

The banking survey, which is an analytical statement of monetary liabilities, shows that in Hong Kong HK\$M3 is largely determined by domestic credit while foreign inflow of funds is also a significant factor. Reflecting Hong Kong's fiscal discipline, the government has only modest effect on the monetary aggregates.

The banking survey, sometimes referred to as the 'money formation table' is a framework for analysing monetary aggregates.¹ It relates the liabilities incurred by the banking system to the assets created by the system.

The construction of the banking survey essentially involves consolidation of accounts of the monetary authority and the banking system. The International Monetary Fund (IMF) presents a banking survey for many countries in its *International Financial Statistics* (IFS).

Hong Kong's banking survey is based on the same framework, but with adaptation to local circumstances. Hong Kong's methodology is based on analysis by currency denomination (HK dollar versus foreign currency) instead of residency (domestic versus foreign sector) as used in the IFS framework. However, it is likely that most domestic transactions are conducted in HK dollars while international transactions are conducted in foreign currencies. Details on the differences between the Hong Kong and IMF approaches are given in the Appendix.

The most important monetary aggregate in Hong Kong is HK\$M3. This is defined as legal tender notes and coins, plus deposits with authorised institutions and negotiable certificates of deposit (NCDs) held by the public. For most analytical purposes foreign currency swap deposits are also included.

Derivation of Banking Survey

Exchange Fund

The liabilities of the Exchange Fund (EF)² consist mainly of Certificates of Indebtedness, the

clearing balance of the banking system, the fiscal reserves account, and Exchange Fund Bills and Notes. On the assets side, the bulk are foreign currency assets which represent Hong Kong's foreign reserves.

In most countries currency appears directly as a liability of the central bank or monetary authority. In Hong Kong, currency issuance is carried out by three note-issuing banks. They have to provide US dollar backing to the Exchange Fund at the rate of HK\$7.8 : US\$1 to obtain Certificates of Indebtedness when they issue any legal tender notes for circulation. The Certificates of Indebtedness appear as liabilities on the Exchange Fund's balance sheet. However, issue of coins appears directly as a liability of the Exchange Fund.

Authorised institutions in Hong Kong have no statutory reserve requirement. However, the Management Bank of the Clearing House has to maintain an account (the Balance) with the Exchange Fund, generally close to the net clearing balance of the other banks with the Management Bank. The Balance is a liability of the Exchange Fund and the HKMA can influence inter-bank liquidity through varying the level of the Balance.

The Fiscal Reserves Account of the Exchange Fund comprises deposit placements from the government. The other major liabilities of the EF are EF Bills and Notes, which are all denominated in HK dollars.

Banking institutions

In Hong Kong, only authorised institutions (AIs), i.e. licensed banks, restricted licence banks and deposit-taking companies, are allowed to accept deposits from the public. The main assets of

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1 If only the licensed banks are consolidated with the monetary authority, the resulting survey would be termed the Monetary Survey in IMF parlance. It would provide credit counterparts to HK\$M2. To analyse better the broadest measure of monetary aggregate, HK\$M3, the framework of banking survey is adopted instead of monetary survey.

2 The HKMA does not have a balance sheet per se, but its operations are funded by and effected through the Exchange Fund. Therefore, its transactions show up in the balance sheet of the Exchange Fund.

Als are cash, loans, interbank lending within or outside Hong Kong, and debt securities. The main liabilities include customer deposits, interbank borrowings, borrowings from the EF, debt securities issued and shareholders' funds.

The assets and liabilities of Als are delineated by currency denomination to facilitate analysis of the HK dollar money stock. The HK dollar assets and liabilities of Als are further classified by counterparty – the Exchange Fund, the government, other Als, banks located abroad and the private sector – to enable sectoral analysis.

