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Editorial

Liquidity shocks, governance, systemic risk and financial stability

A number of the papers included in this special issue have been selected from those presented at the second international conference on Global Financial Stability and Global Prosperity in June 2013. The main theme of the conference was on Systemic risk, liquidity shocks, governance and financial stability.

The conference was sponsored by the Australian Reserve Bank of Australia, the Financial Services Institute of Australasia (Finsia) and PricewaterhouseCooper (PwC). The keynote speakers of this conference included Dr. Claudio Borio, Head of Economics and Monetary Policy at the BIS, Professor Kose John from New York University, Dr. Jamie McAndrews from Federal Reserve Bank of New York and Professor Antony Saunders from New York University. The Deputy Governor of the Reserve Bank of Australian, Dr. Philip Lowe, also addressed the conference. The papers in this special issue cover a number of topics with respect to Liquidity shocks, governance, systemic risk and financial stability.

A special issue on Liquidity shocks, governance, systemic risk and financial stability intends to contribute to aspects of issues currently analysed and considered by various international institutions, market participants and researchers in the post global financial crisis era.

There are four broad areas covered by the papers in this special issue. The first set of papers looks broadly at issues surrounding macro financial stability. The second set of papers is concerned with the analysis of bank risk and the factors that affect the risk-exposure of financial institutions. The third set introduces various methods for the modelling of market liquidity risk as well as an overall analysis of the aspects of systematic liquidity risk. The fourth and the final set is concerned primarily with the factors that affect corporate governance and how governments can regulate financial institutions.

The first area of papers includes studies of financial stability in markets. The paper by Ellis, Haldane and Moshirian tackles some aspects of G-SIFS and D-SIFs as well as key issues with respect to global financial stability and governance. Borio in his paper uses modelling of the financial cycle to examine business fluctuations. His paper suggests alternative methods of interpreting the impact of financial crises in models and identifies several policy challenges of financial crises. Mercado and Park analyse the cross-border transmission of financial crisis using the financial stress index (FSI). Their paper aims to examine the determinants of financial stress in emerging market economies and to assess the transmission of financial shocks to emerging market economies. Their findings suggest that market shocks can be propagated from advanced economies to emerging market economies, but also that financial shocks can be propagated between regionally linked emerging market economies.

The second area deals with analysing the various factors that contribute to and affect bank risk. Betz et al. present a model for predicting individual bank distress in the European banking sector. They find that bank-specific vulnerability indicators are useful in predicting bank distress levels in the sector. Koch in his paper uses cointegration analysis to examine the reaction of large German banks' to the Global Financial Crisis. Koch then extrapolates on his model and finds that different types of financial markets create different reactions to risk dynamics in large banks. Li in the third paper examines the impact of corporate governance on various firm performance measures. Li argues that a system of mutual monitoring amongst commercial firms can limit risk taking in the market and reduce the markets' vulnerabilities to systemic risks.

The third area covered in this issue focuses on various analyses of systemic liquidity risk and how such risk is propagated and transmitted across markets. Jobst in his paper devises a 'Systemic Risk-adjusted Liquidity' (SRL) model to generate a probabilistic measure of liquidity risk. He examines how individual funding decisions of banks can cause system-wide liquidity crises during periods of stress. Jobst then proposes the SRL model as a more efficient measure of measuring liquidity risk from a macroprudential perspective. Lanfield et al. examine the interbank system in the UK, focusing particularly on how interbank connections across markets are structured and created. They focus on two interbank networks of exposures and funding and discuss the implications of those networks for financial stability and liquidity risk. Qian et al. in their study explore the real impact of commonality in liquidity by studying liquidity commonality in the Chinese stock market. They find that greater liquidity commonality is caused by a higher supply of tradeable shares in the Chinese market and that the direct result is higher systematic risk for Chinese investors. They also examine the impact of liquidity restrictions on the financing capability of Chinese firms and the implications for liquidity risk.

