

Introduction

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Ever more extensive global financial linkages are changing in ways that have significant implications for policy. Governor Wheeler of the Reserve Bank of New Zealand notes in his welcome address to the conference (reprinted in this volume) that Asia-Pacific countries have experienced a particularly rapid growth in financial flows since the crisis. He emphasises that opening the capital account is one of the most powerful reforms a government can undertake, as greater cross-border financial linkages offer major efficiency gains in resource allocation. But he also warns that cross-border flows present challenges for monetary policy and financial stability. The monetary policy challenge is that considerable uncertainty exists about the exchange rate channel in monetary policy transmission and that unjustified appreciation in the real effective exchange rate – driven perhaps by global financial market conditions – can cause a misallocation of resources that can inhibit the country’s long-term economic potential. Wheeler also cautions that cross-border financial linkages can have important implications for financial stability. These can arise when the herding behaviour of large investors causes international financing flows to amplify financial shocks. He explains how macroprudential policy and effective liquidity rules can reduce such systemic risks.

The BIS has long documented the extent and complexity of global financial linkages in its international banking and securities statistics, focusing an increased amount of research on these areas in recent years. Borio (2014) notes that cross-border financial linkages can exacerbate the international monetary and financial system’s tendency to amplify the build-up of financial imbalances. External credit is inclined to lead and outgrow domestic credit during credit booms that greatly increase the likelihood of subsequent financial crisis (Borio et al (2011)). At the same time, the increased share of international bank and bond credit denominated in US dollars reflects the key role of that currency in developing Asia. This can serve to directly transmit monetary policy and leverage cycles from the United States to financial conditions elsewhere (McCauley et al (2015)).

Further, the channels of influence are also evolving. For example, it is now increasingly evident that, post-financial crisis, shift from international bank to global bond market financing constitutes a new phase, or “the second phase” of global liquidity (Bruno and Shin (2015)). This has fuelled a strong expansion in domestic bank credit in many Asian countries (Shin and Turner (2015)). The shifting balance between onshore and offshore bond issuance should also be taken into account when tracking corporate exposures (Mizen et al (2012)). Both borrowers and lenders from the emerging markets are playing a greater role in global bond markets, linking long-term interest rates more closely together (Turner (2015)).

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Co-hosted by the Reserve Bank of New Zealand (RBNZ) and the BIS's Representative Office for Asia and the Pacific and held on 23–24 October 2014 in Wellington, this conference on cross-border financial linkages represents continuing efforts by the BIS to foster research on these important issues. The conference also marked the completion of the BIS Asian Office's research programme under the direction of the Asian Consultative Council of Governors of BIS member central banks.

Patterns of cross-border linkages

The two papers of the conference's first session document patterns and drivers of cross-border financial linkages in Asia-Pacific. Taken together, they address a number of questions: Why was the impact of the global financial crisis relatively muted in Asia? How has the landscape of international banking in the region evolved since then? Have the region's financial systems become more or less vulnerable?

The paper by Curcuru, Thomas and Warnock on cross-border portfolios: assets, liabilities and non-flow adjustments suggests that emerging Asia weathered the global financial crisis relatively well, thanks mainly to the region's limited external linkages. The authors combine a number of databases to compare the structure of emerging Asia's cross-border financial linkages with those of advanced economies. The focus is on non-flow adjustments, a broad term capturing the effects of asset price and exchange rate movements, as well as other statistical adjustments. Losses from non-flow adjustments are estimated to be \$600 billion for emerging Asia between 2006 and 2011, a quite small amount in relation to GDP. That the losses were so limited reflected both the modest scale of Asia's external investments and the equally modest returns on such investments. The considerable home bias in investment also points to the importance of considering risks from domestic portfolios when assessing a country's overall portfolio risks.

In their paper on the channels and determinants of foreign bank lending, Ehlers and Wooldridge focus on international banking flows in Asia-Pacific. International banking can include business conducted locally by international banks' affiliates in host countries as well as business conducted from abroad, across national borders. The state of development and the fragility of the borrower countries' banking sectors are found to influence the form of foreign lending: foreign banks tend to lend locally in economies with fragile or less developed banking systems; cross-border lending is more common in economies with stable or advanced banking systems.

Ehlers and Wooldridge also identify another characteristic of financial linkages in Asia-Pacific – the regionalisation of banking activity. The Asia-Pacific economies now tend to have more diversified creditor bases than in the past; in particular, they have become more reliant on funds from regional banks. These trends may reduce the region's vulnerability to adverse shocks from individual creditor countries outside the region. Nonetheless, a different risk may have risen. Ehlers and Wooldridge show that the region's cross-border flows are mostly dollar-denominated, and may not be fully hedged against currency risk.

FX markets and exchange rate risks

Two conference papers addressed FX markets and exchange rates directly. Levich and Packer's comprehensive review suggests that the development and functioning of FX markets has progressed at a faster pace in Asia-Pacific than in other regions. The BIS's Triennial Central Bank Survey of foreign exchange and derivatives market activity in 2013 shows that turnover in the currencies of both developed and emerging Asian economies, particularly the Chinese renminbi, have seen rapid growth that is well above the global average. All segments of FX market turnover in the region (eg spot and derivatives, onshore and offshore) have expanded exponentially.

