BANK FOR INTERNATIONAL SETTLEMENTS

The nature of evolving risks to financial stability

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53rd SEACEN Governors' Conference/High-level Seminar and 37th Meeting of the SEACEN Board of Governors

Bangkok, 15 December 2017

Introduction

Good evening. Thank you for that kind introduction. I wish to express my gratitude to our hosts at the Bank of Thailand, especially Governor Veerathai Santiprabhob, for their extraordinary hospitality, and to SEACEN for organising tomorrow's conference.

It's also a pleasure to be back in Asia, where you all, as policymakers, have managed to put together a framework that fosters steady high growth while maintaining financial stability, allowing you to successfully navigate through episodes of extreme turbulence in the global economy and financial markets.

Over the past two decades you have strengthened your financial systems, in part through the pre-emptive use of macroprudential instruments, as well as reforms in corporate governance. Although US dollar funding shortages hit your major banks, they did not suffer a solvency crisis during the Great Financial Crisis as did banks in Europe and the United States. The greater exchange rate flexibility that many of your jurisdictions have allowed, combined with the development of local currency bond markets, has also contributed to financial system resilience.

On the macroeconomic front, your economies show the great benefits to be gained from openness to direct investment and trade, and increased integration in global supply chains. Trade recovered more strongly in Asian emerging markets than elsewhere subsequent to the Great Financial Crisis. Regional factors now play a more important role in explaining variation in output than global factors, as the regional economies have become more integrated through stronger supply chains.[1]

The theme of tomorrow's conference is "Pursuing stability in a world of instability". I commend you on this choice. Indeed, there will never be a world of perfect stability. It is our ongoing job as central bankers to identify and prepare for possible shocks to the system.

Tonight I would like to discuss three risks to financial stability from the current perspective: (i) the path of policy normalisation; (ii) protectionism or at least uncertainty in trade policies; and (iii) rapid technological change in financial services.

[1] See A Kose, "The Asian financial crisis: Looking back, looking forward", *20 years after the Asian Financial crisis: Lessons, challenges, and the way forward – conference highlights*, 13–14 April 2017.

Policy normalisation

To start with policy normalisation, the backdrop is that in advanced economies interest rates have been low for long, and central bank balance sheets have been swollen by years of unconventional policies. Low interest rates and ample liquidity have had significant spillover effects to many emerging market economies, including in Asia and the Pacific. They have encouraged increases in indebtedness and the elevation of house and other asset prices beyond historical standards in many economies.

As monetary policy in advanced economies has been overburdened for some time, and markets overly dependent on accommodative policies that aggravate the risks to financial and macroeconomic stability over the medium to longer term, normalisation to build policy space ahead of the next downturn would be a very welcome development.

That said, recent indicators point towards a very slow pace of interest rate increases for advanced economies. Market participants also expect central bank balance sheets to shrink only gradually.[2]

One risk is that the pace of interest rate normalisation could be considerably faster than currently priced into yields. While higher rates could simply reflect higher growth and inflation approaching targets, they could also portend a jump in term premia. Financial markets could be similarly roiled by changes in balance sheet policies.

Examples of "snapbacks" in rates seemingly unrelated to changes in growth or inflation expectations include the taper tantrum of 2013, the bund tantrum of 2015 and, further back, the 1994 bond market sell-off.[3]

Given the global reach of the US dollar, rises in dollar yields are eventually likely to result in higher yields in emerging markets, and a de facto tightening of financial conditions. In addition to reducing spending and investment, higher interest rates could squeeze the debt servicing capacities of households and corporations in Asia, which have leveraged up in recent years, with much of the debt at floating rates. And the overstretched asset valuations mentioned earlier could correct as well, with knock-on hits to economic growth.

