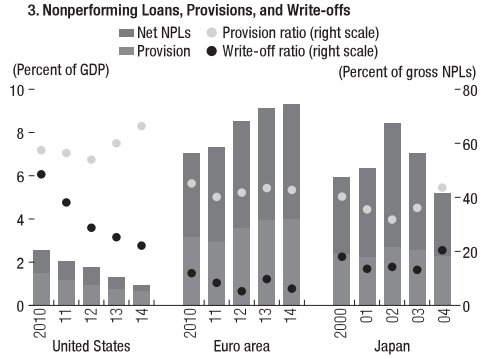
2. Nonperforming Assets: Distribution by Country (Percent of sample assets)



Sources: European Central Bank; and IMF staff calculations.
Note: Based on a sample of 106 banks from 12 of the countries that took part in the European Central Bank's Asset Quality Review (AQR). Banks are sorted by their nonperforming exposure (NPE) ratio. NPE ratio = AQR-adjusted NPE level as a percentage of total credit exposure. Data labels use International Organization for Standardization (ISO) codes.

Provisioning and write-offs have lagged...

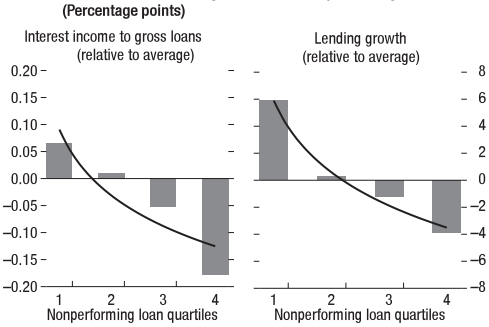
3. Nonperforming Loans, Provisions, and Write-offs



Sources: European Central Bank; Financial Services Agency; and IMF staff calculations.
Note: NPL = nonperforming loan; net NPL = gross NPL plus provisions; provision ratio = provisions as a percentage of gross NPL; write-off ratio = write-offs as a percentage of gross NPL.

...and so bank income and lending have been reduced.

4. Interest Income, Lending Growth, and Nonperforming Loans (Percentage points)



Sources: European Banking Authority; SNL Financial; and IMF staff calculations.
Note: Left chart shows annual interest income to gross loans, for over 100 euro area banks, relative to the yearly average for banks with the same nationality, calculated over the period 2009–13. The right chart shows annualized lending growth relative to average lending growth in the same economy, and uses European Banking Authority data for a sample of more than 60 banks over the period 2010–13. Outliers have been excluded, based on extreme values for lending growth, nonperforming loans and interest margins.

(continued on next page)

Addressing the corporate debt overhang will help support healthy credit demand

Boosting credit demand will require tackling high corporate indebtedness. In the euro area, there is a close correlation between countries with a high volume of nonperforming loans and those with high corporate debt. This is illustrated by information on the distribution of corporate interest coverage ratios, a key indicator of borrower distress (Figure 1.12, panel 6). Companies with high levels of debt are less likely to demand more credit, potentially hampering growth in bank credit. High indebtedness is also likely to reduce the sensitivity of loan demand to a change in bank lending rates, reducing the effectiveness of a further compression in yields under QE.

In Japan, corporate leverage may also limit credit demand for some smaller firms. Companies now have significant cash holdings, amounting to 50 percent of GDP, up from 37 percent at the end of 2007. Firms with large cash holdings are likely to demand less credit from banks. At the same time, firm-level data and sectoral balance sheets show that some small and medium-sized enterprises face the structural challenges of high leverage and low profitability. Again, these indebted firms are likely to be less willing to take on more credit.

European life insurance: An unsustainable business model in a low-interest-rate environment

... The current low-interest-rate environment, which QE will further exacerbate, poses severe challenges to the EU life insurance industry. The industry's practice of writing long-term policies, sometimes of more than 30 years, without assets of a correspondingly long duration has resulted in undesirable negative duration gaps. [Figure 1,12 Panel 5 omitted here] Moreover, many policies contain generous return guarantees, which are unsustainable in today's low-interest-rate environment. According to the European Insurance and Occupational Pensions Authority (EIOPA), more than half of European life insurers are guaranteeing an investment return to policyholders that exceeds the yield on the local 10-year government bond, thereby incurring undesirable negative invest- ment spreads (EIOPA, 2013).[11]

... In contrast, countries with positive duration gaps (reflecting a higher share of saving- and unit-linked products), such as Ireland and the United Kingdom, are less sensitive to the risks arising from low or falling interest rates. They may, however, face other vulnerabilities, including high volatility in equity markets. In the United States, life insurance companies also appear less sensitive to the risks associated with low interest rates, reflecting their product mix, which is similar to that of U.K. insurers, and the more favorable U.S. economic outlook.[12]

A low interest rate scenario is materializing in Europe

The results of the 2014 stress tests conducted by EIOPA indicate the urgency and size of the insurance industry problem. The stress tests show that 24 percent of insurers were not able to meet their 100 percent Solvency Capital Ratio

11. In Germany, for example, despite a recent reduction in the guar- anteed policy rate on new products to 1.25 percent, the guaranteed return on total policies is about 3.2 percent, whereas the 10-year bond yield is about 0.3 percent. For more information on the health and challenges of German life insurers, see Elekdag and others 2014.

12. Further analysis of U.S. insurers can be found in the forthcoming 2015 U.S. Financial Sector Assessment Program.

requirement under a "Japaneselike scenario".[13] Although the industry was expected to have about 8 to 11 years before running into serious cash-flow pressures, even these results seem optimistic, as interest rates are now significantly lower than in the stress test scenarios (Figure 1.13, panel 2 omitted here). ...

European life insurers are vulnerable to distress

Midsize insurers in Europe face a high and rising risk of distress. The failure of one or more midsize insurers could trigger an industry-wide loss of confidence if the failure is believed to reflect a generalized problem.

The high and rising interconnectedness of the insurance industry and the wider EU financial system is another source of potential spillovers. The industry has a portfolio of ∈4.4 trillion in EU credit. Furthermore, insurers are traditionally closely linked to banks through liquidity swaps and bank bond holdings, a trend that could increase with the new Total Loss-Absorbing Capacity requirements. A large mark-to-market shock could force life insurers into asset reallocations and sales that could engulf the financial system (Figure 1.13, panel 3 omitted here).

Policies needed to maximize the effectiveness of QE in the euro ar***ea***

QE provides a strong framework for addressing deflation risks, and some key transmission channels are already beginning to work. But given the potential limits to bank credit growth, further steps to repair private balance sheets are needed for the full potential benefits of QE to ....

The challenges facing life insurers should also be tackled promptly to ensure these institutions can play an active role in the portfolio rebalancing channel. Regulators need to reassess the viability of guarantee-based products and promptly bring minimum return guarantees offered to policy-holders in line with any secular trend in policy rates. At the same time, they must improve the sector^Rs asset-liability matching and hedging capabilities. Prompt regulatory and supervisory actions are needed to mitigate damaging spill-overs from a failure of a medium-sized insurer. Introducing a nationally harmonized policy holder protection scheme would further increase the resilience of the industry by enhancing confidence. Partnerships combining the credit risk expertise of banks with the balance sheet capacity of insurers could also help promote growth.

Finally, regulators should continue to improve transparency and public disclosure of life insurers. Despite EU regulators' significant efforts to strengthen transparency, including through the publication of comprehensive stress test results, it remains difficult to assess insurers' true solvency positions. This situation could undermine public confidence and exacerbate industry pressures if vulnerabilities start materializing in smaller firms.

The effectiveness of QQE in Japan depends on supporting policies

Steadfast implementation of fiscal and structural reforms is essential to boosting growth and making QQE more effective. If these reforms are incomplete, efforts at pulling the economy out of deflation are less likely to succeed, hampering the effectiveness of QQE. The BOJ should consider strengthening the portfolio rebalancing effects of its asset purchases by increasing the share of private assets in purchases and extending the program to longer-maturity government bonds, as necessary to achieve its 2 percent inflation target. A more forecast-oriented monetary policy communication would increase the transparency of the BOJ^Rs assessment of inflation prospects and

13. "Japanese-like scenario" is used in EIOPA 2014a to test the resiliency of the insurance sector by assuming a persistent low-interestrate environment. See also EIOPA 2014b.

also signal commitment to its inflation target, mainly through the discussion of envisaged policy changes if inflation is not on track. To further stimulate bank lending to the private sector, authorities should expand the special lending facilities; jump-start the securitization market for bank loans to small and medium-sized enterprises and mortgages; and enhance risk capital provision, including by encouraging more asset-based lending and removing barriers to entry and exit of small and medium-sized enterprises.

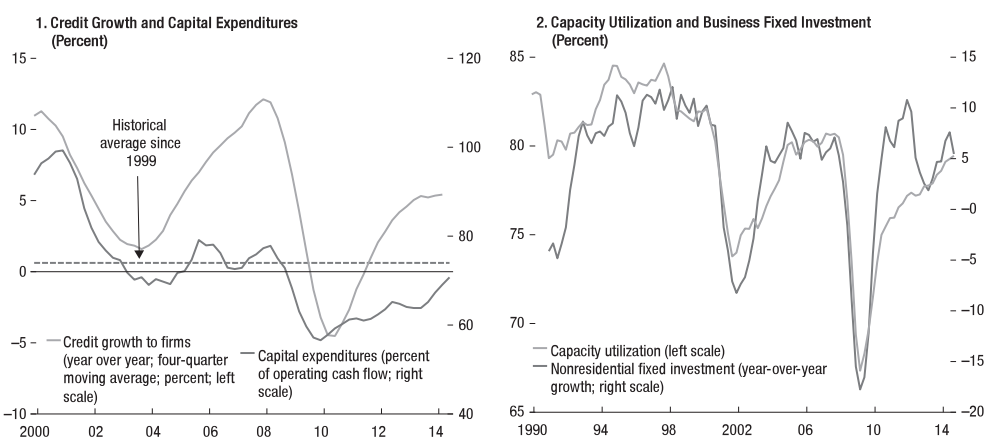
United States

Despite the much-anticipated start of the process for monetary policy normalization in the United States, long rates have been lower than expected as concerns over global growth and disinflation feed back into U.S. markets. Plummeting crude oil prices have raised concerns regarding the recent flurry of high-yield debt issued by speculative-grade energy companies. Divergence between the expectations of financial market participants and those of policy-makers regarding the pace of U.S. monetary tightening reflects the challenge of normalizing monetary policy in a world still addressing legacy problems and trying to encourage economic risk taking.

U.S. recovery solidifies as economic risk taking takes hold

The fundamentals of the U.S. economy continue to strengthen. The April 2015 *World Economic Outlook* projects growth of 3.5 percent in 2015 amid low interest rates, dissipating fiscal headwinds, and lower energy prices. More people are returning to the workforce, and wage growth is widely expected to start picking up. The *World Economic Outlook* projects three-year average growth at an annual rate of about 3 percent, the fastest annual pace since 2005.

Figure 1.14. United States: Nonfinancial Corporations



Sources: Federal Reserve; and IMF staff calculations.

Other indicators support the view that U.S. growth is successfully making the transition from dependence on asset appreciation and financial risk taking to an economy led by economic risk taking. Capacity utilization is returning to pre-crisis levels, and business fixed investment is rising, although at a slower pace than in previous cycles (Figure 1.14, panels 1 and 2). Growth in credit extended to nonfinancial firms is on the rise, in contrast to growth in the euro area, where the trend is still negative. Funds raised through corporate debt issuance are increasingly devoted to capital expenditure rather than to equity buybacks and other forms of financial engineering. The tepid recovery of housing activity, however, remains a concern.

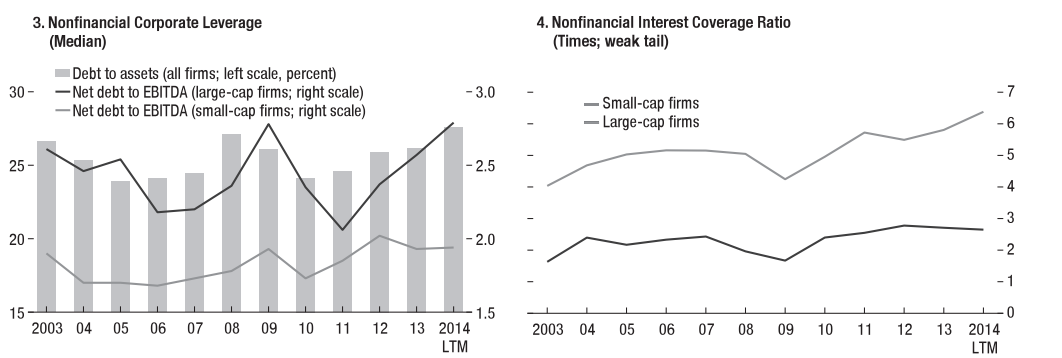
These developments are setting the stage for a nor malization of U.S. monetary policy. U.S. authorities are preparing markets for a shift toward monetary policy tight ening in 2015. Even though much anticipated, such an exit remains challenging, as discussed in the next section.

Financial risk taking continues at a strong pace in U.S. markets

Alongside positive developments in economic fundamentals, the search for yield has continued in U.S. credit markets.... Although the leveraged loan market is still a relatively small part of the U.S. credit market and does not pose an immediate systemic threat, the sector is growing rapidly, and weak underwriting standards could pose problems down the road, as highlighted by U.S. supervisors in their annual shared national credit review program. These developments are also indicative of broader trends toward weaker underwriting standards. Relatively easy financing conditions and slower earnings growth could encourage higher leverage in future deals. ...

Figure 1.15. (Panel 3 and 4)

Figure 1.15. U.S. Credit Spreads, Firm Leverage, and Interest Coverage



Source: Standard & Poor's Capital IQ.

Note: Small-cap and large-cap firms are defined as having market capitalizations of $100 million to $1 billion, and greater than $5 billion, respectively. The sample is a balanced panel of 1,695 firms. Standard & Poor's Capital IQ classifies duty taxes related to exploration and production in the energy sector as operating expenses. EBITDA = earnings before interest, taxes, depreciation, and amortization; LTM = last 12 months.

Source: Standard & Poor's Capital IQ.

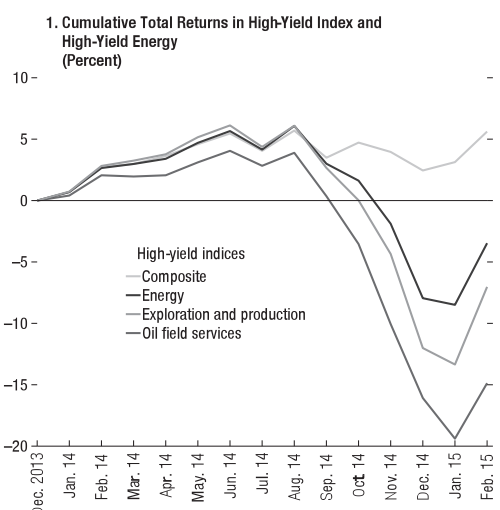
Note: The weak tail is defined as the 25th percentile of the distribution of the interest coverage ratio within the sample. Small-cap and large-cap firms are defined as having market capitalizations of $100 million to $1 billion, and greater than $5 billion, respectively. The sample is a balanced panel of 1,695 firms. S&P Capital IQ classifies duty taxes related to exploration and production in the energy sector as operating expenses. LTM = last 12 months.