Consolidation of accounts

In consolidating the accounts of the Monetary Authority and banking institutions (see Box A), the assets and liabilities representing transactions between the Monetary Authority and banking institutions cancel out. In other words, the survey shows the claims and liabilities of the entire banking system (including the EF). By re-arranging the items, an accounting identity of HK\$M3 can be formed as shown below –

$$\begin{aligned} \text{HK\$M3} &= \text{HK dollar credit to private sector} \\ &+ \text{HK dollar credit to government (net)} \\ &+ \text{Foreign currency assets (net)} \\ &+ \text{HK dollar claims on banks abroad (net)} \\ &+ \text{Net other HK dollar items} \end{aligned}$$

Based on the above identity, the change in HK\$M3 can be expressed as the sum of changes of different items on the right hand side. Under the linked exchange rate regime, while HK dollar money stock is determined by the market, the banking survey illustrates how the HK dollar monetary liabilities change in response to demands for HK dollar credits and assets from various sectors:

- a) HK dollar credit to private sector reflects the demand for bank loans.
- b) Net HK dollar credit to the government is equivalent to the financing of budget deficits by the EF and authorised institutions. A net liability reflects budget surpluses.
- c) Net foreign currency assets are the sum of the corresponding amounts of the Exchange Fund and authorised institutions in Hong Kong. Assuming that foreign currencies were used only for

international transactions, the change in net foreign currency assets should be equal to the sum of the current account balance of the balance of payments and the net foreign inflow to the non-bank sector. Under normal circumstances, this item provides an indication of inflow of funds to the non-bank private sector. However, any shift in residents' holdings between foreign currencies and HK dollars would complicate the interpretation. Moreover, any revaluation adjustment can exaggerate or understate the figure in times of volatile securities prices or exchange rates.

- d) HK dollar net claims on banks abroad derives largely from the interbank placements between authorised institutions in Hong Kong and banks in China. An increase in net liabilities (or decrease in net claims) of authorised institutions in Hong Kong to banks in China indicates a rise in net holdings of HK dollar funds by China's banking sector. This reflects the demand for HK dollars in China arising from trade and investment flows.
- e) The major components of net other HK dollar items include EF Bills and Notes held by the public, debt instruments (other than NCDs) issued by authorised institutions and held by the public, and capital and reserves of the EF and Als. Obviously, the public's preference for other forms of liquid assets (i.e. debt paper issued by Exchange Fund and authorised institutions) will decrease their holdings of cash and deposits. Increases in capital and reserves have a contractionary impact on the money supply if they are used to replace deposits as a source of funding, rather than to increase loans.

The banking survey of Hong Kong

Composition of HK\$M3 and the counterparts

The broad definition of money in Hong Kong, HK\$M3, comprises cash, deposits and NCDs held

by the non-bank public. Reflecting the development of the banking sector in Hong Kong, the share of cash in broad money is very low at 6%, even though its share of narrow money is quite high by international standards (Table 1).

As regards the counterparts of HK\$M3 (chart 1 and Table 2), claims on the private sector (overwhelmingly loans) are the largest element, comparable to the size of HK\$M3. Net foreign currency assets are also substantial in Hong Kong, representing about two-fifths of HK\$M3. Net foreign assets³ tends to be positive in Asian developing economies, reflecting the build-up of

official reserves in recent years. As for developed economies like US, UK and Japan which have also accumulated considerable foreign reserves, the meagre (or even negative) net foreign assets is the result of the banks incurring net liabilities to overseas banks and customers.

Owing to its fiscal surpluses, the Hong Kong government has a net claim on the Exchange Fund as well as on the authorised institutions in Hong Kong. The case is however different in US, UK and Japan where the government generally needs to borrow to finance the fiscal deficit and the banking sector holds a significant proportion of the securities issued.

