

How do we monitor Hong Kong dollar fund flows?

by the Research Department

There has been much talk about fund flows into Hong Kong, especially when central banks in major advanced economies announce further quantitative easing programmes to stimulate their economies. Despite such strong interest, there is often confusion about the nature and scale of fund inflows that have had an impact on Hong Kong. This article explains how economists at the HKMA monitor Hong Kong dollar fund flows, and the concepts and the indicators used in their daily work, which help them form a judgment about the risks associated with such flows.

What are fund inflows?

It helps to be very clear about what is meant by fund flows, since they can mean different things to different observers. At the HKMA's Research Department, we analyse fund flows as part of the exercise to monitor *foreign exchange market pressures*. We define *inflow pressure* as an increased demand for Hong Kong dollar assets, including deposits, stocks, bonds, properties and other assets *accompanied by a conversion of currencies*, and *outflow pressure* as a decreased demand for Hong Kong dollar assets. Inflow pressures will lead to changes in both the *price* and the *quantity* of Hong Kong dollars. In terms of the price impact, the Hong Kong dollar exchange rate will tend to appreciate. In terms of the quantitative impact, the net Hong Kong dollar liabilities of Hong Kong banks, or the net Hong Kong dollar liabilities of the HKMA (the Monetary Base), may also increase. The rest of this article focuses on the concept and indicators of fund inflows, and the reverse will be true in the case of fund outflows.

The key to the concept of fund flows is the role of the foreign exchange market, which is the market for exchanging *bank liabilities* of different currencies. For example, when a US investor is interested in buying stocks listed on the Hong Kong Stock Exchange, the investor needs first to convert US dollar deposits into Hong Kong dollar deposits (if the investor does not already have sufficient funds in Hong Kong dollars), and then use those deposits to pay whoever is willing to sell the stocks the investor is interested in buying. In other words, when there is an increased demand for Hong Kong dollar assets by firms and individuals, they first need to convert their holdings of foreign currency deposits into Hong Kong dollar deposits in the foreign exchange market, for whatever type of Hong Kong dollar asset the investor is ultimately interested in buying.

For the non-bank sector as a whole¹, the counterparties from whom they can buy Hong Kong dollar deposits are mostly banks in Hong Kong. These banks "create" Hong Kong dollar deposits by exchanging such deposits for foreign currency deposits. This will lead to an increase in banks' net Hong Kong dollar liabilities, or equivalently, their net foreign currency assets.

¹ In general terms, the non-bank sector excludes banks and the currency board (the HKMA).

When the non-bank sector sells US dollar deposits, and when banks buy such deposits from the non-bank sector, they may incur an open position in foreign exchange. These open positions may be fully or partially covered through the use of the foreign exchange swap market: when the US investor buys Hong Kong dollar deposits on the spot market, the investor may simultaneously sell such deposits forward, say three months later. Hong Kong banks, acting as the counterparty, will do the exact opposite, i.e. buy US dollar deposits spot and sell them forward. The open positions can also be covered in other derivatives markets (for example, foreign currency options).

Banks may also take their own initiative to change their foreign currency positions instead of passively acting as counterparts of the non-bank sector. For instance, when under very strong inflow pressures, banks may not be willing to further increase their net spot foreign currency positions, for example, due to prudential limits. They may even collectively reduce such positions. These actions will cause the spot Hong Kong dollar exchange rate to appreciate quickly.

Since the HKMA has a standing commitment to buy whatever amount of US dollar deposits the market wishes to sell to it at the rate of 7.75 Hong Kong dollars to one US dollar (the strong-side Convertibility Undertaking), the HKMA may become the sole buyer of US dollar deposits when the market exchange rate reaches that level. However, even when the Hong Kong dollar exchange rate is trading at 7.75, the strong-side Convertibility Undertaking (CU) may not necessarily be triggered as banks may be buying and selling Hong Kong dollars at this level among themselves. The HKMA will only buy US dollars against Hong Kong dollars at 7.75 when the banks approach it for the transactions.

The triggering of the CU is passive. But when it is triggered, it will be announced immediately by the HKMA through Reuters. The HKMA pays its purchase of US dollar deposits from the market by crediting the Hong Kong dollar deposit accounts that banks keep with the HKMA. The total balance of such accounts is called the Aggregate Balance, a component of the Hong Kong dollar Monetary Base. In other words, strong and persistent inflow pressures will ultimately lead to an increase in the Aggregate Balance of the HKMA.

