Capital flows into and out of Hong Kong SAR: implications for monetary and financial stability

Hong Kong Monetary Authority

I. Introduction

This paper describes how the Hong Kong Monetary Authority (HKMA) monitors capital flows in Hong Kong SAR, and analyses the implications of such flows for monetary and financial stability. It makes the following two main arguments: first, while capital inflows and outflows have been large and volatile in recent years, Hong Kong has not been subject to an inundation of heavy net inflows. In fact, there have been large net outflows, which offset much of the inflows associated with the recent current account surpluses, and as a result, the overall balance of payments positions have been small and the scale of reserve accumulation modest. This reflects portfolio choices of the private sector, and the robustness of the Linked Exchange Rate System (LERS) linking the Hong Kong dollar to the US dollar.

Second, increasing financial integration between Hong Kong and mainland China has become an important determinant of capital flows into and out of Hong Kong. While such flows increase the demand for financial sector services in Hong Kong and help strengthen its status as an international financial centre, they may also introduce volatilities in the local monetary conditions. Nevertheless, our rule-based monetary policy framework in the form of the LERS has proved its resilience in dealing with volatile capital flows and has enjoyed market credibility in recent years. Efforts are also under way to strengthen the efficiency and effectiveness of our payment system in handling very large and volatile payment flows, and to improve banks' risk management systems to guard against credit risks that may be associated with volatile asset prices driven by capital flows.

II. Capital flow patterns in the balance of payments

According to balance of payments (BOP) statistics, changes in liabilities of Hong Kong residents to non-residents (capital inflows), and changes in claims of Hong Kong residents against non-residents (capital outflows), have been both large and volatile in recent years.[1] In the past decade, inflows have ranged from a net reduction of close to 90% of GDP in 1998 to a net increase of more than 70% of GDP in the first three quarters of 2007; outflows have ranged from a net reduction of more than 80% of GDP in 1998 to a net increase of more than 90% of GDP in the first three quarters of 2007.[2] However, the overall BOP positions have been small, with small net increases in official foreign reserves, averaging less than 3% of GDP. Given Hong Kong's relatively large current account balances, averaging 8.5% of GDP in the past decade, non-reserve financial account balances have been negative, averaging

[1] In Hong Kong the first set of BOP statistics, for the year 1997, was published in 1999. Statistics with more detailed breakdowns of capital flows start from 1998 and the first set of quarterly data starts from the first quarter of 1999.

[2] In the BOP statistics, capital inflows measure net purchases (+) or sales (–) by non-residents of domestic assets while capital outflows measure net purchases (–) or sales (+) of foreign assets by residents. From this definition, it should be clear that capital inflows and outflows can take both positive and negative values. For example, in 1998, when non-residents were net sellers of domestic shares, capital inflows were negative.

7.5% of GDP over this period. In other words, net capital outflows have been significantly larger than net capital inflows.

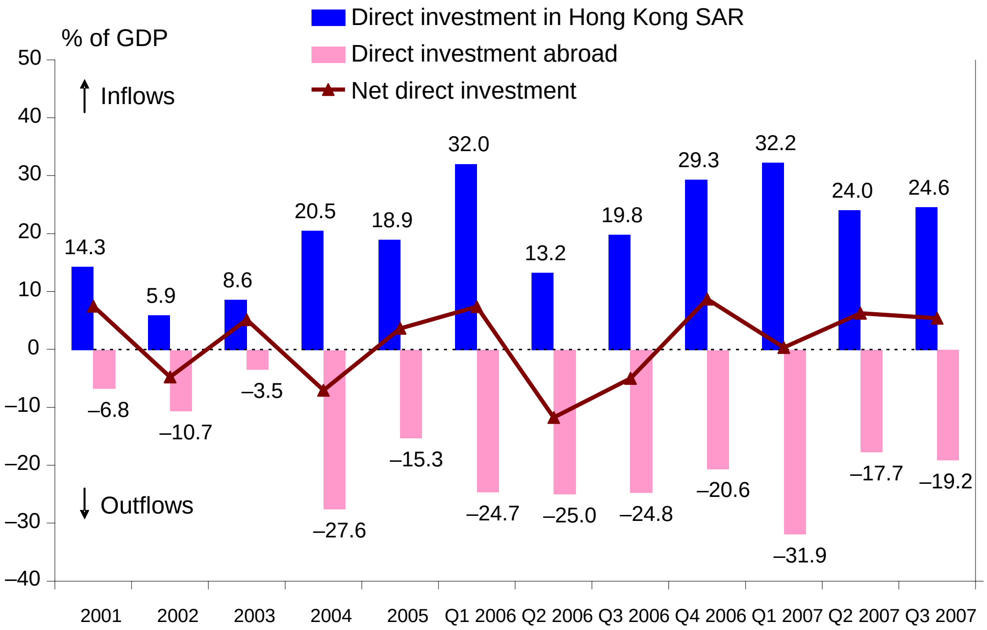
The patterns of direct investment, portfolio investment and other investments are examined in more detail below.[3] We also take a closer look at the fund flows between Hong Kong and mainland China by making use of statistics for external banking transactions.

Direct investment

Direct investment flows in both directions have been important and sizeable in recent years, underpinned by favourable economic growth and a stable macroeconomic environment across the globe (Graph 1). Direct investment flows occur when an investor acquires a long-lasting interest in an enterprise operated in another economy. According to surveys, a favourable and simple tax system, political stability and security, free flow of information, corruption-free government, and rule of law and independent judiciary are the five most important factors in making direct investment in Hong Kong attractive.