Table 1:

Currency (end 1994)

	As share of narrow money	As share of broad money	As ratio to GDP
Australia	23%	7%	4%
Canada	20%	5%	3%
China	35%	16%	17%
France	15%	5%	3%
Germany	31%	11%	8%
HK	40%	6%	7%
Japan	28%	8%	9%
Korea	40%	10%	4%
Malaysia	33%	7%	9%
Singapore	40%	10%	9%
Thailand	70%	9%	7%
UK	7%	3%	3%
US	30%	9%	5%

Source: IFS, March, 1996

Table 2:

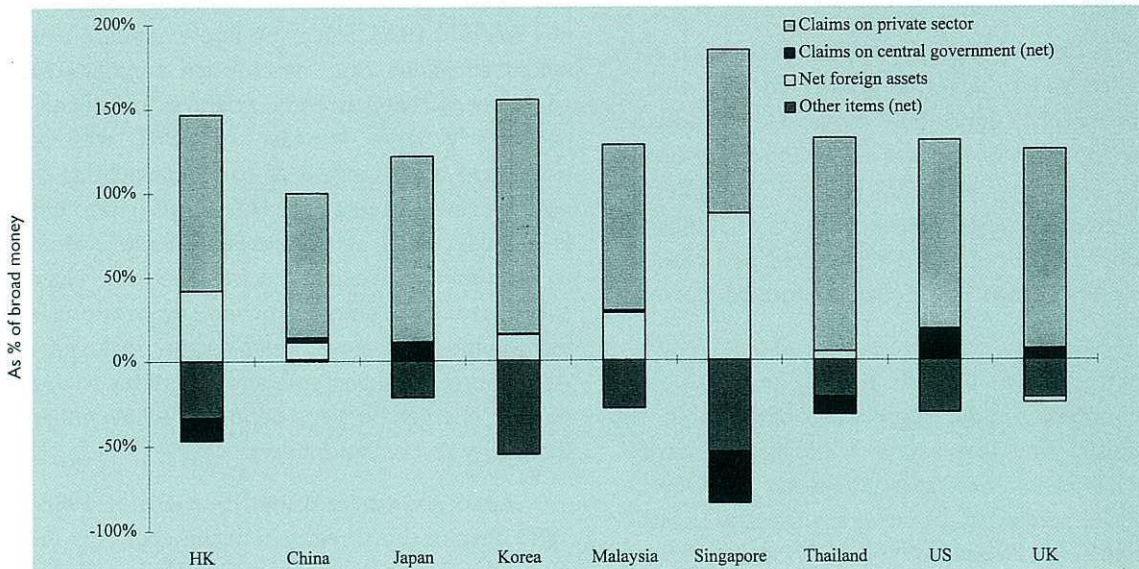
Counterparts of HK\$M3

	HK\$ bn (end 1995)	% (end 1995)	Change in HK\$ bn (1981-1995)	average annual contribution to % growth (1981-1995)
HK dollar credit to private sector	1266	101.5	1160	18.5
HK dollar credit to the government (net)	-140	-11.2	-124	-1.9
Foreign currency assets (net)	520	41.7	482	5.9
HK dollar claims on bank abroad (net)	-88	-7.0	-90	-1.1
Net other HK dollar items	-311	-24.9	-298	-4.9
HK\$M3*	1247	100.0	1130	16.4

* excluding government and EF deposits.