While local currency depreciation might mitigate some of the real effects, work at the BIS has documented that US dollar appreciation vis-à-vis domestic currencies can often hurt activity through balance sheet deterioration more than it helps through improvement of competitiveness.[4]

More generally, normalisation of interest rates and liquidity conditions may well expose other weaknesses in the global financial system: as Warren Buffet once put it, only when the tide goes out do you discover who's been swimming naked. Not only can unforeseen linkages of global financial institutions spread financial stress in unforeseen ways, but there may be precious little time to adjust to higher interest rates and exchange rate volatility, as mobile international capital can be highly procyclical.[5]

In sum, while we should not forget that policy normalisation will be a welcome development on the whole, given where we are, we will need to carefully manage it. Part of this management will be to

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[2] See BIS, "A paradoxical tightening?", *BIS Quarterly Review*, December 2017, pp 1–14.

[3] Bond market implied volatility has been much lower in the last half of 2017 than it has been in earlier tightening episodes; see BIS, "Strong outlook with low inflation spurs risk-taking", *BIS Quarterly Review*, September 2017, pp 1–14.

[4] See V Bruno and H S Shin, "Global dollar credit and carry trades: a firm-level analysis", *Review of Financial Studies*, vol 30, no 3, 2017, and B Hofmann, I Shim and H S Shin, "Sovereign yields and the risk-taking channel of currency appreciation", *BIS Working Papers*, no 538, January 2016.

[5] See BIS, *87th Annual Report*, June 2017, Chapter VI.

further stabilise the banking system, including through the timely and consistent implementation of Basel III reforms.

Protectionism

Next, I would like to talk about the growing risk of protectionism and uncertainty in trade and capital market policies.

Events over the past few years have heightened our awareness of the challenges posed by globalisation – in particular the uneven distribution of its benefits and adjustment costs within societies. And as we now know all too well, this can prompt a backlash.

The solution is not to reverse global integration but to redress its distributional consequences. Let's preserve and enhance free trade – maintain and refurbish agreements and, when necessary, adjust them.

To be more specific, the way forward with trade agreements is to modify and to improve them to widen their beneficiaries. For example, there should be common labour, safety and health standards for industries, to mitigate multinational firms' race to the bottom in global markets. There should be programmes for retraining and re-employing laid-off workers.[6]

Both global and domestic policy institutions need to make a better case for global trade. Many politicians seem unaware of the returns to global value chains in advanced economies, including in terms of overall job creation. Similarly, the cost of protectionism is underappreciated.

At the same time, let us not forget that exchange rate flexibility is one of the antidotes to the worsening of current account imbalances that can exacerbate the job costs of globalisation and open markets. Persistent intervention so that current account surpluses lead to more reserve accumulation and less exchange rate appreciation runs the risk of exacerbating imbalances.

Global capital market integration with flighty international capital also poses challenges. Just as reversing integration is not the answer on the trade side, so too capital controls are not the right answer on the financial side – not in most cases, anyway. Rather, we should continue to increase the resilience of our economies and financial systems to international capital flows and exchange rate movements.

In this respect, I would like to commend you on some of the regional measures you have undertaken – perhaps an example for other emerging market economies. More than a decade ago, ASEAN+3 and EMEAP took initiatives that have boosted local currency bond markets (though most jurisdictions have made more progress on the sovereign than on the corporate front).[7] Local currency debt markets allow both the sovereign and firms to reduce financial vulnerability to exchange rate movements, in particular the hit to national or corporate net worth that local currency depreciation can inflict.

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[6] For further discussion of these issues in the specific context of the North American Free Trade Agreement, see A Carstens, "Policymaking – respecting the life-cycle of policies", commencement address at the School of Global Policy and Strategy, University of California San Diego, 20 June 2017.

[7] See E Chan, M Chui, F Packer and E Remolona, *Local currency bond markets and the Asian Bond Fund 2 Initiative*, report prepared for the EMEAP Working Group on Financial Markets, July 2011, www.bis.org/publ/othp15.pdf. For corporate bond markets, see M Amstad, S Kong, F Packer and E Remolona, "A spare tire for capital markets: Fostering corporate bond markets in Asia", *BIS Papers*, no 85, June 2016.

