

Finance and Economics Working Group Matrix

Highlighted cells indicate U.S. Action

Agenda Item	US Rep	US ABAC position/action	USG Position if known	Other economy positions
1. From the Chair				
A) Review of ABAC Russia Priorities	N/A	<ul style="list-style-type: none"> ABAC USA should monitor 		
2. Matters Arising		<ul style="list-style-type: none"> 		
3. Financial Market Data Flows	Alex Parle	<ul style="list-style-type: none"> Alex Parle will present on the proposed dialogue on data flows. 		<p>Paper has been circulated to ABAC China, Chinese Taipei, Indonesia, Malaysia, Japan, Australia, PNG, Thailand</p> <p>ABAC PNG , Malaysia, and Japan have responded positively.</p>
4. Financial Markets Stability	N/A	<p>This presentation is from ABAC III, where the Guest speaker was unable to attend the meeting.</p> <p>The paper argues for strengthening financial markets is an important part of increasing the resilience of the financial system to adverse shocks thus contributing towards the objective of financial stability.</p>		
5. Financial Markets Stability	N/A	<ul style="list-style-type: none"> No paper available at this time. 		ABAC China, Russia, and Japan are pushing this issue.
6. Finance Ministers Dialogue	N/A	<p>The ABAC dialogue with Finance Ministers will focus primarily on the development of an Asia-Pacific Financial Forum (APFF) as a platform for public-private sector collaboration in:</p> <ul style="list-style-type: none"> The development of robust financial markets across the region; the convergence of financial standards, regulations and practices; and connectivity for facilitating cross-border financial flows, to create dynamic and integrated financial markets that will support the region's sustained rapid growth; and Shaping global financial regulatory reforms in support of 	USG is supportive of the APFF, but is not convinced of the staying power. Treasury stresses that multiple APEC economies must step up to ensure the longevity of the APFF.	

		the region's financial development goals, through coordination of views on agreed areas of common regional concern and ensuring that these concerns are adequately reflected in global financial standards and regulations.		
7. Regional Financial Architecture	N/A	<ul style="list-style-type: none"> ABAC USA Should monitor 		
8. FEWG Input to Leaders Dialogue	N/A	<ul style="list-style-type: none"> ABAC USA Should monitor 		
9. Advisory Group Update	N/A	<ul style="list-style-type: none"> ABAC USA should monitor 		
10. FEWG Agenda for 2013	N/A	<ul style="list-style-type: none"> ABAC USA should monitor closely. NCAPEC will work with Board Members in October to develop US priorities and ensure that they are reflected in the agenda. 		
11. Other Issues	N/A			

Draft
Finance and Economic Working Group
Vladivostok
16:00 to 18:00, 4 September 2012
Anchor Aweigh Lounge, Deck 5

Agenda

Agenda Item No.	Issue	Lead Economy/ Speaker	Doc. No.
1	Introduction <ul style="list-style-type: none"> - Opening Remarks - Review of ABAC Russia priorities - Approval of the minutes of the last FEWG meeting 	Mr John Denton	
2	Matters arising from previous meeting	Mr John Denton	
3	Data Flows ABAC USA will be presented an updated paper on the issue of Data Flows	ABAC USA	
4	Financial Markets Stability ABAC Russia will be introducing their third paper on Financial Stability.	ABAC Russia	
5	Financial Markets Stability ABAC Russian will summarize ABAC Russia work within FEWG in 2012 -- key points, our recommendations to policymakers, why all the matter is important.	ABAC Russia	
6	Finance Minister Dialogue The FEWG will be briefed on the outcome of the Finance Minister's dialogue held in Moscow.	John Denton	
7	Regional Financial Architecture Following on from the leaders dialogue, the Advisory group will brief the FEWG on the next steps in establishing the Asia Pacific Financial Forum	Advisory Group	

8	FEWG Input to Leaders dialogue A round table discussion on FEWG's input to the Leaders Dialogue and main issues to be raised.	Chair	
9	Advisory Group on APEC Financial System Capacity Building Update An update on the outcomes of the Advisory group meeting and endorsement of any issues or initiatives.	Advisory Group	
10	FEWG Agenda for 2013 Members are requested to indentify issues and topics they would like to see be included on the FEWG work plan for 2013	Chair	
11	Other Issues <ul style="list-style-type: none"> - Other Business - Closing Remarks 		

Meeting Document Summary Sheet

Document Title: ABAC Russia FEWG Paper 3 Strengthening Financial Markets
Purpose: For information
Issue: Ways of strengthening financial markets
Background: <p>This is the third paper in a series that has previously focused on the importance of financial stability and macroprudential policies designed to alleviate systemic risk. This paper looks at ways of strengthening financial markets through improvements in regulatory policy, supervisory arrangements and financial infrastructure that help avoid a repeat of the 2007-2009 crisis.</p> <p>From the perspective of the APEC economies, there has been an emphasis on the need to achieve the appropriate balance between measures designed to improve financial stability while at the same time ensuring that the prospects for real economic growth and longer-term development of the financial and banking sectors are not damaged. From a policymaker's perspective, "work is still in progress" as regards the implementation of the global regulatory agenda and it is important that momentum towards the goal of financial stability is not diverted by a background of uncertainties over global economic prospects and continued stresses in financial markets.</p> <p>This paper suggests that strengthening financial markets is part of the process of increasing the resilience of financial institutions and the financial system more generally to adverse shocks rather than necessarily increasing the size of financial sectors relative GDP to levels where it results in a mis-allocation of resources and an undesirable concentration of risk.</p>
Proposal /Recommendations: <ul style="list-style-type: none">• N/A
Decision Points: <ul style="list-style-type: none">• N/A

APEC BUSINESS ADVISORY COUNCIL

Prepared for ABAC Finance& Economic Working Group (FEWG)

Ho Chi Minh City, Vietnam

16-17 July, 2012

STRENGTHENING FINANCIAL MARKETS

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Abstract:

This is the third paper in a series that has previously focused on the importance of financial stability and macroprudential policies designed to alleviate systemic risk. This paper looks at ways of strengthening financial markets through improvements in regulatory policy, supervisory arrangements and financial infrastructure that help avoid a repeat of the 2007-2009 crisis.

From the perspective of the APEC economies, we have previously emphasised the need to achieve the appropriate balance between measures designed to improve financial stability while at the same time ensuring that the prospects for real economic growth and longer-term development of the financial and banking sectors are not damaged. From a policymaker's perspective, "work is still in progress" as regards the implementation of the global regulatory agenda and it is important that momentum towards the goal of financial stability is not diverted by a background of uncertainties over global economic prospects and continued stresses in financial markets.

Strengthening financial markets is part of the process of increasing the resilience of financial institutions and the financial system more generally to adverse shocks rather than necessarily increasing the size of financial sectors relative GDP to levels where it results in a mis-allocation of resources and an undesirable concentration of risk.

Introduction

We presented our first paper on the subject of financial stability to the FEWG in Hong Kong in February this year (“Financial Stability: Dimensions, Background & Key Issues”). The focus of that paper was to outline the importance of financial stability for the economic and regulatory policy agenda. The paper structured the main issues along three principal dimensions (1) private sector leverage (which encompasses the inter-related issues of financial intermediation, corporate and household debt, (2) sovereign debt and long-term sustainability of public finances, (3) global imbalances, monetary policy and stability of fiat currency systems.

Our second paper presented in Kuala Lumpur in May focused on policy recommendations with regard to achieving financial stability and, in particular, outlined policy targets and regulatory instruments that are appropriate to the APEC economies and their financial systems. The paper also examined issues related to strengthening financial infrastructure, improving policy co-ordination at the APEC level and looking at issues such as the management of capital inflows which remain an important issue especially for emerging market policymakers.

ABAC understands the importance of sound financial regulation in maintaining sustainable growth and stable financial systems and that the issue of excessive speculative movements of capital across financial markets needs to be addressed. ABAC acknowledges that given the high level of connectivity in global financial markets, the impact of financial regulations extends beyond jurisdictional borders. ABAC expressed concern that new financial regulations being introduced in some jurisdictions may have unintended and unpredictable consequences affecting other markets that could impede the healthy growth of APEC member economies. ABAC highlights two issues. First, that due account be taken of the cross-border and extra-territorial effects of financial regulations and that the relevant authorities collaborate with each other in addressing those concerns. Second, that account be taken of the unintended consequences for market makers across the region and the impact on the real economy of new regulations that unduly constrain market liquidity, hinder pricing mechanisms and distort markets.

The structure of this paper is as follows: we examine what we mean by strengthening financial markets. We look at the role of the financial sector in contributing to recent crises highlighting negative feedback loops that can occur between the balance sheets of banks, households and sovereigns when credit booms implode and bring about problems of liquidity and solvency and eventual forced deleveraging. Stronger financial markets does not mean an increase in the concentration of risk which is especially apparent in the derivatives markets or an increase in the complexity of “inter-connectedness”. Nor does it necessarily mean an increase in the contribution of the financial sector to a particular country’s GDP (emerging economies excepting) as this can create financial and economic imbalances, possible capital misallocation and a neglect of other sectors such as manufacturing. What it should mean, in our view, is an increase in transparency, improvements in crisis management tools, a strengthening of the system’s architecture, progress in implementation of Basel 3 and Dodd-Franks (rather than delay or dilution of agreed measures) as well as better risk management and improvements in internal governance systems for banks and financial institutions.

Strengthening Financial Markets-What Do We Mean?

What are financial markets for and why do we want to strengthen them? And what do we mean precisely when we do want to strengthen them. Some might argue that we should reduce the influence of financial markets especially banking and financial institutions that have become “to big to fail”. Maybe if they are too big, they should fail. Or to quote Rajan (2005) “Has Financial Development Made the World Riskier”.

Big Numbers ...The Trillions

The IMF estimate that world nominal GDP in 2012 amounts to \$72 trillion (WEO database). McKinsey Global Institute (2011) report that the total value of the world's financial stock, comprising equity market capitalization (\$54 trillion) and outstanding bonds and loans, increased from \$175 trillion in 2008 to \$212 trillion at the end of 2010 (latest available data).

In the OTC market, the notional amount of derivatives outstanding was \$648 trillion at the end of 2011 according to the BIS. Uncovered credit exposures between counterparties to bilateral trades in the OTC derivatives market (i.e exposures less collateral) stood at \$2.1 trillion at the end of 2011 (compared to \$3.0 trillion at the end of 2008, just after the peak of the financial crisis).

US commercial banks hold \$231 trillion of derivatives of which the top 5 banks account for 96% of the total. The Financial Stability Board estimate that the size of the global shadow banking system is about \$40 trillion (about 25-30% of the total financial system) with \$13 trillion in Europe and \$15 trillion in the US. Assets under management are \$60 trillion world-wide. The BIS estimate that global fx turnover per day is \$4.7 trillion.

Global debt outstanding (the sum of financial institution bonds outstanding, public debt securities outstanding, nonfinancial corporate bonds outstanding and both securitized and nonsecuritized loans outstanding) has more than doubled over the past 10 years from \$78 trillion in 2000 to \$158 trillion in 2010 (266% of global GDP).

Securitized lending was the fastest growing segment of global debt from 2000 to 2008 with outstanding volumes increasing from \$6 trillion to \$16 trillion with roughly 80% of securitization issuance taking place in the US. Public debt outstanding (measured as marketable government debt securities) stood at \$41 trillion at the end of 2010 (69% of global GDP compared to 46% in 2000). Japan and the US have the largest outstanding amounts of public debt. US federal debt outstanding is now \$15.8 trillion (about 100% of GDP).