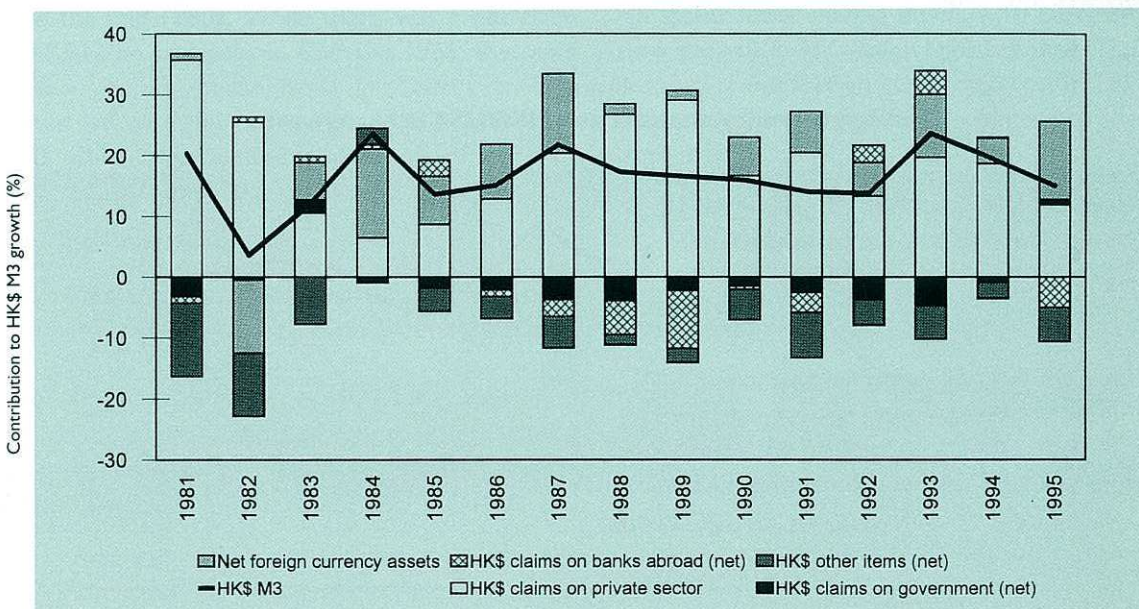
3 "Net foreign assets" is a term used in IFS, referring to the net claims on non-residents regardless of whether the claim is denominated in local or foreign currency. Given that most foreign claims are denominated in foreign currencies, "net foreign currency assets" of Hong Kong should be a good approximation to "net foreign assets".

Chart 1
Counterparts of broad money



Note: Figures refer to end-94 position except UK (end-93 position)
Sources: IFS, China Financial Outlook 95

Chart 2
Banking Survey 1981 - 1995



Note: HK\$ M3 refers to figures excluding government and Exchange Fund deposits with AIs and adjusted to include swap deposits from 1985 onwards.

Factors contributing to the money supply growth 1980-1995

Chart 2 shows the contribution of various components to the growth of HK\$M3 from 1980 to 1995. A quick glance reveals that HK dollar credit to private sector, i.e. a domestic factor, has

been most important counterpart of the growth of broad money. Net foreign currency assets, a broad indicator of inflow of funds, has also at times been significant. On the other hand, reflecting fiscal practice in Hong Kong, net HK dollar claims on the government generally provides a negative, but

slight, contribution to broad money growth. The details are discussed below.

In times of currency crisis

The depreciation of the HK dollar in the early 1980s led to considerable growth in the value of foreign currency deposits. This was further boosted by the abolition of the interest withholding tax on foreign currency deposits (Chart 3). Reflecting these, the net foreign currency assets of authorised institutions reduced.⁴ HK\$M3 slowed as a result of public's shift from HK dollar to foreign currency deposits.