That said, the US dollar remains the dominant global currency in trade and finance, and market participants' impulse to hoard dollars in situations of stress is deeply ingrained. The maintenance of much higher levels of reserves than before the Asian financial crisis is appropriate. But given the potential cost of the accumulation of own reserves, it makes economic (if not always political) sense for central banks and treasuries to also enter into reserve sharing arrangements. The Chiang Mai Initiative Multilateralization and related bilateral swap arrangements in this region deserve credit in this regard. But they remain fair weather cooperation, untested in a storm; their practical usefulness could be strengthened.[8]

Rapid technological innovation

Lastly, I would like to touch on some of the risks posed by rapid technological innovation. We are entering a new era in which internet access and a new generation of payments and financial intermediation technologies ("fintech") are greatly expanding the ability of both diffuse creditors to provide funds, and small businesses to raise funds. The supply of investment funds will be more inclusive.[9]

"Big data" analytics and the use of algorithms also have the potential to enhance the identification, analysis and management of risks and to reduce the cost of adherence to compliance and regulatory reporting requirements. This latter objective is sometimes known as "regtech".

In theory, by increasing the breadth, depth and diversity in the provision of funds, and by decreasing the costs of payments, risk assessment and regulatory compliance, these technological innovations could make the financial system more stable.

At the same time, we must be aware of the risks posed by such rapid technological change. In the provision of credit, new underwriting procedures and mechanisms of certification, many being managed by entities that are not regulated as credit institutions, could lead to declining credit standards and even a credit bubble without proper discipline. Current banking business models could face competitive challenges from rapid disintermediation of customers. Similarly, on the asset management side, with the large-scale entrance of new classes of investors whose behavioural tendencies are unfamiliar, risk management models may prove inadequate.[10] In addition, algorithmic trading – which has the characteristics of a black box and which we have seen could increase the vulnerability of trading systems to flash crashes – is another, potentially interrelated, risk.

In cyber-security, data leaks and infiltration of systems could result in financial and reputational losses for key institutions in the global financial system. It is not unthinkable for cyber-attacks to potentially hinder the operation of traditionally reliable financial transactions such as retail electronic transfers. Authorities in all jurisdictions should treat those threats very seriously and actively invest in raising the reliability of their defences and crisis response capabilities.

Vigilance is required on the part of supervisors and regulators so that the protection of depositors and investors is maintained in the face of rapid technological change. Just as firms will need to adopt their ways of managing risks and meeting regulatory requirements, regulators and supervisors will need to

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8 See M Kawai, "From the Chiang Mai Initiative to an Asian Monetary Fund", *ADBI Working Paper Series*, no 527, April 2015.

9 See Committee on the Global Financial System and Financial Stability Board (FSB), *Fintech credit: Market structure, business models and financial stability implications*, 22 May 2017, www.fsb.org/wp-content/uploads/CGFS-FSB-Report-on-FinTech-Credit.pdf.

10 For further discussion and analysis, see FSB, *Financial stability implications from fintech: Supervisory and regulatory issues that merit authorities' attention*, 27 June 1017, www.fsb.org/2017/06/financial-stability-implications-from-fintech/.

revise their practices. They will need to develop the capacity – now often called "suptech" – to assess and to use the data yielded by fintech.

Suptech can refer to the use of machine learning and natural language processing to link communications and behavioural data to financial stability risks that could derive from trading activity. In fraud detection as well, the use of machine learning to identify high-risk patterns is under way, and shows real promise.[11]

While there is likely to be consolidation as banks unable to deal with the competitive challenges exit, we must ensure that the banking system as a whole retains sufficient financial strength in the face of disruptive technologies. We must also ensure that, despite the convenience and speed afforded by the adoption of the new technologies, investors do not skip due diligence in making financing decisions and clearly understand the risks that they are taking.

And with the new data analytics offered by artificial intelligence and machine learning, we must relentlessly stress-test the resilience of financial institutions to cyber-security threats.