Emerging markets account for 18% of the world's total financial stock compared to their share of global GDP at 32%. Cross-border capital flows grew to \$4.4 trillion in 2010 (compared to a peak of \$10.9 trillion in 2007 and largely reflects a decline in cross-border lending from Western Europe). Capital flows to emerging markets averaged \$226 billion per quarter from 2000 to 2010 compared to \$1.1 trillion per quarter for developed countries.

Interestingly, developed countries' capital flows were 20% more volatile than flows to developing economies over this period as FDI flows (the least volatile flow) accounted for 53% of their total capital flows. Emerging markets were net capital exporters in 2010 and outflows totalled just under \$1 trillion. Global foreign

investment assets reached \$96 trillion nearly 10 times the amount in 1990. The US is the world's largest foreign investor, with \$15.3 trillion in assets followed by the UK with \$10.9 trillion.

Global bank deposits stand at \$54 trillion with China and other emerging markets at \$14.5 trillion (there are 2.5 billion adults in emerging markets with discretionary income who are not part of the formal financial system).

Domestic banking assets-historic trends

PWC (2011) "Banking in 2050" show that for the major developed economies there is a gradual upward trend in the ratio of domestic banking assets to GDP from around 50-100% in 1986 to around 100-230% in 2009. Notably, the UK and Spain have registered significant growth to above 200% of GDP and presumably reflects the impact of the credit boom and the exposure of domestic banks to the real estate market.

The US has a relatively low ratio of banking assets to GDP due to the fact that in the US a much greater proportion of financing takes place through securities markets rather than through bank lending. So while there has been high levels of leverage in the US economy as a whole, a large proportion of debt is held by non-bank organisations.

PWC project E7 banking assets to grow significantly faster than those in the G7 and to overtake the G7 in 2036. By 2050, the E7's banking assets are projected to be approximately 50% greater than those in the G7. China and India could have a combined share of around 35% of global banking assets by 2050.

TABLE 1: Selected market indicators

\$trillion, as at 2010	GDP	Stock mkt cap	Total debt	Bank assets	Total as % of GDP
World	63	55	95	108	407
EU	15	10	31	45	571
US	15	17	32	14	441
Japan	5	4	14	11	536
UK	2	4	5	13	927
EM economies	22	13	9	23	204
o.w Asia	10	7	5	15	275

Source: IMF Global Financial Stability Report, April 2012

Financial crises

Laeven and Valencia (2012) examine banking crises over the period 1970-2011. They define a banking crisis as being predicated on two conditions:

- Significant signs of financial distress in the banking system (as indicated by bank runs, losses in the banking system, and/or bank liquidations).
- Significant banking policy intervention measures in response to significant losses in the banking system.

Policy interventions in the banking sector are considered to be significant if at least three out of the following six measures have been used:

- Extensive liquidity support (when the ratio of central bank claims on the financial sector to deposits and foreign liabilities exceeds 5% and more than doubles to its pre-crisis level)
- Bank restructuring programs (gross fiscal outlays of at least 3% of GDP)
- Significant bank nationalisations
- Significant guarantees put in place
- Significant asset purchases (at least 5% of GDP)
- Deposit freezes and/or bank holidays

For a crisis to be deemed systemic, the authors consider it at least necessary that nonperforming loans are above 20% or bank closures of at least 20% of banking system assets take place or that fiscal restructuring costs of the banking sector exceed 5% of GDP. Banking crises are a worldwide phenomenon and since 1970 there have been 147 according to the IMF's database (see <http://www.imf.org/external/pubind.htm>).

Crises tend to occur in waves and they started to show a marked pickup in activity in the 1980's. During the 1990's, there were three clusters of crises in the transition economies, in Latin America during the Tequila crisis and in East Asia during the Asian financial crisis. The early 2000's were a relatively calm period but ended with the most recent wave consisting of the largest number of crises since 1970. These banking crises cycles frequently coincide with credit cycles. Out of 129 banking crises episodes for which credit data are available, 45 episodes (or about one in three) were preceded by a credit boom (where a credit boom is defined when the deviation of credit-to-GDP ratio relative to its trend is greater than 1.5 times its historical standard deviation and its annual growth rate exceeds 10%).

Banking crises frequently occur together with currency or sovereign debt crises. Triple crisis events (i.e a simultaneous banking, currency and sovereign debt crisis) are quite rare (about 8 cases in the IMF database). Twin crises (i.e a banking crisis with either a currency or debt crisis) are more common. A currency crisis is defined as a nominal depreciation of the currency versus the US dollar of at least 30% (there were 218 currency crises between 1970 and 2011). A sovereign debt crisis occurs in episodes of sovereign default to private creditors and associated debt rescheduling (there were 66 cases from 1970-2011 of which 3 took place between 2008-2011 and, of course, there was the Greek debt restructuring in 2012 though there was not a unilateral default as interest payments on debt were maintained but the restructuring of Greek debt involved using collective action clauses which amounted to a credit event for CDS purposes).

It is also common that banking crises precede currency and sovereign debt crises. 21% of banking crises are followed by a currency crisis within three years following the starting year of the banking crisis while 5% of banking crises are followed by a sovereign debt crisis.

For all of the banking crises between 1970-2011, the average output loss for all countries was 23% of GDP with the fiscal cost (in % of financial system assets) amounting to nearly 13% and the increase in sovereign debt (reflecting bailout costs etc) was 12%. The peak increase in nonperforming loans amounts to 25% (of total loans) while central bank liquidity support is nearly 10% of total deposits and liabilities.

In terms of fiscal cost as a % of GDP, the top 3 costliest are Indonesia at 57% in 1997, Argentina at 55% in 1980 and Iceland at 44%. In terms of the increase in sovereign debt increase, the top 3 costliest are Guinea-Bissau at 105% of GDP in 1995, Congo Republic at 103% in 1992 and Chile at 88% in 1981. Finally, in terms of output loss as a % of GDP, are Kuwait at 143% in 1992, Congo Republic at 130% in 1991 and Burundi at 121% in 1994.

Ireland holds the undesirable position of being the only country currently undergoing a banking crisis that features among the top-ten of costliest banking crises along all three dimensions of fiscal costs, debt increase and output loss (at 41%, 73% and 106% respectively). For “advanced” economies, Iceland and Ireland stand out when fiscal costs are expressed relative to GDP with Iceland’s crisis being the most costliest at 44%.

Looking at the 2007-2009 financial crisis and the current crisis in the eurozone, the IMF estimate the output loss for the US at 31% of GDP compared to (an ongoing) 23% for the eurozone. The fiscal cost amounted to 4.5% of GDP for the US and 3.9% for the eurozone. Liquidity support (via the LTRO and ELA) for the eurozone amounts to 13.3% (of deposits and foreign liabilities) compared to 4.7% for the US. The increase in debt is 23.6% of GDP for the US and 19.9% in the eurozone. On these metrics, the eurozone crisis (yet to be properly resolved at the time of writing) is comparable with the US financial crisis but is likely to turn out to be larger in terms of costs.

Too Much Finance?

Financial depth (measured as the value of outstanding bonds, loans and equity relative to GDP) is 462% for the US, 457% for Japan and 400% for Western Europe. China is at 280%, India 209% and below 200% is typical for emerging markets generally. Arcand, Berkes and Panizza (2012) look at the relationship between financial depth and economic growth and while there is a positive relationship at intermediate levels of financial depth, at high levels of financial depth more finance is associated with less growth. Indeed, the authors report that output volatility starts increasing when credit to the private sector reaches 80-100% of GDP and the results are robust even in the face of tighter regulatory and monitoring requirements. Their results are a partial rebuff to those in the banking industry that tighter capital requirements will have a negative effect on bank profits thus leading to a contraction in lending.

Jenkins (2012), who speaks from the vantage point of the Financial Policy Committee at the Bank of England, thinks the global financial system has become too big and “big number pools of capital” too interconnected that it has become “accident prone”. Jenkins asks whether systemic risks exceed the system’s ability to absorb the potential losses from the risks it is taking. He also notes the days of instant market pricing and limitless liquidity may be fading and that governments are more ready to resort to short-selling bans and capital controls.

Of course, the generally accepted view is that by strengthening markets, we are not necessarily increasing the size of the financial sector relative to GDP. Rather strengthening the resilience of individual financial institutions and the financial system generally helps absorb the impact of financial and economic shocks without destabilising both the real economy and the financial system thus imposing costs on government balance sheets (and taxpayers) in the event of bank bailouts.

The process of strengthening the resiliency of financial systems has already begun and the regulatory authorities in the major economies (through the auspices of Basel 3 mainly) have responded with proposals designed to improve the quantity and quality of capital requirements, improve financial institutions liquidity buffers, improve financial market architecture and infrastructure and strengthen the surveillance and monitoring of the derivatives markets and sectors such as “shadow banking”.

The momentum in strengthening financial markets is still ongoing and the implementation phase for Basel 3 extends through to 2019. It is also important to see improvements in the financial regulatory and supervisory process as part of a broader picture about the debate over international monetary reform where issues of global imbalances and the future of European monetary union, for example, remain high on the agenda. For example, many commentators have made reference to European monetary union as being a major example of a construct that has generated economic divergence rather than convergence in terms of economic growth rates, productivity growth and competitiveness. Comparisons have been made with the 1930’s Gold Standard because of an adjustment mechanism that is asymmetric and puts the burden of adjustment on to the trade deficit economies rather than on the trade surplus economy.

Such systems tend to disintegrate over time but not until after a period of financial and economic dislocation has taken place. The eurozone crisis is both a debt and banking crisis where there has been an adverse connection (a negative feedback loop) between the balance sheets of the sovereign and the banking sector. Undercapitalised and over-leveraged eurozone banks through their over-exposure to real estate end up being bailed out by sovereigns. Financial instability rather than stability has been the outcome regardless of the regulatory framework. This example highlights the need to take a broader perspective on how the international monetary system is constructed and this is something we will address in the next paper in this series.

The basic point is that microprudential policy, macroprudential policy, macroeconomic policy and the encompassing monetary and financial system are all inter-connected and are not mutually exclusive.

Another important element of the process in strengthening markets is to avoid unnecessary over-regulation and complexity in drawing up the rules and regulations governing the financial markets (recent estimates, for example, suggest that the EU financial services industry will spend EUR33 billion over the next three years to comply with new regulatory demands). For emerging economies, where banking and financial markets are relatively under-developed relative to the advanced economies which were at the epicentre of the subprime lending crisis, for example, it is inappropriate to apply the same rules and regulations to emerging markets.

Asia, for example, which proved to be relatively immune from the worst effects of the 2007-2009 financial crisis, used its experience of 1998 to implement various macroprudential policy measures in dealing with excess credit creation and over-exposure to the real estate sector. Applying rules and regulations more relevant to the structure of financial markets in the “advanced” economies would not be appropriate as regards the current structure of markets in the emerging area or to the undoubted development in the financial sector that lies ahead.

Having said that, Asia and other emerging market economies have not been immune from the spill-overs from Federal Reserve policies of quantitative easing which have weakened the US dollar and pushed up emerging market currencies thus complicating the conduct of EM monetary policy. In addition, excess liquidity in search of a “carry trade” increases cross-border capital inflows into the relatively higher growth emerging economies but then creates potential problems of volatility in capital flows with subsequent adverse effects on emerging markets’ economic and financial performance.