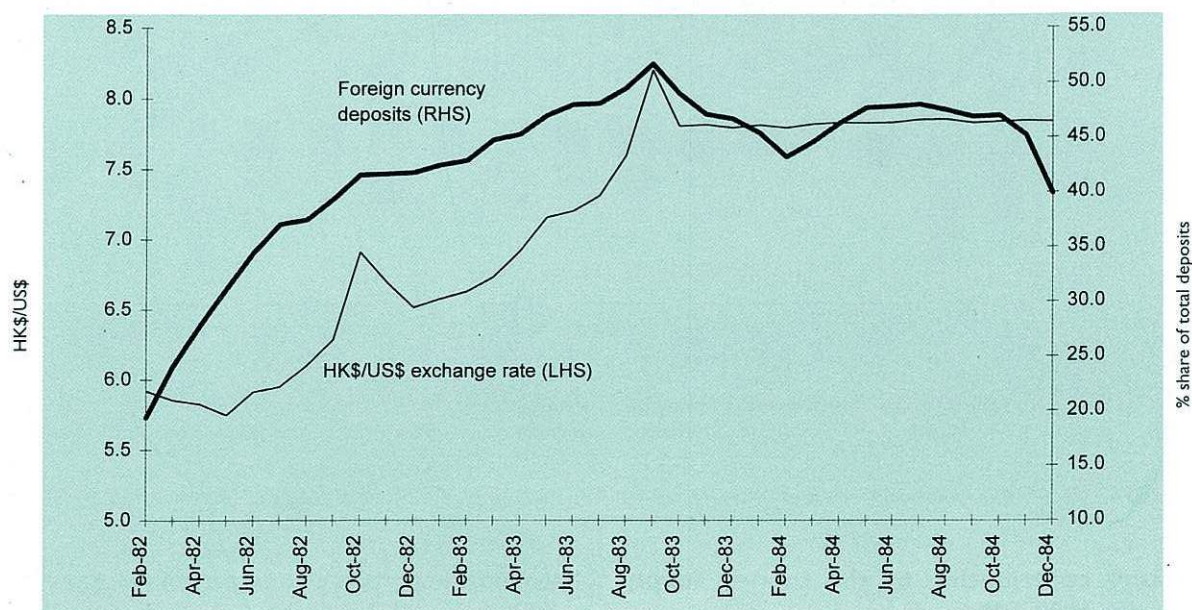
After the linked exchange rate was implemented, people regained confidence in the HK dollar. The interest withholding tax for HK dollar deposits was also abolished in October 1983. The stable HK dollar exchange rate together with the weakness of non-US dollar foreign currencies led to a shift from the foreign currency deposits back to HK dollar deposits and a resultant increase in net foreign currency assets. HK\$M3 then picked up in late 1983 and continued to grow strongly well into 1984.

After the introduction of the link

As the economy recovered, demand for loans increased and boosted growth in the money supply in 1986 and 1987. Since the implementation of the linked exchange rate, net foreign currency assets have been a consistently positive influence. The particularly large increase in 1987 was partly influenced by the inflow of funds speculating on an upward revaluation of the HK dollar. These inflows reduced in 1988 as the resolve of the authorities to maintain the existing parity became clear, as evidenced by, among other innovations, the introduction of new mechanisms including the Accounting Arrangements and the ability to impose deposit charges on large deposits⁵, which enhanced the ability to combat inflows.

Loan growth remained buoyant in 1988 and 1989 despite the slowdown in the economy (Chart 4) as the property market boom continued until early 1989. On the other hand, there were considerable decrease in net HK dollar claims (or increase in net HK dollar liabilities) to banks abroad. Reflecting the increased circulation of HK

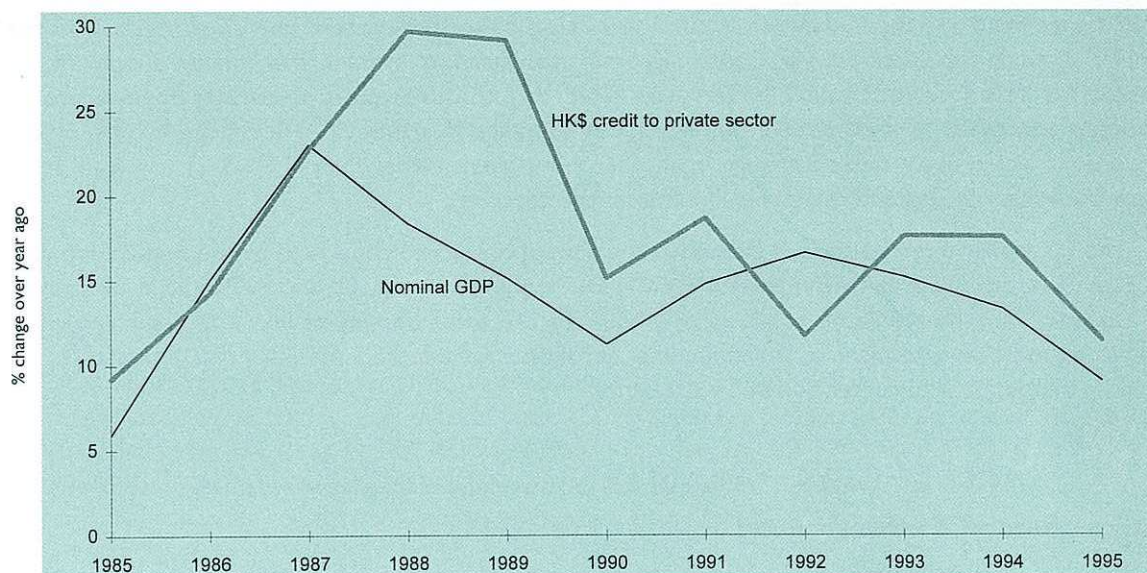
Chart 3
Foreign currency deposits and HK\$/US\$ exchange rate