The fourth area looks at the impact of corporate governance and government regulation on bank risk. Anand et al. analyse the conditions surrounding the success of bank debt guarantee schemes. By applying the global games approach, their paper derives the impact of guarantee programs on the ex-ante probabilities of bank and sovereign defaults as well as on the likelihood of a simultaneous default. They find that greater government transparency and bank disclosure are beneficial for ameliorating bank risk. Tongurai and Vithessonthi use evidence from Thailand to examine the spillover effects from unremunerated reserve requirements on banks. They find little evidence to show that unremunerated reserve requirements are able to achieve significant movements in currency rates.

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1. Macro studies of financial stability

The paper by Ellis, Haldane and Moshirian entitled systemic risk, governance and global financial stability covers a number of issues with respect to SIFs and D-SIBs and factors that could contribute to better governance and more stable global finance.

The main thesis presented in the paper by Borio entitled the financial cycle and macroeconomic: what have we learnt is that it is not possible to understand business fluctuations and their policy challenges without understanding the financial cycle, thus calling for a rethink of modelling strategies and macroeconomic policies. The paper lists 5 core stylised features of the financial cycle: (1) the most parsimonious description of the financial cycle is in terms of credit and property prices; (2) financial cycles have a much lower frequency than the business cycle; (3) peaks in the financial cycle are closely associated with systemic banking crises; (4) it helps detect financial distress risks with a good lead in real time; and (5) its length and amplitude depend on policy regimes. The paper argues that satisfactory models of the financial cycle will need to accommodate the following: (1) that the financial boom should not just precede the bust but cause it; (2) explicit treatment of disequilibrium debt and capital stock overhangs during the busts; (3) a distinction between potential output as non-inflationary output and as sustainable output.

Some methods for incorporating these features into models are presented: (1) moving away from model-consistent (''rational'') expectations; (2) allow for state-varying risk tolerance, i.e. for attitudes towards risk that vary with the state of the economy, wealth and balance sheets; and (3) capture more deeply the monetary nature of our economies. Lastly, the paper identifies several policy challenges of the financial cycle: (1) a firm focus on the medium term; (2) building up buffers during the financial boom to be drawn down during the bust; (3) addressing balance sheet repair head-on in event of serious balance sheet recession: encouraging underlying balance sheet adjustment, rather than unwittingly delaying it. This means recognising the limitations of traditional fiscal expansion and of protracted and aggressive monetary easing; (4) internalising the unwelcome spillovers that policies can have, especially if financial cycles are not synchronised across countries; and (5) the horizon of policymakers needs to adjust to the economic/financial horizon, instead of the high-frequency vagaries of the markets.

The paper by Mercado and Park entitled determinants of financial stress in emerging market economies analyses the cross-border transmission of financial crisis using the financial stress index ('FSI'), which it is argued can help measure and identify the sources of financial stress. This paper utilizes FSI to understand global, regional, and domestic factors influencing the financial stress condition of emerging market ('EM') economies. Specifically, it aims to examine the determinants of financial stress in emerging market economies and to assess the transmission of financial shocks originating from advanced, other regional and non-regional EM economies to individual EM economies. The paper verifies findings of earlier studies that financial shocks spread from advanced to EM economies while highlighting that financial stress originating from EM also exert financial stress on other EM economies. Whether the shock from the EM economy was from the same or different region did not matter, the impact of a non-regional shock is as strong as that of a regional shock or stronger on domestic FSI, except the ones in emerging Asia. The paper suggests the importance of a common regional factor in affecting domestic financial stress – a common regional factor significantly increases domestic financial stress in emerging Asia and emerging Europe.