Policymakers should also try and avoid the notion that pursuing an objective of financial stability necessarily means that financial stability will be achieved. Macroeconomic policy is littered with objectives for inflation, employment, exchange rates and budget balances. This assumes that complex, modern economies can be “fine-tuned” and controlled by well intentioned central planners. The recent financial crisis raised the possibility that financial capitalism might be intrinsically unstable so that the “boom-bust” cycle is unavoidable. For the advanced economies, the credit cycle is the key driver rather than the business cycle.

Separately, there is always the danger that the financial industry through successful lobbying, dilutes and defers the implementation of regulatory measures (i.e “regulatory capture”). In addition, policymakers may want to secure a comparative advantage to favour the domestic financial industry and look for “loopholes” in the imposition of (global) regulatory standards thus creating a “regulatory race to the bottom” which attracts mobile and speculative capital flows.

All of this is to say that we cannot look at the process of strengthening financial markets as merely a legal and administrative process in isolation from the broader political and economic process or indeed from the workings of financial capitalism generally. However, the cost to the real economy from ignoring the importance of financial stability is too high and strengthening the resilience of financial systems and improving the quality of financial institutions’ balance sheets is a necessary condition in ensuring a healthy and vibrant economic system.

Too Big To Fail...or Just Too Big?

First, we look at the role the financial sector plays in the major economies and some of the problems that the size of the financial sector has created especially the concentration of risk, something that might have inadvertently taken place as a result of the financial crisis. It is also worth remembering that some of the catalysts in previous financial crises have not necessarily come from “big” banks but from smaller and medium sized institutions (e.g Northern Rock in the UK).

Professor Henry Hu (2012) argues that technological advances and financial innovation have not only made financial flows and instruments so complex that they are “hard to depict” but that financial intermediaries themselves are so complex that they are ill-placed to make sense of shifting information flows. This undermines the thesis of what he calls the “SEC disclosure paradigm” that presumes the best way to make markets more transparent is to place a bigger reporting burden on financial intermediaries (banks, asset managers etc).

Others like Adair Turner at the UK’s FSA (2009) has argued that the financial and banking sectors provide a socially useful function that is questionable and that some parts of the system were swollen beyond their optimal size prior to the crisis. Paul Volcker, the former Fed chairman, has said that the only useful innovation from the banking industry has been the ATM. Others like Warren Buffet see the growth of the derivatives markets and the process of securitisation as the equivalent of a “time bombs” or weapons of mass

financial destruction that threatens the health of the global economy. The real cost to the global economy in terms of lost output and higher unemployment arising from the financial dislocation was nearly sufficient to push the advanced economies close to a repeat of the 1930's Great Depression.

Professor Steve Keen (2012) claims that the size of the financial sector is directly related to the size of private sector debt which in the US peaked at just over 300% of GDP in 2009. He believes that returning capitalism to a financially robust state involves reducing US private sector debt to around 100% of GDP implying a much smaller financial sector (employment in the financial sector would have to halve).

In theory, financial markets are supposedly mechanisms that facilitate the proper allocation of capital, provide liquidity, and intermediate between savers and borrowers as well as providing a market place for pricing financial instruments and managing/distributing risk. Financial market efficiency and stability implies that the financial system can meet these objectives without undue disruption or costs to the real economy. The characteristics of a robust financial system include a robust legal and institutional setting with an integral financial infrastructure, a comprehensive regulatory and supervisory regime, complementary monetary and fiscal policies and a banking system with adequate capital and sound risk management. On the latter point, in practice, the banking industry has typically been pro-cyclical and not very good at pricing risk or managing risk.

“Fooled by Randomness”

From a theoretical perspective, it is interesting to note that much of modern economic and finance theory describes behaviour by a random walk. Taleb (2001) reminded us that it is possible to be “fooled by randomness” and that the distribution of real world outcomes is not a statistical “normal distribution” where outcomes lie symmetrically around the mean with decaying rates of probability. Taleb argues that in the real world, and especially, in financial systems, there is non-normality and “fat tail risks” so that financial crises and economic shocks can be large and frequent. Assessing outcomes through the prism of a normal financial distribution thus becomes a major error and results in an under-pricing and under-estimation of risk thus exacerbating financial instability.

The theory of a “normal distribution” is predicated on the assumption of independence of statistical observations. However, in complex social systems like the economy and financial markets, such systems are interdependent and therefore are vulnerable to chaotic dynamic and “butterfly effects” i.e small changes in the system can lead to radically different real-world outcomes so that equilibria are neither singular or stable or optimal (as efficient market theory in modern finance assumes).

Reversion to the mean then becomes a poor guide to the future as there may be no such thing as a fixed mean and non-linearities have become familiar in the financial crises of the last 15 years or so. Leverage, for example, can generate highly non-linear system-wide responses to changes in income and net worth. Haldane and Nelson (2012) argue that economic and financial systems exhibit features of non-linearity, criticality and contagion.

Where interactions are present, non-normalities are never far behind and they warn that to the extent financial and economic integration is strengthening these bonds then financial systems could become more fat-tailed, more chaotic and more non-linear in the period ahead.

This type of analysis contains important lessons for economic and financial policymakers. In the face of shocks, the economic and financial world has often responded in highly irregular and discontinuous ways

highlighting a significant disconnect between theory and reality. There is a distinction between risk and uncertainty. Risk arises when the statistical distribution of the future can be calculated or known. Uncertainty arises when this distribution is incalculable or unknown.

Conventional economic and finance theory focuses on risk (as being knowable from a normal distribution and therefore enabling risk to be priced with statistical precision). Risk management tools like VaR (value at risk) widely used by banks and other financial institutions to set risk limits for traders and also to set regulatory capital standards for portfolios suffers a fatal flaw in that it is silent about the risks in the tail beyond the confidence interval thus actually understating regulatory capital requirements.

The recent loss experienced by JP Morgan of \$2 billion on its “portfolio hedging” activities revealed that the VaR estimate was only \$67 million). Uncertainty, on the other hand, has tended to be ignored presumably because it is frustratingly imprecise and unknowable.

Non-normality of outcomes under this thesis points to the need for a rethink about how the banking and financial industry models the financial system and assesses risk. To overcome some of these problems, Haldane and Nelson suggest that a systemic oversight agency could provide a systemic risk map so as to provide “early warnings” and subsequent remedial or defensive action.

This requires deepening the array of financial data available to systemic risk regulators with the aim of constructing behavioural models of systemic risk. Under uncertainty many of the intuitive regulatory rules of thumb may be counter-productive: slower can be faster, less can be more, slack can be tight. In a complex financial system, complex control rules are the wrong way forward. The optimal control rule is a simple rule.

The mainstay of financial regulation for the past 30 years has been more complex estimates of banks’ capital ratios. Going forward, regulators may require banks to abide by a simpler backstop of a leverage ratio and have structural safeguards on worst-case outcomes (e.g the Volcker Rule bar on proprietary trading in banks or the recent UK proposals regarding “ring fencing” of activities between retail and investment banking).

The thinking here is that in a complex uncertain environment the only fail-safe way of protecting against systemic collapse is to act on the structure of the overall system rather than on the behaviour of each individual institution in the system. Indeed, attempts to fine-tune risk control may add to the probability of fat-tailed risks.

What the 2007-2009 financial crisis revealed about weaknesses in financial markets

The financial crisis revealed shortcomings in the regulatory framework as well as in inappropriate levels of capital requirements commensurate with risks taken by banks. The crisis also revealed weaknesses with the “shadow banking system” and the significant growth in securitisation in recent years where pricing of derivatives was opaque and the complexities of derivatives products was poorly understood by risk managers, investors and regulators.

Bernanke (2012) summarises the conventional narrative on the causes of the crisis. He makes a distinction between triggers of the crisis and vulnerabilities of the system. He notes that developments in the market for subprime mortgages were a prominent trigger of the crisis. Key vulnerabilities included high levels of leverage, excessive dependence on unstable short term funding, deficiencies in risk management in major financial firms and the use of exotic and nontransparent financial instruments that obscured concentrations of risk.

From a regulatory perspective, Bernanke highlights gaps in the regulatory structure that allowed systemically important firms and markets to escape comprehensive supervision, failures of supervisors to effectively apply some existing authorities and insufficient attention to threats to the stability of the system as a whole (i.e a lack of macroprudential policy).

Bernanke particularly focused on the shadow banking system and its components such as securitization vehicles, asset backed commercial paper (ABCP) conduits, money market mutual funds, markets for repurchase agreements (repos), investment banks and mortgage companies. A key vulnerability of the system was the heavy reliance of the shadow banking sector on various forms of short-term wholesale funding which supported a higher trend towards increasing leverage and greater maturity mismatch.

Bhatia and Bayoumi (2012) see securitization as a key conduit for foreign credit to US households which helped inflate the housing bubble. They see collateral as the critical link between the implosion of structured finance and the malfunctioning of funding markets. Investment banking was the “turbocharger” of the crisis as leading broker-dealers behaved like hedge funds. Total assets of the investment banking industry jumped from 2% of GDP in 1980 to 35% in 2007. The authors see them as the largest secured short-term borrowers and the most “egregious diluters” of collateral quality. US households became larger and larger net debtors to the financial sector and foreign investors became larger and larger net creditors to it. Securitization, by transforming illiquid residential mortgage and consumer loans into portable securities, was the key facilitator.

Money market funds play an important role in the US financial system. They hold nearly 40% of all commercial paper issued by businesses and represent 23% of short term US Treasury and Agency financing. Money market funds hold \$432bn or 14% of bank CD's and Eurodollar deposits providing much needed financing to banks. Regulatory reform in this area includes greater governance from fund boards with more oversight and responsibilities including a pre-ordained orderly liquidation mechanism to minimize or stop runs at an individual fund thus aligning objectives of shareholders, regulators and advisors. Higher liquidity levels provide greater shareholder confidence in redemption availability. Shorter maximum weighted average maturity and introduction of weighted average life results in lower volatility and greater flexibility to address any changes in the market. Also more frequent and detailed portfolio disclosures are required providing greater flexibility and lower volatility.

While commercial banks benefit from a government-provided safety net including deposit insurance and backstop liquidity provision by the central bank, shadow banking activities do not have this safeguard. As a result, the shadow banking system relied on alternative mechanisms to gain investor confidence including the collateralisation of many shadow banking liabilities, contractual restrictions on portfolio holdings (i.e the liquidity and credit quality requirements applicable to money market mutual funds) and the imprimaturs of credit rating agencies. However, the crisis revealed efficiencies in all of this and widespread flight from the shadow banking system occurred reminiscent of banking panics from an earlier era.

The crisis also highlighted the complex inter-connectedness between banks, investors and funding markets and highlighted the importance of money markets and the repo market in ensuring adequate liquidity. A “run on repo” turned out to be one of the defining moments in the crisis rather than the traditional run on bank deposits (though in the eurozone debt and banking crisis this element was more apparent in the first half of 2012 as far as many southern European banks were concerned). The 2007-2009 crisis highlighted the negative role played by excess credit growth and leverage in driving a boom-bust cycle in financial asset prices especially in real estate.

Poor risk management and inadequate risk diversification resulted in disproportionate pressures at “key nodes” of the financial system notably highly leveraged banks, broker-dealers and securitization vehicles resulting in rapid asset sales at “fire-sale” prices which led to sharp withdrawals of funding and thereby disrupting financial intermediation.