Graph 1

Direct investment flows



Source: Census and Statistics Department.

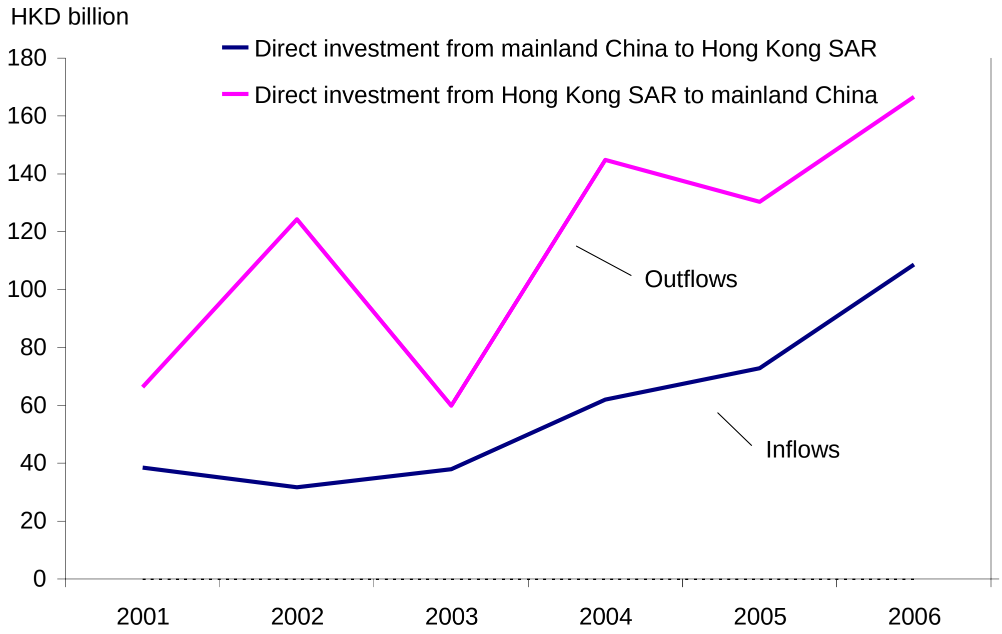
Direct investment flows associated with mainland China have been generally growing, reflecting increasing economic and financial integration between the two economies (Graph 2). In fact, mainland China has been the most important recipient of Hong Kong's outward direct investment (HKD 167 billion in 2006) and the largest source of inward direct investment in Hong Kong (HKD 109 billion in 2006) in recent years. Among all the economic

[3] This paper does not discuss financial derivatives as these represent only a small portion of total private capital flows in Hong Kong.

sectors, investment holdings, real estate and various business services are the most important direct investment activities in both directions.

Graph 2

China-related direct investment flows



Source: Census and Statistics Department.

Portfolio investment

In recent years, outward portfolio investments have become more important, recording occasionally large outflows (Graph 3). Recent net total capital outflows (total capital inflows minus total capital outflows) have been primarily driven by net portfolio investment outflows (Graph 4). Both equity and debt portfolio investment outflows (eg bonds, notes, negotiable certificates of deposit) have been sizeable.

The large portfolio outflows in recent years in part reflect Hong Kong's growing role as a fund-raising centre for mainland Chinese firms.[4] According to the IMF's Coordinated Portfolio Investment Surveys, Hong Kong's equity portfolio investment in mainland China was around HKD 271 billion (or USD 34.8 billion) in 2005, more than six times that in 2001 (Table 1).[5] Equity initial public offerings (IPOs) of mainland companies, accompanied by strong local demand for these investments, have supported this rapid rate of increase, with the amount of equity funds raised by the H-share companies increasing sharply from HKD 6 billion in 2001 to HKD 290 billion in 2006 (Graph 5).

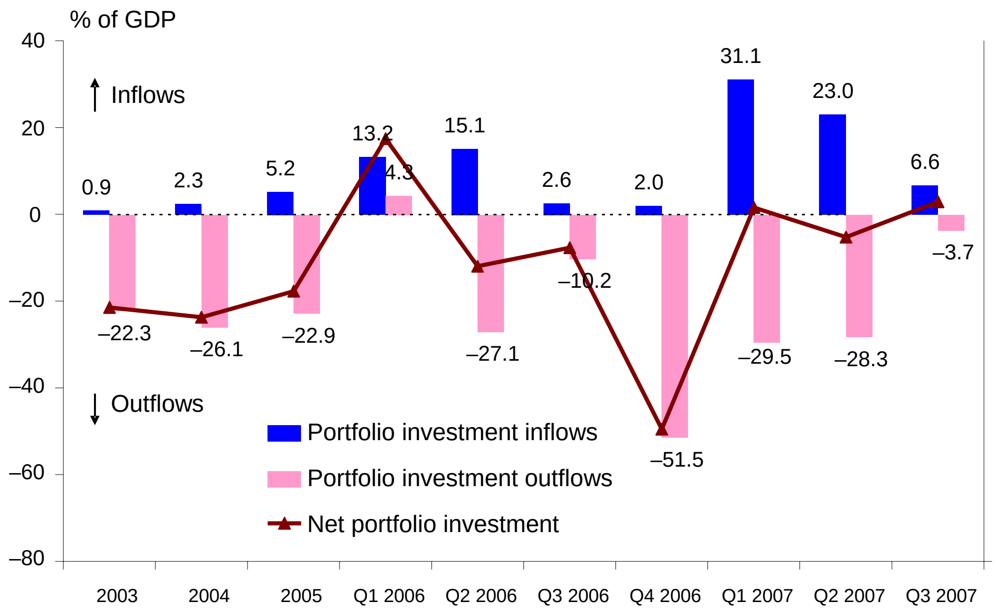
---

[4] When an H-share company is listed on the Hong Kong Stock Exchange, it is classified as a non-resident company because its business activities are not based in Hong Kong. Transactions in which Hong Kong residents buy H-shares are recorded as capital outflows because Hong Kong residents have purchased foreign assets.