From the discussion above, it is clear that when the Hong Kong dollar is subjected to strong inflow pressures, i.e. when the desire to increase holdings of Hong Kong dollar deposits is stronger than the willingness to reduce such holdings, the spot exchange rate appreciates, the net spot foreign currency positions of the Hong Kong banking system increase², and the Aggregate Balance becomes bigger. And, these are the first-round effects. Subsequently, after the US investor buys Hong Kong dollar deposits, the deposits may be used to buy certificates of deposit issued by Hong Kong banks, Exchange Fund Bills and Notes issued by the HKMA, stocks listed on the Hong Kong Stock Exchange, or properties in Hong Kong.

Which indicators are informative about foreign exchange market pressures?

As explained earlier, inflow pressures will show up in both prices and quantities of Hong Kong dollars (net Hong Kong dollar liabilities of banks). Price indicators are available in real time or with little time lag, but they do not reveal the size or positions of various types of financial contracts that have led to the changes in prices. Quantitative indicators have the virtue of intuitive appeal (for example, an inflow of

² This is true when the Hong Kong dollar demand comes from the non-bank sector as a whole.

several billions of Hong Kong dollars), but they are available only with some time lag, and could be distorted by accounting conventions, such as the treatment of valuation changes, regarding the recording of assets and liabilities on the banks' balance sheet. The list of indicators discussed below is monitored regularly by HKMA economists, but it is not an exhaustive list.

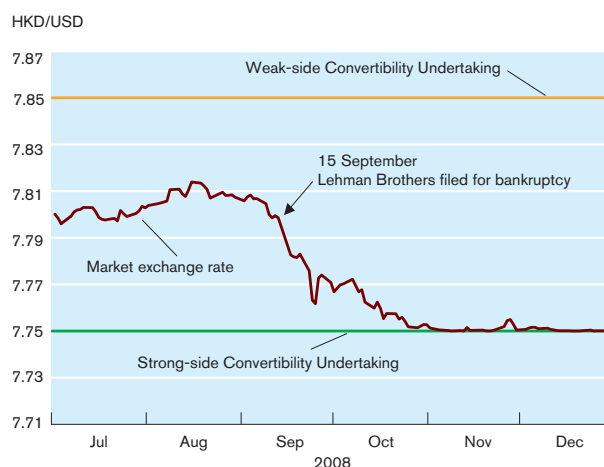
Spot exchange rate

When the spot exchange rate moves significantly in one direction, it may indicate sizeable inflow or outflow pressures. But, it is the *change* in the spot rate that matters. Even if the spot rate stays close to the strong-side CU, there may not be large inflow pressures if the spot rate does not move much. The spot exchange rate tends to be very sensitive to one-way fund flow pressures; it could move significantly before other indicators begin to reveal signs of fund flows. Indeed, the spot exchange rate typically appreciates sharply towards the strong-side CU in the face of strong inflow pressures, before the CU is triggered and the Aggregate Balance increases.

A good example of strong inflow pressures, as indicated by the spot exchange rate, was the period at the height of the global financial crisis during the fourth quarter of 2008. In mid-September 2008, the decision by the US authorities not to rescue the investment bank Lehman Brothers sent shock waves through global financial systems and liquidity evaporated almost overnight. Banks and domestic corporations in Hong Kong repatriated their overseas funds back into the Hong Kong dollar. Strong inflow pressures, therefore, showed up as a rapid strengthening of the Hong Kong dollar spot exchange rate from around 7.80 in mid-September 2008 to 7.75 on 31 October 2008 (Chart 1).

CHART 1

Hong Kong dollar spot exchange rate in the second half of 2008



The Aggregate Balance

Changes in the Aggregate Balance resulting from market operations by the HKMA are the most visible and readily available indicators of fund flow pressures. The HKMA is the only institution in the world that is committed to selling an unlimited amount of Hong Kong dollars at the rate of 7.75 Hong Kong dollars to one US dollar. This means that strong inflow pressures will ultimately be shown as an increase in the deposits of the banking system at the HKMA. For example, strong inflows led to the sale by the HKMA of a total of around HK\$640 billion to banks between September 2008 and December 2009, as reflected in the changes in the Aggregate Balance.³

However, an unchanged Aggregate Balance does not necessarily imply there are no inflow pressures on the Hong Kong dollar, although it does imply that the inflow pressures are not particularly large. For example, there was much discussion about whether there was renewed inflow pressure on the Hong

³ This is often referred to as "net fund flow into the Hong Kong dollar". Analytically, this terminology is imprecise since it has the connotation that the Hong Kong dollar comprises only the monetary base. A more precise term would be "net fund flow into the Hong Kong dollar currency board account".