The start of the financial crisis in the summer of 2007 was triggered by a sudden re-pricing in the US sub-prime mortgage market on account of risks not being properly reflected in the price of the related instruments, in particular, mortgage-backed securities and collateralised debt obligations (CDO's). A market-wide reassessment of financial risk led to sharp increases in premia and spreads across markets. Declining house prices and rising rates of foreclosure raised serious concerns about the value of mortgage-related losses.

Opaqueness in banks' balance sheets together with uncertainty about the real valuation of assets led to tensions in the markets for credit instruments. Some banks faced direct exposures to “toxic” sub-prime assets while others needed liquidity to honour committed credit lines to so-called conduits (bank-sponsored investment funds). Following several months of financial distress, the US economy fell into recession in December 2007.

Off-balance sheet entities, a part of the large shadow banking sector in the US, became unable to roll-over short-term financing in the US asset-backed commercial paper market (ABCP) amid great uncertainty about asset valuations. These events reinforced each other and generated uncertainty about the solvency and liquidity of money market participants. Longer-term unsecured money markets, the most heavily exposed to counterparty credit risk, showed signs of stress as signalled by the spread between the 3 month unsecured interbank rate (libor) and the overnight index swap (OIS) rate. In addition, there were indications that liquidity was no longer flowing from cash-rich banks to cash-poor banks. Banks with surplus liquidity preferred to hoard it by depositing excess funds with the respective central banks. Liquidity supplied by the central bank ended up being deposited at the central bank because of counterparty risk within the banking system and resulted in a malfunctioning money market.

Classic financial panic

Bernanke believes the financial crisis at that time is best understood as a classic financial panic. Once the crisis began, repo lenders became increasingly concerned about the possibility that they would be forced to receive collateral instead of cash. This collateral would then have to be disposed of in falling and illiquid markets. Some lenders responded by imposing increasingly higher “haircuts” cutting the effective amount of funding available to borrowers. Some lenders just pulled away as in a deposit run. Borrowers were then forced to sell assets in illiquid markets driving down asset prices, increasing volatility and generating an unstable dynamic between borrowers and lenders. Structured investment vehicles and other asset-backed programs were forced to draw on liquidity lines or to sell assets. The resulting pressure on the bank liquidity providers was especially evident in the market for dollar-denominated loans in short term funding markets. Following the Lehman collapse and “the breaking of the buck” by a money market mutual fund that held commercial paper issued by Lehman, both money market mutual funds and the commercial paper market were subject to runs.

Run-like behaviour and associated sharp increases in liquidity premiums motivated the Fed's policy response by taking Bagehot's advice in time of panics to lend freely to illiquid but solvent firms against sound collateral.

Given the significance of well-functioning money markets in terms of monetary policy transmission, financing conditions for non-financial institutions and households and providing benchmarks for interest rate pricing (libor, euribor though we note the debate about the usefulness and veracity of these benchmarks in the current environment), it is important that money markets return to health and return to pre-crisis conditions quickly. In the eurozone, this requires a break of the so-called “doom loop” between sovereigns and banks perhaps suggesting the need for a banking union though this requires eurozone members to accept that liabilities are jointly liable, something Germany is opposed to as well as opposed to the introduction of a “eurobills” money market.

Credit boom

At this juncture, it is also worth drawing attention to other factors over and above a boom in credit (relative to GDP), an escalation in securitisation, excess leverage or “cheap money” as being the prime contributors to the financial crisis. Rajan (2010) argues that rising income and wealth inequality in recent decades led to political pressure for redistribution that came in the form of subsidised housing finance which resulted in a lending boom, a massive run-up in house prices which then allowed consumer spending to rise above (stagnating) real incomes.

Rising inequality in the last 15 years or so may have been driven by a rise in wages in the financial sector relative to other industries attracting “talent” into the industry though “talent” can produce not stability but rent-seeking and over-confidence perhaps resulting in a short-term management cycle in the financial industry where “short term-ism “ prevails and a priority of short term maximisation of share price and financial compensation dominates what should be longer-term priorities of viability, stability etc.

Similar points have been made that the financial industry is characterised by distributional activities i.e redistribution of economic value from one group of people to another, rather than actually increasing the size of the economic cake. Thus the finance industry performs its intermediation functions at unnecessarily high economic resource cost and attracts a sub-optimally high share of highly skilled individuals.

Inequality may certainly have been correlated with the crisis in that the growth of Asian economies post-1998 providing an excess supply of cheap labor which depressed unskilled wages in the west and also provided the “savings glut” that produced the housing boom and mal-investments in mortgage derivatives.

Typically, income inequality has so far played a minor role in the conventional literature on financial stability and credit booms. Bordo and Meissner (2012) looked at 14 advanced countries over the period 1920 to 2008 and actually find that rising income concentration plays no significant role in explaining credit growth. Instead, the two key determinants of credit booms are the upswing of the business cycle and low interest rates thus confirming the findings of Schularick and Taylor (2010) there is a consistent relationship between the growth in real credit and the probability of a banking crisis.

As far as the APEC economies are concerned, financial stability is basically dependent on what happens with stability in the major financial markets of the US (and to a lesser degree, Japan). However, as the 1998 financial crisis made clear, volatile and speculative portfolio flows and a backdrop of lax domestic regulatory oversight can also result in excess credit creation and a boom-bust cycle in real estate and equity markets.

It is interesting that a look back at previous financial crises highlights the role played by the real estate sector especially where there is a tradition of home ownership and mortgage financing (the UK and the US being

the obvious examples whereas Germany has been relatively immune from housing booms and busts because home ownership is comparatively low).

The role of property booms and busts

At their peak in 2006-2007, US house prices had risen 50%. In the UK and Spain, the increase was 50%. Irish commercial property prices were up 70%. When the bubble burst, US prices dropped 40% in 18 months (they are still some 30% below the peak). In Spain, house prices are some 11% down on the previous year. In Ireland and Spain, the share of construction in GDP rose by 2 percentage points over 5 years. Germany was an exception given the low level of homeownership and virtually non-existent mortgage market and therefore was immune from volatility elsewhere in house prices.

Between 1970 and the mid-1990's, the average upturn in house prices in 18 OECD economies lasted just over five years during which real prices increased by an average of 40%. The subsequent downturn lasted 4.5 years and prices fell about half as much as they rose during the upturn. The upturn in the most recent cycle lasted twice as long on average as those in the past (41 quarters v 21 quarters) with prices rising by nearly three times as much (114% v 40%). Downturns last 18 quarters on average with an average price decline of 22%. On a longer term time horizon, there seems to be a 18 year cycle in US real estate. On this basis and from the last peak in 2006, the next peak in the housing cycle should be in 2024.

IMF research, (Bracke, 2011), has found that there is a high degree of synchronisation in house price cycles across countries which might reflect the synchronisation of monetary policy and financial deregulation across countries. There is a positive correlation with the mortgage-GDP ratio and a negative correlation with US interest rates. US house prices tend to lead the global housing cycle. The regular frequency of house price booms and busts suggest that there is an important role for macroprudential policy in controlling and monitoring credit which might be a more effective targeted way of damping the cycle than using interest rate policy.

Tucker (2012) argues that even without the excesses in investment banking, many economies would have suffered a commercial banking crisis as a property boom turned to bust. This suggests that given the role of housing markets and real estate sectors in many of the major economies, that there is a case for policymakers paying closer attention to the ups and downs of the housing market cycle. Financial stability and the health of the banking sector could easily be harmed by speculative excesses in the real estate sector.

Of course, property booms are typically fuelled by cheap money, lax lending conditions (e.g “no income, no job” mortgages or low deposit to loan ratios) which allows borrowers to increase gearing (debt exceeding a multiple of income by 3x plus, for example) and to use an increase in house values as collateral for more borrowing. The report into the supervision of RBS found that the bank lost more on straight property lending in the UK, Ireland and the US than on super-senior tranches of ABS and CDO's. Tucker says that a highly levered commercial bank that runs a concentrated portfolio of loans to highly geared property investors, funded short term from the wholesale money markets, is likely to be pretty high risk. In addition, the effects of bank failure or distress can be greater when the industry is concentrated. As a result, there is a case for greater diversification in the banking industry.

Financial cycles

Reinhart (2012) examines the causes of historical financial crises and finds common factors across time and geography. She finds a striking correlation between freer capital mobility and the incidence of banking crises.

Periods of high international capital mobility have repeatedly produced international banking crises. In addition, periods of financial liberalisation are associated with financial crises of varying severity. Rising indebtedness (domestic, external, public and private) is often a historical hallmark of the pre-crisis period and is also associated with a rising incidence of default or restructuring of public and private debts. Reinhart concludes in her study that the future is likely to see financial de-globalization (the re-appearance of home bias in finance) and the re-emergence of more heavily regulated domestic financial markets.

The BIS (2012) find that the duration and amplitude of the financial cycle has increased since the mid-1980's. Financial cycles last on average 16 years. 65-70% of cyclical peaks in credit and property prices occur close to crises.

Joined At The Hip

It is now generally recognised that prior to the financial crisis, policymakers failed to acknowledge increasing systemic risk arising from “cheap money” policies, a build-up of global imbalances, increased leverage, product securitisation and rising asset prices (especially in the real estate sector). Risk was mis-priced, banks’ balance sheets were over-stretched (and largely dependent on wholesale funding) and regulatory oversight was lax or poorly enforced.

The build-up of private sector and sovereign debt and its inter-connectedness with the banking sector ended in severe consequences for the economic and financial system. Mody and Sandri (2011) describe how the eurozone crisis evolved from March 2008 when Bear Stearns was rescued and the Irish-bund yield spread was only 30bps. Through the Lehman bankruptcy to the nationalisation of Anglo Irish in January 2009, the spread rose to 300bps.

A sovereign’s spread responded increasingly to the weakness of its own financial sector. The interdependence between sovereign and banking risk was underscored by the positive correlation between sovereign and bank credit default swaps over the period.

Reinhart and Rogoff (2009) in their classic work on financial crises public debt/GDP ratios are typically higher following a banking crisis reflecting not just the addition of liability to the sovereign’s balance sheet but also because of the slower economic growth that takes place after a crisis.

Banking and sovereign risk are highly correlated as banks’ holdings of sovereign government debt have a negative impact on banks’ assets in the event the sovereign has problems. Higher sovereign risk reduces the value of collateral that can be used for funding. Sovereign credit downgrades translate into lower ratings for banks located in the downgraded country. Increased sovereign risk reduces the value of the implicit/explicit government guarantee to banks. Likewise, banking sectors suffering capital shortfalls, liquidity problems or asset losses on their balance sheets typically end up as bailouts where the sovereign bears the cost on its balance sheet.

A more recent research paper from the IMF (Bhatia and Bayoumi, 2012) notes that the US has suffered financial market instability on an approximate 10 year cycle (1987, 1998 and 2007-2009). They see leverage as a lagging indicator of fragility and point the finger at securitization as the main culprit of the crisis. 20% of US household debt was privately securitized by mid-2007. Collateral was the critical link between the implosion of structured finance and the malfunctioning of funding markets. Investment banking was the “turbocharger” of the crisis and leading broker-dealers behaved like hedge funds and became the largest secured short-term borrowers. When investors fled structured finance products, secured lenders fled the investment banks.