[5] Apart from offshore financial centres (OFCs), the United Kingdom is the largest recipient of Hong Kong residents' equity portfolio investments because some major stocks in Hong Kong are domiciled in the United Kingdom.

Graph 3

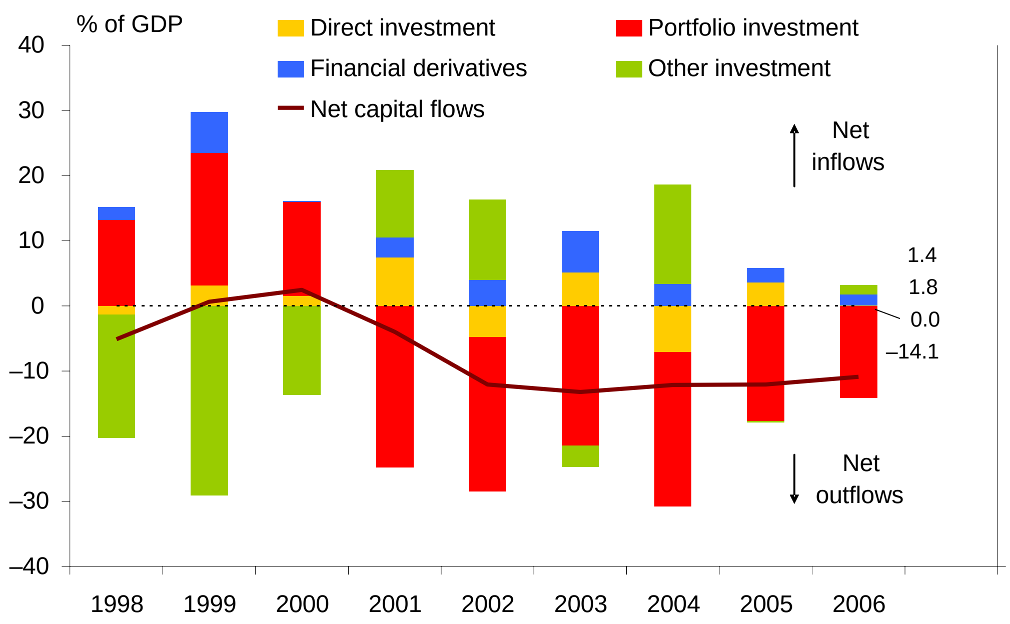
Portfolio investment flows



Source: Census and Statistics Department.

Graph 4

Contributions to net capital outflows



Source: Census and Statistics Department.

Table 1

Equity portfolio investment from Hong Kong SAR to other economies

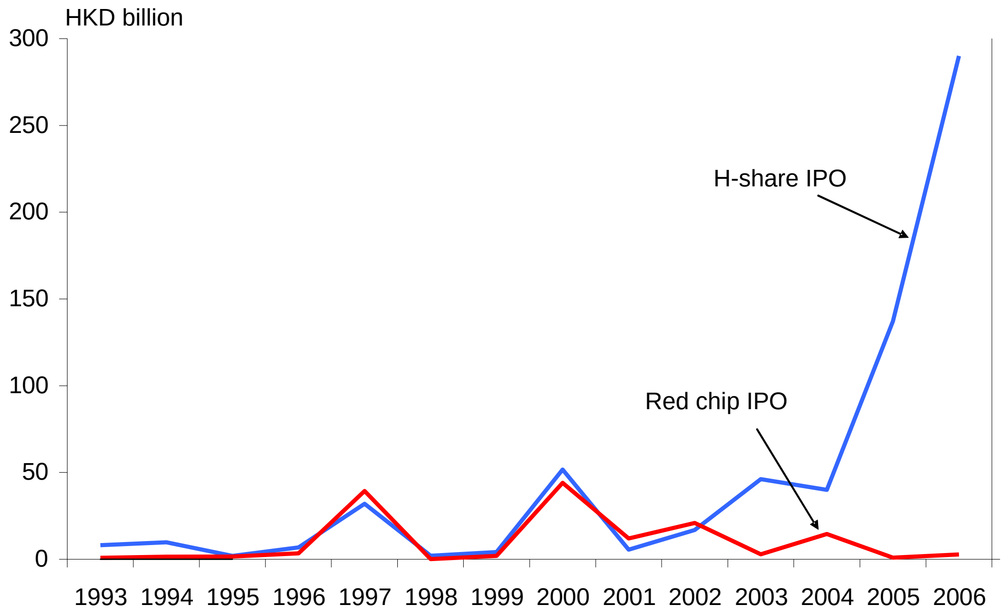
In billions of US dollars

	2001	2002	2003	2004	2005
Offshore financial centres	37.6	47.4	73.5	90.2	94.2
United Kingdom	22.7	21.8	30.7	43.7	48.1
United States	11.5	5	8	12.7	11.9
Australia	0.6	0.6	1.1	1.4	1.4
China	5.4	5.4	15.7	22.7	34.8
Japan	2.1	2	3.3	4.4	9.1
Total (rest of world)	**94.6**	**95.7**	**152.8**	**199.7**	**227.8**

Source: IMF, Coordinated Portfolio Investment Survey.