U.S. companies generally continue to add leverage, as indicated by rising ratios of net debt to assets. However, measuring leverage through net debt to earnings shows a widening disparity between large-capitalization and small-capitalization firms (the latter with equity value between $100 million and $1 billion). The median small-cap firm has pushed leverage far higher than the median large-cap firm, to levels above those preceding the global financial crisis (Figure 1.15, panel 3). Smaller corporations are more vulnerable than the largest U.S. companies, which have the highest credit ratings among U.S. corporations and the easiest access to both the capital markets and banks. An examination of the "weak tail" of corporations with the lowest debt repayment capacity, reveals a stark picture (Figure 1.15, panel 4). The weakest quartile of small-cap corporations are operating with relatively low interest-coverage ratios, leaving them more dependent on cash reserves and the continued ability to roll over debt to service interest.

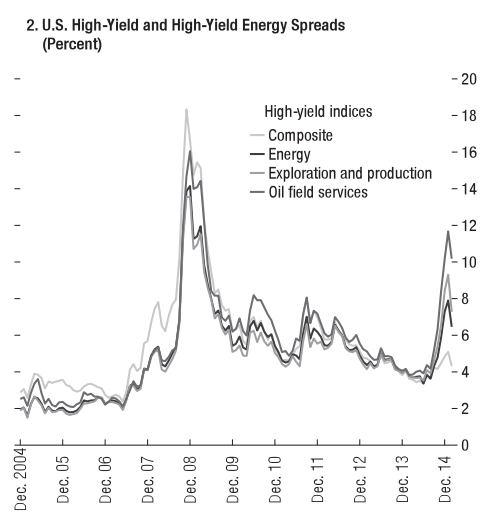
Leverage is being increasingly employed by equity market participants. Although there are some recent signs of stabilization, margin debt as a percentage of market capitalization remains higher than it was during the late-1990s stock market bubble. The increasing use of margin debt is occurring in an environment of declining liquidity. Lower market liquidity and higher market leverage in the U.S. system increase the risk of minor shocks being propagated and amplified into sharp price corrections.

Figure 1.16. U.S. High-Yield Energy Markets

Figure 1.16. U.S. High-Yield Energy Markets



Sources: Barclays; and IMF staff estimates.



Sources: Barclays; and IMF staff estimates.

Declining oil prices could undermine credit quality in high-yield debt markets

In the wake of the sharp drop in oil prices, market participants have grown concerned about exposed credit in the high-yield sector. Since oil prices started to decline in June 2014, the cumulative decline in total returns on energy-related issues in the Barclays High-Yield Index peaked at 13 percent in January of this year, but a recovery in February on the back of rising oil prices limited the cumulative decline to 9 percent (Figure 1.16, panel 1). Accordingly, the divergence between the spreads of the energy subcomponents of the Barclays High Yield Index and the broader index was in January at the widest it has been in the past 10 years (Figure 1.16, panel 2).

Oil-related issues comprise a significant portion of the U.S. high-yield bond market. The share has tripled during the past 10 years, largely because of the U.S. shale oil boom. Combining the high-grade and high-yield markets, energy-related bonds account for 56 percent of the bonds trading at distressed levels, and virtually all were issued by firms engaged in extraction and production and oil field servicing (Table 1.4 omitted here). A positive point in this regard is that U.S. high-yield mutual funds have relatively limited exposure to the energy sector, and accordingly they have only a limited ability to amplify volatility in any potential sell-off in the high-yield energy sector. Also, thus far the contagion to the rest of the high-yield bond market has been limited.

Figure 1.17. U.S. Interest Rates and Term Premiums

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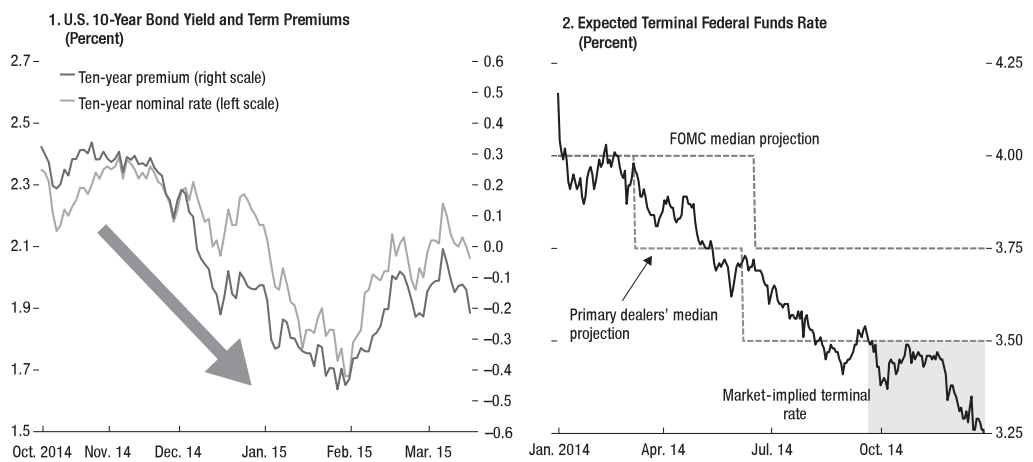


Sources: Haver Analytics; and IMF staff estimates.

Sources: Bloomberg, L.P.; Kim and Wright (K&W) (2005, updated); and IMF staff estimates.
Note: The market-implied terminal rate is derived from the 10-year Treasury rate, the 10-year term premium (Kim and Wright 2005), and the expected months to liftoff in the federal funds rate. The pace of rate hikes is assumed to be 100 basis points per year until the terminal rate is reached. FOMC = Federal Open Market Committee.

Markets remain concerned that global disinflationary forces and downside risks may yet delay the U.S. recovery

Global developments are exercising strong influence on U.S. Treasury markets. The strengthening of the dollar and lower yields in the euro area and Japan have made U.S. Treasury bonds more attractive on a relative value basis, because buyers can benefit from both the favorable yield differential and potential exchange rate gains. As a result, 10-year Treasury yields declined by 80 basis points between October 2014 and the end of January 2015, before rebounding by 50 basis points by mid-March. A large part of this movement can be attributed to a recompression of the term premium. Indeed, the term premium on U.S. Treasuries briefly declined into negative territory, pulling down U.S. long rates, even as the expected terminal federal funds rate remained steady at about 3.25 to 3.50 percent (Figure 1.17), and expected short-term rates remained stable.

Monetary developments in the euro area have had a particularly strong effect on U.S. interest rates. At the Jackson Hole Conference in August 2014, the ECB president indicated a willingness to consider additional unconventional policy measures. Statistical analysis indicates that, before this event, changes in the 10-year Treasury rate were more likely to precede (Granger cause) changes in the 10-year German bund rate; after Jackson Hole, changes in bund yields were likely to precede (Granger cause) changes in Treasury yields (Figure 1.18, panel 1).

Recent developments in global asset markets also reflect dissonance between financial market concerns over global disinflationary pressures and the Federal Reserve's signaling of the path of U.S. monetary policy. Both market-based and survey-based expecta tions continue to point to mid- to late 2015 for the first hike in the U.S. policy rate. But market-based expectations for the future path of policy rates remain notably below the forecasts of most of the participants in the Federal Open Market Committee's "dot" fore casts (Figure 1.18, panel 2).[16] These influences have persisted despite the continuing improvements in the U.S. economic outlook and consistent signals from the committee on the likely trajectory for policy rates.

Financial markets are effectively signaling a significant risk that policy will not normalize as soon as the central bank is forecasting, because disinflationary forces at work in the global economy will keep inflation contained below target. Inflation swap markets are signaling a lower level of expected inflation for both the United States and the euro area, suggesting that markets are taking a more benign view of inflation prospects. If this view is correct, it is possible that the Federal Reserve may act more slowly than currently anticipated.

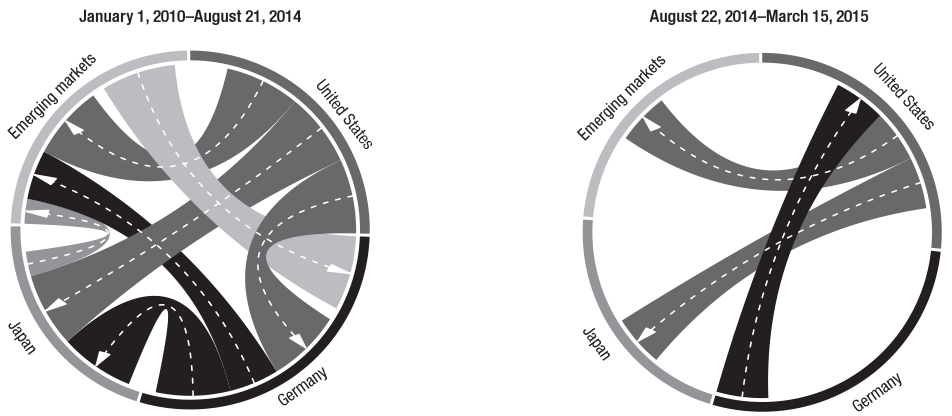
On the other hand, as the Federal Reserve approaches exit and rate hikes appear more imminent, Treasury yields could spike. This risk is not currently a major focus for market participants. However, as was seen in May-June 2013, a sudden rise of 100 basis points in the 10-year Treasury yield is quite conceivable, even in a generally disinflationary context and even when central banks work to communicate their intentions in advance. Shifts of this magnitude can generate negative shocks globally, especially in emerging market economies. The anticipation of an imminent policy move could temporarily overwhelm global disinflation concerns and cause rapid decompression in the term premium. Reduced structural liquidity could exacerbate the volatility of yield adjustments.

16. Some market analysts' forecasts for the first U.S. rate hike extend to early 2016, citing the absence of price pressure and an expectation for a U.S. recovery slowed by a strong dollar and weak foreign growth. Rates implied by futures contracts are also affected by risk premiums, and declines in those premiums can lower the implied path of the policy rate.

Figure 1.18. Global Interest-Rate Developments

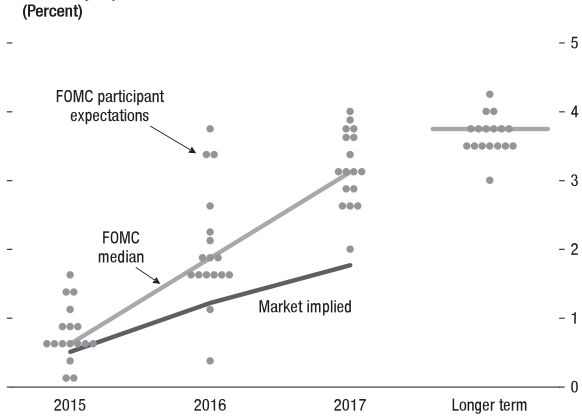
Figure 1.18. Global Interest-Rate Developments

1. Granger Causality Tests for Precedence in 10-Year Bond Yields



Sources: Bloomberg, L.P.; and IMF staff estimates.
Note: The Jackson Hole Economic Policy Symposium was held on August 22, 2014. The arrows indicate the direction of the Granger Causality. The width of bands indicates the significance of the chi-squared statistic from the Granger causality test. The widest band represents significance at the 1 percent level, the medium band at the 5 percent level, and the narrowest at the 10 percent level.

2. U.S. Policy Expectations
(Percent)



Sources: Bloomberg, L.P.; and IMF staff estimates.
Note: Data is as of March 2015. Federal Open Market Committee (FOMC) meeting.

Policies need to support economic risk taking, avert financial excesses, and enhance financial resilience

The impact of international market forces requires appropriately balanced policies, including strong macroprudential policies. In particular, regulators must continue their efforts to understand the less closely regulated corners of the financial sector that could cause problems for the banking system. Existing regulatory frameworks may need to be reassessed to enable

authorities to better identify and measure the activities of nonbank entities. Policymakers should support further economic risk taking, such as tax reforms that could encourage firms to build capacity and increase employment.

Given the risks and uncertainties surrounding the normalization of U.S. monetary policy, central bank officials must continue to follow a transparent and carefully calibrated communications strategy to manage the policy-tightening process that is expected to commence this year. The potential impact of increased volatility and portfolio adjustments that could accompany the move toward policy rate normalization makes this task especially crucial. The section titled "When Market Liquidity Vanishes" examines some of the potential risks from decreased market liquidity and changing patterns of correlation in key financial markets.

When Market Liquidity Vanishes

As U.S. monetary policy normalizes, the temporary boost to market liquidity provided by monetary accommodation will ebb, revealing a changed capital market landscape. Without the buoyant liquidity provided by the Federal Reserve, the liquidity-inhibiting impact of regulatory changes, industry consolidation, and other secular factors will likely become more pronounced. Markets could be increasingly susceptible to episodes in which liquidity suddenly vanishes and volatility spikes.

Two recent price disruptions-the October 15, 2014, volatility in U.S. Treasuries and the January 15, 2015, surge in the Swiss franc-involved an initial shock that was likely amplified by market makers' withdrawal of liquidity support. Many of the factors responsible for lower market liquidity also appear to be exacerbating risk-on/risk-off market dynamics and increasing cross-asset correlations during times of market stress. These phenomena suggest that low market liquidity may act as a powerful amplifier of financial stability risks.

Rising market liquidity risks

As discussed in the October 2014 *Global Financial Stability Report,* capital markets are now more important providers of credit than they were in the past, with a growing share of fixed-income instruments held by mutual funds. Inflows into mutual funds have provided an illusion of liquidity in credit markets, but changes in market structure may exacerbate illiquidity in times of stress.[17] ...

Economic and policy tensions leave global markets vulnerable to bouts of illiquidity that could prove systemic

... Asset valuations remain elevated relative to the past 10 years as monetary policies continue to exert downward pressure on spreads, but could widen on U.S. exit from monetary accommodation. This could reverse recent causality channels discussed elsewhere in this chapter, sending shock waves through global markets. Policy tensions led the central bank of Switzerland to unexpectedly abandon its support for a ceiling on the value of the franc against the euro on January 15, 2015. The franc immediately surged by as much as 41 percent against the euro, and not surprisingly, some participants widened bid-ask spreads or refused to quote in the currency. Foreign exchange liquidity overall collapsed and became less available than it was during the 2011-12 euro crisis or the 2013 "taper tantrum" concerning prospective U.S. monetary policy.

17. Financial stability risks related to mutual funds are also discussed in Chapter 3.

On October 15, 2014, U.S. Treasuries and related markets experienced one of their largest intraday changes in yields in the past 25 years.[18] Yields on 10-year bonds fell by 37 basis points from the previous day before rebounding quickly (Figure 1.19 omitted here) and volatility spread to closely related asset classes (U.S. dollar swaps) and to equities (with a lag). To put this event in perspective, the decline in yields was larger than that on September 15, 2008, when Lehman Brothers filed for bankruptcy. ...

Why have market shocks become more amplified?

Market shocks are easily propagated when liquidity is low. As highlighted elsewhere in this chapter, technological change, regulation, and the shifting composition of market participants have altered the microstructure of the Treasury market and fixed-income markets more broadly. As a result, participants cannot always rely on dealers to provide sufficient liquidity in volatile markets, making them more vulnerable to liquidity shocks. Moreover, market safeguards may no longer be appropriately calibrated to changing market conditions. More specifically,

* ***Automation and the rise of high-frequency trading***- Treasury bonds and Treasury futures trade almost exclusively on electronic platforms, which allow algorithmic and high-frequency traders to capture an expanding market share. ... Market participants report that liquidity provision has become more dependent on programmed reaction functions and less on client-based relationships. In a more anonymous, short-term, profit-oriented trading environment, fewer participants make their pools of liquidity available in risky conditions to help stabilize the market.

