

Hong Kong's official balance of payments will not be available until 1999. As an interim measure to stimulate discussion, a set of tentative numbers have been constructed as a research exercise in the HKMA. They suggest Hong Kong had an overall surplus in the balance of payments (excluding reserves) in 1993, 1994 and 1995. There was a modest current account surplus in 1993 and a small deficit in 1994. This was reflected in net private capital inflow and increased international reserves.

The HKMA has undertaken this desk-top research exercise into the balance of payments for Hong Kong in an attempt to understand the trends in these external accounts and to improve our bases for arriving at such estimates. While the trade data are based on official statistics, it should be understood that the capital flows are at best estimates based on highly preliminary methodology. It is quite likely that these areas are subject to a high degree of variance when the official statistics are produced sometime in 1999. The figures should be used with these caveats in mind. The HKMA welcomes comments and suggestions from the public, especially academia and private sector economists, on how the data and the methodology can be improved.

Balance of Payments Concepts

The balance of payments (BoP) is a systematic statistical record of the economic transactions¹ of an economy with the rest of the world during a specific period. It is based on double-entry accounting principles (see Box A for examples) and comprises two parts. The *current account* (CA) comprises all the goods, services, factor incomes and current transfers an economy receives from or provides to the rest of the world. The *capital and financial account* (CFA) includes capital transfers and changes in an economy's financial claims and liabilities.² As an accounting identity $CA + CFA = 0$.

The BoP fits into the conceptual framework of national account statistics. Unlike a closed economy where investment can only be financed by national savings, an open economy like Hong Kong can borrow from other economies to finance its capital accumulation while it is developing and later it can invest its excess savings abroad. Hong Kong's net savings is reflected in its current account balance; the sum of net exports of goods and services, net external factor income and net current transfers, as shown by the following identity (see Box B for a derivation):

$$S - I = (X - M) + \text{EFI} + T = \text{CA}$$

A rise in the economy's savings (either by the private sector or the government) will increase the current account surplus unless there is a corresponding rise in investment. In Hong Kong prudent fiscal policy has ensured that the government is a net saver most years and so contributes to a current account surplus. The relative strength of private sector consumption and investment is therefore the main influence from year to year on movements in Hong Kong's current account balance.

Contrary to much emotive discussion, neither having a current account deficit (and hence net capital inflow) or a current account surplus (and hence net capital outflow) is necessarily a bad thing. What matters is the use to which the funds are put and the method of funding. Overseas borrowing or direct investment by foreigners can

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1 IMF (1993, p6) defines a transaction in this context as "an economic flow that reflects the creation, transformation, exchange, transfer or extinction of economic value and involves changes in ownership of goods and/or financial assets, the provision of services or the provision of labour and capital."

2 The terminology in this article is based on the IMF's 5th *Balance of Payments Manual*, which is the format being gradually adopted as the international standard. Some readers may be more familiar with earlier versions in which what is now termed the "capital and financial account" was known as just the "capital account". Readers preferring very precise definitions of terms used, rather than brevity, should refer to this manual.

allow domestic investment projects to proceed which might not be possible for an economy relying on its own savings. If these projects earn good returns both the foreign investor and domestic residents will benefit. However, beyond a certain stage, successive large current account deficits funded predominantly by short-term portfolio flows or external borrowing can pose a liquidity risk for an economy due to the possibility of an abrupt withdrawal of such funds.

As the Commissioner for Census and Statistics remarked recently: "BoP statistics are important for monetary and financial monitoring and policy deliberations in both territorial and international contexts. Such data are useful for analytical studies on income growth, external orientation of the economy, relationship between trade in goods and services and direct investment flows, links between the exchange rate and the current and financial accounts and so on".

Hong Kong's Balance of Payments Statistics

Hong Kong has for a long period published data on its trade balance. Since 1992 it has published information on its foreign reserves, initially annually but now monthly.³ The government announced in August 1996 the launch of an investigatory study into the best methods of compiling a complete BoP for Hong Kong, having regard to the need to minimise respondent burden. The first set of official BoP accounts are expected to be published in 1999 for the reference year 1997, to give a broad balance item for the capital and financial account balance in addition to detailed current account. For the complete BoP accounts with full details, official estimates will be available around 2000 for the reference year 1998.