Graph 5

Equity funds raised by China-related companies (main board)



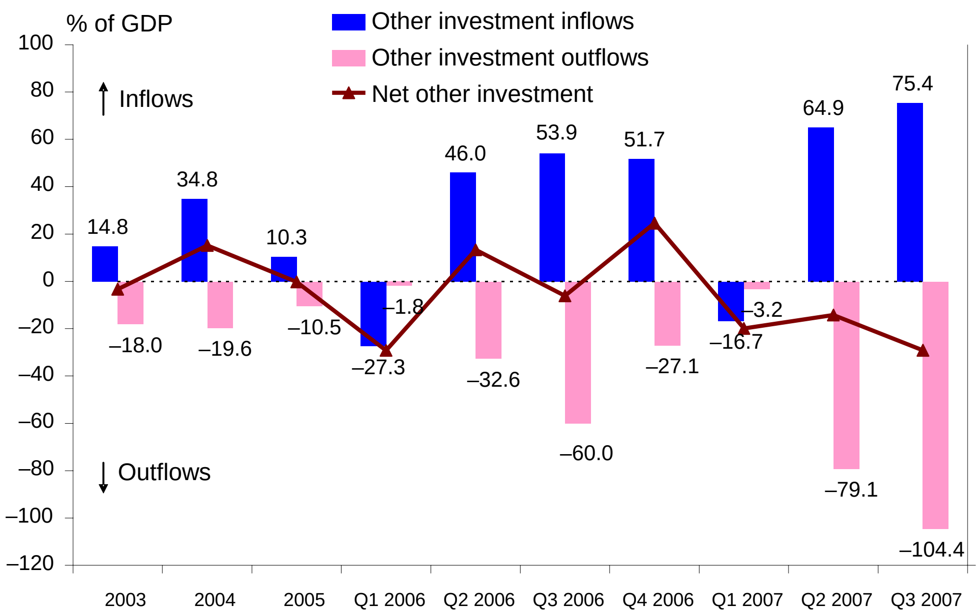
Source: Hong Kong Exchanges and Clearing Limited website.

Other investment

"Other investment" mainly consists of banking sector capital flows in the form of currency and deposits. These flows have been large and volatile in recent years, reflecting Hong Kong's role as an international banking and financial centre (Graph 6). Vibrant H-share IPO activity may have also strengthened these flows of currency and deposits, as well as loans, between mainland China and Hong Kong recently. Subscription money for H-shares is usually placed in interest bearing fixed deposits in the week before the refund day and may be temporarily parked in the Hong Kong banking system afterwards.[6] This can lead to substantial capital inflows until they are later offset by a repatriation of funds out of the domestic banking system.

Graph 6

Other investment flows



The negative figures for "other investment inflows" in Q1 2006 and Q1 2007 indicate that non-residents were net sellers of domestic other investment assets in these periods.

Source: Census and Statistics Department.

Cross-border fund flows between Hong Kong and mainland China

Anecdotal evidence suggests that cross-border fund flows between Hong Kong and mainland China have been increasing rapidly in view of financial integration between the two economies, but bilateral BOP statistics are not available for analysing this issue. To understand how capital flows between Hong Kong and mainland China have evolved, statistics on external banking transactions may be useful. If it is assumed that all cross-border transactions between Hong Kong and the mainland are effected via the banking system, then changes in external claims and liabilities between Hong Kong banks and mainland China can be used to gauge the cross-border fund flows relating to goods and services trades, investment incomes, direct investments and portfolio investments.[7] Specifically, Hong Kong's imports from the mainland and its direct and portfolio investment

---

[6] The IPO money involved can be substantial due to large amounts of funds being raised and/or high oversubscription ratios, which can reach as large as several hundred times.

[7] Since formal fund flows in most cases are reflected in banks' external liabilities and claims positions, it is justified to assume all cross-border transactions are effected via the banking system.

outflows to the mainland will result in a rise in the gross liabilities (or a decrease in claims) of Hong Kong banks vis-à-vis the mainland. Conversely, mainland China's imports from Hong Kong and its direct investment and portfolio investment outflows to Hong Kong will lead to a rise in claims of Hong Kong banks vis-à-vis the mainland (or a decline in Hong Kong banks' liabilities).

Table 2 provides a summary of the stocks as well as the changes in external claims and liabilities of Hong Kong banks vis-à-vis mainland China, compared with the data on bilateral trade and financial activities between Hong Kong and mainland China during the past few years. The first panel of Table 2 shows the stock of net liabilities and the year-on-year change in this stock, with the latter taken as an indicator of net flows of funds between Hong Kong and the mainland. The second panel shows the estimated bilateral BOP components.[8]

Table 2

Possible factors explaining changes in net external transactions of Hong Kong SAR banks vis-à-vis mainland China

In billions of Hong Kong dollars

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Net liabilities (+)/net claims (–)									
Level	–34	17	172	136	162	147	140	151	130
Change	**68**	**51**	**155**	**–36**	**26**	**–15**	**–7**	**11**	**–21**
Possible factors explaining changes in net external transactions of Hong Kong SAR banks vs mainland China									
Due to goods accounts[1, 2]	–139	–94	–113	–137	–147	–196	–245	–267	–323
Due to services accounts[1, 3]	–3	–4	–9	–17	–34	–44	–51	–57	–69
Due to investment income[4]	–3	–1	–4	–8	–14	–26	–27	–21	–39
Due to direct investment[5]	123	88	10	92	108	100	86	67	64
Due to portfolio investment[6]	4	4	52	7	18	48	60	159	289
Residuals	**87**	**57**	**219**	**27**	**95**	**103**	**170**	**130**	**58**

