HONG KONG MONETARY AUTHORITY
香港金融管理局

HALF-YEARLY MONETARY AND FINANCIAL STABILITY REPORT

June 2008

This Report reviews statistical information between end-November 2007 and end-May 2008.

Summary

Economic growth in Hong Kong remained strong and consumer price inflation rose in the past six months. And, despite the turmoil in international financial markets, the Hong Kong dollar exchange rate was stable and conditions in the money markets were normal. Capitalisation and liquidity of Hong Kong's banks continued to be strong. Looking ahead, however, the global economy is likely to weaken further, reflecting both the sluggishness in US demand and its impact on other economies through the trade channel, and a policy environment that may need to become tighter to rein in inflation. A re-emergence of higher-than-expected volatility in international financial markets cannot be ruled out. Growth in Hong Kong is likely to moderate, but inflationary pressures are likely to remain. Market participants should exercise caution and guard against the risks associated with rising inflation and volatile asset prices.

Hong Kong's GDP grew by 7.1% year on year in the first quarter, mainly driven by vibrant private consumption. Investment activities held up well, supported by marked increases in public investment. Despite slowing demand in the major industrial economies, exports grew at a robust pace, underpinned by demand from emerging market economies.

Labour market conditions tightened further, with the seasonally adjusted three-month moving average unemployment rate declining to 3.4% in the first quarter. Tight labour market conditions supported a broad-based increase in labour earnings, with nominal payroll per person rising by 2.5% quarter on quarter in 2007 Q4 and 2.1% in Q3. Reflecting the faster growth in nominal payroll per person relative to labour productivity, the unit labour cost rose in the second half of 2007, after declining in most quarters since 2002.

Rising domestic cost pressures and global food prices have driven up the underlying consumer price inflation. After removing the one-off effects of the government's relief measures, the CCPI inflation rate picked up to 4.9% in Q1 from 3.5% in 2007 Q4. The externally oriented nature of the Hong Kong economy suggests that rising inflationary pressures among major trading partners will continue to influence domestic consumer prices through higher import prices. At the same time, higher payroll and rental costs will also result in rising service charges.

In spite of the volatility of the international financial markets, the foreign exchange and money markets in Hong Kong functioned normally. The Hong Kong dollar spot exchange rate stayed near the centre of the Convertibility Zone. Activities in the interbank market were orderly and the tap issue of short-term Exchange Fund paper in mid-January was well received by the market. Local monetary conditions eased as interest rates declined and the Hong Kong dollar nominal effective exchange rate depreciated, along with the depreciation of the US dollar. Since October 2007, Hong Kong dollar time deposits have declined, while renminbi deposits have risen rapidly over the same period because of the strengthening renminbi, lower Hong Kong dollar interest rates, and the volatilities in the stock market. Nevertheless, renminbi deposits remain small, representing less than 2% of total deposits in Hong Kong.

The local stock market retreated along with other regional markets. In the property market, lower borrowing costs and stronger income growth improved housing affordability, driving up residential property prices notably in late 2007 and early 2008. However, increased uncertainty surrounding the economic outlook restrained transaction volumes. In the commercial property segment, demand for office premises remained strong, reflecting growing business demand and the tight supply of premium office space in prime locations.

Banks in Hong Kong have weathered the turmoil in international financial markets well, as highlighted in Chapter 3, which reviews the state of the banking system. Retail banks have continued to register healthy profits during the review period, with improved interest margins largely offsetting higher operating expenses, higher provisions for investment portfolios, and lower non-interest income amid less vibrant stock market activities. Capitalisation and liquidity have remained strong, and the quality of bank assets, other than sub-prime-related securities, has improved on the back of solid domestic economic fundamentals. Although there have been tentative signs of a modest deterioration in the credit risk of corporate lending, the composite early warning system of banking distress, as detailed in Box 7, reveals that generally the banking sector remains resilient, and the risk of banking distress is well contained.

The macroeconomic and financial outlook is discussed in Chapter 4, together with an assessment of the major risks. The global economy is likely to weaken further, reflecting both the sluggishness of US demand and its impact on other economies through the trade channel, and a policy environment that may need to become tighter to rein in inflation. In Asia, rising inflationary pressures appear to be a more immediate threat to the region than slowing growth. In Hong Kong, economic growth will likely moderate, but pressure on inflation will remain. The latest central consensus forecast points to a slowdown in GDP growth from 6.4% in 2007 to 4.7% in 2008, and accelerating headline CCPI inflation from 2% in 2007 to 4.3% in 2008. Although the balance sheets of both the public and private sectors in Hong Kong remain healthy, it is important for market participants to exercise caution and guard against the risks associated with an environment of rising inflation and volatile asset prices.

The *Half Yearly Report on Monetary and Financial Stability* is prepared by the staff of the Research Department of the Hong Kong Monetary Authority.