Hong Kong is one of only a handful of economies which do not produce a BoP. Many local commentators, as well as international bodies such as the International Monetary Fund and credit rating agencies, have repeatedly requested an indication of Hong Kong's BoP position. For this reason, as an interim measure, the HKMA, with technical assistance from the IMF's Statistics

Department, has drawn up some, admittedly approximate, estimates to give a broad indication of the BoP. These 'desk-top' estimates provide a guide to the availability of data and the robustness of various proxies and assumptions in the absence of full-scale survey results.

The estimates for the current account and reserves are mostly based on hard data so the total of the remaining items should also be a reasonable estimate but the individual financial account items, particularly portfolio investment, will be much less reliable. While the estimates in this paper are based on the best available information and judgements, there is no pretense that the quality of these estimates would be comparable to those produced by the official compilation.

The estimates cover the years 1993 and 1994 as these are the years for which data are available from the *Survey of External Factor Income Flows*, conducted by Census and Statistics Department (C&SD) to produce estimates of Gross National Product. Data availability means a more complete picture is possible for 1994 than 1993.

It is hoped to produce similar research estimates covering 1995 later in the year.

Overview of the Research Estimates

An overview of the research estimates of the BoP is presented in Table 1. More details on the current account are given in Table 2. The less reliable breakdowns for the capital and financial account are contained in Table 3. While the numbers are shown to the nearest \$100 mn, this is merely to avoid rounding discrepancies and should certainly not be taken as an indication that the estimates are accurate to this degree. Information on sources of data are given in the Appendix.

The research estimates suggest the current account recorded a modest surplus in 1993 and was close to balance in 1994. The reduction in the current account balance was primarily attributable to a rapid growth in imports of investment goods which are beneficial to the long-term growth potential of Hong Kong.

3 Nugee (1995) contains historical data on reserves back to 1935.

Table 1:
Balance of Payments Overview

(HK\$ billion)

	1993	1994	1995
Trade balance (goods and services)	46.4	-11.4	-47.6
External factor income	10.3	7.9	n.a.
<u>Current transfers</u>	<u>-6.3</u>	<u>-8.0</u>	<u>n.a.</u>
<i>Current account balance</i>	50.4	-11.5	n.a.
<i>Capital and financial account balance</i>	-50.4	11.5	n.a.

Table 2:
Current Account Details

(HK\$ billion)

	1993			1994		
	credit	debit	net	credit	debit	net
Trade balance	1260.5	1214.2	46.4	1410.6	1422.0	-11.4
Direct investment income	80.7	153.6	-72.8	114.0	169.2	-55.1
Portfolio investment income	68.7	10.8	57.8	67.0	22.3	44.7
Other investment income	167.2	141.9	25.3	192.9	174.6	18.3
<u>Compensation of employees</u>	<u>0.1</u>	<u>0.1</u>	<u>0.0</u>	<u>0.1</u>	<u>0.1</u>	<u>0.0</u>
<i>External factor income</i>	316.7	306.4	10.3	374.0	366.1	7.9
<u>Current transfers</u>	<u>0.6</u>	<u>6.9</u>	<u>-6.3</u>	<u>0.7</u>	<u>8.7</u>	<u>-8.0</u>
<i>Current account balance</i>	1577.9	1527.4	50.4	1785.4	1796.8	-11.5

Table 3:
Capital and Financial Account Details

(HK\$ billion)

	1993			1994		
	credit	debit	net	credit	debit	net
Capital account	15.3	43.5	-28.2	23.3	57.2	-33.9
Direct investment	n.a.	159.3	n.a.	44.1	193.3	-149.2
Portfolio investment	n.a.	n.a.	n.a.	n.a.	n.a.	186.4
<u>Other investment</u>	<u>n.a.</u>	<u>n.a.</u>	<u>n.a.</u>	<u>531.7</u>	<u>482.1</u>	<u>49.6</u>
<i>Financial account (non-reserves)</i>	n.a.	n.a.	n.a.	901.8	814.9	86.9
Errors and omissions	—	—	n.a.	—	—	7.6
<u>Reserve assets (excluding valuation effect)*</u>	<u>0</u>	<u>55.2</u>	<u>-55.2</u>	<u>0</u>	<u>49.1</u>	<u>-49.1</u>
<i>Capital and financial account</i>			-50.4			11.5

* negative sign indicates increase in reserves.