The findings encourage future researchers to consider the importance of financial shocks originating from both advanced and EM economies. However they also present a cautionary tale; while financial activity is increasingly global, regulation remains extremely national. There is a need for a coordinated oversight of international financial institutions and markets. Regulatory oversight should be more inclusive of EM economies given the growing importance of EM financial systems. The paper lastly points to the benefits of regional institutions/regulators for monitoring of regional market conditions and maintaining financial stability at the regional level in coordination with national and global ones, especially in emerging Asia, where regional integration has made substantial progress.

2. Analysing bank risk

The paper by Betz, Oprica, Peltonen and Sarlin entitled Predicting distress in European banks presents an early-warning model for predicting individual bank distress in the European banking sector, using both bank-level and country-level indicators of vulnerabilities. The model introduces a novel dataset that complements bankruptcies, liquidations and defaults by also taking into account state interventions and mergers in distress due to the rarity of outright bank failures in Europe. It focuses on predicting vulnerable states, where one or multiple triggers could lead to a bank distress event. It also calibrates signals of the early-warning model according to policymakers' preferences between type I and II errors as well as the potential systemic relevance of each individual financial institution, proxied by its size.

The study finds that complementing bank-specific vulnerabilities with indicators for country level macro-financial imbalances and banking sector vulnerabilities improves the model performance. This confirms the usefulness of the vulnerability indicators introduced recently via the EU Macroeconomic Imbalance Procedure. An early-warning model based on publicly available data yields useful out-of-sample predictions of bank distress during the global financial crisis. For the model to be effective, a policymaker must be substantially more concerned with missing bank distress than issuing false alarms. It is important to give more emphasis to systemically important banks for a policymaker concerned with systemic risk. However, vulnerabilities and risks of large financial institutions are more complex, as the models show poorer performance when accounting for the size of the banks.

The paper by Koch entitled risky adjustments or adjustments to risks: Decomposing bank leverage sheds light on the liability management of large commercial, globally operating German banks through use of cointegration analysis from a short- and long-run perspective against the background of key events during this financial crisis in 2007 and 2008. The findings suggest large commercial banks significantly cut their leverage in June 2007 and April 2008. As early as June 2007, large commercial banks withdrew from foreign borrowing while substituting domestic debt and bond funding for foreign debt while in April 2008, banks withdrew from interbank borrowing.

In the short run the findings point out that banks' reactions to risk dynamics vary considerably across the type of financial market. Higher risks on equity markets seem to induce banks to increase their leverage, whereas more risks on currency markets apparently play a minor role. More risk appetite in general seems to discourage banks from jumping on the bandwagon. Across all different risk proxies, interbank debt turns out to perform a key valve function.

It should be noted that this is the first paper that applies cointegration analysis to split bank leverage into a short- and long-run dimension, making it also the first to interpret structural breaks in cointegrating relationships as channels of leverage adjustment. The paper contributes to the understanding of how banks respond to

key crisis events and how they transmit shocks to different markets. Furthermore, this paper informs the debate on government interventions and contributes to an appropriate design of regulation on leverage and the overall liability structure.

This paper by Li entitled mutual monitoring and corporate governance contends that mutual monitoring in a well-structured authority system can mitigate the agency problem. It examines whether the number two executive in a firm, if given authority, incentive, and channels for communication and influence, is able to monitor and constrain the potentially self-interested CEO. The paper presents three key findings: (1) measures of the presence and extent of mutual monitoring from the No. 2 executive are positively related to future firm value; (2) the beneficial effect is more pronounced for firms with stronger incentives for the No. 2 to monitor and with higher information asymmetry between the boards and the CEOs; and (3) mutual monitoring is a substitute for other governance mechanisms.

In recent crises, like the GFC, existing corporate governance systems failed to contain firm-level risks before they became systemic risks. A mutual monitoring governance system can prevent or detect corporate fraud early, discourage excessive and short-term risk taking, and lead to better decisions pertaining to investment and financial policy. All of these benefits are especially important for financial firms wanting to reduce systemic risks.