At this juncture, banks and the sovereign were joined at the hip. Mody and Sandri find that countries with the largest loss in competitiveness and lowest medium-term growth prospects found that a weaker financial sector translated into the biggest increase in sovereign spreads especially for those countries with already high public debt/GDP levels. The ECB's LTRO operations from December 2011 onwards also inadvertently resulted in the weakest eurozone banks using central bank liquidity to increase bank exposure to the weakest sovereign debt. As Spanish and Italian bond yields rose in June 2012 (the spreads at euro-era highs) this exacerbated the negative feedback loop between banks and sovereigns which became mutually reinforcing.

“Bonfire of the Verities”

Martin Wolf, the Financial Times commentator, has described the financial crisis as creating a “bonfire of the verities” by which he means that the crisis exploded widely-held assumptions about the working of the financial system, in particular, the assumption that the financial system would be self-stabilising, that financial innovation would improve risk management, and that low and stable inflation would guarantee economic stability. In addition, the financial crisis also highlighted an international dimension to the transmission of US monetary policy as globalised banks through their foreign subsidiaries and affiliates reduced lending to emerging market economies and became more unwilling to roll-over existing debt.

The expansion of the financial sector over the last 20 years or so has been associated with a massive expansion in financial markets, especially derivatives, as well as an increase in the size of the banking sector in terms of assets to GDP. In 2011, the total amount of outstanding OTC derivatives was USD648 trillion which is close to its pre-crisis peak of USD673 trillion. The financial system's growing size is highlighted by IMF estimates which show that the assets of the top five financial institutions in each country exceeded 300% of GDP before the crisis. According to the McKinsey Global Institute (2011), the total value of the world's financial stock comprising equity market capitalisation and outstanding bonds and loans increased from USD175 trillion in 2008 to USD212 trillion at the end of 2010 surpassing the previous 2007 peak.

Cross-border capital flows grew to USD4.4 trillion after declining the previous two years. McKinsey found that the recovery of financial markets remained uneven across geographies and asset classes. Global debt/GDP increased from 218% in 2000 to 266% in 2010. Emerging markets account for 18% of the global financial stock but its share has tripled since 2000 but have ample room to deepen their financial systems. Most emerging markets' financial depth is between 50 and 250% of GDP compared with 300-600% in developed countries.

The degree to which financial deepening occurs depends on whether they have the right regulatory and institutional framework to allocate capital. During the 2000's, the growing stock of foreign investment assets included not only increased cross-border investment between the traditional financial centres but also the growth and development of financial linkages with emerging markets. By 2009, the US share of cross-border investments had shrunk to 32% down from 50% in 1999. The US and Spain are also the largest foreign net debtors with Japan and China the largest net foreign creditors.

Domestic banking assets-historic trends

PWC (2011) “Banking in 2050” show that for the major developed economies that there is a gradual upward trend in the ratio of domestic banking assets to GDP from around 50-100% in 1986 to around 100-230% in 2009. Notably, the UK and Spain have registered significant growth to above 200% of GDP and presumably reflects the impact of the credit boom and the exposure of domestic banks to the real estate market.

The US has a relatively low ratio of banking assets to GDP due to the fact that in the US a much greater proportion of financing takes place through securities markets rather than through bank lending. So while there has been high levels of leverage in the US economy as a whole, a large proportion of debt is held by non-bank organisations.

PWC project E7 banking assets to grow significantly faster than those in the G7 and to overtake the G7 in 2036. By 2050, the E7's banking assets are projected to be approximately 50% greater than those in the G7. China and India could have a combined share of around 35% of global banking assets by 2050.

During the eurozone crisis, this was especially evident in Ireland, Greece, Portugal and Spain. It should be qualified that in some instances, it was a build up in private sector debt (Ireland and Spain, for example) associated with a real estate boom (and subsequent collapse) that forced the banks into difficulties. Prior to the crisis, Irish and Spanish public sector debt levels were comparatively low. Nevertheless, eurozone banks are typically under-capitalised and over-leveraged (the ECB estimate that the leverage ratios of large eurozone banks remain relatively high at 25).

Building a resilient financial system

Jaime Caruana, General Manager of the BIS, February 2012 highlighted a number of broad principles with regard to financial reform. First, financial stability is about resilience. Second, preserving financial stability involves a wide range of policy areas. Third, a globalised financial system requires global rules. Fourth, we should stay focused on a system characterised by less leverage, better liquidity management, sounder incentives, less moral hazard, stronger oversight and more transparency.

The key challenges are implementing what has been agreed, especially with regard to bank capital: second, designing the appropriate transition against a background of an uncertain global economy, third: completing the regulatory reform agenda especially in the areas of liquidity standards, resolution regimes, OTC derivatives and the shadow banking system. Fourth, ensuring sound micro and macroprudential oversight.

In the aftermath of the financial crisis of 2007-2009 and underlined by the eurozone debt and banking crisis of the last two years or so, the regulatory reform agenda has been focused on ensuring that banking institutions have sufficient quality capital, liquidity and stable funding requirements to protect their balance sheets from adverse economic and financial shocks. The emphasis has been on providing buffers that limit contagion and systemic risk and try to avoid SIFI's from disrupting the broader financial system. This has been exemplified in the measures agreed under Basel 3 and the Dodd-Frank Act. However, implementation has been slow and recently national jurisdictions have looked to have flexibility in the setting of capital standards for banks rather than stick to a globally agreed formula. There is also the danger that intense lobbying by the financial industry dilutes and defers the regulatory program.

Preserving financial stability requires co-ordination with macroeconomic policy where, increasingly, central banks are giving consideration to the role of asset prices in their inflation-targeting objectives as well as making financial stability a key policy objective. Of course, this requires monetary and fiscal settings to be compatible. In the advanced economies at the moment, central banks are still pursuing policies of quantitative easing and ultra-low interest rates while at the same time governments are faced with unsustainable fiscal policies dominated by high budget deficits and rising debt/GDP levels (especially the US and Japan where fiscal consolidation is becoming more urgent).

In addition, achieving the optimal balance between policies of price stability, full employment and price stability requires co-ordination between the central bank, finance ministry and financial regulator. There is always the risk of incompatible policy objectives that can result in financial imbalances and unintended instability. Indeed, the financial crisis of 2007-2009 generated a deeper economic (and perhaps philosophical) debate about whether financial capitalism is intrinsically unstable and vulnerable to periodic credit crises.

A revival in the works of US economist, Hyman Minsky, is perhaps testimony to a loss of confidence by policymakers and economists in “conventional” economic analysis. Minsky says that stability can result in instability while economists like Schumpeter saw instability (economic and financial) as a necessary condition for the survival of capitalism. If this is the case, then we need to acknowledge that the pursuit of financial stability may not necessarily result in the intended objective. This is characterised by “Goodhart’s Law” which claims that any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.

The imposition of capital and liquidity rules, construction of balance sheet buffers for financial institutions might mask a much deeper vulnerability of the financial system especially if structural factors such as the concentration of risk amongst a few very large financial institutions is not remedied. There is also the risk that mobile financial capital seeks to escape regulatory control and moves to jurisdictions where regulatory surveillance is lax (deliberate or otherwise). This is of key importance for policymakers in emerging and developing economies where previous financial market crises have been characterised by volatile and speculative cross-border capital flows.

A globalised financial system requires global rules though as we argued in the previous paper in this series (“Policy Recommendations”), there is a strong case for setting a global minimum standard rather than imposing a fixed set of rules (capital ratios etc) that do not allow national jurisdictions some degree of flexibility. This is especially the case in a region like Asia, for example, where the banking and financial system as well as the real economy proved to be relatively immune from the financial crisis that hit the advanced economies such as the US and UK.

As we have highlighted in our previous papers this was because Asian policymakers in the aftermath of the 1998 financial crisis took remedial measures to successfully consolidate external debt, build fx reserves to act as a cushion against external shocks and also implement macroprudential policy measures to control credit growth, in particular, lending to the real estate sector through measures such as loan-to-value (LTV) ratios and/or debt-to-income (DTI) ratios.

Some central banks have also imposed administrative controls on lending or used reserve ratio requirements as an accompaniment to traditional interest rate policy. China is an example where the central bank during the course of 2010 and 2011 implemented such policies in order to contain a surge in money supply growth and address the credit explosion underpinning a real estate “bubble”.

Regulatory reform since the financial crisis

The medium term challenges to strengthening the financial system and pursuing the goal of financial stability fall into four broad groupings. First is ensuring implementation and adherence to an agreed timetable of regulatory reform. Basel 3 is generally regarded as being a major step forward to building a more secure and stable financial system and does so by enhancing the regulatory framework and introducing a macroprudential

overlay to address systemic risk through mitigating pro-cyclicality and also mitigating “inter-connection” and contagion risk.

Basel 3 raises the level and quality of capital in the system so that eventually, banks’ common equity will need to be at least 7% of risk-weighted assets which includes a 2.5% capital conservation buffer. As from January 2013, a minimum Tier 1 leverage ratio of 3% will be tested and expected to become a requirement in 2018. The leverage ratio is defined as the ratio of Tier 1 capital to the bank’s total non-weighted assets plus off balance sheet exposures.

In terms of timing implementation of Basel 3, it is agreed to implement the wider capital buffers gradually starting in 2013 and reaching their target levels at the start of 2019. The length of the imposition period is designed to avoid potential negative economic effects as banks go through a deleveraging and capital raising process as they repair their balance sheets from the effects of the 2007-2009 crisis. In the eurozone, the European Banking Authority (EBA) has already estimated a capital shortfall of eurozone banks and looks for an increase in Tier 1 capital ratios.

The banking crisis in the eurozone, highlighted by the recent EUR100bn bailout of Spanish banks, may have negative spill-over effects through intensifying the credit crisis and undermining investor and depositor confidence in the integrity of the eurozone banking system. Already, there are calls for a system-wide level of deposit protection and a fuller banking union though without closer fiscal integration (which involves debt mutualisation) then the risk of further deposit runs and bank bailouts (thus worsening sovereign debt positions) cannot be ruled out.

Higher capital ratios are accompanied by improvements in the quality of capital with the focus shifting from Tier 1 to common equity which is seen as the most important capital concept in terms of its capacity to absorb losses.

In addition, the risk weights in Basel 3 are intended to better capture the underlying risks. Basel 3 also allows supervisors to impose a counter-cyclical buffer on their banking system when credit growth is deemed to be excessive. In our previous papers, we highlighted academic research which showed that excess credit growth was closely associated with the boom and bust cycles that seem to be more frequent in the last 20 years or so.

Controlling credit growth (and associated excess leverage) is a necessary condition in our view to avoiding financial crises. For policymakers and regulators, the monitoring of excessive credit growth is an important part of the surveillance process though it also requires action by regulators. The risk, of course, is that “groupthink” can create complacency along the lines of “this time it’s different” so that little or no corrective action is taken.

As far as SIFI’s are concerned, additional measures have been adopted to address the cross-border externalities they create and include greater loss absorbency, more intense supervision, stronger resolution processes and a stronger infrastructure (including platforms for trading, clearing and settlement). Clearly, it is preferable to have a framework for these systemically important financial institutions that avoid an increase in moral hazard and a “too-big-to-fail” ethos.

The IMF’s latest assessment of progress on regulatory reform (the “Global Financial Stability Report”, April 2012) emphasises the need to focus on consistent, timely and high quality implementation of G20 regulatory initiatives. Strong multilateral commitment is key to ensuring the credibility of the reform agenda and avoiding regulatory arbitrage.