* ***Reduction in market making by traditional dealers***- Banks claim that their ability to make markets and therefore provide liquidity has diminished with the tightening of regulation in recent years.[19] Similarly, pension funds and insurance companies are less able to play a countercyclical role in financial markets because of tighter requirements to minimize asset-liability mismatches.
* ***Inadequate market safeguards***- Existing safeguards can fail to limit abnormal price movements in markets dominated by automated trading.
* ***Emergence of less-regulated nonbank market intermediaries***- Access of leveraged retail investors to foreign currency brokers allowing bets against the Swiss franc exacerbated the price surge. In many cases, heavily leveraged positions involved little coordination or oversight by authorities.
* ***Benchmarking***- More market participants are using benchmarks by investing in indices or in underlying baskets of securities.[20] As more asset managers focus on benchmarks, assets not in the benchmark index suffer a decline in liquidity.
* ***Use of derivatives and exchange-traded funds***- The increasing trading of index-based instruments such as derivatives and exchange-traded funds may amplify the effects of benchmarking in limiting

18. See Bouveret and others, forthcoming, for a detailed analysis of the events of October 15.
19. To a degree this may be related to restrictions on proprietary trading and to more demanding capital requirements, which may have limited the capacity of banks to hold inventories and conduct repurchase agreement operations (see Powell 2015).
20. Mutual funds own a rising share of risky assets, particularly in the less liquid credit markets, and hedge funds are increasingly behaving in a more benchmark-centric manner (see the October 2014 Global Financial Stability Report).

liquidity. When dealers use the cash market to hedge their exposure to a client's derivatives contract on an equity index, they need to replicate a simultaneous opposing order for each stock in the index.[21] This leads to further differentiation in liquidity between securities included and excluded from indices.

Figure 1.20. Asset Comovements and Correlation Spillovers

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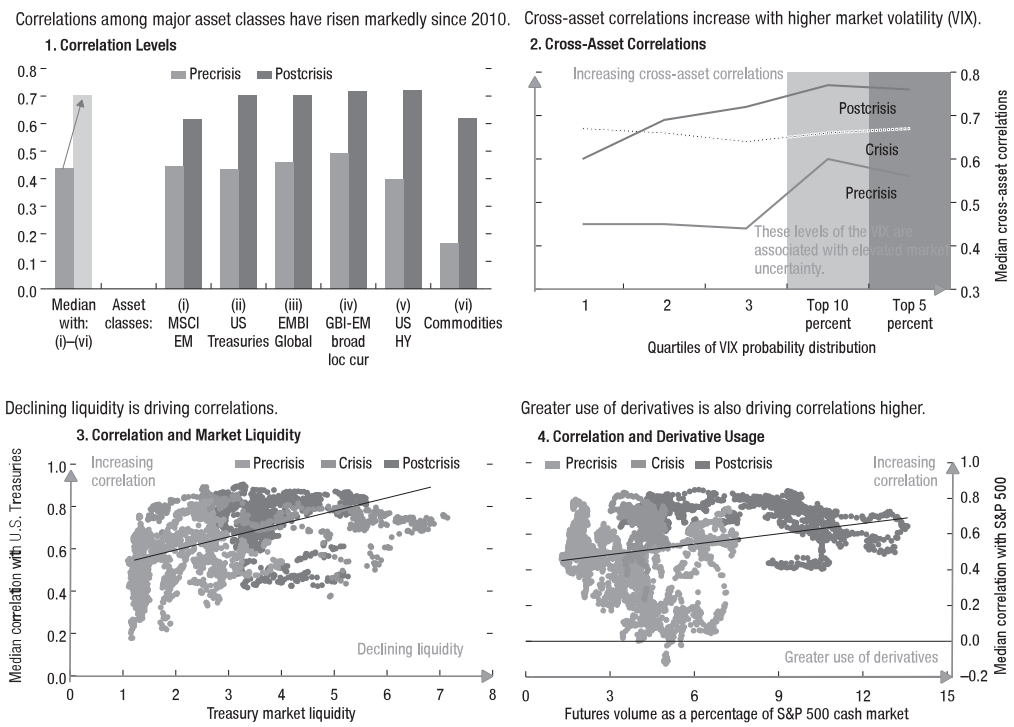


Sources: Bank of America Merrill Lynch; Bloomberg, L.P.; Federal Reserve; JPMorgan Chase and Co.; and IMF staff calculations. Note: Precrisis period denotes January 1, 1997, to June 30, 2007; crisis period July 1, 2007, to December 31, 2009; and postcrisis period January 1, 2010, to December 31, 2014. Cross-asset correlation is measured as the median of the absolute values of pair-wise correlations over a 60-day window between the daily Sharpe ratios of the asset classes listed in panel 1. Market liquidity is measured as the ratio of returns on the U.S. Treasury wide index to the turnover of the U.S. Treasury market. The higher the ratio the lower the liquidity, because large amounts cannot be traded without a signi.cant impact on prices. The median correlations in panels 3 and 4 are of the U.S. Treasury 7-10-year index and the S&P 500 index against all six other asset classes as shown in panel 1. MSCI EM = MSCI Emerging Markets Equity Index; U.S. Treasuries = 7-10-year U.S. Treasury Index; EMBI Global = JPMorgan Emerging Markets Bond Index Global; GBI-EM broad loc cur = JPMorgan Government Bond Index-Emerging Markets in local currency; US HY = U.S. High-Yield Index; Commodities = Credit Suisse Index; VIX = Chicago Board Options Exchange Market Volatility Index.

21. Similar dynamics apply to broad-index exchange-traded funds. Although buying a future does not directly lead to the purchase of the constituents in the index, it will have an impact on the underlying securities through the actions of index arbitrageurs such as hedge funds.

Illiquidity events can spill over to other asset classes and emerging markets

These structural shifts in markets may have also contributed to higher asset price correlations. With lower liquidity, less market making, and more benchmarking, asset prices are more likely to be driven by common shocks, particularly at higher frequencies, than by their respective idiosyncratic fundamentals. Both the decline in market liquidity and the increasing use of derivatives are associated with higher asset price correlations over the past five years (Figure 1.20, panels 3 and 4).[22] This is particularly evident during periods of stress, when flow liquidity reverses and volatility increases.[23]

A rise in correlations during periods of stress is often seen as one of the main attributes of contagion (see, for example, Pericoli and Sbracia 2004).

Correlations among risk-adjusted returns of major asset classes have increased markedly since 2010 (Figure 1.20, panel 1).[24] The correlation of the S&P 500 with U.S. high-yield indices has shown a steep increase, and the correlation with commodities has increased fourfold. The substantial rise in correlations between asset markets in advanced and emerging market economies points to an increased possibility of contagion or spillovers in periods of stress.

Asset price comovement has become stronger during periods of high market volatility. Correlations normally increase during periods of market turbulence. However, over the past five years, correlations have been rising to much higher levels, often to 0.7 or beyond, in periods of high volatility (Figure 1.20, panel 2).

The increase in correlations during stress periods suggests greater risks of contagion across asset classes or borders. It also points to the importance of liquidity as an amplifier of other risk factors. Consequently, policies that address the sources of low liquidity should be seen as part of a comprehensive financial stability framework.

What can policymakers do to address illiquidity and stability spillovers?

Policymakers should seek to address the liquidity mismatch in the asset management sector. As discussed in the October 2014 *Global Financial Stability Report*, a major concern is the market liquidity risk arising from the mismatch between the liquidity promised to mutual fund owners in good times and the cost of illiquidity when meeting redemptions in times of stress, particularly in the less liquid corporate and emerging market bond markets. Policymakers should seek to address this mismatch by adopting policies that remove incentives of asset owners to run by aligning redemption terms of funds with the underlying liquidity in the assets in which they are invested. They could also adopt policies that enhance the accuracy of net asset values, increase liquidity cash buffers in mutual funds, and improve the liquidity and transparency of second ary markets, specifically for longer-term debt markets.

Chapter 3 [Chapter 3 omitted here.] finds that the asset management industry needs stronger oversight that combines better micro- prudential supervision of risks with the adoption of a macroprudential orientation. ... The roles and adequacy of existing risk management tools

22. The replication impact on the securities that make up an index when derivatives are traded naturally pushes up intra-asset correlations. Increasing trading of derivatives also drives up cross-asset correlations. For example, it is not uncommon for credit investors to hedge their portfolios with liquid futures and options on equity indices.

23. Flow liquidity, or the capacity to trade assets cheaply during normal market conditions, has been enhanced by the rise in flows into mutual funds and exchange-traded funds. The effect may be masking the negative impact of declining market making on other measures of market liquidity, such as depth and breadth (see the October 2014 *Global Financial Stability Report*.

24. The median correlation of the risk-adjusted returns between the S&P 500 and the six major asset classes in the figure has almost doubled from 0.44 in 1998-2007 to 0.70 in the past five years. Sharpe ratios are used to calculate risk-adjusted returns to control for differing risk characteristics across asset classes.

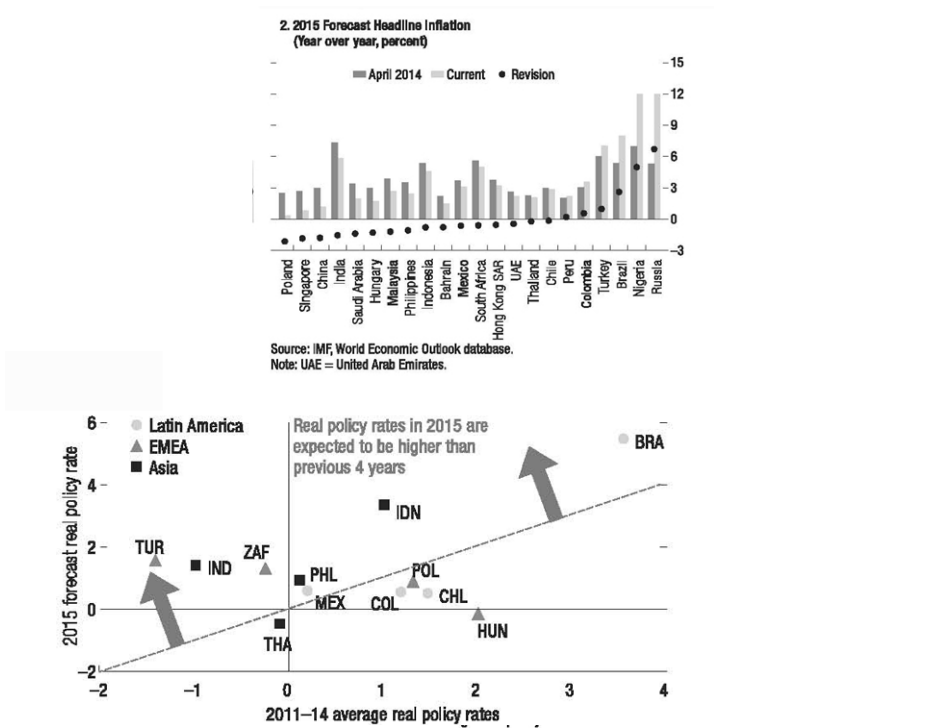
should be reexamined, taking into account the industry's role in systemic risk and the diversity of its products.

Policies are also needed to strengthen market structures, including in the more liquid fixed-income markets such as government bond markets. Authorities could consider encouraging market participants in gov ernment bond markets to provide liquidity in normal trading conditions, thereby forestalling the deteriora tion of trading liquidity.... Reporting requirements could reinforce these approaches, typi cally on an ex-post basis.

Futures exchanges for U.S. Treasury markets could consider introducing designated market makers.[25] Unlike some equity markets, futures markets for Treasuries do not have designated market makers who provide liquidity. By providing fee rebates and other incentives, exchanges could effectively charge market participants for the provision of risky market-making services. Authorities could also consider best-practice guidelines for market makers.

Market safeguards can help stop panics in periods of heightened volatility. In the U.S. Treasury futures markets, current market safeguards should be recalibrated to prevent a market dislocation of the scale observed on October 15, 2014, and periodically reviewed to ensure that they are up to date and relevant. The authorities could consider introducing similar market safeguards in the U.S. Treasury cash market. Adequate coordination of such safeguards across cash and related derivatives markets would help prevent liquidity arbitrage across platforms.

Figure 1.21. Wide Range in the Inflation Outlook of Emerging Market Economies



Sources: Bloomberg, L.P.; IMF, World Economic Outlook database; and IMF staff calculations.
Note: The 2015 forecast real policy rate is calculated using the end-2015 policy rate as implied by the market (using forward-rate agreements or interest rate swaps) and the *World Economic Outlook* end-2015 headline inflation forecast. BRA = Brazil; CHL = Chile; COL = Colombia; EMEA = Europe, Middle East, Africa; HUN = Hungary; IDN = Indonesia; IND = India; MEX = Mexico; PHL = Philippines; POL = Poland; THA = Thailand; TUR = Turkey; ZAF = South Africa.

25. For a discussion of how designated market makers with well- designed obligations can support liquidity and price efficiency in order-driven markets, see Bank of England 2012.

Risk management at trading firms should be reinforced, including from a macroprudential perspective. Supervisors should provide coordinated guidance to trading firms, allowing them to set consistent and appropriate risk limits on individual retail investors, or at the level of the exchanges (circuit breakers and limits on trading firms' positions), or at the level of the clearing firms. Supervisors should also investigate whether retail platforms are adequately capitalized to honor guarantees on loss limits for leveraged retail investorsunder stressed conditions. Retail firms need to improve their ability to monitor the aggregate risk of their clients in real time while, as discussed in Chapter 3, regulators should enhance the microprudential supervision of risks from individual institutions that builds on their own risk analysis and stress testing. Regulators and monetary authorities should take the dynamics of asset correlations and volatility into account when evaluating systemic risks in financial markets.[26]

Emerging Markets: Safeguarding the Financial Sector against Global Headwinds

Commodity price declines are exacerbating ongoing corporate balance sheet strains in some emerging market economies, adding to headwinds from overcapacity, real estate sector adjustments, and property price declines (particularly in China). This is despite the benefits of additional monetary policy space provided by lower commodity prices and lower inflationary pressures. Elevated volatility and the rapid depreciation of local currencies for some economies jeopardize financial stability of firms that have borrowed heavily in foreign currencies. These developments outweigh the financial stability benefits from improved competitiveness provided by depreciating currencies. Overall, these shocks have increased financial stability risks in emerging market *economies, given the increased leverage in the public and private sectors, and authorities need to enhance surveillance of vulnerable sectors.*

Inflation dynamics vary across emerging market economies, and some of those economies are gaining monetary policy space to support growth

Inflation dynamics in emerging market economies are diverse (Figure 1.21, panel 1 omitted here). Most of South American economies and Russia continue to experience accelerating inflation pressure or above-target inflation, while Hungary, Poland, and many Asian economies have seen falling or low inflation (Figure 1.21, panel 2). Some economies are benefiting substantially from the impact of lower oil prices and increased monetary policy space. India and South Africa, for example, are expected to have inflation decelerate to their target bands by the end of 2015.[27] As net commodity-importing economies, India, and to a lesser extent Turkey, are expected to reduce their external imbalances and have a chance to improve their resilience by enabling necessary reforms.

Easing inflation pressure provides a welcome increase in monetary policy space for countries in which growth is expected to decelerate. Markets expect real policy rates to decline relative to recent years in economies with large inflation gaps, such as Hungary, Poland, and Thailand (Figure 1.21, panel 3), which in turn can help strengthen financial stability by reducing the debt burden of domestic currency debt. Else

26. Other initiatives, such as the G20 Financial Stability Board's recent proposal (issued jointly with the International Organization of Securities Commissions) on the supervision of global systemically important financial institutions to cover traditional funds and their managers (rather than just the funds), also merit attention.

27. Hong Kong SAR and Singapore are categorized as advanced economies, but they are included in this section because as international financial centers that cater primarily to emerging market economies, their banking and corporate sectors are influenced by the forces analyzed here.

where, central banks may have only limited ability, or willingness, to significantly cut rates. For Brazil, India, Indonesia, and Turkey, the expected increase in real policy rates in 2015 relative to the previous four years may boost the cost of debt service in the private sector, where credit has grown strongly in recent years.