Half-Yearly Monetary and Financial Stability Report
June 2008

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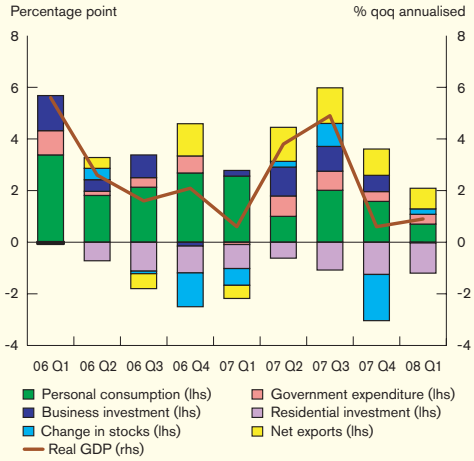
1. Global and regional setting

External environment

Global economic growth is slowing amid the fallout from the US sub-prime mortgage crisis. Across-the-board weakness in monthly indicators suggests the US economy has barely grown, even if it has not contracted. Economic activity in the euro area and Japan also shows signs of slowing. Despite the deteriorating external environment, East Asian economies remain fairly buoyant, supported by growth in exports within the region and to other emerging markets.

Chart 1.1
US: contributions to GDP growth



Source: Bureau of Economic Analysis.

Table 1.A
US: monthly indicators of activity

	Dec	Jan	Feb	Mar	Apr	May
Manufacturing PMI	48.4	50.7	48.3	48.6	48.6	49.6
Non-manufacturing PMI	54.4	41.9	50.8	52.2	50.9	n.a.
Industrial production (% 3m-on-3m)	0.1	0.4	0.1	0.0	-0.7	n.a.
Durable goods orders (% 3m-on-3m)	-1.3	0.4	1.1	-1.5	-1.1	n.a.
Core capital goods orders[1] (% 3m-on-3m)	-0.8	1.1	2.8	1.1	0.6	n.a.
Retail sales (% 3m-on-3m)	1.0	1.0	0.1	0.1	-0.4	n.a.
Real personal consumption expenditure (% 3m-on-3m)	0.6	0.5	0.3	0.2	0.1	n.a.
Real disposable income (% 3m-on-3m)	0.0	-0.2	0.1	0.4	n.a.	n.a.
Change in nonfarm payroll (thousand persons)	41	-76	-83	-81	-20	n.a.
Unemployment rate (%)	5.0	4.9	4.8	5.1	5.0	n.a.
Consumer confidence (index)						
Conference Board	90.6	87.3	76.4	65.9	62.8	57.2
Job prospects[2]	0.9	3.2	-1.9	-5.3	-10.8	-11.7
University of Michigan	75.5	78.4	70.8	69.5	62.6	59.8

Note 1: Non-defence capital goods orders excluding aircraft.
2: "Jobs plentiful" less "jobs hard to get".
Source: Bloomberg.

1.1 United States

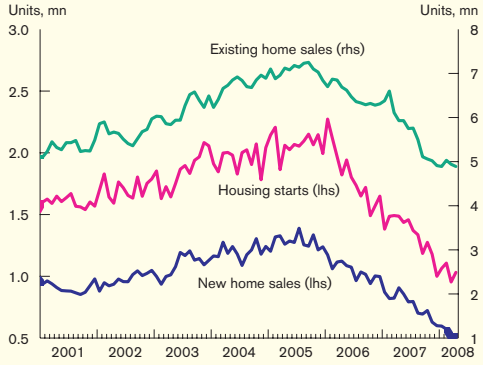
Economic activity in the US slowed sharply from the last Report. Preliminary estimates show real GDP growing by 0.9% in Q1, slightly higher than the 0.6% registered for Q4 2007, but down substantially from 4.9% observed in Q3 2007. While growth remained positive, it was supported in part by external demand and inventory accumulation, which together contributed one percentage point to GDP growth in Q1. Domestic demand was feeble, as private consumption grew at 1.0%, its slowest pace since 2001, while business fixed investment declined 0.3% after growing by 6.0% in Q4 2007. Residential construction continued to be a major drag on growth, dropping by 25.5% to take 1.2 percentage points from GDP growth (Chart 1.1).[1]

Monthly indicators available for Q2 suggest that economic conditions continued to deteriorate, as sustained weakness was observed across a wide range of economic activity (Table 1.A). Consumer spending slowed, reflecting a softening in labour market conditions and corrections in asset prices, with retail sales declining by 0.4% three months on three months in April. The Conference Board's consumer confidence index declined sharply to 57.2 in May from 87.8 six months ago. The labour market also showed increasing

[1] For the US, euro area, the UK, Japan and non-Japan Asia (ex-Mainland China), all quarterly real GDP percentage changes are on a seasonally adjusted annualised basis, unless otherwise stated.

signs of weakness, as non-farm payroll employment registered its fifth consecutive monthly decline in May, with job losses totalling 324,000 in the first five months of 2008. Business investment was likely to have been restrained amid slowing sales and declining orders, as durable goods orders fell 1.1% three months on three months in April. While the April ISM non-manufacturing index picked up to 52.0, the manufacturing index stayed below 50 for the fourth consecutive month in May, suggesting a contraction in manufacturing activity. Access to credit became more restrictive, with the Federal Reserve's April senior loan officer survey revealing that tightening credit standards had spread from residential and commercial real estate lending to household and business lending, further constraining consumption and investment activities.