Note: Figures for foreign currency deposits include swap deposits.

4 The effect of the decrease in net foreign currency assets on HK dollar money supply was understated due to the weaker HK dollar.
5 See "History of the Exchange Fund", *HKMA Quarterly Bulletin*, May 1995, p. 12-13.

Chart 4
Growth of HK\$ credit and nominal GDP



dollar funds in China, the holdings of HK dollar funds by banks in China has become prominent since the mid-1980s. While there was a net claim of HK\$12 bn on banks in China in 1986, the rapid increase in HK dollar funds in China's banking system led to a net liability of HK\$33 bn at end-1990 which represented about half of net HK dollar liabilities to all banks abroad.

Into the nineties

In the early nineties, domestic credit remained the main source of the growth in money supply. The growth of HK dollar credit was largely in line with nominal GDP except in 1992 when authorised institutions implemented a stricter mortgage lending policy to help curb speculative activities in the property market.

HK\$M3 however accelerated again in 1993 due to stronger loan demand and inflow of funds (evidenced by the increase in net foreign currency assets) into the active stock market and property market. The HK dollar net liabilities to banks abroad decreased in 1992 and 1993, reflecting the deteriorating current account in China as a result of the overheated economy. On the contrary, the item increased in 1995 on the back of a strong trade surplus in China.

Reflecting the moderation in economic growth and asset markets in the last two years, growth in HK dollar loans slowed down, with corresponding slow growth in HK dollar broad money. The large increase in net foreign currency assets in 1995 was indicative of inflows of foreign funds into the non-bank sector.

Even though there was a fiscal deficit in 1995, its modest size meant that it had only a slight expansionary influence on the money supply.

Conclusion

The banking survey of Hong Kong provides a tool for analysing monetary trends in Hong Kong, particularly the source of demand for HK dollar funds. Domestic credit remains the most important factor in the money creation process in Hong Kong. Inflows of foreign funds only have a large effect on the expansion of HK dollar broad money in times of booming asset markets which attracted considerable foreign investment. With closer economic links between Hong Kong and China, the demand for HK dollars in China has a stable influence on the HK dollar broad money. On the other hand, reflecting the relatively small size of the government's fiscal balance in Hong Kong, the fiscal surplus (or very occasional deficit) has little impact on the money supply. ☺

Box A: Derivation of the Banking Survey

The banking survey for Hong Kong is compiled by re-arranging items from the balance sheets of the Exchange Fund and the authorised institutions. These balance sheets are published regularly in the HKMA's *Monthly Statistical Bulletin*. Some algebraic manipulation enables the money supply to be expressed in terms of its credit counterparts. Note that the process is a rearrangement of some accounting identities; in itself it says nothing about causality. In many cases a change in one of the components would likely cause a change in another component rather than in HK\$M3 (e.g. bad debts reduce the value of loans and capital but do not change deposits).

The HK dollar money supply is defined as the sum of notes and coins held by the non-bank public and bank deposits (from both the private sector, D_P , and government, D_G and NCDs held by public). The currency held by non-bank public (C_P) is equal to the total amount of notes on issue, which in Hong Kong must be equivalent to the amount of certificates of indebtedness (i.e. $N=CI$), plus coins on issue less that amount of currency held by the banks.

$$\begin{aligned} \text{HK\$M3} &= C_P + D_P + D_G + \text{NCD} && \text{where } C_P = N + C - C_B \\ &= (N + C - C_B) + D_P + D_G + \text{NCD} \end{aligned}$$

Balance sheet of Exchange Fund

By re-arranging the balance sheet of the Exchange Fund as shown below, the sum of N and C can be expressed as total assets less remaining Exchange Fund liabilities.