Implementation will be closely monitored and supported through the Financial Stability Board's "Coordination Framework for Implementation Monitoring" which aims at fostering discipline and transparency regarding individual countries' progress. Priority areas include the Basel 3 capital and liquidity framework, policy measures for global systemically important financial institutions (G-SIFI's), a broad framework for monitoring shadow banking, domestic cross-border resolution frameworks, over-the-counter (OTC) derivatives market reforms and improvement in data gaps.

Liquidity regulation

A central element in Basel 3 is liquidity. The "Lehman crisis" in 2008 highlighted the importance of liquidity as well as the importance of bank funding and counterparty risk. Both the Fed and the ECB responded towards the end of 2011 to worries about a "Lehman moment" in the eurozone banking sector by enhancing existing dollar funding arrangements while the ECB commenced the first of its LTRO operations by providing 3 year loans to banks at 1%. Counterparty risk and funding worries have not been completely assuaged. Eurozone banks are especially depended on dollar funding given the internationalisation of their operations over the past decade.

Under Basel 3, a new global liquidity standard that was proposed in December 2010, consists of two components: a liquidity coverage ratio (LCR) and a net stable funding ratio (NSFR). The LCR is intended to address short-term shocks to liquidity while the NSFR targets stresses under a somewhat longer time frame that matches the liquidity profile of its assets and potential contingent liquidity needs. Solvency risk and liquidity risk are intertwined and the new liquidity measures are designed to mitigate adverse systemic effects and yield substantial macroprudential benefits.

The new requirements are expected to lead to an increase in credit institutions' liquidity buffers and to reduce the risks posed by maturity transformation and interconnectedness in the financial system. The requirements standards should reduce information asymmetries concerning banks' risks, including banks' liquidity risk exposure and liquidity risk-bearing capacity thus improving the efficiency of interbank markets. The proper functioning of money markets is an important requirement in promoting financial stability and is an important intermediary between the financial system and the real economy. Money markets are the "plumbing system" of the economy.

Unfortunately, in some cases like the UK, the money market requires reforms in order to deepen and extend liquidity and play an important part in providing liquidity for domestic and international investors and allowing institutions to manage short term risk. In the eurozone (Coeure, 2012), markets are characterised between cash-rich and cash-poor banks and a fragmentation along national lines. In the aftermath of the financial crisis, central banks increasingly became intermediaries for inter-bank transactions as witnessed by the sharp rise in the size of central bank balance sheets.

In the US, the SEC has adopted measures to stabilise money market mutual funds (total \$2.6 trillion assets) following the destabilization of this market in 2008 which prompted a one-year guarantee of those funds' holdings. New rules implemented in 2010 require funds to shorten maturities of portfolio holdings, increase cash holdings, improve credit quality, and report their portfolio holdings on a monthly basis. Some commentators are looking for further reforms including floating the net asset value, introducing a capital buffer and imposing redemption restrictions.

One of the key functions performed by banks is maturity transformation i.e banks typically take in deposits or obtain short-term funding in wholesale markets and use these funds to make long-term investments. On the liabilities side, deposits can be withdrawn on demand thus providing depositors with valuable flexibility in making payments as they need. Similarly, short term market funding may not be rolled over when it comes due. On the assets side, long term investments are often risky and illiquid in that their liquidity before maturity entails a loss. Maturity transformation gives rise to liquidity risk since by definition an entity engaging in maturity transformation cannot honour a sudden request for full withdrawals.

Liquidity buffers can help to avoid costs of a premature liquidation of long-term investments and to prevent “fire-sale” externalities and financial contagion. During financial crises, when assets can be liquidated or sold only at a significant loss, even a large capital buffer can be insufficient to prevent contagion between financial institutions. In this case, liquidity requirements can help to internalise some of the negative externalities that are generated by the price impact of selling in a falling market and lower banks’ market liquidity risk.

Another factor favouring liquidity buffers is that the value of safe liquid assets is generally readily observable while the value of capital is not. The value of capital depends on the value of risky assets held by banks. Safe liquid assets can play a doubly important role in banking, not just because of their low risk, but because their value can be easily assessed and agreed upon by banks’ counterparties, should such a need arise. By investing in safe liquid assets, banks commit to removing solvency risk from a portion of their portfolio. This can make it easier for banks to obtain financing from retail depositors or interbank markets thus lowering banks’ funding liquidity risks.

Federal Reserve proposals and Dodd-Frank implementation

The Dodd-Frank Act (2010) and other international regulatory reforms share an important feature with a strong focus on the largest, most complex, and most interconnected financial firms and the systemic risks posed by those firms. In 2011, urged on by the Federal Reserve, an international agreement was reached on a framework for capital surcharges to be implemented during the same 2016-2019 transition period as for the capital conservation buffers under Basel 3. Section 619 of the Dodd-Frank Act known as the “Volcker Rule” generally prohibits banking entities from engaging in proprietary trading or acquiring an ownership interest in having certain relationships with a hedge fund or private equity fund. The Federal Reserve, in April 2012, clarified that a banking entity has a full two-year period until July 2014 to fully conform its activities and investments to the requirements of the “Volcker Rule”.

On 8 June 2012, the Federal Reserve approved three proposed rules (“Notices of Proposed Rulemaking”- NPR’s) that would revise the general risk-based capital rules to make them consistent with Basel 3 as well as certain provisions of the Dodd-Frank Act which are intended to strengthen the quality and quantity of capital. Comments on the proposals are due 7 September 2012. The proposals total; 700 pages and lay out the most far-reaching changes in capital requirements to be made in more than two decades.

The first proposed rule, which would apply to all depository institutions, bank holding companies with total consolidated assets of \$500 million or more, and savings and loan companies focuses primarily on the numerator of the capital ratio and would establish a new minimum common equity tier 1 ratio of 4.5% of risk-weighted assets.

The Federal Reserve proposes to apply limits on a banking organisation’s capital distributions and certain discretionary bonus payments to executive officers if the banking organisation does not maintain a new

“capital conservation buffer” of 2.5%. There may be an additional 2.5% on activation of a new “countercyclical capital buffer” in the US when the Federal Reserve and other federal banking agencies determine that a period of excessive aggregate credit growth is contributing to an increase in systemic risk.

Thus, the proposed rule has the following capital requirements with full compliance required by January 2019.

- Common equity tier 1 capital to total risk-weighted assets of 7.0% (4.5% plus a capital conservation buffer of 2.5%).
- Tier 1 capital to total risk-weighted assets of 6% (this becoming the new minimum from 4% previously)
- Total capital to risk-weighted assets of 8%.
- Tier 1 capital to adjusted average total assets (leverage ratio) of 4% with bigger banks (so-called “advanced approaches banking organisations”) at 3% and to meet this by January 2018.

DEFINITIONS: tier 1 capital=sum of common equity tier 1 capital and additional tier 1 capital
: total capital=sum of common equity tier 1 +additional tier 1 +tier 2 capital

The second proposed rule is the so-called “Standardized Approach “ rule which would apply to all banking organisations (to take effect January 2015) and focuses on the denominator of the risk-based capital ratio. The proposed rule would revise (and tighten) the methodologies for determining risk-weighted assets for residential mortgage exposures (from 35 to 200%), commercial real estate credit facilities, exposures that are more than 90 days past due, exposures to foreign sovereigns, foreign banks and foreign public sector entities and derivatives contracts (but providing preferential capital treatment for centrally-cleared derivatives and repo-style transactions).

The third proposed rule is the “Advanced Approaches and Market Risk” rule which generally would only apply to the nation’s largest, most complex, organisations (i.e with consolidated assets of at least \$250 billion or consolidated total on-balance sheet foreign exposures of at least \$10 billion). The rule incorporates certain aspects of Basel 3 and the Dodd-Frank Act with the changes designed to increase the risk sensitivity of internationally active banks to counterparty risk and inter-connectedness among financial institutions. The rule includes:

- A higher counterparty credit risk capital requirement to account for credit valuation adjustments
- Capital requirements for cleared transactions with central counterparties
- Increased capital requirements for exposures to non-regulated financial institutions and to regulated financial institutions with consolidated assets of more than \$100 billion.
- Fed Governor, Daniel Tarullo, says these proposals are “major progress on the way to overhauling capital requirements”. He identifies two areas for future reform: first, he would like to see revisions made to the market risk capital requirements as a back-up for model-derived risk weights. Second, regulators should consider changes in capital requirements to ensure that there would be adequate subordinated debt or similar liabilities on the balance sheets of the largest banking organisations to help ensure they could be successfully resolved through the conversion of debt to equity.

The UK response

On 13 June 2012, HM Treasury announced measures on reform of the UK banking sector. It was noted that between October 2008 and December 2010, European taxpayers provided almost EUR300 billion to prop up their banks with trillions provided in terms of liquidity and lending support. In the UK, the bailout of RBS was the biggest banking bailout in the world. In the UK, the Bank of England is in charge of prudential regulation and the Financial Policy Committee has been created to look at risks across the financial system. The Treasury set out how it will implement the recommendations of the Independent Banking Commission and welcomed the European Commission's Recovery and Resolution Directive that will improve Member States ability to resolve cross border banks without imposing costs on taxpayers as well as pressing for full implementation of Basel 3 in Europe.

The objectives of the UK government's reforms are to make banks more resilient to shocks and make banks more resolvable so that, if they fail, they do not threaten the provision of vital services to the real economy. The financial services sector is an important part of the UK economy, employing around 1.4 million people and in 2010-2011 contributing £63 billion in tax revenues. The third objective to curb risk-taking in financial markets so that investors reap rewards when banks do well but take the pain if banks fail.

The UK government also intends to "ring-fence" retail deposits from the risks posed by international wholesale and investment banking. Ring-fencing prohibits banks that accept retail deposits from undertaking a range of activities that are not directly connected to providing payment services and making loans (note that the "Volcker Rule" in the US is focused on constraining the ability of banks to undertake proprietary trading).

However, ring-fencing and the Volcker Rule both act to curtail the perceived implicit government guarantee. Ring-fencing delivers additional benefits to the Volcker Rule. Most of a bank's global wholesale and investment banking activities, and the risks they entail, would be separated from everyday retail banking. This insulates the ring-fenced bank and makes it more resolvable in the event it runs into trouble. (aggregate assets of the UK banking sector amount to 500% of GDP in the UK while aggregate assets for US banks are less than 100% of GDP).

A "ring-fenced" bank will be economically and legally separate from the rest of its group and run by an independent board. The "ring-fence" does not stop a bank failing but it will insulate the deposits so that if a bank does fail then the essential parts of the banking system can continue without recourse to the taxpayer. Strict controls will be applied on the use of derivatives in a ring-fenced bank especially in terms of any hedging strategy (as was the case recently with JP Morgan in the US). Smaller banks with below £25 billion of mandated deposits are exempt.

The largest UK ring-fenced banks will be required to hold an additional 3% of equity on top of the Basel3 minimum standards and endorses the introduction of a binding minimum leverage ratio for all banks. Large ring-fenced banks should hold a minimum amount of loss absorbing capacity (made up of equity or debt) amounting to 17% of risk-weighted assets. Their overseas operations will be exempt from this requirement unless they pose a risk to financial stability. The Treasury's analysis suggests that the reform proposals will cost £0.6-1.4 billion per annum (the 2007-2009 crisis is estimated to have cost the UK economy £140 billion according to the Treasury).