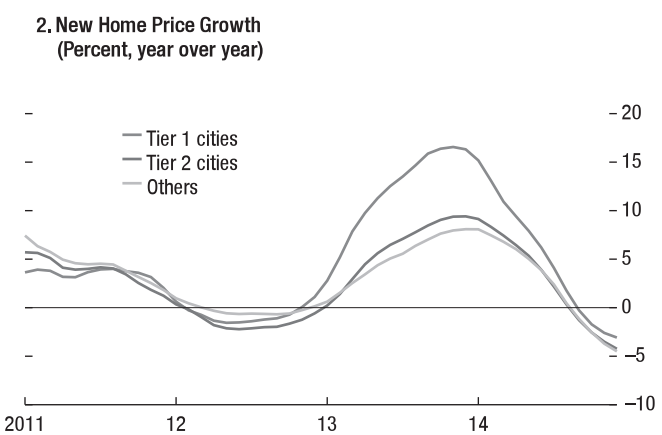
The following challenges confront some emerging market economies to varying degrees:

* Retrenchment of overinvested industries, real estate sector adjustments, and property price declines, particularly in China, which could spill over to emerging markets more broadly.
* Price declines in oil and other commodities, which hurt commodity-exporting countries and related corporate sectors.
* Ongoing dollar appreciation and the resulting upward revaluation of foreign currency liabilities, which creates balance sheet strains for indebted emerging market firms and sovereigns.

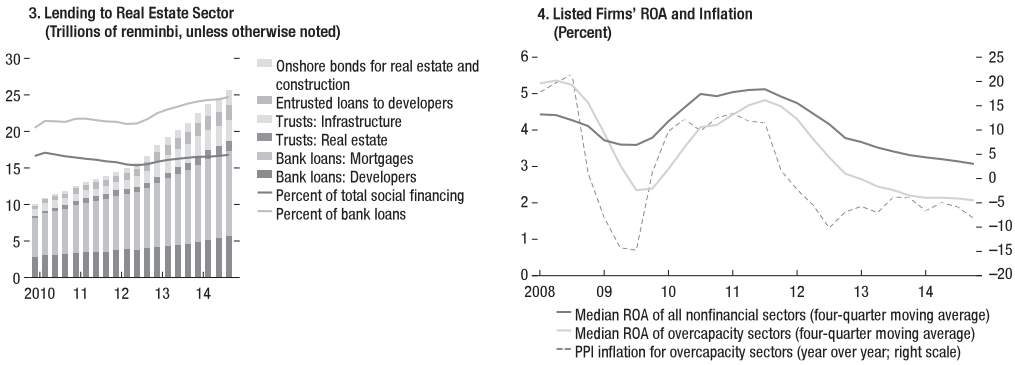
Disinflationary pressures in China may complicate the transition to slower but safer growth, while real estate sector adjustments and overcapacity in leveraged industries are key financial stability risks

In addition to food and energy prices, China's disinflation pressure may reflect more durable forces, includ ing debt-financed supply-demand imbalances that have built up since 2008. Overcapacity in some heavy industries and excess supply in the real estate market are likely contributing to downward pressure on inflation. Disinflationary pressures are keeping real interest rates high (even when calculated using less volatile core inflation) and contributing to tighter real financial conditions, notwithstanding slowing growth (Figure 1.22, panel 1 omitted here). If these trends intensify, they could engender a disinflationary feedback loop in which further declines in inflation raise the real cost of debt service for highly leveraged firms in weaker sectors, leading to potentially abrupt and disorderly deleveraging, a further slowdown in activity, and more downward pressure on prices.

Figure 1.22. China: Real Estate and Interest Rate Developments

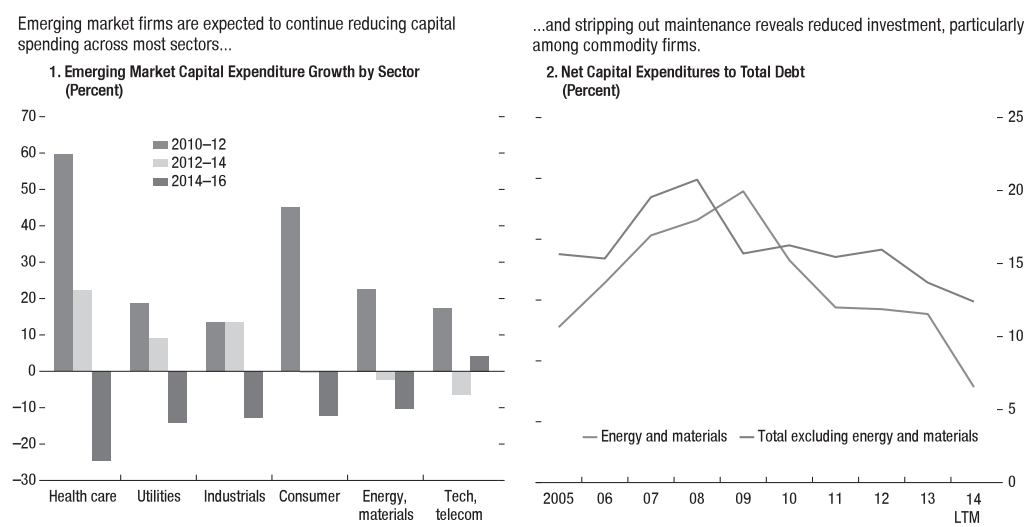


Sources: CEIC; National Bureau of Statistics (NBS); and IMF staff calculations. Note: New home price growth is the simple average of year-over-year change of NBS-compiled property price indices for newly constructed residential buildings in 70 medium and large cities grouped by different tiers. Tier 1 cities include Beijing, Guangzhou, Shanghai, Shenzhen, and Tianjin.



Sources: CEIC; China Trust Association; People's Bank of China; and IMF staff calculations. Note: Assumed 20 percent of entrusted loans are to the real estate sector. The entrusted loans to developers and onshore bonds for real estate and construction are captured by the total social financing (TSF).
Sources: CEIC; WIND Information Co.; and IMF staff calculations. Note: Overcapacity sectors include building materials, chemicals, and mining. PPI = producer price index; ROA = return on assets.

Figure 1.23. Emerging Market Nonfinancial Corporate Investment Continues to Shrink



Sources: S&P Capital IQ; and IMF staff calculations.
Note: Calculated on a balanced panel of 2,075 firms from 20 major emerging market economies. Estimates for 2014-16 from S&P Capital IQ.
Sources: S&P Capital IQ; and IMF staff calculations.
Note: Net capital expenditures = capital expenditures - depreciation. Calculated on a balanced panel of 1,274 firms from 20 major emerging market economies. LTM = last 12 months.

Lower real estate prices are necessary in China for an improved supply-demand balance, but they could lead to higher-than-expected losses in the financial sector [Figure 1.22 Panel 2]. Currently, levels of nonperform- ing property loans reported by banks remain subdued. Credit exposures to real estate, excluding mortgages, stood at about 12 trillion yuan ($1.9 trillion, or 19 percent of GDP) at the end of 2014 (Figure 1.22, panel 3).[28] Moreover, financial stress among real estate firms could lead to direct cross-border spillovers, given gross issuance of about $130 billion in external bonds since 2010. ...

Falling output prices are eroding the profitabil ity of sectors with overcapacity and worsening their debt-service capacity (Figure 1.22, panel 4). These sectors, which include building materials, chemicals, and mining, have also borrowed heavily since 2009. As with the property sector, falling output prices are welcome if they result in the exit of unprofitable firms and a return to financially sustainable growth. Such an adjustment, however, could mean potentially substan tial losses for creditors. For banks, on-balance-sheet exposures to these sectors look manageable. But their off-balance-sheet exposures, which some may have used to evade macroprudential edicts against lending to these sectors, may be much higher. As banks recognize these contingent liabilities, the losses could quickly erode their seemingly ample capital buffers.

China's case is instructive for some sectors of other emerging market economies where excess capacity and overinvestment could create additional disinflationary pressures. Emerging market firms, which have been reducing their capital investment since 2011 (see the April 2015 *World Economic Outlook*, Box 4.1, for a broader exposition), have more recently been cutting back across all sectors on the investment plans (Figure 1.23, panel 1) that were funded by big debt increases. The share of net capital expenditures to total debt over the past two years has declined, and is more pronounced among commodity firms, which also account for nearly half of capital expenditures of nonfinancial firms (Figure 1.23, panel 2). As with China, these developments pose the risk of a disinflationary feedback loop.

Commodity price declines are exacerbating balance sheet strains in some emerging market economies

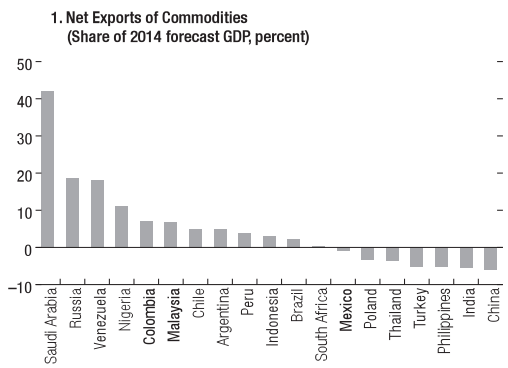
In most emerging market economies, lower commodity prices are boosting consumption, helping to offset lost output from general trade shocks and providing greater monetary policy space. However, they may also give rise to financial stability concerns. For others, the decline in commodity prices during the past nine months has led to sizable downward revisions of economic activity for some major commodity-exporting countries (Figure 1.24, panels 1 and 2). Commodity price shocks have become systemic for the oil and gas sector in Nigeria, Russia, and Venezuela, and markets have reflected that fact (Figure 1.24, panel 4). Lower revenue and higher public indebtedness in Nigeria and Venezuela, for example, have limited the ability of those countries to react to the growth downturn (see the April 2015 *Fiscal Monitor*).

Since 2007, energy firms have issued one-third of all hard-currency nonfinancial emerging market corporate bonds as they took advantage of accommodative financial conditions to borrow heavily in international bond and syndicated loan markets to expand their operations and finance

28. Assuming most trust real estate and infrastructure assets (often related to property development) are in the form of loans. However, the true total may be higher if lenders and borrowers found ways to overcome tighter restrictions placed in 2010 on lending for property development, such as by classifying loans for other purposes.

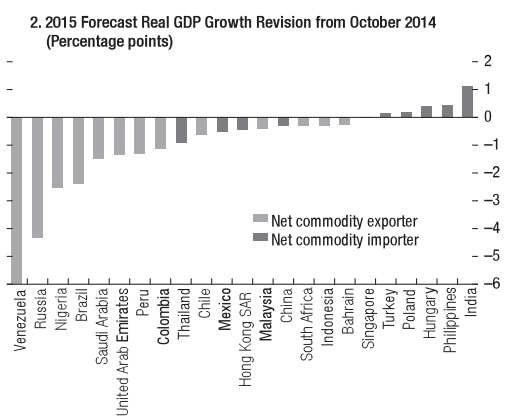
Figure 1.24. Dependence of Emerging Market Sovereigns on Commodities, and Market Reaction

Emerging market economies that rely heavily on commodity exports...

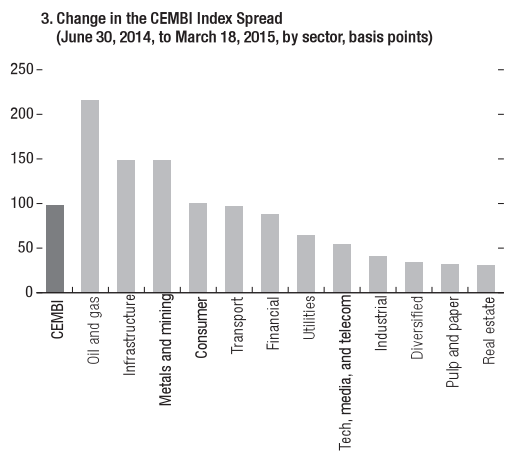


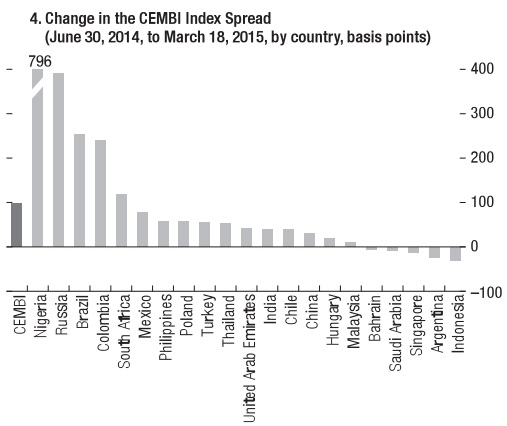
Sources: IMF, World Economic Outlook database; UN Comtrade; and IMF staff calculations.
Note: The UN Comtrade commodity net exports for 2013 comprise commodity codes 0 through 4, using Standard International Trade Classification Revision 3.

...generally had the greatest growth revisions.



Sources: IMF, World Economic Outlook database; UN Comtrade.
Note: See Figure 1.24, panel 1 for categorization of commodity exports.

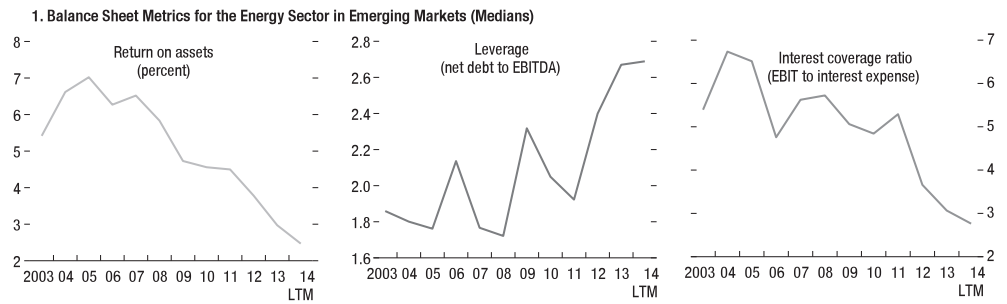




Source: JPMorgan Chase & Co.
Note: CEMBI = Corporate Emerging Markets Bond Index.

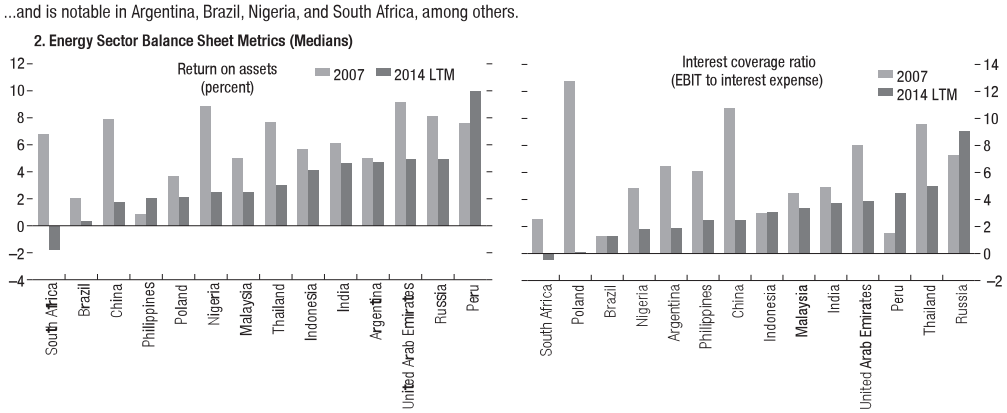
Figure 1.25. Energy Corporate Sector Metrics

The balance sheet deterioration for the emerging market energy sector started even before the oil price decline...



Source: S&P Capital IQ.

...and is notable in Argentina, Brazil, Nigeria, and South Africa, among others.