Exchange Fund (EF)			
Liabilities		Assets	
Certificates of Indebtedness	CI(=N)	Foreign currency assets	F_M
Coins in circulation	C	HK dollar assets	OA_M
Balance of banking system	B		
EF Bills & Notes	EFBN		
Fiscal reserves transferred	FR		
Other liabilities	OL_M		
Re-arranged balance sheet of Exchange Fund			
Certificates of Indebtedness	CI(=N)	Foreign currency assets	F_M
Coins in circulation	C	HK dollar assets	OA_M
		Balance of banking system	-B
		EF Bills & Notes	-EFBN
		Fiscal reserves transferred	-FR
		Other liabilities	$-OL_M$

Balance sheet of authorised institutions

The consolidated balance sheet of authorised institutions is shown below. Intra-AI balances should in principle be off-setting and do not appear in the following balance sheet.

Authorised institutions (AIs)			
Liabilities		Assets	
Notes issue	$N(=CI)$	Certificates of Indebtedness	CI
Government deposits	D_G	Notes and coins	C_B
HK dollar deposits from customers ¹	D_P	Balance of banking system	B
HK dollar NCDs issued and held outside AIs	NCD	Net foreign currency assets	F_B
Net other HK dollar liabilities ²	OL_B	EF Bills & Notes	EFBN _B
		HK dollar credit to private sector	L
		HK dollar loans	
		HK dollar debt instruments held (other than those issued by AIs in HK)	
		Net HK dollar claims on banks abroad	CBA

- 1 Adjusted to include swap deposits but exclude government and EF deposits.
- 2 Include EF deposits.

Similar to the EF balance sheet, the balance sheet of AIs is re-arranged such that only deposits, NCDs and cash held by AIs are on the liabilities side.

Re-arranged balance sheet of authorised institutions (AIs)

Notes and coins	-C _B	Certificates of Indebtedness	CI
HK dollar deposits from customers	D _P	Notes issue	-N(=CI)
HK dollar NCDs issued and held outside AIs	NCD	Balance of banking system	B
		HK dollar credit to private sector	L
		Government deposits	-D _G
		Net foreign currency assets	F _B
		EF Bills & Notes	EFBN _B
		Net HK dollar claims on banks abroad	CBA
		Net other HK dollar liabilities	-OL _B

Banking survey

On consolidating the re-arranged balance sheet of the Exchange Fund and that of the AIs, the monetary liabilities on the left side will add up to HK\$M3 and the counterparts are shown on the right. The tabular format is known as the banking survey. Note that any balance between the Exchange Fund and the authorised institutions is offsetting and does not appear in the banking survey.

Banking Survey of Hong Kong

HK\$ M3 ¹		HK dollar credit to private sector	L
Of which:		HK dollar credit to government (net)	L _G
Currency held by public	N+C-C _B	<i>Fiscal reserves transferred</i>	-FR
HK dollar deposits from customers ¹	D _P	<i>Government deposits</i>	-D _G
HK dollar NCDs issued and held by the public	NCD	Net foreign currency assets	F
		<i>Of which: Exchange Fund</i>	F _M
		<i>AIs</i>	F _B
		Net HK dollar claims on banks abroad	CBA
		EF Bills & Notes held by public	-EFBN _P
		(i.e. EFBN _B -EFBN)	
		Net other HK dollar items ²	O

1 Exclude government and Exchange Fund deposits; swaps deposits are included.

2 Net other HK dollar items is a residual item:

$$O = OA_M - OL_M - OL_B$$

Accordingly, HK\$M3 can be expressed as follows –

$$HK\$M3 = L + L_G + F + CBA - EFBN_P + O$$

This can be expressed as changes to show contribution to the growth in the money supply –

$$\Delta HK\$M3 = \Delta L + \Delta L_G + \Delta F + \Delta CBA - \Delta EFBN_P + \Delta O$$

It should be noted that *changes in stocks* are used in the calculations rather than *flows* (due to data constraints). Flow figures essentially arise from transactions and thus, unlike changes, will not be affected by valuation adjustment, write-offs or any other accounting adjustments. However, changes in stocks can provide good approximation to financial flows when valuation adjustment and write-offs are small.