3. Systemic liquidity risk

This paper by Jobst entitled measuring systemic risk-adjusted liquidity examines systemic-liquidity risk through a devised 'SRL' model which combines option pricing theory with market information and balance sheet data to generate probabilistic measure of systemic liquidity risk. The model is used to identify regulatory and analytical shortfalls in existing approaches to systemic-liquidity risk. Jobst uses the model to quantify individual institution's contributions to expected losses from system-wide liquidity shortfalls and to also price insurance premia that provides incentives for banks to internalise the social cost of their funding decisions.

The SRL model contributes to the development of new instruments that directly address systemic liquidity risk. The model represents a structural approach to measuring systemic liquidity risk and introduces analytical tractability to the modelling of systemic liquidity risk. It follows on the existing literature concerning how individual funding decisions of banks can cause system-wide liquidity shortfalls in times of stress. The SRL model approach forms the basis for an effective price based regulation that could endogenise the social cost of net liquidation losses during periods of systemic solvency crises. Whilst examining systemic liquidity risk from a macroprudential perspective remains largely unaddressed, the SRL model appears to provide a more suited approach than existing prudential approaches to identifying, quantifying and mitigating liquidity risk. There remain imperfections in the model in the form of estimation uncertainty surrounding the valuation models the SLR model is derived from. Improvements on the model could stem from more accurate data and greater data availability, particularly in light of increasing complexity in the financial sector.

The paper argues that existing approaches to addressing systemic-solvency risk may be insufficient due to the neglect of measuring and regulating systemic-liquidity risk. A novel approach that incorporates individual decision making decisions of institutions may provide useful implications for designing regulations to reduce the danger of systemic-liquidity risk. Examination of the individual funding decisions and liquidity-risk exposure of institutions may provide a basis for examining systematic-liquidity risk through assessing and quantifying the risks created by the interdependence of individual institutions. Through this approach, system-wide vulnerabilities can be more accurately identified and their impacts on individual institutions can be assessed in a more objective manner.

This paper by Langfield, Liu and Ota entitled Mapping the UK interbank system presents new evidence on the structure of interbank connections across key markets: derivatives, marketable securities, repo, unsecured lending and secured lending. Taken together, these markets comprise two networks: a network of interbank exposures and a network of interbank funding. Network structure varies across and within these two networks, for reasons related to markets' different economic functions. Credit risk and liquidity risk therefore propagate in the interbank system through different network structures. The implications for financial stability are then discussed.

A prior study,[1] by Qian, Tam and Zhang entitled systemic liquidity and the funding liquidity hypothesis using an international sample, found that only demand-side factors explained differences in liquidity commonality across countries, while the supply-side factors do not. This study reconciles the previous study's findings on supply-side determinants and explores the real impact of commonality in liquidity by studying liquidity commonality in the Chinese stock market over the period of 1995–2012.

The Chinese stock market as the unique setting for the study: supply-side explanations of commonality in liquidity in global stock markets may fit well with China's segmented market where interest rates, credit supply, and capital flows are highly regulated and controlled by government. Two variables are unique to the Chinese stock market proxied for supply of funding (monthly change in stock market participants and the 2005–2007 share-split structure reform). The real impact of liquidity commonality is studied by investigating the impact of commonality in liquidity on capital-investment decisions. Both supply and demand-side determinants can explain liquidity commonality in China. Firms with high liquidity commonality invest less than those with low liquidity commonality.

Three implications are able to be deduced: (1) there is a potential cost to China's reform; the supply of new tradable shares increases liquidity commonality, reducing investors' ability to diversify their risk. Thus, post reform, Chinese investors face higher systematic risk; (2) a caveat to claims from prior studies, that increasing public holdings of listed firms' equity improves corporate governance and market transparency, is that increasing public float without a corresponding increase in funding liquidity may result in stock markets' susceptibility to crises; and (3) stock-market liquidity impacts firms' ability to fund their investment projects, indicating the real impact of liquidity risk.