[1] Some data on goods and services accounts for 2004 and 2005 are estimates based on available information. [2] Exports and imports were adjusted to exclude outward processing trade. [3] Data on trade in services between Hong Kong SAR and mainland China are from the *Report on Hong Kong Trade in Services Statistics*. [4] From survey data. [5] Data for Hong Kong SAR's foreign direct investment (FDI) flows to mainland China are based on data from the mainland, while data for mainland FDI in Hong Kong SAR are from the balance of payments statistics. [6] Data refer to funds raised by mainland companies on the Hong Kong Stock Exchange, while data on mainland portfolio investment in Hong Kong SAR are not available.

Sources: HKMA; Census and Statistics Department.

[8] Shi and Tsang (2005) provide more details on the methodology for estimating the bilateral BOP components.

Analysis based on Table 2 shows that Hong Kong has run a widening current account surplus with mainland China in the past few years, thereby contributing to a rise in claims by Hong Kong banks on the mainland (or a decline in liabilities). On the other hand, Hong Kong has had a net capital outflow to mainland China in terms of direct and portfolio investment, implying an increase in the liability of Hong Kong banks vis-à-vis mainland China. In particular, liabilities relating to portfolio investment increased substantially in 2005 and 2006, in line with vibrant activity in H-share trading and IPOs. In terms of size, these flows vis-à-vis the mainland appear to have dominated the overall movements of the financial accounts of Hong Kong's balance of payments in recent years.

Some commentators have raised the concern that further capital account liberalisation by mainland China, for example in the forms of a significant expansion of the Qualified Domestic Institutional Investor (QDII) scheme and the launch of the plan to allow individuals to invest directly in Hong Kong's stock market, would subject Hong Kong to an inundation of capital inflows that would overwhelm its financial system, create asset price bubbles, and pose material risks to its monetary and financial stability. Such concerns are, however, overblown, for several reasons. First, while mainland investors may be enthusiastic towards investing in the Hong Kong stock market, it is unlikely that their portfolio choice will be irrational. Research conducted at the HKMA shows that, based on characteristics such as the size of financial markets, and investors' understanding of and familiarity with host markets, Hong Kong would be able to attract 10% of capital outflows from mainland China, while close to 50% of such outflows would be invested in the United States, Japan and the United Kingdom (Cheung et al (2006)). Second, the track record in the past several years has showed that Hong Kong's monetary and financial system has been capable of dealing with temporary volatilities of capital flows, and this capacity is also being further strengthened, as discussed below.

III. Capital flows and foreign exchange market developments

Although BOP statistics are useful for monitoring the broad patterns of capital flows, they may not fully capture changes in Hong Kong's foreign exchange flows for two reasons. First, BOP data do not provide a complete picture on the total amount of two-way capital flows. For example, when non-residents buy H-shares from Hong Kong residents in the secondary market, the transactions are recorded as decreases in portfolio investment assets in BOP statistics, representing lower capital outflows from Hong Kong residents instead of more capital inflows from the rest of the world. Second, BOP data are ex post records of accounting relationships, and they are typically released with a time lag. This implies that relying on BOP data may not be appropriate for a proper analysis of the impact of capital flows on domestic monetary and financial conditions.

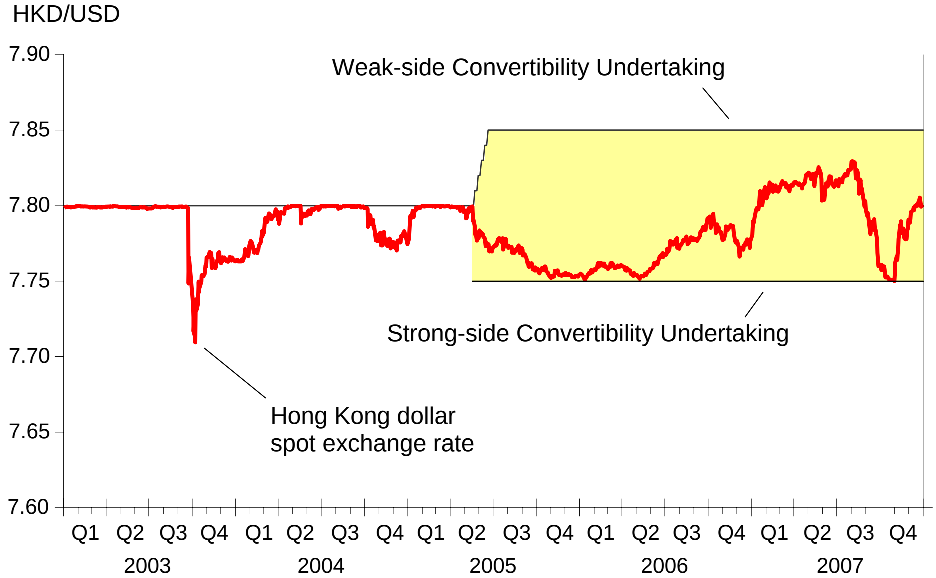
In order to understand the implications of capital flows for domestic monetary and financial stability in Hong Kong, it is necessary to analyse timely information on fund flows between the Hong Kong dollar and foreign currencies, using financial market price data such as exchange rates, interest rates and asset prices. An outflow of funds from the Hong Kong dollar into foreign currencies may arise from a foreign investor exiting the Hong Kong stock market; a speculator squaring a long position in Hong Kong dollars; a foreign issuer switching IPO proceeds into foreign currencies; or an exporter repatriating its export earnings. If there is greater pressure on the selling side than on the buying side of Hong Kong dollars, then the exchange rate will weaken. Conversely, if there is greater pressure on the buying side than on the selling side, the exchange rate will strengthen.