Sources: S&P Capital IQ; and IMF staff calculations.
Note: S&P Capital IQ classi.es duty taxes related to exploration and production as operating expenses. EBIT = earnings before interest and taxes; EBITDA = earnings before interest, taxes, depreciation, and amortization; LTM = last 12 months.

investment. Given expectations of lower energy prices, firms in the oil and gas and materials sectors are significantly cutting back their capital expenditure plans. Because these sectors account for, on average, half of investment in the major emerging market economies, this may affect long-term growth for other sectors as well (Figure 1.23, panel 2).[29]

On average, the deterioration of balance sheets for many oil and gas firms preceded the energy price decline of 2014. Profitability (for example, return on assets), leverage, and debt-servicing capacity are now at their worst levels since 2003 (Figure 1.25, panel 1). Price declines have cut into the profitability of energy firms, particularly in China, Nigeria, and South Africa (Figure 1.25, panel 2). Strains in the debt-repayment capacity of the oil and gas sector may become more evident in Argentina, Brazil, Nigeria, and South Africa, given their low interest-coverage ratios in 2014 (on a last-12-month basis; Figure 1.25, panel 2).[30]

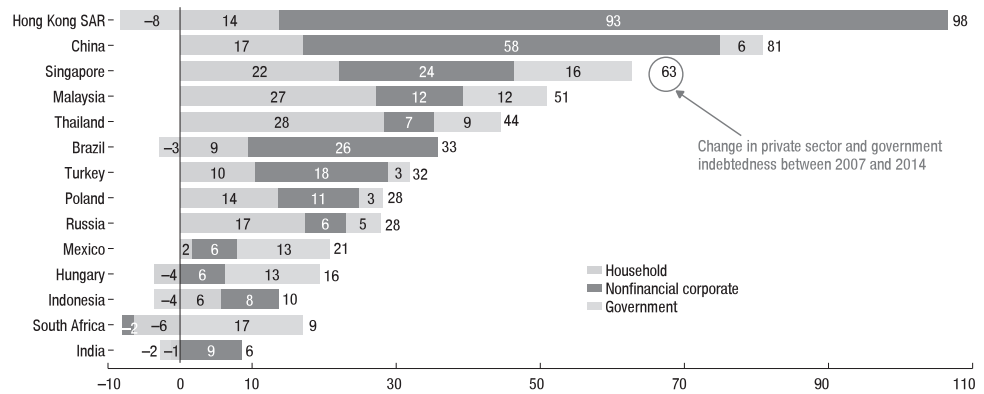
29. For emerging market energy firms with available data, capital expenditures in fiscal year 2015 will decline by 31 percent from the previous year, and earnings before interest, taxes, depreciation, and amortization will decline by 20 percent.

30. In Brazil, Petrobras's corporate governance concerns have resulted in credit rating downgrades and pushed its borrowing costs to their highest level in more than 10 years.

Figure 1.26. Large Increase in Emerging Market Debt

Indebtedness increased strongly across most major emerging markets.

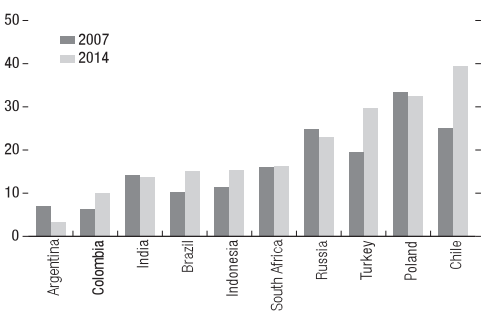
1. Change in Private Sector and Government Indebtedness between 2007 and 2014 (As a share of GDP; percentage points)



Sources: Bank for International Settlements; Morgan Stanley; national authorities; IMF, World Economic Outlook database; and IMF staff calculations.
Note: Data for Malaysia are from Bank Negara Malaysia, and the change in debt is between 2008 and 2014.

The private sector in many economies increased its foreign currency debt since the crisis or kept it high.

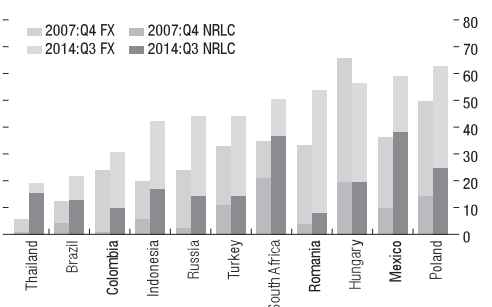
2. Foreign Currency Debt of Nonfinancial Firms and Households (Percent of GDP)



Sources: Bank for International Settlements; IMF, Financial Soundness Indicators; and IMF staff calculations.
Note: Foreign currency debt comprises domestic loans, international loans, and international bonds.

Most emerging market economies increased their foreign currency debt and exposure to foreign investors despite issuing relatively less in foreign currencies.

3. Government Debt Breakdown in Foreign Currency and Nonresident Holdings of Local Currency (Percent of total)



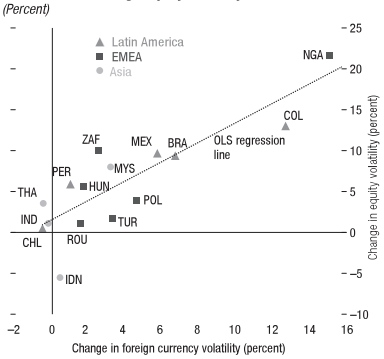
Sources: Bank for International Settlements; Haver Analytics; national authorities; and IMF staff calculations.
Note: FX is the share of foreign currency government debt; NRLC is the share of nonresident holdings of local currency government debt. The date for the left-hand bar for Colombia is January 2010, for Romania is December 2010, for South Africa is January 2011, and Russia is December 2011.

Dollar appreciation could test firms and countries that have accumulated dollar debt

From October 2014 through February 2015 the U.S. dollar appreciated by 14 percent in nominal terms and by 11 percent in real effective terms. This dramatic movement in the exchange rate over a period of five months has major implications for emerging market economies that have high debt levels denominated in foreign currencies. From 2007 to 2014, debt grew faster than GDP in all major emerging market economies and in the international financial centers of Hong Kong SAR and Singapore, which lend to many emerg- ing market economies in Asia. Most of the growth in debt was in the nonfinancial private sector (firms and households; Figure 1.26, panel 1), and a significant portion is in foreign currencies, especially in Chile, Poland, and Turkey (Figure 1.26, panel 2), although in Chile foreign currency mismatches of corporate balance sheets appear limited, and households do not have debt in foreign currencies.[31]

Rapid depreciation of the domestic currency can lead foreign investors to abruptly reduce their holdings of local currency debt and thus create a debt-rollover challenge to the public sector. Since 2007 the share of foreign currency and nonresident holdings of local currency general government debt in total general government debt has risen in a number of countries, such as Indonesia, Mexico, Poland, Romania, and South Africa, or remains elevated, such as in Hungary (Figure 1.26, panel 3). This development is critical where the ability of the local investor base to absorb new debt may be insufficient, such as in Hungary, Indonesia, Mexico, and Poland.[32] Even though foreign currency exposure may not have increased for many emerg ing market economies, the increased role of foreign investors in local bond markets creates an implicit debt-rollover risk, which can be loosely described as "original sin 2.0."

Figure 1.27. Firms in Countries with Large Currency Selloffs Also Had High Equity Volatility
(Percent)



Sources: Bloomberg, L.P; and IMF staff calculations. Note: Changes calculated over June 30, 2014-March 9, 2015. Volatilities are three- month realized. Currencies are quoted against the U.S. dollar, except in Hungary, Poland, and Romania, where they are quoted against the euro. Volatility in Russia (not shown) increased 44 points for the ruble and 39 points for equities. BRA = Brazil; CHL = Chile; COL = Colombia; EMEA = Europe, Middle East, and Africa; HUN = Hungary; IDN = Indonesia; IND = India; MEX = Mexico; MYS = Malaysia; NGA = Nigeria; OLS = ordinary least squares; PER = Peru; POL = Poland; ROU = Romania; THA = Thailand; TUR = Turkey; ZAF = South Africa.

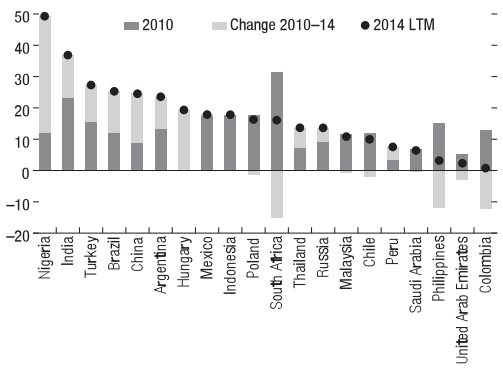
31. The existence of foreign currency hedges, financial (via financial derivatives) or natural (via offshore revenues), are significant offsetting factors to foreign currency risks of emerging market firms. Nevertheless, disclosures and data availability for such hedges are difficult to obtain or estimate.

32. See the October 2012 Global Financial Stability Report, Chapter 1, for an analysis of the absorptive capacity of banks and asset man agers in emerging market economies.

Figure 1.28. Financial Stability of Emerging Market Banks

Nigeria, India, Turkey, and Brazil among others have a large share of corporate debt-at-risk.

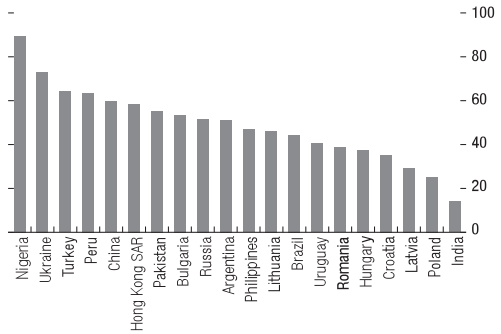
1. Corporate Debt-at-Risk (Percent)



Sources: S&P Capital IQ; and IMF staff calculations.
Note: Debt-at-risk is the share of corporate debt held by the "weak firms" or those with interest coverage ratios (EBITDA divided by interest expense) less than two. A sample of more than 10,000 firms was used. EBITDA = earnings before interest, taxes, depreciation, and amortization; LTM = last 12 months.

Banks in Nigeria, Ukraine, Turkey, and Peru are highly exposed to nonfinancial firms.

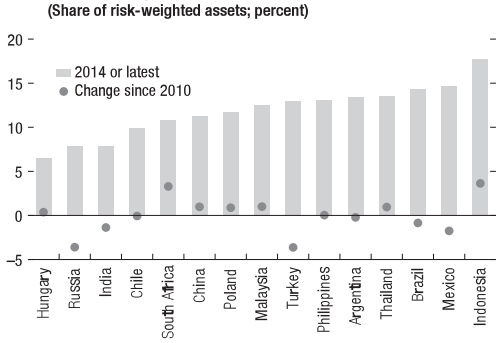
2. Bank Loans to Nonfinancial Corporations (Share of total loans; percent)



Sources: IMF, Financial Soundness Indicators; and IMF staff calculations.

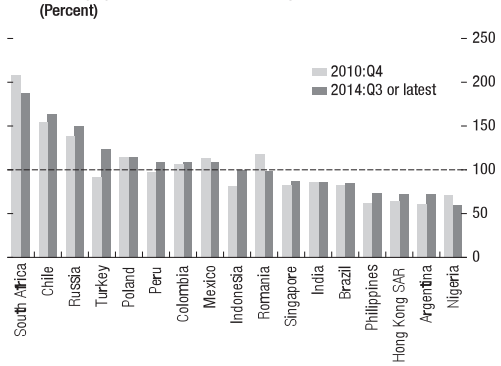
Banking buffers vary considerably among emerging market economies, and loan-to-deposit ratios have increased in places.

3. Loss-Absorbing Buffers (Share of risk-weighted assets; percent)



Sources: IMF, Financial Soundness Indicators; and IMF staff calculations.
Note: Loss-absorbing buffers = (Tier 1 capital + loan loss reserves – NPL)/(risk weighted assets). Data are for 2014 or latest available (2013 for China, Poland, and Thailand). NPL = nonperforming loan.

4. Banking System Loan-to-Customer-Deposit Ratio (Percent)



Source: IMF, Financial Soundness Indicators.
Note: Does not include interbank loans. Dashed line corresponds to 100 percent level.

The dramatic moves in commodity prices and the exchange rates of many emerging market economies over the past six months have already had a significant impact on market valuations for emerging market cor porations (Figure 1.24, panel 3). For some central and eastern European countries, such as Poland, the high share of foreign-currency-denominated or -linked debt built up during the precrisis period also makes them vulnerable to depreciation against other currencies, such as the Swiss franc. Since the end of June 2014, financial markets have reassessed equity valuations for firms in Brazil, Colombia, Malaysia, Mexico, Nigeria, Peru, Rus sia, and South Africa with the increase in the volatility of their currencies (Figure 1.27). For emerging markets more generally, higher volatility and loss of market con fidence can cause a sharp reduction in secondary market liquidity of emerging market assets and fast depreciation of local currencies, similar to what has been observed in Russia since the introduction of economic and financial sanctions (Box 1.2).

Banks have large exposures to the corporate sector in countries with significant corporate debt at risk

A significant share of debt in Argentina, Brazil, China, India, Nigeria, and Turkey is owed by firms with relatively constrained repayment capacity in terms of interest-coverage ratios[33] (Figure 1.28, panel 1), and in Turkey a significant share of this debt is in foreign currencies (Figure 1.26, panel 2). The exposure of banks to the nonfinancial corporate sector is particularly high in some emerging market economies. In 11 of the 21 emerging market banking systems analyzed here, more than half of the bank loan books consist of loans to firms, rendering them more exposed to corporate weakness, particularly in Nigeria, Peru, Turkey, and Ukraine (Figure 1.28, panel 2). Although it is difficult to match the precise exposure of banks to firms, the higher the overlap of these two metrics, the more significant the risks of bank asset deterioration from weaknesses in the corporate sector.

The broader impact of a sudden deterioration in corporate health depends on the capacity of banks to absorb losses and continue providing liquidity, given that domestic banks still play the primary financing role in emerging market economies. An assessment of different measures of bank health is provided in Table 1.5. Bank balance sheets appear healthy in most emerging market economies, but some vulnerabilities are still present. Loss-absorbing buffers appear particularly low in Chile, Hungary, India, and Russia (between 5 and 10 percent of risk-weighted assets; Figure 1.28, panel 3), and deterioration in loan quality could threaten capital levels. Furthermore, in India, Russia, and Turkey loss-absorbing buffers have deteriorated quite substantially in recent years. System-wide Tier 1 ratios for most emerging market economies are above 10 percent. However, the countries with the lowest ratios are China, India, and Russia, which account for about 70 percent of the aggregate banking system assets in this sample of banks. Buffers are still fairly low in some commodity-sensitive economies (such as Russia), while some banking systems are also sensitive to dollar funding and tighter liquidity conditions. This sensitivity could in turn put pressure on banks' funding channels, with many countries exhibiting high levels of loan-to-deposit ratios, including Chile, Russia, South Africa, and Turkey (Figure 1.28, panel 4). Finally, although regulatory caps mean that banks' direct currency exposures are generally limited, vulnerabilities could yet arise via increasing nonperforming loans in places where firms have a high proportion of foreign currency debt.