The Implicit Subsidy of Banks

There is a separate cost which is described as the “implicit subsidy of banks”. Noss and Sowerbutts (2012) examine the public subsidy to UK banks arising from the use of taxpayers money to avert bank failure and the “too important to fail” syndrome. Bank equity holdings were severely diluted through state intervention but debt holders of some failed UK banks did not incur losses. Insolvency was pre-empted by government intervention. To the extent that banks and creditors did not pay for this guarantee, it can be considered an implicit subsidy by taxpayers. The implicit subsidy causes three types of distortion. First it gives banks that benefit from the implicit subsidy a competitive advantage over those who do not (very few it seems in practice).

Second, the subsidy can increase banks’ incentives to take risk and reduce market discipline. It can create a spiral where the existence of an implicit guarantee encourages banks to take more risk, raising the likelihood and cost of bank failure. Third, the implicit subsidy can result in an increase in the size of the financial sector thus diverting resources from other sectors of the economy as more financial services are produced and consumed than would otherwise be the case. Noss and Sowerbutts estimate that the implicit subsidy for UK banks ranges from a minimum £30 billion and possibly high as £120 billion (if an options price contingent claims method is used).

Strengthening systems while economic recovery is fragile

Some commentators have argued that strengthening bank capital while global economic prospects are uncertain and while banks (especially in the eurozone) are going through a deleveraging process could be harmful to economic growth. The BIS and IMF have estimated that the impact on growth is manageable though the IMF in its April 2012 “Global Financial Stability Report” analysed the spill-over effects from the eurozone banking crisis and estimated impacts on GDP and the credit crunch that suggested the potential for EUR 2 trillion deleveraging.

An important element of the global effort to address SIFI’s is the strengthening of resolution frameworks. The objective is to significantly reduce the possibility that the authorities will find themselves forced to bail out institutions in order to prevent a dis-orderly wind-down of a failed bank or institution. A sound resolution regime requires clear authority for the regulator to wind-down a failed (or failing) institution. In addition, given the global nature of the largest banks and financial institutions there needs to be cross-border mechanisms for co-ordination and information sharing. Jurisdictions should put recovery and resolution plans (so-called “living wills”) in place for all global SIFI’s and review and update these regularly.

Another critical factor is strengthening market infrastructure especially in the derivatives markets and particularly those traded over-the -counter (OTC). The design of market infrastructures is important for financial stability as it can either dampen or amplify financial disruption especially if collateral is insufficient or counterparty links are opaque.

Not surprisingly, regulators are pushing for changes to derivatives infrastructure including the requirement that standardised OTC derivatives are traded on an exchange and cleared through a central counterparty (CCP) instead of bilaterally. OTC derivatives will be needed to be reported to a trade repository (TR) which is an electronic registry that records transaction details.

The shadow banking system

A key element of concern to regulators is the “shadow banking” system and initial recommendations were published in November 2011 by the Financial Stability Board (FSB) entitled “Shadow Banking: Strengthening Oversight and Regulation”. Shadow banking is defined as “credit intermediation involving entities and activities outside the regular banking system” which involve leverage and maturity transformation (long term assets funded by short term liabilities). Shadow banks in the US are subject to regulatory rules by the SEC though there is not the day-to-day onsite prudential supervision that is routinely applied too large commercial banks. Bhatia and Bayoumi (2012) describe the shadow system as “banking without backstops”, profitable in good times, dangerous in bad times.

Shadow banking also refers to the creation of assets that are thought to be safe, short term and liquid and as such “cash equivalents” similar to insured deposits in the commercial banking system. In the financial crisis, these assets turned out not to be the same as insured deposits. New varieties of shadow-banking activities were created, in particular, the volume of asset-backed commercial paper (ABCP) grew enormously. Many ABCP vehicles issued short term highly rated liabilities and bought longer term highly rated securities often mortgage backed securities. Many of the vehicles were sponsored by European banks which issued dollar denominated ABCP in the US market and bought dollar-denominated assets in the US market.

The three decades preceding the financial crisis were characterised in the US by the increasing integration of traditional lending and capital markets activities. This trend diminished the importance of deposits as a source of funding for credit extension in favour of capital market instruments sold to institutional investors. It altered the structure of the financial services industry, both transforming the activities of broker-dealers and promoting the emergence of large financial conglomerates. The US regulatory system found it difficult to keep pace with these developments.

The first element is a monitoring exercise and the authorities have agreed to regularly exchange data and information on shadow banking activities in their jurisdictions. The second element is that the FSB will conduct annual supervisory exercises. The growth of securitisation and its subsequent mutation into the development of a shadow banking system contributed a major part in the financial crisis. To make the shadow system more stable requires policy makers to extend regulation into connected markets like the repo market and look to apply appropriate constraints on shadow bank credit. The Financial Stability Board is investigating these issues currently.

Kane (2012) notes that the perception of a governmental “rescue reflex” is a key element of shadow banking in that it permits banks to back risky positions with the ex ante value of its contingent safety-net support (from taxpayers rather than stockholder equity). He argues that the shadow banking system attempts to avoid regulatory control and intensive lobbying thus dilutes and defers the preventative approach of Basel 3 and the Dodd-Frank Act.

Strengthening Financial Infrastructure

By 2030, many Asian economies are expected to achieve developed economy status with the financial sector set to expand in tandem with the rise in GDP per head, rising financial wealth and increased economic expansion and modernisation. Safeguarding and promoting financial stability will become increasingly important. The latest BIS report “Principles for Financial Market Infrastructures”, April 2012, provides the latest recommendations for policymakers in terms of infrastructure requirements. The growth of regional

financial centres will continue to evolve and centres like Hong Kong and Singapore already manage to score top positions in terms of competitiveness and development scores just outside of London and New York.

The BIS report contains new international standards for financial market infrastructures (FMI's) including systemically important payment systems, central securities depositories, securities settlement systems, central counterparties and trade depositories. The new standards are designed to make FMI's more resilient to financial crises and participant defaults.

The BIS report also includes revised responsibilities of the relevant authorities in regulating, supervising and overseeing FMI's. The standards set out a specific minimum requirement to ensure a common minimum level of risk management across FMI's and countries and cover nine broad categories which are general organisation, credit and liquidity risk management, settlement, CSD's and exchange-of-value settlement systems, default management, general business and operational risk management, access, efficiency, and transparency.

Strengthening financial infrastructure generally also requires ensuring the effectiveness of the operational infrastructure for individual banks. The recent problem experienced with NatWest in the UK where there was a 6 day downtime in the ability of its customers to withdraw cash and make payments because of a computer "glitch" highlights the need for regular supervisory accountability of banks in ensuring a properly funded in-house IT system. A properly functioning banking and financial system requires an IT system that is reliable and efficient.

TABLE 2: Development of Financial Assets, \$bn

	2010	2030	Share of world total, % 2010 2030	
Bank deposits	13390	53768	23.7	44.1
Private bank credit	8278	32998	16.7	32.9
Stock market cap	10686	42442	19.4	34.4
Private bond market cap	2162	17203	4.1	13.7

Source: Morgan and Lamberte, ADBI Working Paper, February 2012 Note: data refers to ASEAN, PRC and India

The “London Loophole”

Recent US congressional hearings highlighted the problems of regulatory inconsistencies that occur between national jurisdictions especially in London which has spawned frequent a number of incidents such as JPM’s \$2bn trading loss recently, rogue trading at SocGen (Jeremy Kerviel), the AIG special purpose investment vehicle and MF Global and damaged London’s reputation as a leading financial centre. Some financial institutions and investment banks have taken advantage of “loopholes” in the UK regulatory framework.

In MF Global’s case assets in brokerage accounts were used and re-used in such a way that the credit multiples outweigh the actual assets from customers’ deposits at the firm. These “rehypothecated” assets then become part of a “daisy chain” so that any breakage in the chain sets off margin calls that cannot be met thus causing substantial financial market dislocation. In the UK, there is no limit on the amount of client assets that can be rehypothecated.

As Duffie (2012) points out, the UK also has no regulatory standards on prime-brokerage businesses (Morgan Stanley suffered a firm-threatening loss of liquidity due to a sudden run by its prime-brokerage hedge fund business in both the US and UK after the failure of Lehman). These problems emphasise the need for congruency in the application of international financial regulation and a tightening up of regulations in the UK.

Nevertheless, a survey by the Institute of International Finance found that 70% of UK banks have put in place the liquidity tracking and risk management systems needed for the Liquidity Coverage Ratio (LCR) compared with 20% or fewer in the rest of the world. The LCR becomes mandatory in 2015.

Interestingly, the Bank of England’s Financial Policy Committee is expected to announce an easing in liquidity rules for UK banks in response to the weakness in the UK economy with the objective of encouraging banks to increase lending to the real economy.

Safe Assets

The financial crisis and the heightened concerns about sovereign debt sustainability has reinforced the notion that no asset can be viewed as truly safe. Sovereign credit rating downgrades in many cases highlight that so called “risk-free” assets actually do contain some degree of risk. The number of AAA-rated sovereigns is declining and the US was downgraded by Standard and Poors in the summer of 2011 following the controversial “debt ceiling” debate in the US Congress. In the advanced economies, the number of countries with a AAA debt rating fell from 68% before the financial crisis to 52% currently. In emerging markets, there are no AAA sovereign ratings and an AA rating is held by 15% of countries (up from 10% pre-crisis). IMF projections envisage gross general government debt of the advanced economies will reach \$58 trillion by 2016 compared to \$47 trillion at the end of 2011 (an average 69% of GDP).

As at end-2011, AAA-rated and AA-rated OECD government securities accounted for \$33 trillion or 45% of the total supply of potentially safe assets which the IMF estimates is \$74.4 trillion in total. Holdings of government securities world-wide amount to \$41.3 trillion with private banks accounting for 34% of the total. Domestic banks in the US, Japan and the eurozone typically hold 25% of domestic sovereign debt while in the UK, insurance companies and pension funds account for nearly 30% reflecting statutory rules regarding

matching of their liabilities. Of course, since the financial crisis and the implementation of quantitative easing especially in the US and UK, central bank holdings of their respective sovereign debt has increased sharply.

Securitized instruments including mortgage-backed securities and other asset-backed securities account for 17% of the global aggregate followed by corporate debt and gold (both 11% each).

The recent downgrade by Moody's to the ratings of the top 15 banks affects their cost of funding. Funding costs for European banks have risen from zero in 2007 to 360bps over 10 year bonds (as at end-June 2012). On the supply side, the number of sovereigns whose debt is considered safe has fallen which according to the IMF could remove \$9 trillion from the supply of safe assets by 2016 (or some 16% of the projected total). Private sector production of safe assets has also declined as poor securitization has tainted these assets. The shrinking set of safe assets can have negative implications for global financial stability. It increases the "price of safety" and safe asset scarcity could lead to more short-term volatility, herding behaviour and runs on sovereign debt.