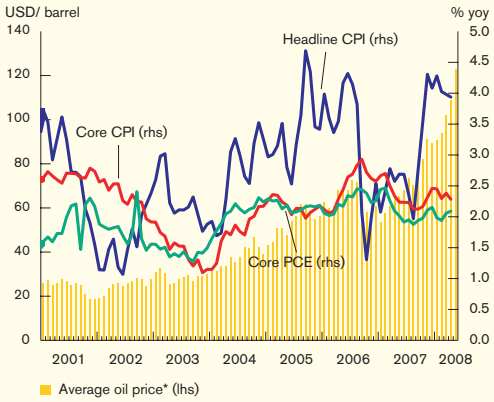
Chart 1.2
US: Housing market activity indicators



Source: US Department of Housing and Urban Development.

The deteriorating housing market remained a key factor in the economic downturn and recent developments suggested that housing market adjustments had yet to run their course. New home sales and housing starts declined to about 40% of their respective peaks (Chart 1.2), while the decline in house prices for 20 US metropolitan areas accelerated to 14.4% year on year in March. The outstanding inventory of homes for sale stood at some 10 months' worth at the current sales pace, while rising foreclosure rates were likely to continue adding to the supply. The ongoing housing market correction is likely to weigh further on consumption spending and investment growth.

Chart 1.3
US: Headline and core CPI inflation[1]



1. Excluding food and energy.
* Simple average of WTI, Brent and Dubai oil prices.

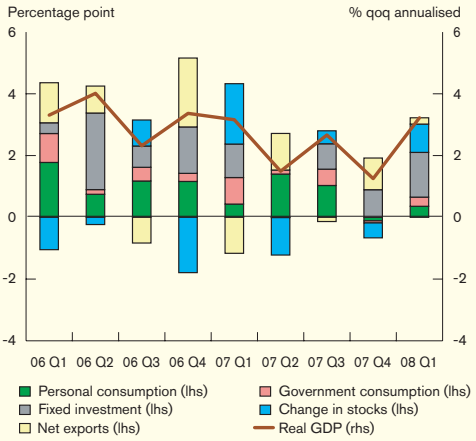
Source: U.S. Department of labour

Inflation risks remained elevated despite the sharp economic slowdown, although there were some tentative signs of softening in April (Chart 1.3). Higher oil and food prices continued to exert upward pressure on headline inflation, with the CPI rising 3.9% year on year in April, while measures of core inflation were also heightened reflecting continued rises in the costs of education and medical care, as well as increases in owners' equivalent rent, albeit at a slower pace. Core CPI and core PCE inflation stayed at 2.3% and 2.1% in April respectively. While inflationary pressure from the continued rise in food and commodity prices is expected in the near term, consumer prices may moderate over a longer timeframe because of the greater slack in the economy.

The FOMC lowered its target for the Fed Funds rate by 25 basis points to 2.0% at its April meeting, taking the cumulative monetary easing to 325 basis points since September 2007. Financial markets expected the Fed to suspend further reductions and wait for the monetary easing to work through the economy. Separately, a US$168 billion fiscal stimulus package was enacted to counter the risks to growth, with a focus on tax rebates to families and incentives to encourage business investment. Rebate cheques are being sent out and should help stimulate consumption spending in Q2 and Q3. The range of liquidity-boosting measures introduced by the Fed since December 2007, and particularly in mid-March, have also reassured financial markets somewhat, helping to mitigate spillover from disruptive financial market developments to the real sector.

1.2 Euro area and UK

Chart 1.4
Euro area: contributions to GDP growth



Source: Eurostat.

Euro area economic growth rebounded in Q1, displaying considerable resilience given the sharp US slowdown and the close financial links between the two economies. Real GDP increased by 3.2% in Q1 and 1.3% in Q4 2007, compared with 2.7% growth observed in Q3 2007 (Chart 1.4). Growth was supported by the investment component, which grew 6.6% in Q1, reflecting a weather-related boost to construction in Germany. Growth in private consumption, however, remained weak, rising just 0.6% in Q1 after falling by 0.2% in Q4 2007, as consumers turned more cautious in the face of the financial market turbulence, more restrictive access to credit, and higher energy prices. Net exports stayed slightly positive, suggesting that the strength of the euro has yet to affect the economy's trade performance. A breakdown by country showed rather disparate trends, with German expansion accelerating to a strong 6.3% in Q1 and growth in France staying solid at 2.6%, while the Spanish economy grew at 0.9%, its slowest pace in almost eight years.