33. Defined as the ratio of earnings before interest, taxes, deprecia tion, and amortization to interest expenses.

Table 1.5. Summary of Sovereign, Corporate, and Banking Indicators

		Macroeconomy				Commodity Exposure				Corporate Sector			
		CPI (Percent year- over -year, 2015 forecast)	Deviation of CPI from Central Bank's Inflation Target/ Middle of Band (Percentage points)	Policy Rate (Percent)	2015 Growth forecast (Percent)	Commodity Exports/ Total Exports (Percent)[1]	Oil Exports/ Total Eports (Percent)[1]	Commodity- related shatre of Corporate Sector (Percent)[2]	Oil-Related share of Corporate Sector (Percent)[2]	Share of Debt at Risk (Percent)[3]	Share of Debt of Risk after Shock (Percent)[3]	Private Nonfinancial Sector FX Debt/GDP (Percent)	Nonfinancial Corporate Total Debt/ GDP (Percent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Latin America	Brazil	8.0	3.5	12.75	-1.0	52	7	25	20	25.3	37.0	15.1	46.9
	Chile	2.9	-0.1	3.00	2.7	47	1	26	6	10.0	22.4	39.4	-
	Colombia	3.6	0.6	4.50	3.4	69	47	45	33	0.8	2.5	9.9	-
	Mexico	3.1	0.1	3.00	3.0	20	12	39	30	17.9	19.4	-	20.9
Asia	China	1.2	-2.3	2.50	6.8	4	1	29	17	24.5	31.2	-	149.9
	India	5.8	-0.2	7.50	7.5	25	14	23	13	36.9	49.9	13.6	47.5
	Indonesia	4.6	0.6	7.50	5.2	54	7	36	18	17.8	45.7	15.3	21.7
	Malaysia	2.7	-	3.25	4.8	32	12	33	28	10.8	24.2	-	96.9
	Philippines	2.4	-0.6	4.00	6.7	15	2	9	5	3.2	31.5	-	-
	Singapore	0.8	-	-	3.0	-	-	-	-	-	-	-	80.7
	Thailand	2.1	-0.4	1.75	3.7	20	5	47	31	13.7	17.5	-	53.7
Europe, Middle East, Africa	Bahrain	1.5	-	0.50	2.7	82	68	37	-	2.1	2.1	-	-
	Hungary	1.7	-1.3	1.95	2.7	13	2	-	-	-	-	-	85.2
	Nigeria	12.0	-	13.00	4.8	91	81	60	35	49.3	51.9	-	-
	Poland	0.4	-2.1	1.50	3.5	16	2	32	18	16.3	23.9	32.5	44.2
	russia	12.0	7.5	14.00	-3.8	68	48	53	46	13.6	16.0	22.9	49.2
	Saudi Arabia	2.0	-	2.00	3.0	83	81	50	5	6.4	6.4	-	13.0
	South Africa	5.0	0.5	5.75	2.0	34	3	28	6	16.1	20.2	16.4	32.6
	Turkey	7.0	2.0	7.50	3.1	13	3	12	7	27.3	31.0	29.6	50.8
	United Arab Emirates	2.2	-	1.00	3.2	32	29	11	8	2.3	4.0	-	-

(Contd.)

Table 1.5. Summary of Sovereign, Corporate, and Banking Indicators *(Concld.)*

		External Vulnerabilities						Banking Sector		
		Current Account (Percent of GDP, 2015 forecast)	Reserves/ Short-Term External Financing Requirements[4]	Nonresident Holdings of Domestic Government Debt (Percent of all domestic government debt)	Change in Current since June 30 (percent)[5]	Weight in EMBIG (Percent)[5]	Sovereign Credit Default Swap Spreads (Basis points)[5]	Nonperforming Loans (Percent)[6]	Loan-to-Deposit Ratio (Percent)[6]	Loss-Absorbing Buffers (Percent)[6]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Latin America	Brazil	-3.7	1.9	20.1	-32.5	6.7	250	2.9	84.3	14.3
	Chile	-1.2	1.2	-	-12.7	2.6	89	2.2	163.1	10.0
	Colombia	-5.8	1.1	14.6	-32.0	3.2	151	2.8	109.1	-
	Mexico	-2.2	1.2	38.5	-17.8	12.9	115	2.9	108.9	14.7
Asia	China	3.2	6.2	-	-1.0	5.0	84	1.1	56.5	11.3
	India	-1.3	2.0	-	-3.2	0.4	-	4.0	86.1	7.9
	Indonesia	-3.0	1.2	38.1	-8.9	7.8	145	2.1	100.2	16.6
	Malaysia	2.1	1.0	47.3	-12.8	1.3	138	1.8	82.0	12.5
	Philippines	5.5	7.8	-	-1.0	4.6	85	2.4	73.4	13.1
	Singapore	20.7	-	-	-10.0	0.0	-	0.9	-	-
	Thailand	4.4	2.3	18.6	-0.4	0.0	98	2.2	109.4	13.5
Europe, Middle	Bahrain	-2.1	7.9	-	0.0	0.0	278	4.6	46.0	-
East,	Hungary	4.8	2.1	34.1	-22.0	2.8	115	16.6	-	-
Africa	Nigeria	0.7	-	-	-20.5	0.2	-	3.2	59.9	-
	Poland	-1.8	0.7	40.0	-22.6	2.1	59	4.9	114.1	11.8
	russia	5.4	6.7	24.3	57.6	8.1	454	6.5	149.9	7.8
	Saudi Arabia	-1.0	18.6	-	0.0	0.0	73	1.3	78.1	16.8
	South Africa	-4.6	0.9	36.0	-12.4	2.5	203	3.4	187.7	10.8
	Turkey	-4.2	0.6	21.8	-21.4	7.4	218	2.7	124.0	13.0
	United Arab Emirates	5.3	-	-	0.0	0.0	-	7.3	97.0	0

Sources: Bank of International Settlements; Bloomberg, L.P.; JP Morgan Chase & Co.; S&P Capital IQ UN Comtrade; IMF, World Economic Outlook database; IMF, Financial Soundness Indicators, and IMF staff dcalculations. Note: CPI = consumer price index; EBITDA = earnings before interest, taxes, depreciation, and amortisation; EMBIG = Emerging Markets Bond Index Global; FX = foreign currency; NPL = nonperforming loan.
1. 2013 COMTRADE data. Commodity exports using codes 0-4 from Standard International Trade Classification, Revision 3. Oil exports using code 33.
2. According to available firms from S&P Capital IQ, weighted by assets.
3. Percentage of firms with interest coverage (EBITDA/ interest expense) ratio below 2. The shock is composed of a 25 percent increase in borrowing costs, 20 percent appreciation of the U.S. dollar, and 25 percent reduction in earnings of energy firms.
4. Short-term external financing requirement is defined as short-term debt maturities plus current account deficit.
5. Market data is as of March 6.
6. As of 2014:Q3 or latest available data. Loss-absorbing buffers is (tier 1 capital + loan loss reserves - NPL/ (risk-weighted assets). 2014 data, except for China, Poland, and Thailand (2013).

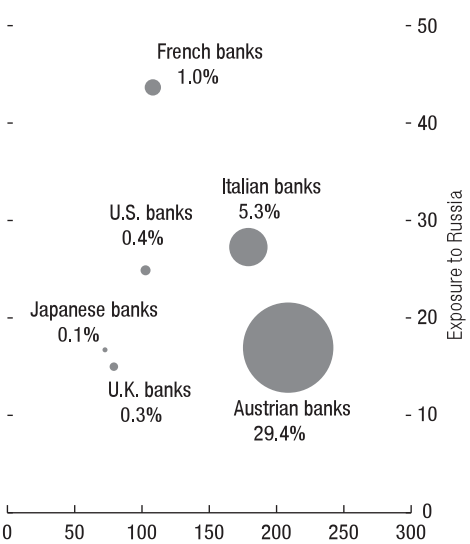
Box 1.2. Russia's Financial Risks and Potential Spillovers

Russia's economic outlook has deteriorated significantly under the combined shocks of sanctions and the sharp drop in the price of oil-interest rates are higher, the ruble has depreciated, and the government has lost its investment-grade credit rating. These developments threaten a further deterioration in asset quality and possible financial spillovers.

Foreign portfolio outflows amounted to $21 billion in the first nine months of 2014 ($13 billion of which was in equities), taking the stock of total foreign portfolio investment down to $225 billion. In the same period, Russians increased their portfolio investments abroad by $10 billion, to $63 billion.

External debt is not insignificant (at $599 billion as of December 2014). But the short-term repayment burden-$74 billion is due April-December 2015 (Figure 1.2.1), of which 61 percent is due to the corporate sector and 36 percent to banks- represents only one fifth of foreign exchange reserves ($352 billion as of the end of March). And the public and private sectors hold significant assets abroad (including $61 billion in portfolio assets, $184 billion in currency and deposits, and $32 billion in short-term loans at the end of December) that can be liquidated as needed. Nevertheless, as a consequence of the escalation of geopolitical tensions, lower oil prices, and sanctions, Russia's sovereign and corporate spreads have risen sharply, reflecting the market's perception of increased credit risk.

Figure 1.2.3. Foreign Bank Exposures
(Billions of U.S. dollars)



Sources: Bank for International Settlements (BIS); Bank of Japan; European Central Bank; and IMF staff estimates.
Note: Size of bubbles is exposure (BIS Table 9D) to central and eastern European economies as a percentage of total assets.

From a financial stability perspective, the Russian banking sector deserves close attention. Solvency risks in the sector appear contained overall, but some pressure is evident: nonperforming loans increased steadily through 2014 (to 6.7 percent as of the end of December) and profitability declined [Figure 1.2.2 omitted here]. Liquidity risk also appears relatively contained to date-overall deposits grew through 2014, with central bank funding representing 12 percent of liabilities as of the end of 2014; however, this may prove more challenging in the future. With a loan-to-deposit ratio of 150 percent, the sector is heavily dependent on wholesale market financing, and rolling over in external markets the foreign financing that comes due in 2015 ($37 billion) will not be possible for the seven sanctioned banks that account for about 75 percent [Figure 1.2.1 omitted here.] of Russian bank assetsAlthough the Russian banking sector weathered the crisis of 2009 (when conditions were arguably tougher), and official sector support can be expected to continue, a significant deterioration in asset quality or earnings or a liquidity shock at a large bank could signal a more systemic problem.

Direct financial linkages between Russia and the rest of the world are fairly limited, but the indirect connections with neighboring countries raise more serious global financial stability concerns. Foreign bank exposures to Russia have been reduced. But the stability of the European banking system could become significantly stressed should geopolitical concerns boost investors' risk aversion, which would lead to a stronger dollar and higher rates. This could cause Russia's intensified difficulties to spill over to central and eastern European countries, to which some large European banking systems are highly exposed (Figure 1.2.3).

The authors of this box are Allison Holland and Luigi Ruggerone.

Policies to mitigate risks

Emerging markets generally should aim to cushion the impact of global headwinds and disinflationary forces where possible, for example, by allowing exchange rate adjustment if it does not jeopardize smooth market functioning, or if the currency is already significantly undervalued, by boosting reserves, or by applying policies to increase macroeconomic policy space and buffers. Furthermore, countries ought to safeguard the resilience of the financial system through enhanced surveillance of vulnerable sectors. In China, the overall priority must be to allow an orderly correction of excesses. This will require policies to play a dual and finely balanced role. Policies should contribute to a financial rebalancing, curtailing the riskiest parts of shadow banking. Policies should also facilitate corporate deleveraging and the transparent recognition of costs arising from the exit of nonviable firms. Authorities should discourage the financing of nonviable borrowers, which will require tolerating more defaults, including in public bond markets. Orderly deleveraging requires comprehensive policies that allow a gradual slowdown in credit growth and, where necessary, provides mechanisms for orderly debt restructuring. Given China's outsized level of gross corporate debt and its importance to the global economy, managing this process smoothly will be critical in order to minimize the macroeconomic headwinds it could create.

Across emerging markets more generally, the large portion of debt denominated in foreign currencies as well as in specific sectors, such as energy firms, means that micro- and macroprudential measures have an important role to play in limiting the risks from shocks, and authorities need to enhance supervision of these sectors. The relevant macroprudential tools include higher risk weights (capital requirements) for corporate foreign currency exposures as well as caps on the share of such exposures on banks' balance sheets. In the likely case of leakage, consideration should also be given to changes in the tax code that remove fiscal incentives in favor of debt or that penalize foreign currency debt (see also IMF 2014b). To avoid these measures from becoming procyclical, they should be introduced cautiously and with sufficient phase-in periods. At the microprudential level, regulators need to conduct bank stress tests related to foreign currency risks and regularly monitor corporate foreign currency exposures, including derivatives positions. The hedges employed by corporations to limit their exposure risks may be compromised when most needed, so regulators should assess them conservatively. These macroprudential and microprudential measures can be usefully complemented by flexible exchange rates. Flexible exchange rates can aid the adjustment to shocks and facilitate an independent monetary response to credit booms. They can also discourage banks and corporations from building up large foreign exchange exposures in the first place. Renewed efforts by authorities globally to collect and provide better information on foreign currency corporate indebtedness and offsetting factors (such as hedges) is also desirable.

To ensure properly functioning markets, authorities need to adopt and enforce policies that protect against lapses of liquidity in local bond markets. This calls for country authorities to potentially use cash balances when needed or to lower the supply of long-term debt to the market to help curtail bond spread increases. Policymakers can also adopt crisis management tools that allow the smooth functioning of markets, by using bilateral and multilateral swap line agreements to help reduce excess volatility in currency markets and provide foreign currency funding in times of stress. Multilateral resources, such as IMF facilities, could also provide additional buffers. Overall, keeping emerging market

economies resilient calls for authorities to maintain a strong focus on domestic vulnerabilities, as noted in previous *Global Financial Stability Report* issues.

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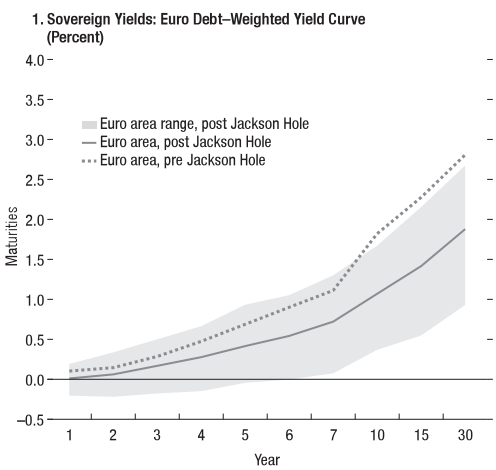
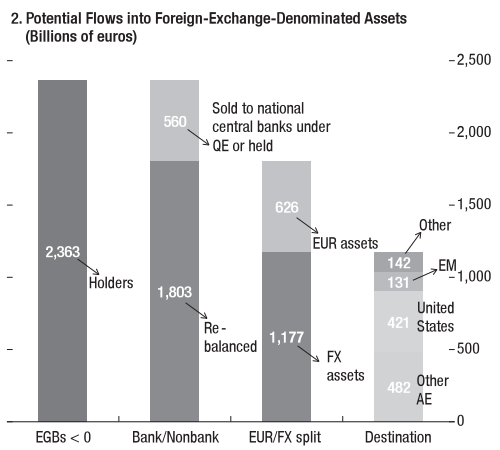
Annex Figure 1.2.1. Euro Area Negative-Yielding European Government Bonds and Baseline Portfolio Rebalancing

Expectations of quantitative easing drove some core yields negative.



Sources: Bloomberg, L.P.; and IMF staff estimates.

Rebalancing under the baseline scenario.



Sources: Bloomberg, L.P.; and IMF staff calculations.
Note: AE = advanced economies; EGB = European government bond; EM = emerging markets; EUR = euro area; FX = foreign exchange; QE = quantitative easing. See Figure 1.10 panel 2 for country groupings.

* Pension funds are assumed to follow the GPIF's lead, reducing their domestic bond holdings to 35 percent of assets through a reduction of JGB holdings.
* The outstanding stock of JGBs rises in line with the latest *World Economic Outlook* fiscal projection and the BOJ buys %80 trillion of JGBs every year, as announced under QQE2.