— not applicable.

n.a. not available.

In 1994 there was strong net private capital inflow (shown by the non-reserves financial account), well in excess of the current account deficit. With a fixed exchange rate regime, this inflow was reflected in a large rise in the official international reserves (as this represents funds leaving Hong Kong to purchase foreign assets, it appears as a negative item in Table 3).

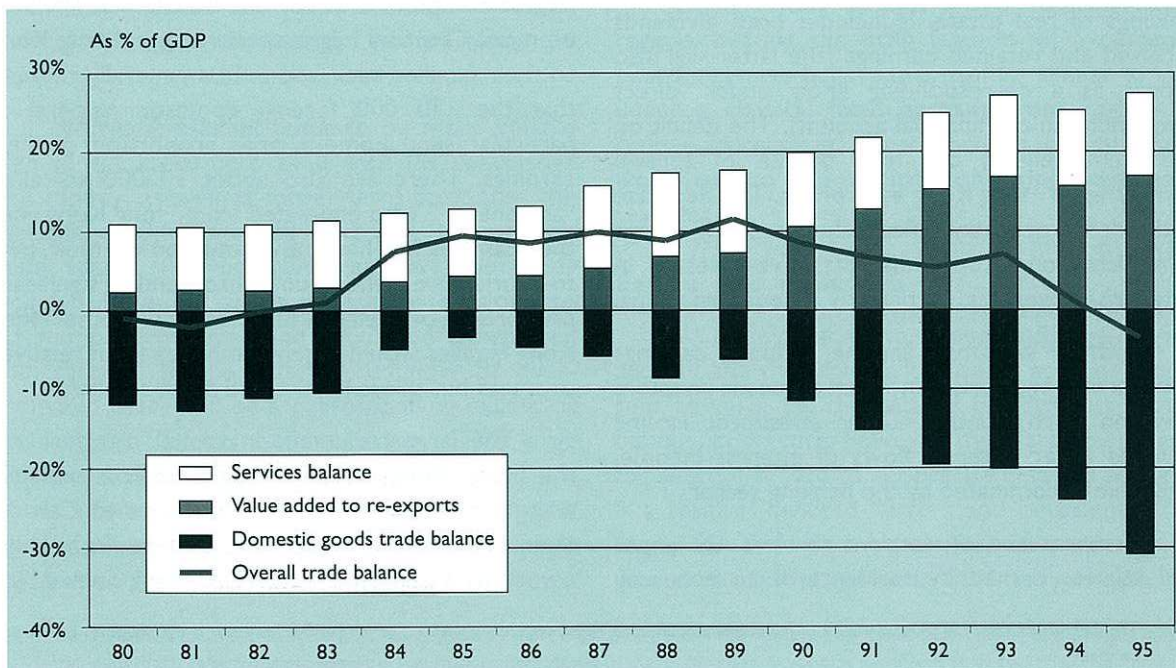
The trade balance was particularly weak in 1995 as there was a substantial increase in retained imports of raw materials and capital goods, such as for the airport project, and a deterioration in the terms of trade in the early part of the year. Most forecasters expect the trade balance to strengthen in 1996. Direct investment income is also likely to rise over time as investments in southern China start to generate profits. No large change is expected in current transfers. So while the current account deficit likely widened in 1995, it should narrow in 1996, and by more than will be seen in the trade balance alone. Reserves rose in 1995 and recorded a further increase in 1996 so it is likely there was further net private capital inflow in both years.

The Trade Balance

The long-term trend in Hong Kong's trade balance, based on the national accounts, is shown in Chart 1. It shows a steady decline over the past decade in the domestic goods trade balance being broadly offset by the services balance and the value added to re-exports. This reflects the transformation of Hong Kong's economy from a light manufacturing base to a services centre and the importance of Hong Kong's port facilities following China's opening up to the world in 1978.