Safe assets play an important role as a source of high quality, liquid collateral and spans private and central bank repo markets as well as OTC derivatives markets. The key collateral providers and thus the ultimate demanders of safe assets include hedge funds, broker dealers and banks. The tri-party repo market in the US stands at \$1.7 trillion and is an important source of funding for US institutions. US Treasury and agency securities account for 83% of collateral in the US tri-party repo market. In the eurozone, sovereign debt accounts for 79% of EU-originated collateral in the repo market. The move of standardised OTC derivatives contracts to central counterparties (CCP's) may spur demand for high quality collateral. OTC derivatives are highly dependent on the use of collateral with 80% of these including collateral agreements. The IMF estimate that the move to CCP's could elevate collateral demand by up to \$200 billion for initial margin and guarantee funds. The IMF also that the requirements of the Basel 3 Liquidity Coverage Ratio (LCR) could increase the demand for safe assets by some \$2trillion to \$4 trillion worldwide, equivalent to 15-30% of banks' total current sovereign debt holdings.

The production of safe assets by the private sector largely collapsed with the onset of the financial crisis. Securitization issuance fell from \$3 trillion in the US and Europe in 2007 to less than \$750 billion.

The implications for financial stability arising from the shrinkage in supply of safe assets is that the "price of safety" goes up with the safest assets affected first. Investors that are unable or unwilling to pay higher prices will then accept explicitly higher risks which then affects counterparty risk in funding markets thus hampering the ability to fund. The "flight to safety" recently arising from the eurozone crisis has seen record low yields in US Treasuries, UK gilts and German bunds. Swiss bond yields out to 5 years maturity are negative and US Treasury bill yields out to 12 months are effectively zero. The use of regulatory zero weights on sovereign debt can result in increasing exposure to riskier sovereign debt and create mark-to-market problems that we have seen inside the eurozone especially with regard to Spain where the ECB's LTRO liquidity provision encouraged a "carry trade" and "overinvestment" in domestic sovereign debt. When bond yields rose (and reached a "tipping point" of 7% on 10 year yields) it is usually a precursor to a bailout of the banks and eventually the sovereign as negative feedback loops finally crack.

Conclusions

- The financial crisis of 2007-2009 resulted in a move towards a reform of the financial system and through Basel 3 and the Dodd-Frank Act focused on the systemic risks posed by the largest and most inter-connected financial firms with the aim of securing financial stability.
- The policy initiatives include robust capital requirements and high -quality capital and liquidity buffers as well as a minimum leverage ratio. Alongside improvements to the regulatory capital framework, there are also important supervisory complements in the development of firm-specific stress testing and capital planning requirements. Is designed to ensure that firms have sufficient capital to remain viable financial intermediaries if they sustained losses in asset values and earnings in adverse economic scenario.
- Enhanced liquidity standards have also been implemented as the crisis highlighted the importance of funding dislocation in the short term money market sand the issue of counterparty risk. Two liquidity standards have been developed: a Liquidity Coverage Ratio with a 30 day time horizon and a Net Stable Funding Ratio with a one-year horizon.
- Apart from capital and liquidity overhauls, strengthening financial markets also includes improvements to financial infrastructure and architecture as well as ensuring the operational integrity of individual bank's infrastructure.
- The 2007-2009 financial crisis also highlighted the role played by the so-called shadow banking system and the importance of funding markets and OTC derivatives markets. It will be a major challenge for regulators to monitor this part of the financial system as there is a risk that intensive lobbying by the shadow system may dilute regulatory recommendations and defer their implementation.
- Key areas of attention for further progress in the agenda of strengthening financial markets and the global regulatory reform agenda are cross-border resolution and supervision, reform of OTC derivatives, stronger oversight and regulation of shadow banking and closing critical data and information gaps. In addition, it is important that there is steady and consistent implementation of the Basel 3 timetable and other regulatory initiatives.
- Implementation and coordination risks are significant and it is important that attempts by national authorities to secure some form of regulatory arbitrage is minimised as this undermines a globally consistent approach to ensure financial stability and a more resilient financial system.
- In the eurozone, resolution of the debt and banking crisis highlights the need for a move towards a banking union in the eurozone as well as common supervisory arrangements and a common deposit guarantee scheme. The eurozone crisis remains the key downside risk to financial and economic stability.
- In emerging markets, regulators must ensure that the development of financial systems and prospective economic growth is not damaged by the application of regulatory rules that are more applicable to the "advanced" economies especially in terms of too-stringent liquidity rules.
- In conclusion, strengthening financial markets is an important part of increasing the resilience of the financial system to adverse shocks thus contributing towards the objective of financial stability. However, a warning note. Strengthening financial markets does not mean increasing the size of the financial sector to such an extent that it results in a misallocation of resources or results in a concentration of risk that could potentially destabilise the real economy.

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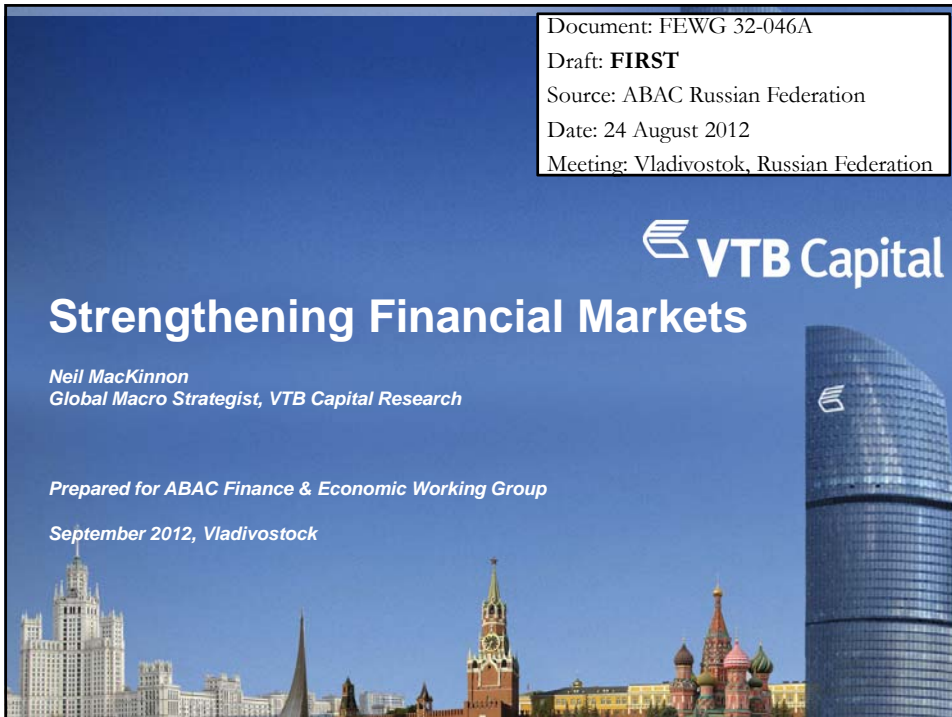
 **VTB Capital**

Strengthening Financial Markets

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Prepared for ABAC Finance & Economic Working Group

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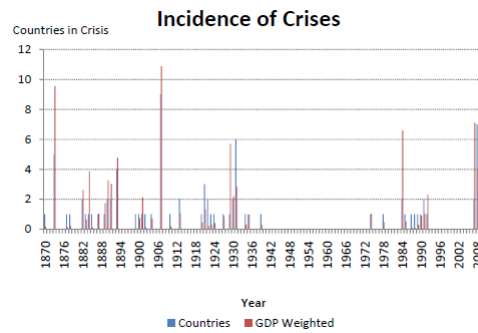


Strengthening Financial Markets

- *Why? The 2007-2009 crisis resulted in severe economic dislocation and significant costs and high unemployment*
- *In addition, financial markets seized up ...the Lehman moment...*
- *...and so did money markets...the “plumbing” of the system*
- *...the legacy is still with us...deleveraging, sovereign debt constraints, pressure on banks balance sheets, counterparty risk*
- **FINANCIAL STABILITY IS CRUCIAL**

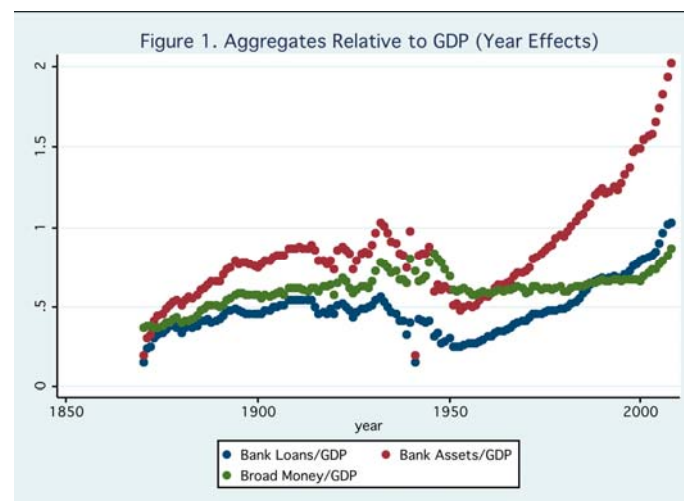
Global Financial Crises

5 global financial crises: 1873, 1891, 1907, 1930-31, 2007-2008



Source: Jorda, Schularick, Taylor, 2011

Banking 1870-2008: balance sheets of the world's largest 1000 banks increased by about 150% between 2001 and 2009



24.08.2012


Source: Prof Moritz Schularick, "Financial Stability: The View from Economic History" November, 2011.

Page 4



Stronger markets does not mean:

- Greater concentration of risk...
- ...or outsized financial sectors
- ...or complex trillion \$ derivatives markets
- ...which can distort the real economy and resource allocation
- ...does mean more control of shadow banking, MMMF's



...it means

- ...more resilient financial systems
- ...that can cope better with shocks
- ...that do not burden the taxpayer
- ..."too big to fail"? or just "too big"?
- ...systems that are transparent
- ...and that serve the interests of the real economy
- ...a global dialogue

Regulatory Policy Initiatives

- Basel Committee: counter-cyclical capital buffer, enhanced risk management, global liquidity standards, leverage ratios...Basel 3 as a minimum standard
- Dodd-Franks Act (848 pages long), the “Volcker Rule”...keep it simple...consolidate pre-crisis fragmented supervision...Financial Stability Oversight Council
- The Financial Stability Board: focuses on risks posed by systemically important banks
: early warnings exercise, peer reviews
- European Systemic Risk Board, European Commission’s “Alert Mechanism Report” on EU macroeconomic imbalances
- The G-20 Mutual Assessment Process: focus on “external sustainability”
- Macro and micro prudential policy: macro-reduce common exposures and interconnectedness, mitigate pro-cyclicality....micro-strengthen capital and liquidity buffers, enhance transparency

Macro-Prudential Policy

- Macro-prudential policy
 - ✓ the objective-mitigating systemic risk across the credit cycle: risk migrates to where regulation is weakest (the “London Loophole”).
 - ✓ scope of analysis: transparency and consistency
 - ✓ powers and instrument: avoid excessive regulation and complexity
- System-wide approach required rather than firm-specific...direct costs of banking crises typically exceed 10% of GDP
- Balance sheet tools include: maximum leverage ratios
 - : counter cyclical capital and liquidity buffers
 - : time-varying provisioning practices
- ...all designed to influence level of leverage and maturity mismatch in the financial system
- Market structure tools: financial trading on organised trading platforms, central counterparties, targeted disclosure requirements, proper bank audits,



Key Principles

- : resilience of the financial system, solid financial architecture
- : broad macro-financial stability framework
- : the need for co-ordinated (simple) global rules
- : more regulation has to be better regulation !!!
- : less leverage and more high-quality capital, improve risk profile
- : less concentration of risk, stability of funding, accounting reform
- : transparency, greater individual supervision of banks
- : reduce moral hazard, clear resolution procedures



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