Under the LERS, which encompasses a target zone regime after the "three refinements" introduced in May 2005, fund flows between the Hong Kong dollar and other currencies will most often be reflected in changes in the exchange rate, and occasional foreign exchange operations by the HKMA. When the pressure on the selling side is so much greater than on the buying side that the market exchange rate is pushed to a level that triggers the weak-side Convertibility Undertaking (CU), then the HKMA will buy Hong Kong dollars and sell US dollars without any limit at the rate of 7.85 Hong Kong dollars per US dollar. Conversely, when the pressure on the buying side is so much greater than on the selling side that the strong-side CU is triggered, the HKMA will buy US dollars and sell Hong Kong dollars without any limit at the rate of 7.75 Hong Kong dollars per US dollar.

Financial market data indicate that two-way flows between the Hong Kong dollar and foreign currencies have been roughly balanced in the past five years, although there were episodes of strong inflow pressures. For example, while BOP data showed net private capital outflows during heavy IPO activity in the second and third quarters of 2006, price data point to consistent appreciation pressures on the Hong Kong dollar exchange rate, which stayed around the strong side of the Convertibility Zone (Graph 7). Meanwhile short-term interest rates were also depressed as the IPO proceeds stayed in the banking system, increasing the supply of interbank liquidity (Graph 8). Despite sizeable capital flows associated with fund-raising activities by mainland firms in Hong Kong during June 2005 to September 2007, there were no foreign exchange interventions by the HKMA. A confluence of factors, including in particular bunching of IPOs over an extended period, resulted in stronger inflow pressures in late October 2007 and prompted the HKMA to sell Hong Kong dollars against US dollars. Overall, there have been no persistent one-way flows in the past several years.

Graph 7

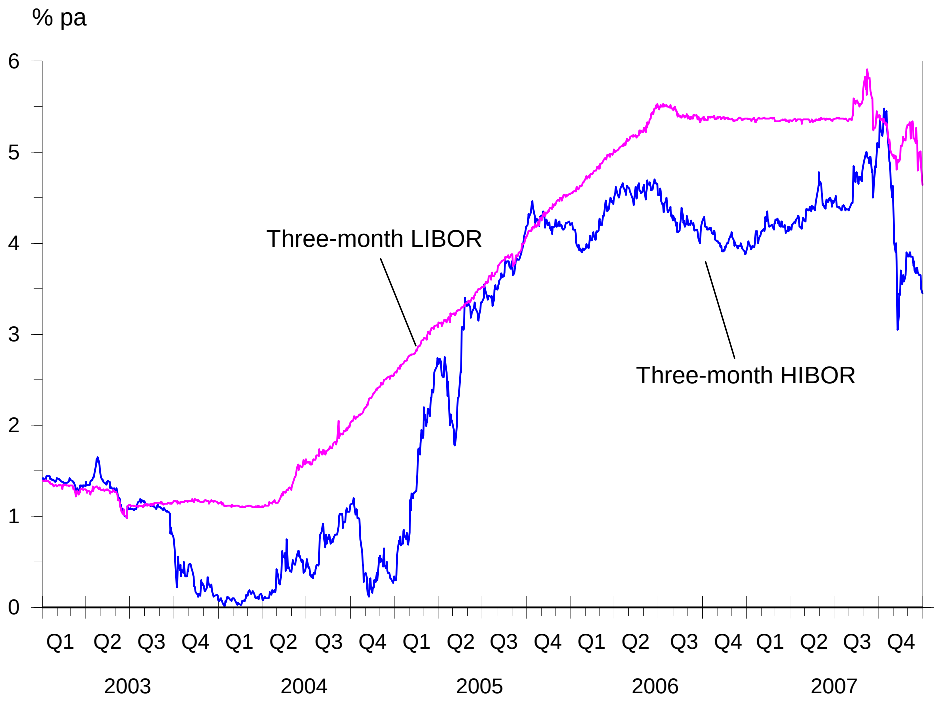
Hong Kong dollar exchange rate



Source: HKMA.

Graph 8

Hong Kong dollar and US dollar interest rates



Libor = London interbank offered rate; Hibor = Hong Kong interbank offered rate.

Source: HKMA.

IV. Implications of capital flows for monetary and financial stability

Under the LERS, Hong Kong dollar interbank interest rates should track the corresponding US interest rates closely, but capital flows into and out of Hong Kong may cause deviation from time to time, creating room for potentially sharp adjustments of interest rates. There have been a number of occasions in the past several years when deviations of Hibor rates from Libor rates became sizeable (Graph 9). However, with the introduction of the three refinements to the LERS in May 2005, the Hibor-Libor spread should now be bounded inside a band that reflects the width of the Convertibility Zone of the LERS.[9] Empirical evidence shows that this has largely been the case and the LERS has enjoyed a high degree of market credibility (Genberg et al (2007); Fung and Yu (2007)).