Unfortunately, only part of the story is told in the chart. Increasingly Hong Kong's manufacturers have been moving the basic 'assembly line' part of their business over the border into mainland China while retaining the more skilled elements such as design, marketing, management and sophisticated manufacturing in Hong Kong. By some estimates Hong Kong's manufacturers now employ about 1/2 million workers within Hong Kong but 3-4 million in southern China. The output of these factories now appears as a Chinese export rather than a Hong Kong export. However, the profits still flow to Hong Kong. So over the long-term there is likely to be a substitution from domestic exports

Chart 1
Hong Kong's trade balance



to re-exports and/or external factor income. The latter is not shown in the chart but could be observed if there were a full BoP for a number of years.

There has also been a gradual shift from re-exports to trans-shipment (the latter involves goods passing through Hong Kong under a bill of lading or airway bill with no change to the goods at all). This will reduce merchandise trade. It is associated with increased export of services such as transport and cargo handling which appear in the trade balance. There is also an increasing number of sub-offices of Hong Kong's shipping agents established in China; their earnings would not appear in the trade balance (but would be part of direct investment income).

The decline in the trade balance in 1994 and 1995 reflects in part these underlying structural factors. It also reflects a substantial increase in retained imports of raw materials and capital goods, such as for the airport project, and a deterioration in the terms of trade in the latter part of 1994 and early 1995.

External factor income

Direct investment income includes earnings of residents of one economy from investments in enterprises in another economy in which they have a significant degree of influence or control over the management (as a rule of thumb, holding over 10 per cent of equity) and rental income from holdings of real estate. It includes both dividends received and retained earnings (the latter will also appear as a corresponding entry under 'direct investment' in the financial account). The deficit on this item reflects the high degree of foreign ownership of Hong Kong enterprises. The decrease in the deficit probably reflects the increasing extent to which Hong Kong residents have invested in enterprises overseas, particularly in southern China.

Portfolio investment income includes earnings from foreign enterprises in which domestic investors have no such control. *Other investment income* includes other external flows of interest income. This item is dominated by the banking sector.

Compensation of employees refers to wages and salaries earned by residents of an economy

from their short-term employment outside that economy. This item is quite small, notwithstanding Hong Kong's international orientation. Many Hong Kong people who spend a considerable period working in China are still paid by Hong Kong companies and so their incomes are not included under this item. Employees working here under labour importation schemes usually have contracts of over a year so their income is also excluded. Overseas earnings of some specialists are instead treated as exports of services. This is a small item in most economies.

Transfers

Gifts, donations, taxes paid to foreign governments or benefits received from them are classified as transfers as they do not involve any corresponding obligation on the recipient. Where the donation takes the form of a transfer of a fixed asset or forgiveness of a liability, it is classified as a *capital transfer* and forms the capital account.⁴ Otherwise it is classified as a *current transfer* and appears in the current account.

The Hong Kong government receives no foreign aid. It has made donations to some charities, such as those helping flood victims in mainland China and Rwandan refugees but these are quite small relative to other BoP items. Private donations and transfers to relatives in mainland China could amount to around HK\$1 bn. The largest component of current transfers is likely to be money sent by migrants working in Hong Kong to their families back home. It is generally thought that the 150 000 foreign domestic helpers⁵ in particular send home a large proportion of their earnings. There are also about 30 000 so-called "astronauts", who emigrated from Hong Kong with their families but have now returned on their own to work here, who would also send a significant proportion of their earnings abroad. Some Hong Kong families would receive transfers from relatives overseas but this is likely to be much smaller.

The largest element in capital transfers are the Hong Kong assets of migrants. For example, when a resident of Hong Kong moves to Canada, their apartment in Hong Kong changes from being owned by a domestic resident to being owned by a

4 The IMF manual refers to other elements of the capital account than capital transfers but IMF(1995) shows that very few, if any, countries collect data on them.

5 Foreign domestic helpers generally stay in Hong Kong on contracts of over one year and therefore are regarded as residents for BoP purposes.

foreigner. (There are corresponding offsetting entries in the direct investment component of the financial account.) As the average Hong Kong emigrant is likely to own more assets than the average immigrant, there is a net transfer of assets to foreigners and so this item is negative.

Foreign investment

The non-reserve component of the financial account consists of various forms of 'foreign investment' or 'capital flows', where the external claims involved are not considered as reserve assets by the monetary authorities. Like external factor income (see above), investment is classified into three types, 'direct', 'portfolio' and 'other'.

