

# Financial market depth: friend or foe when it comes to effective management of monetary policy and capital flows?

Sukudhew Singh<sup>1</sup>

In advice given to emerging market economies (EMEs), it is often emphasised that having developed financial markets would both enable them to manage capital flows more efficiently, thereby reducing the need to intervene in the foreign exchange markets, and allow for more effective monetary policy. But despite their evident benefits, it is also the case that developed financial markets can complicate the management of monetary policy and capital flows. This note examines both sides of the argument, but with a greater emphasis on the issues that highly developed financial markets can create for policymakers.

Here is a brief summary of some of the key points from both sides of the issue:

## Friend – Ways in which developed financial markets help policymakers

1. Deeper financial markets can more readily absorb flows. Financial markets in EMEs are dominated by the banking system. Hence, liquidity tends to accumulate in the banking system. With more developed capital markets, the liquidity inflows tend to be more spread out across the financial system.
2. A deep financial system can more effectively utilise the liquidity in a non-wasteful and non-distortionary manner.
3. Developed financial markets give the central bank a broader range of tools to manage monetary policy.
4. The greater variety of saving and borrowing instruments makes it easier for the central bank to change interest rates to manage monetary policy, unlike where, for example, savings are predominantly in the form of deposits with banks.

## Foe – How developed financial markets hamper effective policy

1. Deeper financial markets attract more capital inflows, due to the availability of more assets and market liquidity to support speculative activity.
2. As the recent crisis highlights, deeper financial markets are not immune to excesses. In fact, deep financial markets may channel liquidity into riskier but more opaque activity that may not be noticed by regulators.
3. Developed financial markets do not solve the problem of asset price bubbles.
4. The monetary policy transmission mechanism may be more complicated – a lack of understanding can lead to policy errors.

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<sup>1</sup> Central Bank of Malaysia (Bank Negara Malaysia – BNM).

5. Increased innovation (correlated with market depth) can lead to some market activity being outside the regulatory view, with implications for crisis prevention and management.
6. Increased liberalisation (also correlated with market depth) can increase the impact of global disturbances on the domestic financial system, hence disrupting the conduct of monetary policy.
7. Large financial systems with large flows may require the central bank to hold larger reserves than it otherwise would in order to smooth market volatility.

The rest of this paper looks at the recent experience of four Asian economies that have relatively well developed financial markets, starting with Malaysia and Korea and then moving on to Hong Kong SAR and Singapore.

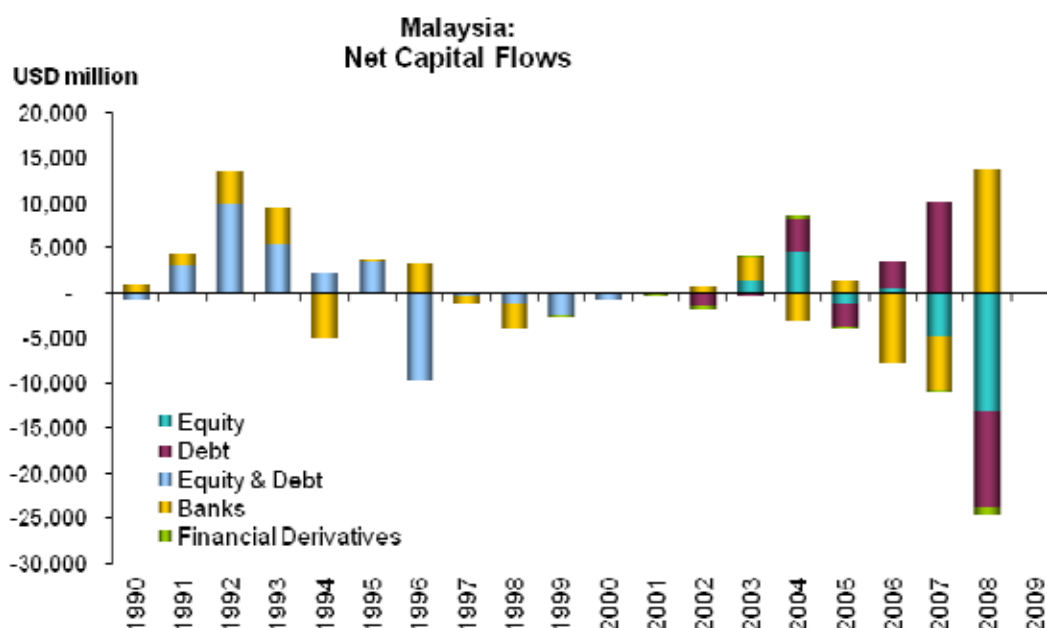
## Malaysia

After the Asian financial crisis highlighted the concentration of risks in a bank-based financial system, efforts were undertaken to accelerate the development of the capital markets, particularly the bond market. Because of these measures, the size and depth of the bond market in Malaysia increased significantly, propelling it to become the third largest in Asia as a percentage of GDP. Meanwhile, the equity market also remains sizeable with an annual turnover in US dollar terms of USD 169.7 billion in 2007. Liberalisation of foreign exchange rules has led to increased foreign participation in the equity and bond markets. Consequently, there has been increased volatility in the equity, bond and foreign exchange markets as portfolio flows increase the linkage between these markets and changes in global conditions.