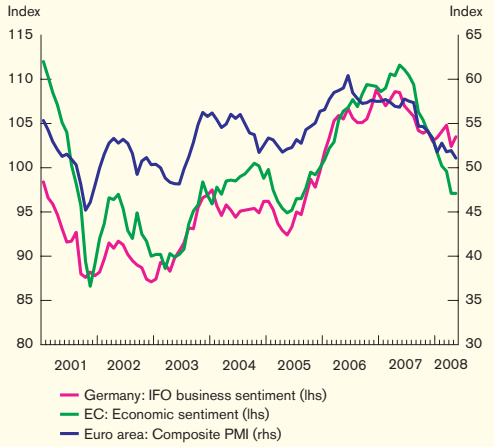
Monthly activity indicators suggest growth momentum is likely to moderate in Q2. Retail sales declined 1.6% year on year in March, reflecting increasingly restrained consumer spending in the face of rising fuel and food costs. The Purchasing Managers' Indices for both the manufacturing and the service sectors edged down to

Table 1.B
Euro area: survey indicators of activity

(Index)	Dec	Jan	Feb	Mar	Apr	May
Composite PMI	53.3	51.8	52.8	51.8	51.9	51.1
Manufacturing PMI	52.6	52.8	52.3	52.0	50.7	50.6
Services PMI	53.1	50.6	52.3	51.6	52.0	50.6
European Commission survey						
Economic sentiment	103.4	101.7	100.2	99.6	97.1	97.1
Industrial confidence	1.6	1.1	0.2	0.1	-2.0	-2.2
Orders component	0.0	-1.0	-2.0	-1.0	-5.0	-5.0
Consumer confidence	-8.7	-11.5	-12.0	-12.1	-12.4	-14.7
ZEW economic sentiment	-35.7	-41.7	-41.4	-35.0	-44.8	-43.6
Germany IFO						
(business climate)	103.0	103.4	104.1	104.8	102.4	103.5

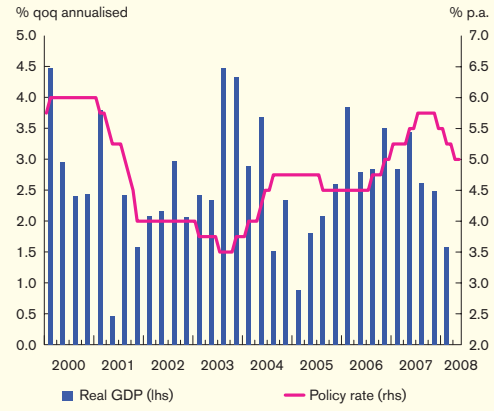
Sources: Bloomberg and Reuters.

Chart 1.5
Euro area: economic sentiment indicators



Sources: European Commission and Zentrum für Europäische Wirtschaftsforschung (ZEW).

Chart 1.6
UK: Real GDP growth and interest rates



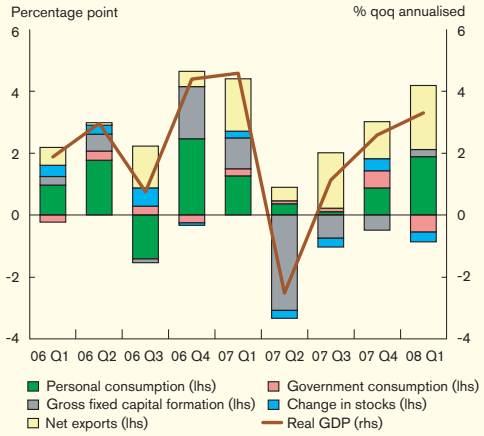
Sources: UK National Statistics and Bank of England.

slightly above 50 in May, indicating that activity is flattening out (Table 1.B). Sentiment indicators also suggest softening economic activity, as the European Commission economic sentiment indicator stayed at 97.1 in May, the lowest since 2005, while the ZEW German economic sentiment lingered at -43.6 in May, compared with -30.0 six months ago (Chart 1.5). The ECB April bank lending survey also showed a progression of tightened credit standards for both corporates and households, suggesting a more difficult environment for growth.

Inflation risks remain, with the headline HICP inflation staying at 3.3% year on year in April, compared with 2.6% six months ago, on the back of rising energy and food prices and solid labour market conditions. Core inflation, however, moved down to 1.6% in April from 2.0% in March, reflecting softer education and recreation costs. Following its meeting in May, the ECB noted that inflation rates were expected to remain high for a protracted period.