As a result of this portfolio rebalancing, insurance companies and pension funds could invest as much as %42 trillion ($350 billion), or 8 percent of GDP, in for- eign assets (Table 1.2.3). This scenario is in line with the pace of their portfolio rebalancing abroad over the last year and the GPIF^Rs new target allocation announced in late 2014. If the insurance companies and pension funds maintain present international allocation ratios, 80 percent of the outflow would go into bonds of other advanced economies, 14 percent into emerging market bonds, and 6 percent into global equities.

Annex Table 1.2.2. Japan: A Potential Portfolio Rebalancing Scenario under QQE2, 2015-17 (Trillions of yen)

	End-2014	End-2017	Change
Bank of Japan's JGB Holdings	207	447	240
Other Financial Institutions' JGB Holdings	505	340	165
Pension Funds (public and private)	92	78	14
Insurance Companies	199	159	40
Domestic Banks (major and regional)	105	50	55
Japan Post Bank	110	53	57
Memo Items:			
Outstanding Stock of JGBs	828	903	75

Sources: Bank of Japan (BOJ); Japan Post Bank; Ministry of Finance; and IMF staff projections. Note: Pension fund holdings of domestic bonds decline to 35 percent of assets by a reduction in JGB holdings in line with the GPIF^Rs new target allocation. Similarly, insurance company holdings of JGBs and Japan Post Bank holdings of domestic bonds decline to 35 percent of total assets. Domestic bank holdings of JGBs decline to 5 percent of total assets (benchmark: other advanced economies). The BOJ buys 80 trillion yen of JGBs on a net basis every year, as announced under QQE2. Outstanding stock of JGBs rises in line with World Economic Outlook fiscal projections. GPIF = Government Pensions Investment Fund; JGB = Japanese government bond; QQE = quantitative and qualitative easing.

Annex Table 1.2.3. Potential Portfolio Outflows by Japanese Institutional Investors, 2015-17 (Billions of U.S. dollars)

	Baseline	QE-plus (complete policies)	Downside
(1)	(2)	(3)	(4)
Insurance Companies	100	275	0
Private Pensions	25	58	0
Public Pensions	225	225	225
Total	350	559	225

Source: IMF staff projections.

Note: All figures are expressed at end-2014 exchange rates. Under the baseline scenario, insurance companies and pension funds continue their portfolio rebalancing abroad at the same pace as since 2012:Q3. Under the complete policies/ QE-plus scenario, insurance and private pension funds accelerate their portfolio rebalancing abroad at twice the pace as baseline. Under the downside scenario, they stop their portfolio rebalancing abroad. QE = quantitative easing.

This baseline scenario assumes a significant but partial implementation of the other two arrows of Abe nomics (fiscal and structural reforms). If announced policies are fully implemented and work to their fullest extent across the three reform arrows (the "QE-plus" scenario, also referred to as the "complete policies" scenario), portfolio outflows could be as much as $550 billion, as insurance and private pension funds acceler ate their portfolio rebalancing abroad (Table 1.2.3). Alternatively, if the other two reform arrows are not effectively deployed and efforts at pulling the economy out of deflation are not successful ("downside" scenario), portfolio outflow could be less than anticipated, as private financial institutions continue to demand JGBs as a hedge against deflation. This would imply a partial return to the status quo before Abenomics when home bias of Japanese institutional investors was strong and portfolio outflows were limited. In this case, portfolio outflows could be limited to $225 bil lion by end-2017.

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Annex 1.1. Global Financial Stability Map: Construction and Methodology[50]

This annex outlines our choice of indicators for each of the broad risks and conditions in the global financial stability map (Figure 1.1). To complete the map, these indicators are supplemented by market intelligence and judgment that cannot be adequately represented with available indicators.

To begin construction of the stability map, we determine the percentile rank of the current level of each indicator relative to its history to guide our assessment of current conditions, relative both to the April 2009 GFSR and over a longer horizon. Where possible, we have therefore favored indicators with a reasonable time series history. However, the final choice of positioning on the map is not mechanical and represents the best judgment of IMF staff. Table 1.10 shows how each indicator has changed since the April 2009 GFSR and our overall assessment of the movement in each risk and condition.

Monetary and Financial Conditions

The availability and cost of funding linked to global monetary and financial conditions (Figure 1.34). To capture movements in general monetary conditions in mature markets, we begin by examining the cost of short-term liquidity, measured as the average level of real short rates across the G-7. We also take a broad measure of excess liquidity, defined as the difference between broad money growth and estimates for money demand. Realizing that the channels through which the setting of monetary policy is transmitted to financial markets are complex, some researchers have found that including capital market measures more fully captures the effect of financial prices and wealth on the economy. We therefore also use a financial conditions index that incorporates movements in real exchange rates, real shortand long-term interest rates, credit spreads, equity returns, and market capitalization. Rapid increases in official reserves held by the central bank create central bank liquidity in the domestic currency and in global markets. In particular, the recycling of dollar reserves in the United States contributes to looser liquidity conditions. To measure this, we look at the growth of official international reserves held at the U.S. Federal Reserve. While most of the above measures capture the price effects of monetary and financial conditions, to further examine the quantity effects we incorporate changes in lending conditions, based on senior loan officer surveys in mature markets.

Risk Appetite

The willingness of investors to take on additional risk by increasing exposure to riskier asset classes, and the consequent potential for increased losses (Figure 1.35). We aim to measure the extent to which investors are actively taking on more risk. A direct approach to this exploits survey data. The Merrill Lynch Fund Manager Survey asks around 200 fund managers what level of risk they are currently taking relative to their benchmark. We track the net percentage of investors reporting higher-than-benchmark risktaking. An alternative approach is to examine institutional holdings and flows into risky assets. The State Street Investor Confidence Index uses changes in equity holdings by large international institutional investors relative to domestic investors to measure relative risk tolerance.[51] The index extracts relative risk tolerance by netting out wealth effects and assuming that changes in fundamentals symmetrically affect all kinds of investors. We also take account of flows into emerging market bond and equity funds, as these represent another risky asset class. Taken together, these measures provide a broad indicator of risk appetite.

50. This annex was prepared by Ken Miyajima.

51. The estimated changes in relative risk tolerance of institutional investors from Froot and O'Connell (2003) are aggregated using a moving average. The index is scaled and rebased so that 100 corresponds to the year 2000.

Table 1.10. Changes in Risks and Conditions since the April 2009 Global Financial Stability Report

Conditions and Risks	Changes since April 2009 GFSR
(1)	(2)
Monetary and Financial Conditions	↑
G-7 real short rates	↓
G-3 excess liquidity	↓
Financial conditions index	↑
Growth in official reserves	↓
G-3 lending conditions	↑
Risk Appetite	↑↑↑
Investor risk appetite survey	↑
Investor confidence index	↑
Emerging market fund flows	↑
Macroeconomic Risks	↓
World Economic Outlook global growth risks	↓
G-3 confidence indices	↔
OECD leading indicators	↔
Implied global trade growth	↔
Global breakeven inflation rates	↓
Mature market sovereign CDS spreads	↓
Emerging Market Risks	↓↓
Fundamental EMBIG spread	↑
Sovereign credit quality	↔
Credit growth	↓
Median inflation volatility	↑
Corporate spreads	↓
Credit Risks	↓
Global corporate bond index spread	↓
Credit quality composition of corporate bond index	↔
Speculative-grade corporate default rate forecast	↓
Banking stability index	↓
Loan delinquencies	↑
Household balance sheet stress	↓
Market and Liquidity Risks	↓↓
Hedge fund estimated leverage	↔
Net noncommercial positions in futures markets	↔
Common component of asset returns	↔
World implied equity risk premia	↔
Composite volatility measure	↓
Funding and market liquidity index	↓

Source: IMF staff estimates.
Note: Changes are defined for each risk/condition such that ↑ signifies higher risk, easier monetary and financial conditions, or greater risk appetite, and ↓ signifies the converse; ↔ indicates no appreciable change. The number of arrows for the six overall conditions and risks corresponds to the scale of moves on the global financial stability map.

Macroeconomic Risks

Macroeconomic shocks with the potential to trigger a sharp market correction, given existing conditions in capital markets (Figure 1.36). Our principal assessment of the macroeconomic risks is based on the analysis contained in the IMF's *World Economic Outlook* and is consistent with the overall conclusion reached in that report on the outlook and risks for global growth. We complement that analysis by examining various economic confidence measures. The first of these is a GDP-weighted sum of confidence indices across the major mature markets to determine whether businesses and consumers are optimistic or pessimistic about the economic outlook. Second, recognizing the importance of turning points between expansions and slowdowns of economic activity, we incorporate changes in the Organization for Economic Cooperation and Development's composite leading indicators. Third, in order to gauge inflection points in global trade, we include global trade growth estimates implied by the Baltic Dry Index, a high-frequency indicator based on the freight rates of bulk raw materials that is commonly used as a leading indicator for global trade. The fourth component is market-implied inflation expectations, based on intermediate-dated yield differentials between nominal and inflationlinked domestic bonds. Finally, in order to help assess stress levels on sovereign balance sheets, we examine a GDP-weighted average of the cost that investors need to pay to protect themselves against defaults of selected mature market sovereign debt.

Emerging Market Risks

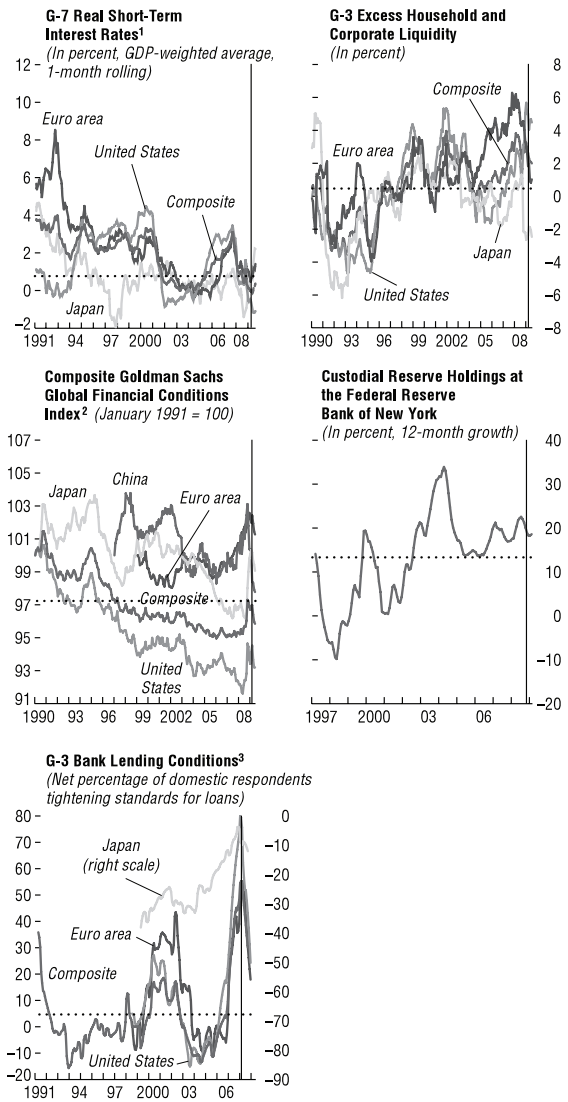
Underlying fundamentals in emerging markets and vulnerabilities to external risks (Figure 1.37). These risks are closely linked to the macroeconomic risks described above, but conceptually separate as they focus only on emerging markets. Using an econometric model of emerging market sovereign spreads, we identify the movement in Emerging Market Bond Index Global (EMBIG) spreads accounted for by changes in fundamentals, as opposed to the movement in spreads attributable to other factors. Included in the fundamental factors are changes in economic, political, and financial risks within each country.[52] This is complemented with a measure of the trend in sovereign rating actions by credit rating agencies, to gauge changes in the macroeconomic environment and progress in reducing vulnerabilities arising from external financing needs. In addition to these factors relating to sovereign debt, we also include an indicator of growth in private sector credit. Other components of the subindex include a measure of the volatility of inflation rates, and a measure of corporate credit spreads relative to sovereign spreads.

Credit Risks

Changes in, and perceptions of, credit quality that have the potential for creating losses resulting in stress to systemically important financial institutions (Figure 1.38). Spreads on a global corporate bond index provide a market price-based measure of investors' assessment of corporate credit risk. We also examine the credit-quality composition of the high-yield index to identify whether it is increasingly made up of higher- or lower-quality issues, calculating the percentage of the index comprised of CCC or lower-rated issues. In addition, we incorporate forecasts of the global speculative-grade default rate produced by Moody's. Another component of the subindex

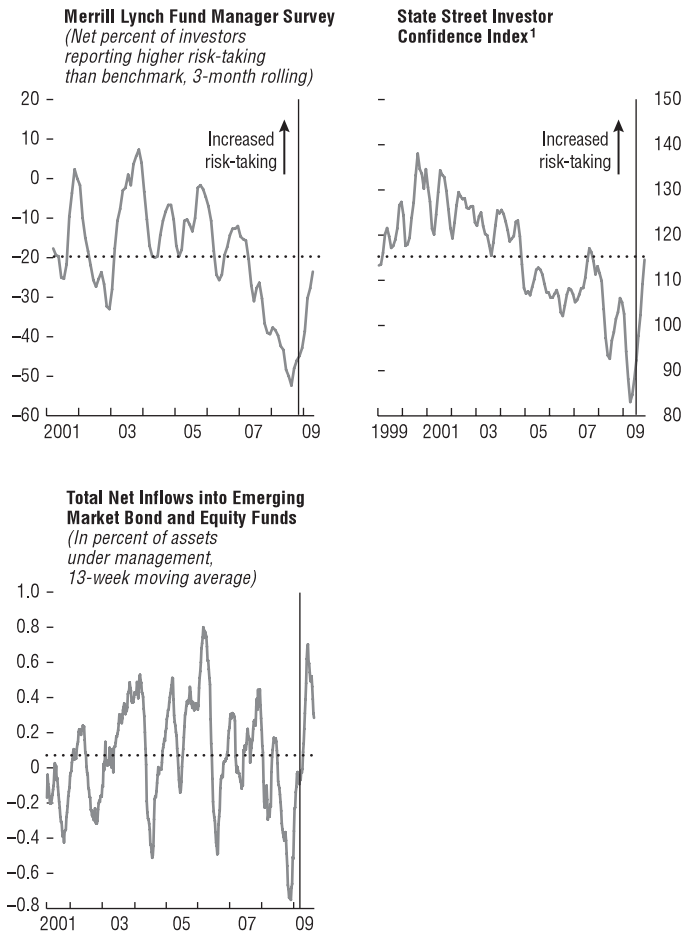
52. The economic risk rating is the sum of risk points for annual inflation, real GDP growth, the government budget balance as a percentage of GDP, the current account balance as a percentage of GDP, and GDP per capita as a percentage of the world average GDP per capita. The financial risk rating includes foreign debt as a percentage of GDP, debt service as a percentage of GDP, net international reserves as months of import cover, exports of goods and services as a percentage of GDP, and exchange rate depreciation over the last year. The political risk rating is calculated using 12 indicators representing government stability and social conditions.

Figure 1.34. Global Financial Stability Map: Monetary and Financial Conditions



Sources: Bloomberg L.P.; Goldman Sachs; Federal Reserve Bank of New York; lending surveys for households and corporates by the Bank of Japan, European Central Bank, and the U.S. Federal Reserve; and IMF staff estimates.
Note: Dashed lines are period averages. Vertical lines represent data as of the April 2009 GFSR.
1. Canada and the United Kingdom are included in the composite but not shown separately.
2. A GDP-weighted average of China, euro area, Japan, and the United States. Each country index represents a weighted average of variables such as interest rates, credit spreads, exchange rates, and financial wealth.
3. Monthly interpolated GDP-weighted average. Euro area 1999:Q1 to 2002:Q4 based on values implied by credit growth. Composite and Japan showing up to 2009:Q2.