In terms of monetary policy and the management of capital flows, the increased depth of the financial markets provides a number of benefits. The development of the bond market has not only served to diversify the sources of financing to the economy, but has also enhanced the overall stability of financial prices by allowing the flows to be dispersed across a wider range of assets. As a result, the distribution of capital inflows among financial assets in Malaysia had become more balanced by 2008, compared to the 1990s.

Second, the deepening of the money markets has made available more tools for BNM to manage liquidity. Traditional liquidity management instruments such as direct borrowing and reserve requirements are complemented by the use of repo operations, foreign exchange swaps and the issuance of BNM bills. Third, empirical evidence indicates that the development of financial markets has generally led to a stronger monetary policy pass-through in terms of faster and larger adjustments of retail rates in response to changes in the policy rate.

In the current circumstances of large capital flows to emerging markets, the fact that, to date, Malaysia has not found it necessary to impose measures to manage these inflows is evidence that the deeper financial system is making their management easier. It has effectively raised Malaysia's threshold of tolerance compared to the pre-Asian financial crisis period. However, it is important to note that while the threshold has been raised, it has not been eliminated. Sustained large inflows could still overwhelm the absorptive capacity of the financial system and the ability of policymakers to manage them.



Source: IFS & Department of Statistics, Malaysia

Therefore, deep financial markets are not a panacea when it comes to sustained large capital inflows. They have also posed challenges to the conduct of monetary policy and the management of capital flows. First, the magnitude and volatility of portfolio flows have placed considerable two-way pressure on the exchange rate that can potentially be disruptive for international trade and investment activity. Second, the management of sustained large capital inflows can potentially pose risks to central bank balance sheets, for instance when foreign investors hold large amounts of central bank bills issued to sterilise liquidity – this could potentially expose the central bank to risks arising from interest rate differentials and exchange rate fluctuations.

Third, large capital flows have also hampered the monetary policy transmission mechanism. In 2005, BNM raised interest rates by 80 basis points to normalise monetary conditions. Yields on three- to 10-year government bonds, however, declined by 79–91 basis points between June 2006 and December 2007, as foreign interest in these bonds increased substantially.

Fourth, the significant foreign participation and strong linkages with global financial markets have also increased the contagion of global shocks to the domestic financial system. For example, during the subprime crisis in 2008, Malaysia experienced large portfolio outflows as foreign investors liquidated their holdings of Malaysian assets in response to the financial distress in their home markets. This caused the KLCI index to retreat by 39.3% during the year. The fall in equity prices had negative wealth effects on domestic consumption.

## Korea

Following the deregulation and liberalisation of the Korean financial system in the 1990s, the depth of the Korean capital and foreign exchange markets, as well as the banking system, increased significantly. The liberalisation also led to rising foreign participation in the Korean financial system. Its bond market is now the second largest in Asia after Japan, while its equity market capitalisation is now seven times higher than in 1998. The average turnover in the foreign exchange market has increased tenfold since 1998. In addition to its capital

markets, the banking sector also became deeper and was transformed, especially in terms of a liability base that was increasingly characterised by non-deposit liabilities, with the average loan-to-deposit ratio exceeding 100%. Following several liberalisation measures, many foreign banks opened branches in the country. These banks rely mainly on foreign currency funding. This, together with the hedging activities of the shipbuilding industry, has added to the high short-term external debt of the economy.

In terms of monetary policy and the management of capital flows, the increasing depth and sophistication of the financial markets have posed several challenges. Firstly, the large portfolio inflows during 2001–07 caused persistent appreciation pressure on the Korean won, a significant expansion of household credit and a steep run-up in housing prices. They also posed risks to the central bank's balance sheet. The large issuance of Monetary Stability Bonds (MSBs) for sterilised intervention purposes resulted in the debt structure of the Bank of Korea (BoK) being concentrated on foreign assets and MSBs, which exposed the BoK's balance sheet to interest rate and exchange rate risk. The accounts of the BoK turned into deficit from 2004–07 when the won appreciated persistently.

Large portfolio flows have also hampered the effectiveness of monetary policy transmission. Responding to the increase in liquidity, the BoK raised its policy rate several times between October 2005 and August 2008. Large inflows of foreign bond investments exerted downward pressure on long-term market interest rates, thus limiting the transmission of the upward adjustment in the policy rate.