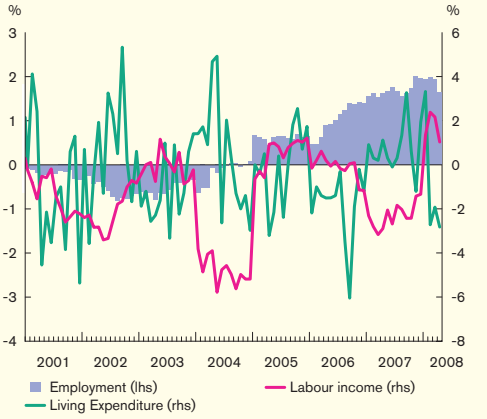
The UK economy grew by 1.6% in Q1, the slowest since 2005, as gross fixed capital formation detracted from growth, although consumption spending remained relatively resilient (Chart 1.6). Monthly indicators suggest a further deceleration of growth. Retail sales fell by 0.1% month on month in April, as sentiment was weighed down by tightened credit standards and soft real wage growth. The housing market continued to soften, adding to consumer restraint, with house prices declining 1.0% year on year in April. Both services and manufacturing slowed, with the service sector PMI declining to 50.4 in April from 53.1 six months ago, while the manufacturing sector PMI edged down to 51.0 from 54.7 over the same period. However, inflationary pressures have increased since the last Report, as energy and food prices continued to rise, with headline inflation rising to 3.0% year on year in April, the highest since March 2007, while core CPI edged up to 1.4%.

Chart 1.7
Japan: contributions to GDP growth



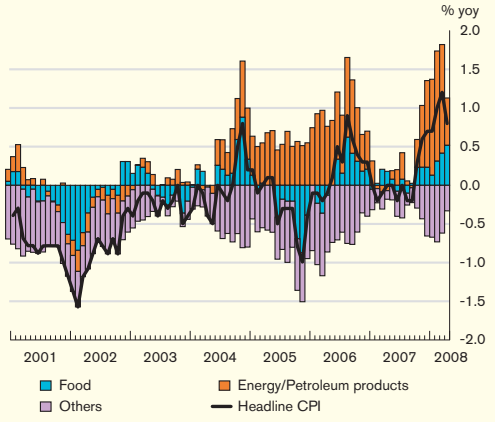
Source: Cabinet Office of Japan.

Chart 1.8
Japan: employment, labour income and living expenditure



Sources: Ministry of Health, Labour and Welfare.

Chart 1.9
Japan: contributions to consumer price inflation



Sources: Ministry of Internal Affairs and Communications and staff estimates.

1.3 Japan

In Japan, real GDP grew by a stronger-than-expected 3.3% in Q1 (Chart 1.7), helped by rising net exports to other Asian economies and emerging markets. Nevertheless, recent indicators suggest that the negative effect of the US slowdown will be felt more fully in the coming quarters. The labour market remained weak, with the unemployment rate staying at 3.8% in Q1 (Chart 1.8). On the back of the deteriorating outlook, the Bank of Japan (BoJ) downgraded its assessment of current economic conditions by acknowledging in the April issue of its monthly report that "economic growth is slowing", instead of "expanding moderately" as stated in the past few issues.

Manufacturing activity softened in Q1. On a quarter-on-quarter comparison, industrial production contracted by 0.7% in Q1. The slowdown was mainly due to the reduction in automobile output and general machinery production. Business sentiment echoed the sluggish production growth. The *Tankan* survey conducted by the BoJ showed that business sentiment among major Japanese manufacturers dropped in Q1 to its lowest level since December 2003, while the sentiment index in the *Shoko Chukin small firm survey* also fell in Q1 to its lowest level since March 2002. Companies of all sizes have become more hesitant in expanding capital expenditure in the near term.

On the other hand, merchandise exports continued to expand in Q1, increasing by 6.8% quarter on quarter (in US dollar terms). Exports to Europe and other Asian economies grew solidly, offsetting the shrinkage in demand from the US.

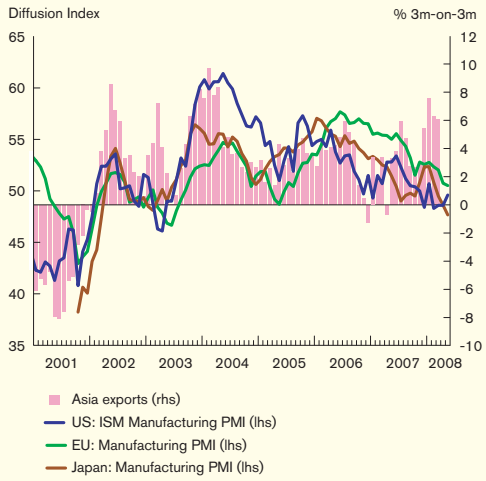
Inflationary pressure has been increasing since 2007 Q4, due to rising food and energy prices. Headline CPI inflation hit a decade-high of 1.2% year on year in March, while excluding fresh food, the CPI also increased by 1.2% (Chart 1.9). The BoJ signalled a medium-term rate pause in its semi-annual outlook report against the backdrop of rising inflationary pressures but increasing risks to growth.