Direct investment by Hong Kong residents is estimated to have approached \$200 bn in 1994, based on data from recipients. The vast majority of this was invested in mainland China and contributed over half of their global foreign investment. For example, Hong Kong's firms purchased a large stake in the Yantian Port in Shenzhen, established a food processing centre in Rizhao in Shandong, developed the Xiamen airport, and opened retail stores in a number of cities. Hong Kong was also a substantial investor in other parts of Asia, contributing perhaps a tenth of the global total. This provides a solid basis for expecting further growth in direct investment income in coming years. At the same time, Hong Kong attracted a sizable amount of direct investment from overseas, particularly from enterprises from China, the United Kingdom and the USA.

Portfolio investment tends to be more volatile than direct investment as it includes speculative 'hot money' as well as longer-term positions. The available data from which it can be estimated is quite scanty. For completeness, an estimate is included here but it is particularly sensitive to assumptions employed and should be interpreted with caution. To the extent it is under or over-estimated there will be a corresponding excess or deficiency in 'errors and omissions'. The large credit and debit amounts in *other investment* are mainly a reflection of banking operations, with data from banking statistics, reflecting Hong Kong's status as an international financial centre.

Both the credit and debit investment flows are very large in Hong Kong. In many cases Hong Kong is facilitating investment from one foreign country to another (particularly to and from China). The recorded flows therefore include a lot of funds which are booked in Hong Kong and thereafter remitted out. These are unlikely to be denominated in HK dollars, and therefore have no implications for domestic monetary policy. (In some cases one leg of the transaction may be more readily detected from the data sources available to us than the other, introducing errors in the estimates. This problem is likely to be the most severe for portfolio investment.⁶ It is hoped to improve these estimates over time by obtaining new sources of information.)

Reserve Assets

The change in reserve assets is the final component of the BoP. As mentioned above, as this represents funds leaving Hong Kong to purchase foreign assets, it appears as a negative item in the table. The number in tables 1 and 3 differs from the change in the reserves generally quoted as, for BoP purposes, it is only changes due to transactions that are relevant. The effects of valuation changes, such as capital gains or losses on the bond portfolio when interest rates move or fluctuations in the yen or D-mark against the US and HK dollars, are excluded.

Under Hong Kong's linked exchange rate regime, bearing the main features of a currency board, reserves behave in a manner similar to that under a classical fixed exchange rate regime. A sudden increase in, say, exports or capital inflow would tend to lead to almost offsetting increases in reserves.

Errors and omissions

As mentioned above, conceptually the current account and the capital and financial account should sum to zero, i.e. the balance of payments should balance. In practice, however, there are some items for which it is hard to get precise data and so there is a residual denoted "errors and omissions". The scope for such discrepancies is, of course, much greater given the methods used to generate the

⁶ The 'errors and omissions' item is significantly negative for most neighbouring economies, most notably China. Some commentators have suggested that much of this reflects understatement of foreign investment abroad by these economies. In this case it may well be that portfolio investment into Hong Kong is understated in the estimates in Table 3.

research estimates in this paper than it will be after a full BoP is compiled using formal surveys.

The discrepancy is around \$8 billion in the estimates presented here. In relative terms this is comparable to that in many other economies' BoPs and markedly less than in some (Table 4). The size of the discrepancy only sets a minimum size for the errors in the figures, however, as it is possible for large errors in the gross transaction figures to offset one another. It has been arbitrarily placed in the financial account in this paper as these data are more likely to be subject to error.

A comparison with other economies

Hong Kong's balance of payments structure can be compared with that of Singapore. (Table 4)

Both are major trading centres with exports and imports larger than GDP. Both are also international financial centres, with very large gross flows in other investment income relative to the size of their economies. While London, New York and Tokyo are larger international financial centres in absolute terms, international financial intermediation represents a smaller proportion of their economies.