Financial market developments have also sometimes worked against policymakers' efforts to manage capital inflows. This is especially the case with the development of financial derivatives such as foreign exchange swap contracts and currency swaps. For example, in 2006, the government introduced policies to promote capital outflows, making it much easier for Korean residents to invest abroad. While residents' overseas portfolio and direct investment soared in response, overseas foreign currency borrowings also increased as investors sold forward exchange on a large scale to hedge against exchange rate risk. Therefore, measures aimed at promoting capital outflows had the unexpected consequence of increasing capital inflows.

Significant foreign participation and high linkages with the global financial markets have also heightened volatility in the domestic financial markets. The relatively high reliance of Korean banks on wholesale funding and the high external debt have proved to be a source of instability, negatively affecting investor confidence even when other economic fundamentals were strong. After Lehman Brothers' collapse in September 2008, Korea experienced a haemorrhage of foreign capital outflows, due to a rapid increase in repayments of external borrowings and the sell-off in the equity market. The rollover ratio of banks' external borrowings declined sharply to less than 30% at one point, and the won/dollar exchange rate and CDS (credit default swap) premium surged. In order to ease the foreign liquidity squeeze, the BoK supplied a total of USD 26.6 billion in foreign currency liquidity through its Competitive Auction Swap Facility using official foreign reserves, and through its Competitive Auction Loan Facility using proceeds of its currency swaps with the US Federal Reserve. The Korean government also guaranteed payment for the banking sector's external debt due until end-June 2009. To strengthen the backstop in mitigating the risk of the global financial market turmoil, the BoK then established a USD 30 billion swap arrangement with the Fed, the People's Bank of China and the Bank of Japan.

The deep financial system in Korea has not ameliorated the need for government intervention to mitigate risks, especially those related to the external sector. For instance, over the last two years, several macroprudential measures have been introduced to manage capital flows and the consequent risks. These include limiting the banks' derivative positions, a tax of as much as 14% on interest income from treasury and central bank bonds and a 20% levy on capital gains from the sale of these bonds, while a levy on foreign currency borrowings is being considered.

## Hong Kong SAR

Hong Kong SAR is an international financial centre and its monetary regime is a currency board.<sup>2</sup> Its deep financial markets have allowed Hong Kong to intermediate large amounts of liquidity and have, to some extent, compensated for the lack of monetary tools to manage excessive monetary growth. Nevertheless, Hong Kong's deep markets have not shielded the economy from the vagaries of capital flows and its limited monetary flexibility. During the Asian financial crisis, it became the target of speculative attacks on its currency and equity markets. From January to August 1998, speculators accumulated Hong Kong dollars (HKD) by swapping US dollar (USD) bonds for HKD. At the same time, speculators were also accumulating large short positions in the stock index futures market while waiting for the right moment to dump their large amounts of accumulated HKD. In accordance with currency board discipline, the Hong Kong Monetary Authority (HKMA) had initially intervened by passively buying HKD to ease pressure on the currency. However, this caused liquidity in the HKD interbank market to shrink, which sent interbank rates skyrocketing as high as 19%. The effects of the extremely high interbank rates were immediately transmitted to the Hang Seng Index, which dropped to its lowest level of 6660. In an unprecedented move, the HKMA was forced to intervene in the stock market by purchasing USD 15 billion worth of constituent stocks to stabilise the market.

Hong Kong has also not been spared from risks arising from external financial contagion. In the aftermath of the Lehman Brothers collapse, the liquidity squeeze in the USD interbank market spread quickly to the HKD money market as investors sought to borrow HKD and actively convert them to USD through foreign exchange swaps. The three month Hibor-OIS<sup>3</sup> spread, used here as an indicator of interbank stress, increased to 250 basis points in an environment of heightened credit risk uncertainties and the desire to preserve liquidity for contingency purposes. As a result, HKD interbank rates increased significantly in tandem with their USD counterparts. At the same time, there was also appreciation pressure on the HKD as investors unwound their earlier HKD-funded carry trade positions.