Table 1.C
East Asia: real GDP growth

(% qoq, annualised)	06Q4	07Q1	07Q2	07Q3	07Q4	08Q1
NIE:	**3.8**	**4.7**	**6.6**	**9.2**	**4.0**	**3.9**
Korea	3.4	4.0	7.1	6.0	6.4	2.9
Singapore	9.7	9.2	13.4	5.1	-4.8	14.6
Taiwan[1]	3.2	4.9	4.2	15.6	1.8	3.2
ASEAN:	**6.4**	**4.2**	**6.6**	**7.7**	**6.9**	**3.3**
Indonesia[1]	8.3	1.4	6.4	10.1	7.3	1.6
Malaysia[1]	5.2	4.9	7.0	9.9	7.5	4.3
Philippines	7.6	8.8	8.8	3.3	5.1	3.0
Thailand	3.0	4.7	5.0	6.2	7.2	5.9
East Asia:	**5.2**	**4.4**	**6.6**	**8.4**	**5.5**	**3.6**

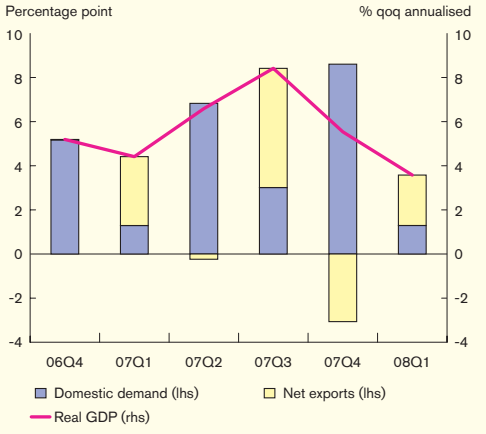
Note 1: Staff estimates.
Sources: CEIC and staff estimates.

Chart 1.10
East Asia: exports and the PMI in the US, the euro area and Japan



Sources: CEIC, Reuters, Bloomberg and staff estimates.

Chart 1.11
East Asia: contributions to GDP growth



Sources: CEIC and staff estimates.

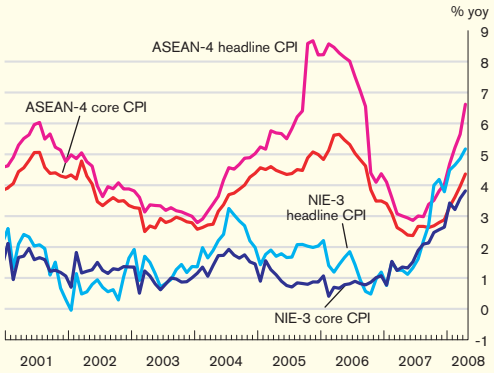
1.4 Other Asia (ex-Mainland China)

In the rest of East Asia, economic growth remained firm in Q1, albeit at a slower pace. Real GDP for the region rose by 3.6% in Q1, compared with 5.5% in 2007 Q4.[2] Growth in Korea, Singapore and Taiwan averaged 3.9%, while Indonesia, Malaysia, the Philippines and Thailand grew by an average rate of 3.3% (Table 1.C).

Export growth was robust in Q1, despite lower import demand from the US (Chart 1.10). Intra-regional trade has become increasingly important to exporters in the area. The production performance remained firm, but the pace of expansion decelerated from its peak. Rising production costs and the slowdown in the US economy have cast doubt on the sustainability of robust production in the region. Domestic demand also remained strong in Q1, following solid expansion in the previous quarter (Chart 1.11).

[2] Aggregate real GDP growth for East Asia is weighted by the 2006 GDP of the respective economies valued at Purchasing Power Parity.

Chart 1.12
East Asia: headline and core CPI inflation[1]



Note 1: Simple average.
Sources: CEIC and staff estimates.

Rising food and energy prices are increasingly becoming a major threat to the region. Headline CPI inflation in Korea, Singapore and Taiwan averaged 5.2% year on year in April, while that in the ASEAN-4 rose to 6.6% (Chart 1.12). Rising food prices could hurt economic growth and affect social stability in the region, especially in those low-income countries where food accounts for a large proportion of the consumption basket. Box 1 analyses the food price inflation dynamics and implications for monetary policy in the region.

In Vietnam, CPI inflation reached 25.2% year on year in May 2008, driven by a 42.4% increase in food prices. Meanwhile, the current account turned into a sizable deficit (of an estimated 9.7% of GDP in 2007 according to the IMF). High inflation and concerns about external sustainability have prompted the non-deliverable forward market in the second half of May to price in a devaluation of the Vietnam dong-US dollar exchange rate in the next 12 months by 20-40%. Worries about inflation also exerted some depreciation pressure on a number of other regional currencies. In response, the respective authorities have quickened the pace of policy tightening.