I would like to add a word on the possibility of central bank digital currencies, which is receiving much attention and stimulating discussion.[12] In some jurisdictions, particularly those where the use of cash is declining rapidly, policymakers are considering providing a digital alternative to cash to serve as a store of value and medium of exchange. Under one design of such an alternative, anyone could electronically open an account and deposit money at the central bank.

To be sure, various forms of digital central bank currencies, depending on degrees of access, remuneration and other features, can be envisaged as improving welfare, among others, given potential efficiencies to be gained in payment, clearing and settlement. Considerations of financial inclusion objectives may also come into play in some jurisdictions.

But each jurisdiction will need to consider the risks to financial stability as well. Over time central banks have evolved to limit access to their balance sheet only to commercial banks (and some selected non-bank financial institutions). This defines the centuries-old two-tier banking system – the central bank being a bank for banks and banks providing services to the public and the broader economy.

Digital central bank currencies, under certain designs, could do away with this long-standing practice, with major implications. Granting access to central bank balance sheets to many parties would present competition to bank deposits. One could expect a shift of deposits to the central bank under certain conditions that could in principle exacerbate financial stability risks. The shift would be particularly marked in times of stress, when depositors would fly to safety at any price, leaving banks vulnerable to losing deposits to the central bank.

Many tough questions would arise. Could commercial banks still undertake efficiently their current forms of intermediation? Which type of financial intermediary, besides the central bank, could take their place? Most importantly, central banks would end up intermediating more. With a larger balance sheet, they have to choose how to allocate funds. Would the central bank be more efficient than the private sector in resource allocation, and if not, would the benefits be worth the welfare costs?

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[11] See FSB, *Artificial intelligence and machine learning in financial services: Market developments and financial stability implications*, 1 November 2017, www.fsb.org/wp-content/uploads/P011117.pdf.

[12] For recent discussion and analysis, see eg M Bech and R Garratt, "Central bank cryptocurrencies", *BIS Quarterly Review*, September 2017, pp 55–70, and M Bordo and A Levin, "Central bank digital currency and the future of monetary policy", *NBER Working Papers*, no 23711, August 2017.

So while it is a good thing that some jurisdictions have been thinking seriously about digital currencies, and are fairly advanced in their planning, it is highly likely that other jurisdictions, considering their own financial system structure, underlying preferences for privacy and other constraints, will approach the introduction of central bank digital currencies more cautiously.

One area in which policymakers across jurisdictions might share a common view is with regard to the recent emergence of so-called cryptocurrencies (more like cryptoassets) such as bitcoin. While these can offer decentralised peer-to-peer exchange and cash-like anonymity, the general judgment is that their volatile valuations, as well as inadequate investor and consumer protection, make them unsafe to rely on as a common means of payment and store of value.[13] We should not hesitate to warn the public about the differences between central bank money and privately created virtual currencies. The growth and development of the latter may end up quite badly if we in the central banking community do not warn enough of the importance of this distinction.

Concluding remarks

While the risks I have outlined above are significant, they are by no means unmanageable. We can learn from previous tightening episodes and prepare ourselves for the risk of sharp snapbacks in the level of interest rates. We can do a better job in both spreading and selling to the body politic the benefits of economic and financial integration. Globalisation is not off the rails; it is just in need of maintenance.

We should continue to enhance our capacity to respond to the challenges posed by some disruptive innovations in financial services. At the same time, we should not allow for the revolution in IT and innovation to blur the distinction between money and virtual currencies.

And let's also continue to buttress domestic policies with international cooperation that monitors and addresses global linkages – through both global bodies such as the BIS, the IMF and the FSB, and regional ones such as ASEAN and SEACEN. Not least, let's fully implement the internationally agreed financial reforms – such as Basel III – in a timely and consistent manner to ensure the resilience of our financial systems.

[13] See D Yermack, "Is bitcoin a real currency?", in D Lee (ed), *The Handbook of Digital Currency*, Elsevier, 2015, pp 31–4.