As capital flows relating to mainland China have become more important in recent years, it follows that macroeconomic developments on the mainland might also exert greater influence on monetary conditions in Hong Kong. The response of Hibor to a particular shock relating to the mainland is theoretically ambiguous, depending on the relative impact on the demand for and supply of Hong Kong dollars that reflect the prevailing macroeconomic and market conditions, as well as investor sentiment. For example, a positive output shock could

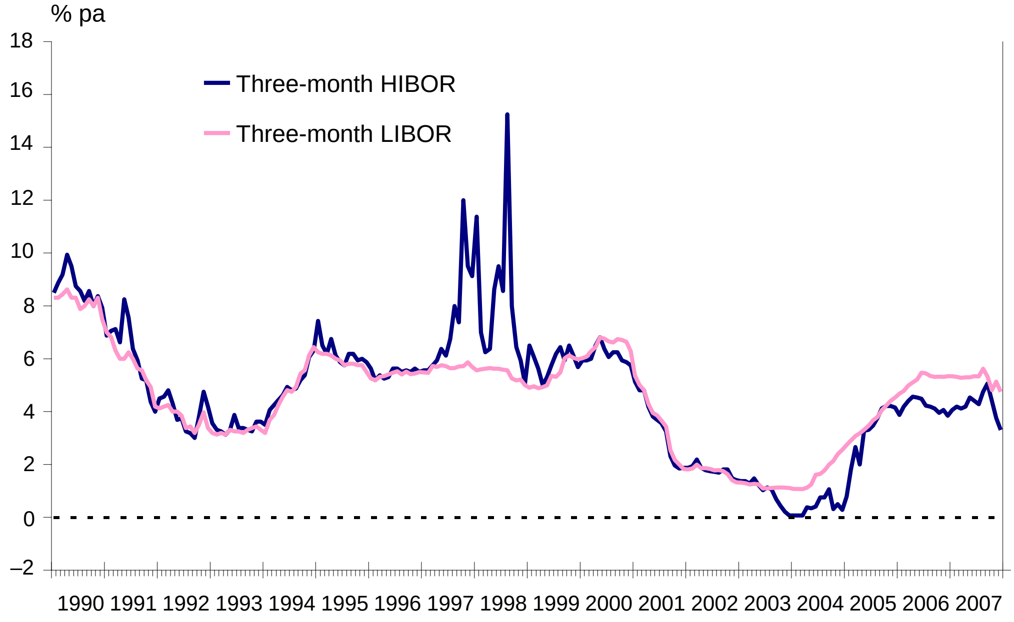
---

9 Genberg et al (2007) argue that the spread should be no larger than 127 basis points, if the transaction cost is assumed to be zero, given the 1,000 pip width of the Convertibility Zone.

be indicative of improved earnings of mainland companies. This may induce increased investments in their stocks on the Hong Kong market and the resultant higher demand for Hong Kong dollars relative to supply could raise the short-term Hibor. On the other hand, a positive output shock on the mainland could signal a build-up of overheating pressure and affect market sentiment negatively. This could lead to reduced investments in mainland-related stocks on the Hong Kong market and a lower demand for Hong Kong dollars relative to supply, prompting a decrease in the short-term Hibor.

Graph 9

Movements of three-month Hibor and Libor



Month-end data.

Source: HKMA.

Empirical analysis using a vector auto-regression (VAR) model suggests that, after controlling for the influences of US variables, an unexpected rise in the mainland policy interest rate or higher than expected growth in mainland output or money supply in general produces a positive and hump-shaped effect on the three-month Hibor (He et al (2007)). This analysis also shows that US shocks still dominate, but mainland shocks have become more important in accounting for the unexpected fluctuations in Hibor in recent years. Thus, while the Hibor-Libor spread is expected to be bounded inside a band that reflects the width of the Convertibility Zone of the LERS, mainland-related shocks could exert a significant influence on the actual size of the spread.

When there is a sizeable negative interest rate spread between Hibor and Libor rates, the lower Hong Kong dollar interest rates should in theory bring arbitrage activities and hence lead to outflows of funds, pushing the spot exchange rate towards the weaker side of the Convertibility Zone. Should the weak-side CU be triggered, the clearing balance of the banking system held with the HKMA would shrink, leading to higher interest rates. However, it is also possible that the arbitrage activities might not be sufficiently strong to counteract the strong demand for Hong Kong dollars because of equity-related inflows. As a result, the weak-side CU would not be triggered and the low short-term interest rates could persist. On the other hand, if there are drastic changes in market sentiment, due for example to a sharp deterioration of the global economic environment, then the spot exchange rate could move rather quickly towards the weaker side, triggering the weak-side CU in an abrupt manner and leading to an overshooting of interest rates.

The HKMA is, however, well equipped to deal with such a potential disruptive scenario. The three refinements of the LERS introduced in May 2005 allow the HKMA to conduct discretionary monetary operations within the Convertibility Zone should it consider such action appropriate. The HKMA can either conduct foreign exchange operations (ie sell/buy Hong Kong dollars against US dollars) or issue/redeem Exchange Fund bills and notes.[10] While intra-zone operations have not been necessary to deal with scenarios of disruptive capital flows, there have been two discretionary intra-zone foreign exchange operations by the HKMA since the introduction of the three refinements, which were conducted to alleviate liquidity pressure associated with IPO activities of mainland firms in Hong Kong.