Box 1
Rising food prices in Asian economies and implications for monetary policy

Global food prices climbed notably in 2007 and in early 2008, with the prices of several agricultural commodities such as wheat, maize and more recently, rice, surging ahead. Together with heightening social concerns, higher food price inflation has also triggered concern over broader price stability. This note gives an overview of food price inflation in regional Asian economies, and points to the issues faced by monetary policymakers at a time of unusually high uncertainties for global growth.

Food price inflation in Asian economies

Asian economies, along with many others around the world, experienced high food price inflation in 2007. In many cases, it outpaced non-food inflation in its contribution to the headline inflation rate (Table B1.A). To a large extent, rising food prices reflect global trends. Food price inflation in Asian economies has also been broad-based, with the prices of different food types such as grains, cooking oils, vegetables and meat all rising to various degrees, reflecting in part more intense competition for the same resources in the production of different food products.

In general, and among Asian economies, the increase in retail food prices has been more pronounced in developing economies than in the more developed ones (Table B1.A). This may be because a larger proportion of retail food prices in the more developed economies consist of compensation to services, such as processing, packaging, transportation and marketing.

At the same time, the consumption of food often takes up a larger share of household expenditure in less developed economies, and hence a greater weight of food in the CPI basket. For instance, food (including eating out) makes up just 14% and 19% respectively of the CPI basket in the US and the EU, while it accounts for over 20% in many Asian economies, and up to 50% in the Philippines. This coupled with a faster rate of food price inflation means that food's contribution to headline inflation is higher in many emerging Asian markets than in industrial economies (Table B1.A).

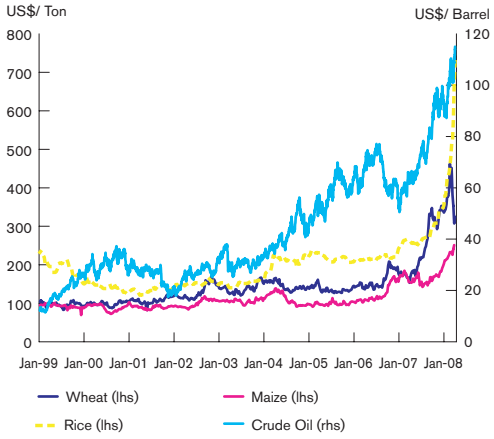
Table B1.A
Regional economies' CPI and food inflation in 2007

	CPI Inflation (yoy %)	Food Inflation (yoy %)	Weight of Food in CPI	(A) Contribution of Food to CPI Inflation (%)[1]		
					(B) Fresh Food (%)	(C) Eating Out (%)[2]
China	4.8	12.4	0.33	86.4	–	–
Hong Kong	2.0	4.3	0.27	56.9	35.3	21.0
Indonesia	6.4	10.5[3]	0.35	53.7	44.0	9.7
Japan	0.1	0.4[4]	0.31	216	151.1	64.9
Korea	2.5	2.2	0.27	23.5	13.5	10.0
Malaysia	2.0	3.1	0.30	45.3	29.5	15.9
Philippines	2.8	3.3	0.50	58.8	–	–
Singapore	2.1	2.9	0.23	32.7	19.1	13.5
Taiwan	1.8	2.9	0.26	41.4	29.0	12.3
Thailand	2.2	4.1	0.36	65.6	50.2	11.2
US	2.9	3.9	0.14	19.4	11.8	7.6
EU	2.3	3.5	0.19	28.4	–	–
UK	2.3	4.0	0.22	37.6	19.8	17.9

1. A = B + C.
2. CPI sub-index that is close to "eating out" in definition is used for several countries: "cooked food" for Singapore, "prepared food" for Indonesia, "prepared food" for Thailand.
3. Weighted-average of inflation rates of fresh food and prepared food/eating out are used for Indonesia, the US, and the UK.
4. Weighted-average of inflation rates of food and eating out.

Sources: Bloomberg, CEIC.

Chart B1.1
Energy and agricultural prices



Sources: Food and Agriculture Organization of the United Nations (FAO) and Bloomberg.

Factors driving food price inflation

Several factors have helped push up agricultural product prices. One factor has been a change in dietary patterns in developing countries in favour of animal-based protein, such as meat and milk, fuelled by rising incomes. As industrial livestock production is highly grain-intensive, with some estimates indicating that two to five times more grain is required to produce the same amount of calories through livestock than through direct grain consumption, higher meat and dairy consumption has in turn magnified the demand for grain, pushing up prices.

Another demand-side factor concerns the rising production of biofuels in the past two to three years, triggered by high energy prices and supported by government incentives. Indeed, energy and agricultural prices have become increasingly intertwined (Chart B1.1). A fifth of the US maize crop is now used to produce ethanol, and as farmers planted more maize, they reduced the acreage of other crops, particularly wheat and soybeans, contributing to a sharp increase in the prices of these crops. The United Nations Food and Agriculture Organisation predicted in late 2007 that biofuel production, assuming that current mandates continue, would increase food costs by 10 to 15%.