Endpiece

This preliminary attempt at preparing research estimates of BoP accounts has revealed some of the difficulties in the methodology and the data gaps. It is hoped that experts from the universities and the research institutions could give suggestions on how the estimates can be improved. ☺

Table 4:
International Comparison of Balance of Payments
(1994; % to GDP)

	Hong Kong	Japan	Singapore	Switzerland	United Kingdom	United States
Exports (goods & services)	139.3	9.5	154.1	40.1	24.9	9.7
Imports (goods & services)	140.4	7.4	138.7	35.0	25.8	11.1
Trade balance	-1.1	2.0	15.3	5.1	-1.0	-1.5
Direct investment income	-5.7	0.2	n.a.	1.3	1.8	0.6
Portfolio investment income	4.6	#	n.a.	2.5	n.a.	-0.7
Other investment income	1.8	0.7	0.8	1.4	-0.3	-0.1
of which: credit	19.1	3.1	10.7	4.0	8.0	0.6
debit	17.2	2.4	9.9	2.6	8.3	0.7
Compensation of employees	#	#	n.a.	-1.9	n.a.	#
External factor income	0.7	0.9	0.8	3.3	1.5	-0.1
Current transfers	-0.8	-0.2	-1.0	-1.3	-0.8	-0.5
Current account balance	-1.2	2.7	15.1	7.0	-0.2	-2.1
Capital account	-3.3	n.a.	n.a.	n.a.	n.a.	#
Financial account (non-reserves)	8.6	-1.8	2.3	-6.3	-0.3	2.3
Errors and omissions	0.8	-0.4	-11.4	-0.3	0.7	-0.2
Reserve assets (excluding valuation effect)*	-4.8	-0.5	-6.0	-0.4	-0.1	0.1
Capital and financial account	1.2	-2.7	-15.1	-7.0	0.2	2.1

Source: Tables 2 and 3 for Hong Kong, IMF(1995) for other economies.

* negative sign indicates increase in reserves

less than 0.05%

Box A: Double entry system and the balance of payments

The basic convention applied in constructing the BoP is that every recorded transaction is represented by two entries with equal value but opposite sign. This should ensure that the sum of all items in the current, capital and financial accounts is zero.

Most transactions involve an exchange. For example, Ms Wong's company in Hong Kong exports some goods to Mr Smith's company in England and in exchange Mr Smith sends some money to Ms Wong.

Credit entries (which add to the balances) are recorded for reductions in assets such as an export in the current account or the sale of a foreign government bond to a non-resident in the financial account. An increase in liabilities, such as borrowing from an overseas bank, is also a credit transaction. Debits (which subtract from the balances) correspondingly refer to increases in physical or financial assets, such as imports or purchases of foreign government bonds, and decreases in liabilities.

In some cases there are one-sided transactions, such as Ms Wong sending some money to her aunt in Canada. In this case the counterpart to the financial transaction is recorded as a 'transfer'. Transfers are shown as credits when the entries to which they provide the offset are debits and vice versa.

Some examples follow;

1. Ms Wong exports some goods to Mr Smith and he puts some pounds in her London bank account.
 - *credit* exports (adds to current account)
 - *debit* 'other' (ie. neither direct nor portfolio) investment (subtracts from financial account)
2. Ms Wong is paid interest on the deposit in her London bank account.
 - *credit* other investment income (adds to current account)
 - *debit* other investment (subtracts from financial account)
3. Ms Wong transfers funds from her London bank account to her Hong Kong bank deposit account. The local bank uses the money to buy some gilts.
 - *credit* other investment, by Ms Wong (adds to financial account)
 - *debit* portfolio investment, by local bank (subtracts from financial account)
4. Ms Wong sends some money from her local bank account to her aunt in Canada. To make the payment for her, the local bank sells Canadian bonds.
 - *credit* portfolio investment, by local bank (adds to financial account)
 - *debit* current transfer, by Ms Wong (subtracts from current account)
5. In payment for some goods she sends him, Mr Smith gives Ms Wong some shares in his company.
 - *credit* exports (adds to current account)
 - *debit* portfolio investment (subtracts from financial account)
6. Ms Wong buys many more shares in Mr Smith's company, giving her a big say in its management, by writing a cheque on her London bank.
 - *credit* other investment (adds to financial account)
 - *debit* direct investment (subtracts from financial account)
7. Mr Smith's company pays a dividend to Ms Wong which she uses to buy a Jaguar.
 - *credit* direct investment income (adds to current account)
 - *debit* imports (subtracts from current account)