This identity shows that the following are associated with an increase in the HK dollar money supply:

- Increase in loans and other forms of credit to the private sector
- Government funding of budget deficit by issuing bonds or running down fiscal reserves
- Increase in net foreign currency assets
- Increase in net HK dollar claims on banks abroad
- Reduction in holdings of Exchange Fund Bills and Notes held by the public
- Increase in net other assets (equivalent to a decrease in net other liabilities) such as a fall in capital and debt instruments (other than NCD) issued by AIs

Appendix: Comparison of IMF format and Hong Kong format

Monetary authorities

IFS presentation	Hong Kong method
Assets Foreign assets Claims on government Others Liabilities Reserve money Notes in circulation Deposits Money market instruments Bonds Foreign liabilities Central government deposits Capital accounts Others	Assets Foreign currency assets n.a. HK dollar assets Liabilities Reserve money Certificates of Indebtedness & coins in circulation Balance of banking system) Exchange Fund Bills & Notes) n.a. Fiscal reserves) Others)

Banking institutions

IFS presentation	Hong Kong method
Assets Currency Deposits at Monetary Authorities Foreign assets Claims on central government Claims on state and local government Claims on non-financial public enterprise Claims on private sector Loans and advances Securities Others Unclassified assets Liabilities Demand deposits Deposits of state and local government Deposits of non-financial public enterprise Deposits of private sector Time and savings deposits Same as above Foreign currency deposits Same as above Money market instruments (held outside banking institutions) Bonds (held outside banking institutions) Foreign liabilities Central government deposits Credit from monetary authorities Capital accounts Valuation adjustments Unclassified liabilities	Assets HK dollar Cash and coins HK dollar placements with HKMA Foreign currency assets n.a. n.a. n.a. HK dollar claims on private sector Loans and advances) Debt instruments held) Other HK dollar assets Liabilities HK dollar demand deposits n.a. n.a. Deposits of private sector HK dollar time and savings deposits Same as above Foreign currency deposits Same as above HK dollar NCDs held outside AIs Other HK dollar debt instruments Other foreign currency liabilities HK dollar deposits of government Borrowing from HKMA Capital and reserves n.a. Other HK dollar liabilities

Note: Any intra-banking sector balance should be cancelled out in the above presentation. Any accounting discrepancy would be included in other liabilities.

Banking survey

IFS presentation	Hong Kong method
<p>Assets</p> <p>Foreign assets (net)</p> <p>Domestic credit</p> <p> Net claims on central government</p> <p> Claims on state and local government</p> <p> Claims on non-financial public enterprise</p> <p> Claims on private sector</p> <p>Other items (net)</p> <p>Liabilities</p> <p>Money</p> <p> Currency outside banking institutions</p> <p> Demand deposits</p> <p>Quasi-money</p> <p> Time and savings deposits</p> <p>Money market instruments (held outside banking institutions)</p> <p>Bonds (held outside banking institutions)</p>	<p>Assets</p> <p>Foreign currency assets (net)</p> <p>HK dollar credit</p> <p> Net claims on government</p> <p> n.a.</p> <p> n.a.</p> <p> HK dollar claims on private sector</p> <p>HK dollar claims on banks abroad (net)</p> <p>Other HK dollar items (net)</p> <p>Liabilities</p> <p>Money</p> <p> Currency outside AIs</p> <p> HK dollar demand deposits</p> <p>Quasi-money</p> <p> HK dollar time and savings deposits</p> <p>HK dollar NCDs held outside AIs</p> <p>n.a.</p>