4. Governance

This paper by Anand, Heiemann and Konig entitled Guarantees, transparency and the interdependent between sovereign and bank default risk analyses the conditions conducive for the success of bank debt guarantee schemes. The paper models the coordination problem between a bank's creditors and sovereign creditors that arises from the government's guarantee of the bank creditors' claims. The guarantee induces a functional interdependence between the likelihood of a sovereign default and a banking crisis which crucially depends on the transparency of bank and government. By applying the global games approach, the paper derives the impact of guarantee programs on the ex-ante probabilities of bank and sovereign defaults as well as on the likelihood of a simultaneous default. Assuming that such defaults are associated with welfare losses, the paper considers the optimal guarantee that

[1] Karolyi, G.A., Lee, K.-H., van Dijk, M.A., 2012. Understanding commonality in liquidity around the world. Journal of Financial Economics 105, 82–112.

minimises expected welfare costs and analyses how the optimal guarantee scheme is affected by the transparency of bank balance sheets and government finances.

The study shows clear-cut welfare improvements of the guarantee, with greater transparency contributing to lower fundamental uncertainty and higher welfare. This suggests that in designing guarantee schemes, authorities can improve on their credibility by mandating greater disclosure on the part of the banks. Moreover, by improving on the government's own transparency, these gains can be further enhanced. The authors' model provides a theoretical foundation for the empirically observed behaviour of credit default spreads during the recent crisis across the countries that issued bank debt guarantees. The model captures the key strategic interactions across sovereign and bank creditors. When designing (optimal) guarantee schemes, such effects should be taken into account since they can easily lead to undesirable consequences.

This paper by Tongurai and Vithessonthi entitled the spillover effects of unremunerated reserve requirements explores the question of how restrictions on capital inflows in the form of the Chile-styled unremunerated reserve requirement (URR), which were implemented in Thailand 2006–2007 as a means to halt the rise of the Thai baht (THB) against the USD, affect the exchange rate exposure of firms against other major currencies (EUR and JPY). More specifically, it addresses the question of whether there exists a spillover effect of the URR on firm value through exchange rates of other major currencies when the implementation of the URR is intended to primarily stabilize the exchange rate of the domestic currency against the USD.

The paper finds that there is no spillover effect of the URR on stock prices through changes in the first- and second-moment exchange rate exposure to the EUR and the JPY. The imposition of the URR appears to affect the first and second-moment exchange rate exposure to the EUR and the JPY of some firms. The THB/EUR and THB/JPY exposure of Thai firms are largely negative, indicating that an appreciation of the foreign currency against the THB has a negative effect on stock prices. The paper suggests that the imposition of the URR does not appear to strengthen the negative THB/EUR exchange rate exposure. Furthermore, little evidence is found to support the notion that the URR moderates the effect of the THB/EUR and THB/JPY exchange rate volatility on stock prices.

The paper also deals with the question of whether central banks in emerging market countries should introduce capital controls when dealing with a substantial change in the exchange rate as a result of large capital inflows. It finds that if the main objective of URR is to prevent short- or medium-term appreciation of the currency; no. It shows that the URR did not weaken the value or reduce the volatility of the THB as anticipated, but had large immediate negative effects on stock prices and some spillover effects. However, if the main objective of the URR is to prevent additional capital inflows the answer is yes. It could be argued that the URR achieved this objective (although it is questionable whether this truly was a primary goal of the URR), since the total of net capital flow did not significantly increase after the imposition of the URR.

As can be seen from the above papers, this special issue covers a number of pertinent issues related to Liquidity shocks, governance, systemic risk and financial stability. In recent years, it appears that regulators, policy makers, academics, financial analysts and people in general are searching for more effective international and national financial systems. We expect that some of the articles in this special issue will shed more light on some of the financial challenges ahead and the opportunities that the post global financial crisis could provide for a more stable global financial system.

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