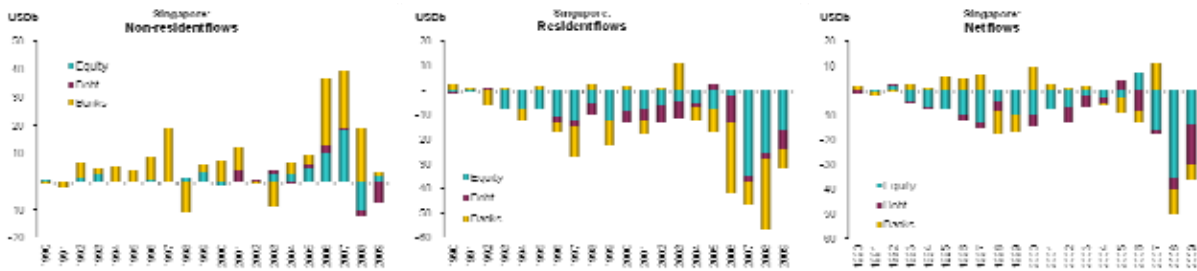
## Singapore

While Singapore is an international financial centre similar to Hong Kong, the state of openness poses less of a risk to Singapore. First, being a financial centre, Singapore acts as an intermediary for global funds whose ultimate destinations are countries in the region. Therefore, while these funds come into Singapore, they do not stay there – a large portion ultimately flows out again. Second, the government and the private sector in Singapore have regularly undertaken large investments abroad, resulting in net portfolio outflows. Hence, capital flows have probably been less of a complication for policymaking in Singapore than they have been in other regional countries.

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<sup>2</sup> Hong Kong's monetary system is a currency board arrangement where the main objective of monetary policy is currency stability. The HKD is linked to the USD within a narrow band of HKD 7.75–7.85. The monetary base has to be backed by at least 100% of USD reserves, and any change in the monetary base has to be backed by an equal amount of change in the USD reserves.

<sup>3</sup> The three-month Hibor-OIS (the Hong Kong Interbank Offered Rate less the overnight index swap rate of the same maturity) is used as an indicator of interbank stress. The interbank rate of a given tenor reflects the current and expected future overnight interest rate and premia associated with liquidity and credit risks, while the OIS rate represents the average overnight interest rate expected to prevail over the term of the swap.



Secondly, in contrast to Hong Kong, Singapore's monetary policy is based on an exchange rate targeting regime, which is managed with reference to a trade-weighted index. The width and slope of the target band are adjusted in response to changes in economic fundamentals and desired policy objectives. This feature combined with the large foreign exchange reserves of the Singapore authorities provides a strong defence against currency speculation. In addition, to facilitate better domestic monetary control, Singapore has imposed some restrictions on the international use of the domestic currency. Only domestic banking units are allowed to undertake transactions in Singapore dollars (SGD). The Asian Currency Units,<sup>4</sup> on the other hand, deal with any currency except the SGD. Singapore also used to have the non-internationalisation policy that protected the SGD from speculative attacks and facilitated the effective conduct of monetary policy. The policy was progressively relaxed after the Asian financial crisis to develop the bond market.<sup>5</sup>

Despite its status as a financial centre, Singapore's financial system has not been able to absorb the surplus liquidity created by its monetary regime. As in the case of Hong Kong, the limited availability of land in Singapore has made property investments the primary target of domestic and international speculative flows. Also like Hong Kong, lacking the normal monetary policy tools, Singapore has relied almost exclusively on macroprudential measures to manage the build-up of property price bubbles and to mitigate excessive bank lending for risky ventures. In addition, the fiscal surpluses of the government, the positive net contributions to the Central Provident Fund and the external investments of the Singapore sovereign wealth funds have proved to be important in draining some of the surplus liquidity out of the domestic financial system.

## Conclusion

The point here is not that having deep financial markets is not useful. Rather, it is that they are not the remedy that they are made out to be when it comes to managing capital flows and maintaining the independent conduct of monetary policy. Furthermore, deep financial markets come with their own set of problems and vulnerabilities. With respect to capital flows, deeper financial markets create higher thresholds for absorptive capacity and tolerance of capital inflows, but there are nevertheless thresholds of tolerance. This issue will become increasingly important if the current divergence in growth between EMEs and the

<sup>4</sup> Financial institutions seeking approval to operate in the Asian Dollar Market (ADM) in Singapore are required to set up two separate bookkeeping units. The Asian Currency Unit (ACU) is permitted to transact in all currencies except the SGD. SGD transactions are separately booked in the Domestic Banking Unit (DBU).

<sup>5</sup> The remaining restrictions are as follows: 1) Financial institutions may not extend SGD credit facilities to non-resident financial entities where they have reasons to believe that the proceeds may be used for speculation against the SGD. 2) Any SGD loan to non-resident financial entity exceeding SGD 5 million must be swapped or converted into foreign currency before being repatriated out of Singapore.

advanced economies proves to be a long-term trend and the flows of capital into EMEs become more permanent and sustained.

In such circumstances, even the deeper financial markets of some EMEs may prove to be inadequate, and policymakers – aside from contemplating measures to directly manage the large capital inflows – also need to start thinking about how to increase the resilience of their financial systems in the face of these inflows and minimise the consequent economic distortions. Would limiting financial innovation – that is, giving up some market depth for market stability – be a useful option? Would building more sophisticated information systems and greater regulatory oversight be a useful accompaniment to the increased liberalisation and depth of markets, and if so, how should we go about putting them in place and how should we assess their effectiveness?