CLS bank and other payment-versus-payment (PVP) systems have significantly enhanced the institutional safeguards for trading in FX markets, despite the relatively light regulation and reporting requirements in these markets. At the same time, herding behaviour in FX trading appears to have become less pronounced in recent years. Reflecting these developments, increased robustness in regional FX markets was evident during the 2013 "taper tantrum". During that episode, Asia-Pacific currencies were in the main subject to less depreciation pressure than those in other regions, despite increases in exchange rate volatility. In contrast to the 2008–09 episode, there were no notable deviations from covered interest parity or significant moves in reported bid-ask spreads; and the withdrawal from the carry trade was orderly compared with earlier periods.

Levich and Packer present two policy recommendations for further enhancing the safety and resilience of FX markets in the Asia-Pacific. First, more countries should adopt CLS or another PVP system for their currencies. Second, crowdedness metrics for trading activity in FX markets should be refined and published regularly as indicators of financial market vulnerability.

Munro builds on her earlier work in analysing the risks and returns of Asia-Pacific currencies in "Exchange rates, expected returns and risk: what can we learn from Asia-Pacific currencies?". This paper proposes a more refined statistical test of uncovered interest parity (UIP). Significant deviations from UIP based on standard tests may be due to a failure to adequately account for certain types of risk. In particular, when the bond premium is taken into account, the estimated exchange rate response to changes in expected returns is considerably closer to that predicted by theory.

Munro's study further contributes to discussions on the Mundellian trilemma. The findings point to the significant difficulties in assessing the trade-offs between controls over capital, interest and exchange rates when expectations and risk are included in the analysis. The paper's empirical results also suggest that policymakers are not necessarily confined to "corner" solutions: through exchange management, Asian countries could trade a lesser degree of control over interest rates for lower exchange rate volatility.

Financial market spillovers in the region

The paper by Shu, He, Wang and Dong compares the influence of the US and Chinese financial markets in the Asia-Pacific region. Spillovers from US financial markets to the global markets have been well researched, while China's global influence in the real economy is much better understood than its influence on

financial markets. The paper represents the first attempt to systematically study the spillovers from China's financial markets to those of Asia-Pacific, and compare these spillovers with those from the United States.

The empirical analysis indicates that China's equity market and currency movements have become quite influential in the region. In normal market conditions, the impact of China's stock market in the region approaches that of the US stock market, although the impact of the US market still dominates strikingly during stress periods. Movements in the Chinese renminbi are a significant driver of regional currencies. By contrast, the Chinese bond market has a negligible impact on other financial markets in the region.

Policies to deal with capital flows and their effectiveness

In the final paper presented at the conference, Bruno, Shim and Shin assess the effectiveness of capital flow and macroprudential measures for 12 Asia-Pacific economies. The study uses a comprehensive data set for these measures and conducts panel regressions that isolate the impact of these policies by controlling for global and local factors.

Mixed results are found for policy effectiveness. Capital flow measures operating through the banking sector and bond market appear to have slowed down targeted flows before the global financial crisis, but not afterwards. At the same time, cross-border lending, bank credit and total credit are not much affected by macroprudential measures.

One major contribution of the paper to the capital control literature is in its documentation of policy spillovers, ie the unintended impact on untargeted sectors and markets. Indeed, there is evidence of significant policy externalities: banking sector measures are associated with higher international debt issuance, and bond market measures with an increase in cross-border bank lending. The important implication is that such policy spillovers need to be taken into account when considering macroprudential measures.

Global liquidity

Hélène Rey's keynote speech addressed the issue of how large capital flows affect the international transmission of monetary policy.³ A number of trends have been widely recognised in recent years: massive credit growth globally; strong co-movements in capital flows; and a global financial cycle in risky asset prices. The speech drew on several studies done by Rey and her co-authors to account for these stylised facts.

Rey introduced a theoretical model to illustrate the role of financial intermediaries and leverage in transmitting financial conditions around the world. In contrast to the analysis of Bruno and Shin (2014), which focused on global banks, Rey's model includes heterogeneous financial intermediaries – including banks and asset managers. Risky asset prices across the world's financial markets are shown to depend on a global factor, which is a function of realised volatility and of time-

³ The slides presented at the conference are available upon request from Margaret.Siu@bis.org.

varying effective aggregate risk aversion. In turn, this aggregate effective risk aversion depends on the risk-taking attitude of heterogeneous investors and on their leverage.

Rey provided an empirical assessment of the role that monetary policy in the centre country (the United States) plays in setting credit conditions worldwide and in affecting global banks' risk-taking. One global factor, extracted using the dynamic factor model, was shown to explain an important part of the variance of a large cross section of risky asset returns around the world. Further analysis based on large Bayesian VAR models suggests that US monetary policy is a driver of credit growth both at home and abroad, and has affected the cross-border credit flows and leverage of European banks in particular. US monetary policy thus can influence domestic financial conditions even in countries with flexible exchange rates.

Rey concluded that the major central banks drive the global liquidity cycle; for economies under the influence of the cycle, the policy predicament is reduced from a trilemma to a dilemma between free capital movements and independent monetary policy. Under these conditions, macroprudential policies can help enhance monetary policy independence.

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