8. Mr Smith's company make more profits but retains them rather than paying a dividend.
 - *credit* direct investment income (adds to current account)
 - *debit* direct investment (subtracts from financial account)
9. Ms Wong donates some water drilling equipment to an African charity.
 - *credit* exports (adds to current account)
 - *debit* capital transfers (subtracts from capital account)
10. The Exchange Fund (essentially the central bank in Hong Kong) receives interest on its US dollar bonds which it uses to buy more of them.
 - *credit* portfolio investment income (adds to current account)
 - *debit* increase in international reserves (subtracts from financial account)

Box B: National accounts and the balance of payments

A national accounting identity says that the total sources and uses of goods and services must be identical. Goods can be either produced in the economy (**G**ross **D**omestic **P**roduct) or be imported (**M**). They can be either used within the economy as **C**onsumption or **I**nvestment or they can be exported (**X**).⁷

$$\text{GDP} + \text{M} = \text{C} + \text{I} + \text{X}. \quad (1)$$

The total (gross national disposable) income of the economy (**Y**) comprises the value of what is produced in the economy, plus net **E**xternal **F**actor **I**ncome⁸ (ie. total income earned by Hong Kong residents from outside Hong Kong less that part of income in Hong Kong earned by non-residents) plus net current **T**ransfers (gifts from non-residents).

$$\text{Y} = \text{GDP} + \text{EFI} + \text{T} \quad (2)$$

Savings is defined as that part of income not consumed.

$$\text{S} = \text{Y} - \text{C} \quad (3)$$

Substituting (1) and (2) into (3);

$$\text{S} = \text{C} + \text{I} + \text{X} - \text{M} + \text{EFI} + \text{T} - \text{C} \quad (4)$$

Rearranging;

$$\text{S} - \text{I} = \text{X} - \text{M} + \text{EFI} + \text{T} \quad (5)$$

The term on the left hand side is net savings in the economy. The right hand side term is the current account balance.

⁷ A build-up of stocks is regarded as inventory investment and is therefore included in I.

⁸ GDP + EFI represents Gross National Product.

Appendix: Major data sources and estimation basis

Trade balance: C&SD (1996a).

External factor income: C&SD (1996b).

Current transfers: Government transfers from budget papers. Private current transfers calculated based on the following assumptions for 1994 (the plausibility of which was checked against Chinese data on receipts) and information from charitable organisations;

	Number of persons	Average annual income (HK\$'000)	% of income sent overseas
<i>Funds leaving Hong Kong</i>			
Foreign domestic helpers	131 000	45	55%
General imported labour	21 600	95	55%
Airport core project	3 400	160	55%
Foreign professionals	18 800	320	1%
Returned migrants ("astronauts")	28 800	260	40%
People with close family in China	187 000	160	3%
<i>Funds received in Hong Kong</i>			
Recent emigrants (last 10 years)	460 000	160	1%

Capital transfers: Information on emigrants and returnees was obtained from the Institute of Human Resources Management and the embassies of those countries who receive most Hong Kong emigrants. Those emigrants projected to return were assumed to own one average-sized apartment.

Direct investment: Hong Kong direct investment abroad is estimated by aggregating bilateral credit flows of major partner economies. Foreign direct investment in Hong Kong comes from the two *Annual Surveys of External Investments*, covering manufacturing and non-manufacturing respectively, conducted by C&SD.

Portfolio investment: The estimates of Hong Kong's portfolio investment abroad are derived from a data model which is calibrated using, among other data, the bilateral data from a major counterpart economy, the United States, and the investment patterns of major institutional investors. Portfolio investment in Hong Kong is based on investment positions estimated from data in C&SD's *Survey of External Factor Income Flows*, adjusted for valuation effects. The estimates were checked for consistency only against other partial data and hence are subject to substantial revision later as more data become available.

Other investment: Data on banks' external claims and liabilities from the HKMA's *Monthly Statistical Bulletin* were adjusted for exchange rate changes. Estimates of HK dollar currency circulating outside Hong Kong were taken from internal HKMA research. The Bank for International Settlements provided information on overseas banks' transactions with resident non-banks.

Reserve assets: Levels of international reserves are shown in the HKMA's *Monthly Statistical Bulletin*. Internal HKMA data was used to strip out valuation effects. Hong Kong has no reserve position in the IMF or holdings of SDRs.

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