Figure 1.35. Global Financial Stability Map: Risk Appetite

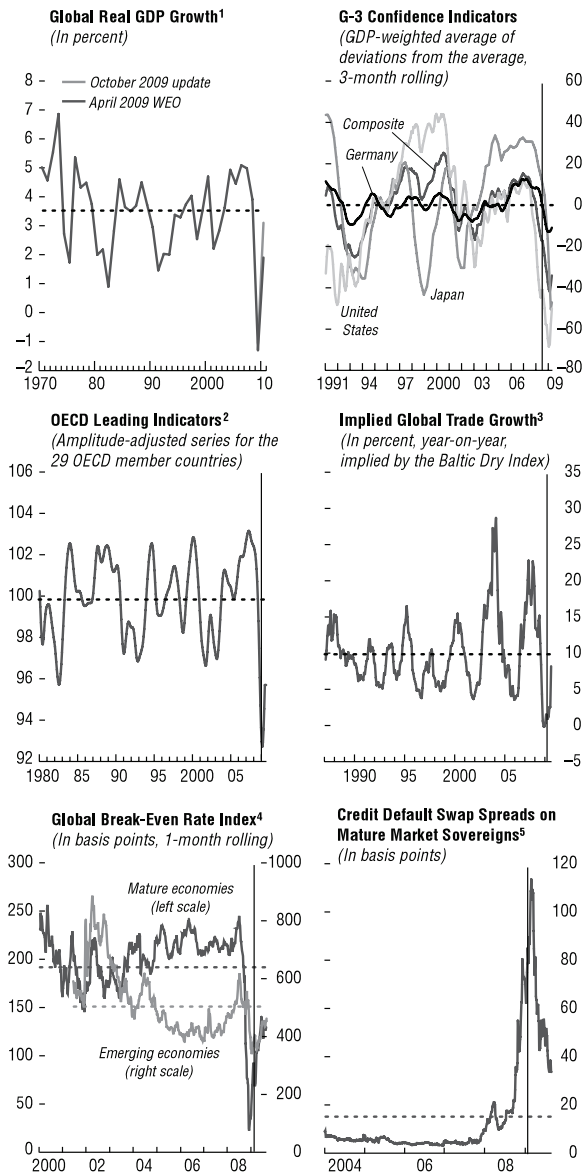


Sources: Merrill Lynch; State Street Global Markets; Emerging Portfolio Fund Research; and IMF staff estimates.

Note: Dashed lines are period averages. Vertical lines represent data as of the April 2009 GFSR.

1. The estimated changes in relative risk tolerance of institutional investors from Froot and O'Connell are integrated to a level, scaled, and rebased so that 100 corresponds to the average level of the index in the year 2000. Three-month rolling average of the published index.

Figure 1.36. Global Financial Stability Map: Macroeconomic Risks



Sources: The Baltic Exchange; Barclays Capital; Bloomberg L.P.; Datastream; Organization for Economic Cooperation and Development; IMF, World Economic Outlook; and IMF staff estimates.

Note: Dashed lines are period averages. Vertical lines represent data as of the April 2009 GFSR.

1. 2010 growth forecast labeled as October 2009 GFSR Update accounts for risks to the baseline forecast.

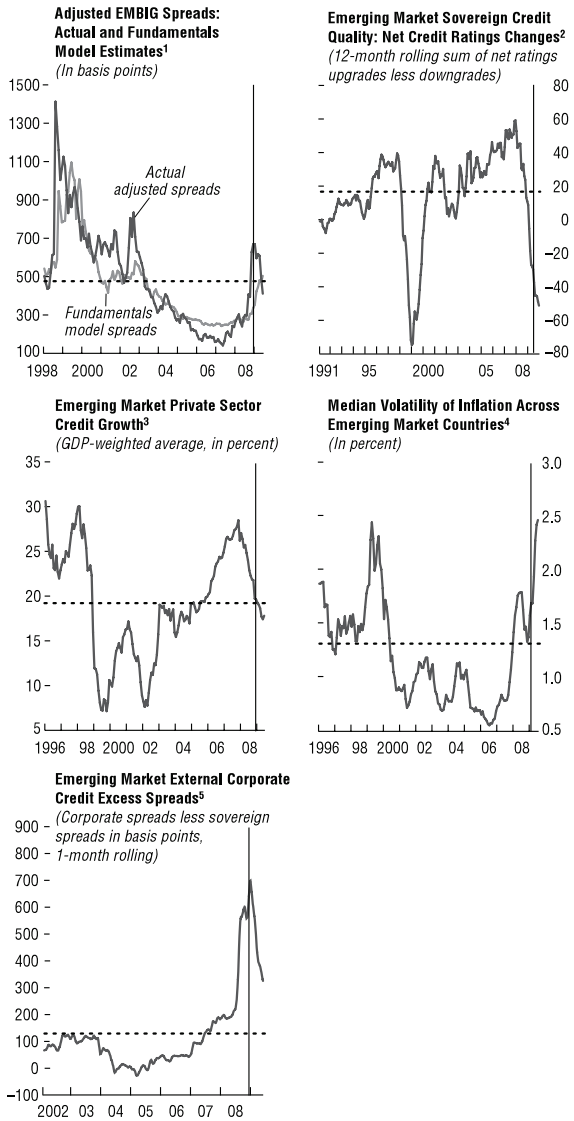
2. Amplitude adjustment is carried out by adjusting mean to 100 and the amplitude of the raw index to agree with that of the reference series by means of a scaling factor.

3. The Baltic Dry Index is a shipping and trade index measuring changes in the cost of transporting raw materials such as metals, grains, and fuels by sea.

4. Tracking GDP-weighted longer-term break-evens, or inflation expectations for Australia, Brazil, Canada, Colombia, France, Germany, Italy, Japan, Korea, Mexico, Poland, South Africa, Sweden, Turkey, the United Kingdom, and the United States. The ranking of the observations is determined by z-score in absolute terms relative to their long-run averages.

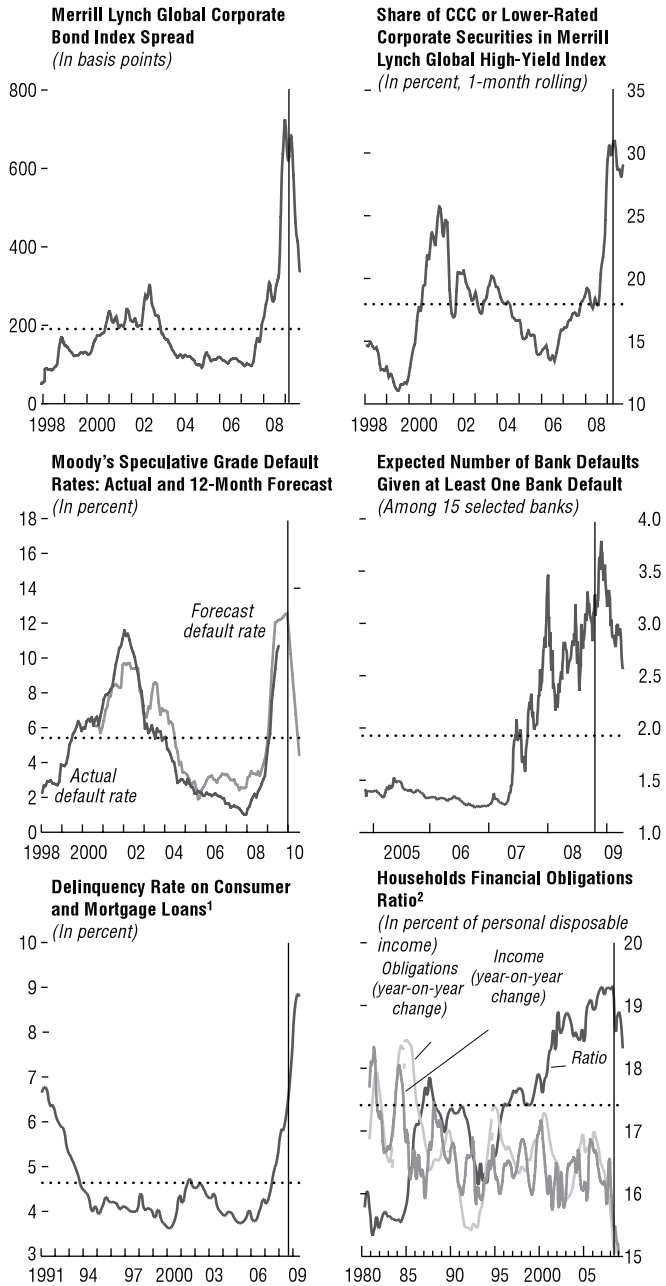
5. GDP-weighted average of France, Germany, Italy, Japan, Spain, United Kingdom, and United States.

Figure 1.37. Global Financial Stability Map: Emerging Market Risks



Sources: Bloomberg L.P.; JPMorgan Chase & Co.; The PRS Group; IMF, International Financial Statistics; and IMF staff estimates.
Note: Dashed lines are period averages. Vertical lines represent data as of the April 2009 GFSR.
1. EMBIG = Emerging Markets Bond Index Global. The model excludes Argentina because of breaks in the data series related to debt restructuring. Owing to the short data series, the model also excludes Indonesia and several smaller countries. The analysis thus includes 32 countries.
2. Net actions of upgrades (+1 for each notch), downgrades (-1 for each notch), changes in outlooks (+/- 0.25), reviews and creditwatches (+/- 0.5).
3. 44 countries.
4. Average of 12-month rolling standard deviations of consumer price changes in 36 emerging markets.
5. Unweighted average of Brazil, China, Colombia, Egypt, Kazakhstan, Mexico, Malaysia, Peru, Russia, and Ukraine.

Figure 1.38. Global Financial Stability Map: Credit Risks



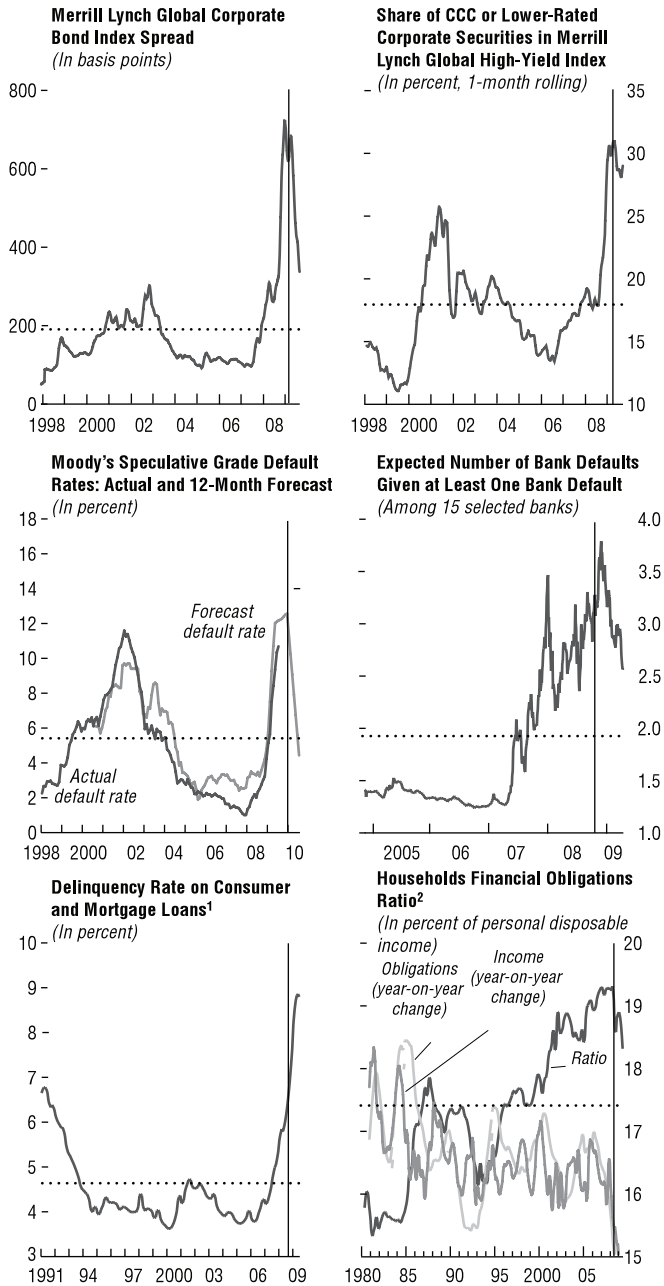
Sources: Bloomberg L.P.; Merrill Lynch; Moody's; Mortgage Bankers Association; U.S. Federal Reserve; and IMF staff estimates.

Note: Dashed lines are period averages. Vertical lines represent data as of the April 2009 GFSR.

1. 30-, 60-, and 90-day delinquencies for residential and commercial mortgages, and credit card loans in the United States. Quarterly data are extrapolated into monthly frequency.

2. Financial obligations consist of the estimated required annual payments on outstanding mortgages, consumer debt, automobile lease, rental on tenant-occupied property, homeowners' insurance, and property tax.

Figure 1.38. Global Financial Stability Map: Credit Risks



Sources: Bloomberg L.P.; Merrill Lynch; Moody's; Mortgage Bankers Association; U.S. Federal Reserve; and IMF staff estimates.

Note: Dashed lines are period averages. Vertical lines represent data as of the April 2009 GFSR.

[1]30-, 60-, and 90-day delinquencies for residential and commercial mortgages, and credit card loans in the United States. Quarterly data are extrapolated into monthly frequency.

[2]Financial obligations consist of the estimated required annual payments on outstanding mortgages, consumer debt, automobile lease, rental on tenant-occupied property, homeowners' insurance, and property tax.

is a banking stability index, which represents the expected number of defaults among large complex financial institutions (LCFIs), given at least one LCFI default (see Segoviano and Goodhart, 2009). This index is intended to highlight market perceptions of systemic default risk in the financial sector. To capture broader credit risks, we also include delinquency rates on a wide range of other credit, including residential and commercial mortgages and credit card loans. Also included is a measure of stress on household balance sheets, constructed as the total amount of financial obligations scaled by disposable income for U.S. households.[53]

Market and Liquidity Risks

The potential for instability in pricing and funding risks that could result in broader spillovers and/ or mark-to-market losses (Figure 1.39). An indicator attempting to capture the extent of market sensitivity of hedge fund returns provides an indirect measure of institutional susceptibility to asset price changes. The subindex also includes a speculative positions index, constructed from the net noncommercial positions relative to overall open interest for a range of futures contracts as reported to the Commodity Futures Trading Commission (CFTC). The index typically rises when noncommercial traders take relatively large positions on futures markets, relative to commercial traders.[54] Also included in the index is an estimation of the proportion of variance in returns across a range of asset classes that can be explained by a common factor. The greater the common factor across asset-class returns, the greater the risk of a disorderly correction in the face of a shock. An additional indicator is an estimate of equity risk premia in mature markets using a three-stage dividend discount model. Low equity risk premia may suggest that investors are underestimating the risk attached to equity holdings, thereby increasing potential market risks. There is also a measure of implied volatility across a range of assets. Finally, to capture perceptions of funding conditions, secondary market liquidity, and counterparty risks, we incorporate the spread between major mature-market government securities yields and interbank rates, the spread between interbank rates and expected overnight interest rates, bid-ask spreads on major mature-market currencies, and daily returntovolume ratios of equity markets.

53. Estimated payments on outstanding mortgages, consumer debt, auto leases, rental contracts, homeowners' insurance, and property tax.

54. Not all "noncommercial" traders can accurately be described as "speculators". Indeed, as of September 2009, the CFTC no longer uses the terms "commercial" and "noncommercial" to classify traders in its weekly Commitment of Traders report. Instead, the report disaggregates the data into four categories of traders: (1) producer/ merchant/processor/user; (2) swap dealer; (3) managed money; and (4) other reportable.