Kong dollar when the US Federal Reserve launched the second round of quantitative easing programme (QE2). While the Aggregate Balance remained stable, the spot and forward exchange rates strengthened (Chart 2) and net Hong Kong dollar liabilities (or net spot foreign currency positions) of banks increased. These indicators show that, while there was an increase in the demand for Hong Kong dollar assets by the non-bank sector, the pressure of inflows was not strong enough to cause the banking system as a whole to buy Hong Kong dollars from the HKMA, so that the Aggregate Balance remained little changed.

Net spot foreign currency positions of the banking system

When inflow pressures induced by the non-bank sector are not particularly large, they may be reflected as an increase in the net spot foreign currency positions of the banking system instead of an increase in the Aggregate Balance. Such an increase in banks' net spot foreign currency positions

is matched by an increase in Hong Kong dollar deposits of the non-bank sector. For example, during the first quarter of 2012, there were reports of fund inflows into Hong Kong as market sentiment and risk appetite improved amid a respite from the euro area crisis and a rebound in the local stock market. In this period, Hong Kong banks' net spot foreign currency positions increased by about HK\$107 billion. Although the strong-side CU was not triggered and the HKMA did not have to sell Hong Kong dollars, there was increased demand for Hong Kong dollar assets, albeit at a more moderate scale.

Nevertheless, banks' net spot foreign currency positions can be very volatile, partly reflecting Hong Kong's status as an international centre for initial public offerings (IPO). For example, the record-breaking IPO of the AIA Group in October 2010 led to a sharp increase in banks' net spot foreign currency positions, but the increase was quickly unwound the following month (Chart 3).

CHART 2

QE2 and its impact on inflow pressures in Hong Kong in 2010

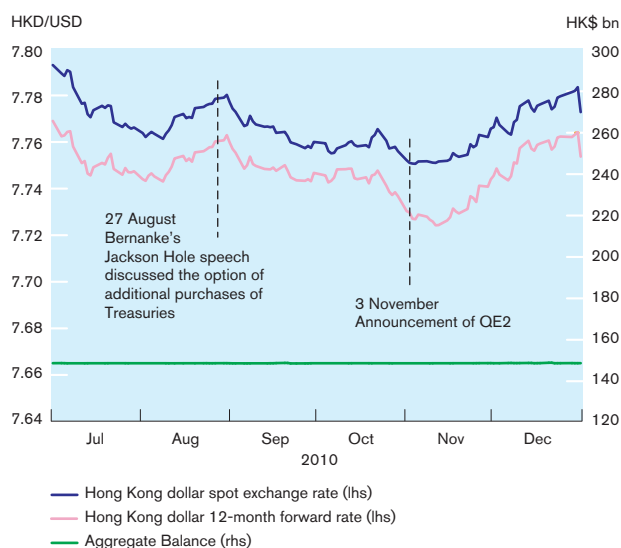
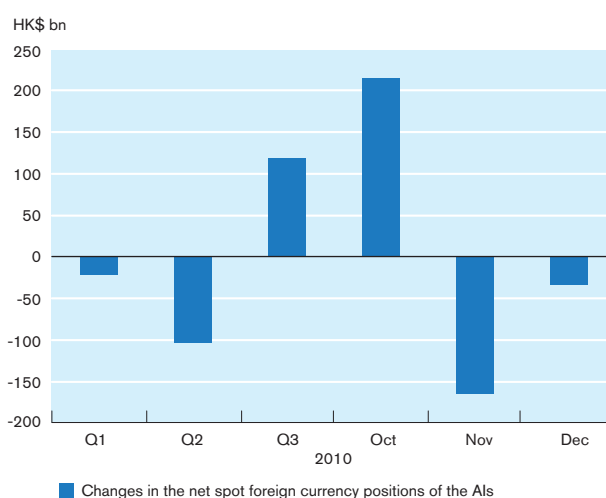


CHART 3

Changes in the net spot foreign currency positions of banks in 2010



There are a number of limitations when using changes in net spot foreign currency positions of the banking system as a measure of inflow pressures. First, they may include valuation effects. As such, they are a noisy signal of inflow pressures, especially when financial market conditions are very volatile. Secondly, unlike the Aggregate Balance, which is available almost on a real-time basis, data of net spot foreign currency positions of the banking system are published only with some time lag (around two months), reducing the timeliness of the indicator as a measure of fund flow pressures.⁴

How do we make use of the Balance of Payments (BoP) statistics and market surveys?