Equity market activities could affect Hong Kong dollar interest rates in two major ways. First, concentration of IPO subscription money in the receiving banks may reduce the supply of interbank liquidity in the banking system and cause abrupt fluctuations in overnight Hibor. Second, funding requirements for the settlement of equity trades by mainland-related companies may fluctuate sharply given the volatile nature of equity transactions, posing challenges for banks to manage their liquidity position. The settlement of share trades usually takes place in the morning, but reversal of overnight interbank lending can take place at any time during the day, causing a mismatch in the timing of intraday cash outlay and inflow. In response to the uncertainties, banks purchase Exchange Fund papers to obtain temporary liquidity through intraday repos. The liquidity pressure on banks to settle share trades has been so great that Exchange Fund papers have been in keen demand lately, driving down yields of short-term Exchange Fund papers into negative territory in recent months. As a result, the HKMA conducted a tap issue of Exchange Fund paper in January 2008 to satisfy the increasing demand for such paper in the banking system. In addition, the HKMA is introducing infrastructural enhancements in early 2008, by adopting a new payment code in the real-time gross settlement (RTGS) system and the central clearing and settlement system (CCASS) to allow reversal of overnight lending operations at the time of settlement of share trades, reducing the mismatch in the timing of cash flows.

Stock market activities relating to mainland-related companies also affect deposits and loans in the banking system in Hong Kong. The growth paths of Hong Kong dollar M3 and domestic credit have exhibited occasional sharp spikes attributable to such activities (Graph 10). Sharp spikes in M3 growth occur when heavily subscribed IPOs are present around the end of a calendar month. Demand deposits increase notably as investors use cheques for IPO subscription, while time deposits also rise markedly in the week to the refund day because the subscription money is temporarily placed in interest bearing time deposits in local banks. Such sharp movements in deposits pose challenges for banks to manage their liquidity positions.

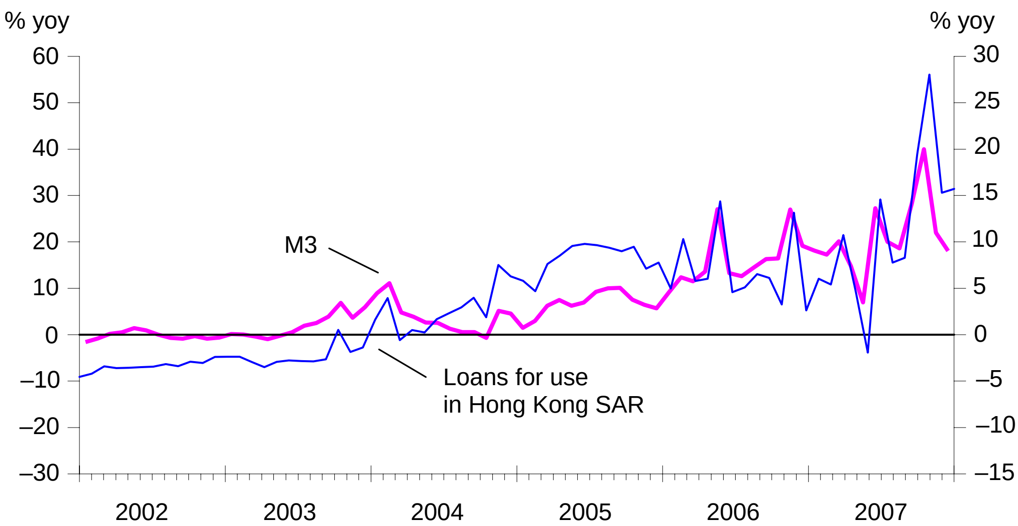
In respect of credit growth, sharp rises usually occur because of a significant increase in margin lending for IPO subscriptions. Reflecting buoyant stock market activity, lending to stockbrokers rose by 35.6% and 11.9% respectively in the second and third quarters of 2007. While the strong growth in such lending benefits bank earnings, the asset quality of these loans is highly associated with stock market movements. Banks may suffer in the event of a significant market correction, as the value of the collateral for these loans, which comprises mainly stocks, would decrease significantly. Given the increasing contribution of share-

[10] Exchange Fund papers are essentially liabilities of the HKMA and are defined as part of the Hong Kong dollar monetary base. This type of operation would be consistent with the currency board principle as it represents only a shift of one component of the monetary base (the aggregate balance) to another (the Exchange Fund paper).

related lending and income to banks' loan portfolios and earnings, the HKMA has reminded banks that they should be vigilant with regard to the possible risk of a sharp correction in the stock market. The HKMA has also recently launched a major review by an external consultant of its work in the area of banking stability. The aim of the review is to make recommendations on how the HKMA can best discharge its functions in promoting the general stability and effective working of the banking system, taking into account recent and likely future developments and the changing nature of the risks facing the system, including those associated with large and volatile capital flows.

Graph 10

Money and credit growth



Month-end data.

Source: HKMA.

References

Cheung, L, K Chow, J Chang and U Li (2006): "Outward portfolio investment from mainland China: how much do we expect and how large a share can Hong Kong expect to capture?", *HKMA Research Memorandum* 13/2006, Hong Kong Monetary Authority.

Fung, L and I Yu (2007): "Assessing the credibility of the Convertibility Zone of the Hong Kong dollar", *HKMA Working Paper* 19/2007, Hong Kong Monetary Authority.

Genberg, H, D He and F Leung (2007): "The 'Three Refinements' of the Hong Kong dollar Linked Exchange Rate System two years on", *Hong Kong Monetary Authority Quarterly Bulletin*, no 51, June.

He, D, F Leung and P Ng (2007): "How do macroeconomic developments in mainland China affect Hong Kong's short-term interest rates?", *HKMA Working Paper* 17/2007, Hong Kong Monetary Authority.

Shi, J and A Tsang (2005): "Cross-border fund flows and Hong Kong banks' external transactions vis-à-vis mainland China", *HKMA Research Memorandum* 07/2006, Hong Kong Monetary Authority.