BoP statistics

The BoP statistics are widely used indicators for cross-border flows. They provide an accounting record of changes during a period of time (typically a quarter) in the assets and liabilities of Hong Kong residents vis-à-vis non-residents. As such, they provide a comprehensive picture of cross-border capital flows. In particular, they reveal which types of assets and liabilities (for example, bank deposits and

loans, stocks and bonds, and foreign direct investments) were involved in cross-border transactions.

However, the concept of BoP statistics differs from Hong Kong dollar fund flows. The former refers to cross-border flows based on the concept of residency, while the latter focuses on fund flows involving the Hong Kong dollar. Transactions as recorded in the BoP statistics do not necessarily involve payments or use of the foreign exchange market, so they are less useful for analysing foreign exchange market pressures. Conversely, transactions among residents, and among non-residents, can have an important impact on the foreign exchange market, but are not included in the BoP data. Table 1 sets out the relationship between the concepts of the BoP and Hong Kong dollar fund flows as defined earlier. For example, subscription for H-share IPOs by non-residents is not recorded in Hong Kong's BoP statistics as this represents transactions among non-residents, but it usually does introduce foreign exchange market pressures. In addition, unlike the price and quantity indicators discussed above, BoP statistics become available only with a long time lag.

TABLE 1

The relationship between the concepts of balance of payments and Hong Kong dollar fund flows

	Transaction parties		
	Among Hong Kong residents	Between Hong Kong residents and non-residents	Among non-residents
Transactions involving Hong Kong dollars only		Captured by BoP statistics	
Transactions involving foreign exchange of the Hong Kong dollar	Captured by indicators of Hong Kong dollar fund flows	Captured by both BoP statistics and indicators of Hong Kong dollar fund flows	Captured by indicators of Hong Kong dollar fund flows
Transactions involving foreign currencies only		Captured by BoP statistics	

⁴ Foreign currency position data of banks are published in Table 3.10 of the HKMA's *Monthly Statistical Bulletin*.

Market surveys

Market surveys can also provide useful information regarding the scale and volatility of fund flows. Survey data on portfolio flows are available from a few private information agencies.⁵ In some surveys, fund managers are asked how they allocate their funds to stocks in different economies. Where more funds are allocated to stocks in a particular economy, there are more fund inflows into that stock market. Survey data show that increased equity-related inflows were associated with a rising Hang Seng Index during the first quarter of 2012 and these net inflows were mainly connected with Mainland-related stocks (Chart 4).

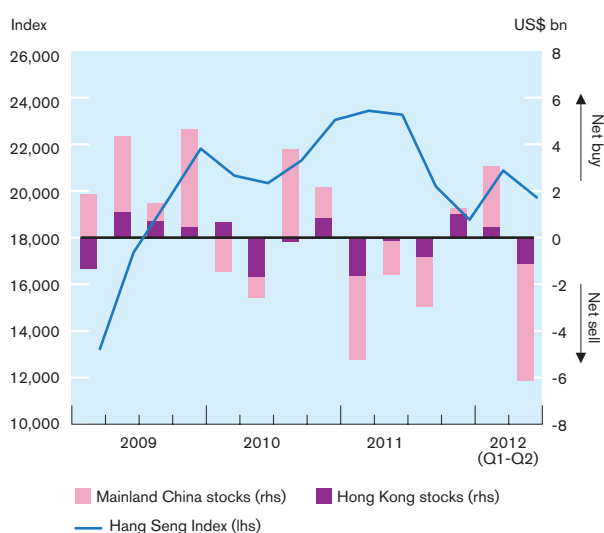
Market survey data are typically available without too much time lag, but their coverage is usually incomplete and they do not provide a consistent framework for monitoring fund flows. In particular, portfolio flows as captured by survey data may not involve conversion of currencies. Thus, while providing a useful alternative, care should be taken when interpreting these data.

Conclusion

We have discussed in this article the concept of fund flows and showed that a range of indicators is available to monitor foreign exchange market pressures. No single measure is sufficient. With this in mind, economists at the HKMA monitor and analyse both price and quantity indicators, as well as BoP statistics and other market surveys, to form a comprehensive judgment on the nature and scale of fund flows in Hong Kong.

CHART 4

Equity portfolio investment flows



Note: Mainland China stocks include H-shares and Red-chips.
Source: EPFR Global.

⁵ For example, EPFR Global has surveys on equity-related capital flows.