At the same time, supply-side factors such as the severe drought in Australia in 2006-07 and the snowstorm in China in early 2008, as well as speculative activities in agriculture commodity markets, may have also played a role in rising food prices.

Risks to broader price stability

Food price inflation affects general price inflation through various channels. It contributes directly to CPI inflation with food being a component of the index. As noted earlier, the direct contribution of food price inflation is higher, and the impact felt by the average consumer is larger in less developed than in more developed economies. For many developing Asian economies and emerging markets, food prices are a larger contributor to general consumer price inflation than are energy prices.

Indirectly, there is also some pass-through from food price inflation to non-food inflation. Higher food price inflation may, for instance, prompt higher wage demands to compensate for rising food costs, thus bringing about cost-push inflation. Preliminary results from studies have found that the response of non-food inflation to food price inflation is also larger in less developed economies. One possible reason is that food takes up a bigger share of the consumption basket in the less developed economy, and thus the food element in any cost-push inflation is higher.

Food price inflation can also feed into non-food inflation by generating higher inflation expectations for the future, which could prompt second-round effects on prices through the price and wage setting process. There is concern that as food price inflation is highly visible, and constitutes a larger share of household expenditure in lower income economies, higher inflation expectations are more easily built in to those economies.

Monetary policy in the context of food price inflation

Most Asian economies have price stability as one of their monetary policy goals. Some have adopted an inflation-targeting framework in which to achieve their price stability objective. However, in the past several months, inflation has exceeded the upper ceiling of the target range for many Asian economies as a result of the impact of rapidly rising food price inflation (Table B1.B).

A key factor in whether, and how, monetary policy is to respond to higher food prices is to determine the duration of any shock to food prices. Food price inflation tends to be temporary, with price hikes relating to adverse weather conditions. In such cases, monetary authorities would be more concerned with the underlying rate of inflation, often proxied by some core measure of the inflation rate, in their conduct of monetary policy, to avoid any undue volatility in output and employment.

However, in the current situation, there may be more persistent or structural elements that could keep food prices elevated, and even rising, for a longer period.

Table B1.B
Regional economies' inflation targets

	Inflation Targeting	Inflation Target	CPI Inflation Apr 08 (yoy%)
China	No	N.A.	8.5%
Hong Kong	No	N.A.	5.4%
Indonesia	Yes	5.0± 1.0%[1]	10.4%[2]
Japan	No	N.A.	0.9% (ex. fresh food); 0.8% (headline)
Korea	Yes	3.0± 0.5%	4.9%[2]
Malaysia	No	N.A.	3.0%
Philippines	Yes	4.0± 1.0%[1]	8.3%
Singapore	No	N.A.	7.5%
Taiwan	No	N.A.	3.9%
Thailand	Yes	0% - 3.5% (core CPI)	2.8% (core);[2] 7.6% (headline)

1. For 2008.
2. May 08 figure(s).

Sources: Official websites of the respective central banks; CEIC.

While supply-side factors such as droughts may abate, the shift in the structural demand for food products seems to be developing in a way that may not disappear soon. And while higher food prices are likely to trigger an increase in supply, the supply response may only come gradually because of constraints in such factors as land availability.

A persistent rise in food prices would also affect the underlying rate of inflation which, arguably, might lead to a monetary policy response. While monetary policy may do little to affect the rise in the relative price of food, it has a vital role in managing inflation expectations. In economies where monetary policy is operated within an inflation-targeting framework, as in several Asian economies, inflation expectations may be better anchored. However, since some of these inflation targets could be breached as food prices continue to rise, and the monetary policy stance may not have changed in response, a clear public explanation of the rationale behind such policy decisions will be crucial. Policy makers in economies without an explicit monetary anchor may have to weigh the risks of dislodging inflation expectations, and hence having to face a less favourable inflation-output combination in the future, against the risk of unduly slowing growth now in the face of increasing global uncertainties.

Mainland China

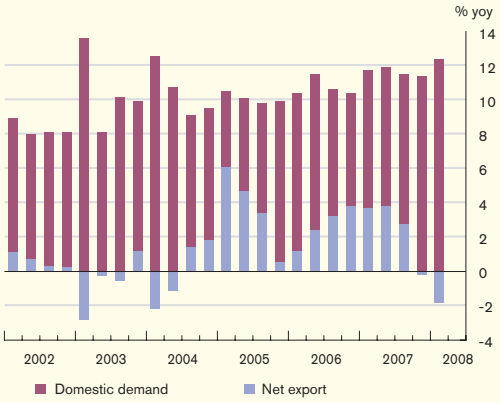
Growth momentum softened, whereas inflation accelerated across the board owing to sharp increases in food and raw materials prices. The trade balance dropped noticeably as a result of deteriorating external conditions. While domestic demand is likely to rise at a firm pace, unabated inflationary pressure and worsening external demand continue to pose challenges to the Mainland economy.

1.5 Output growth, external trade and inflation

Output growth

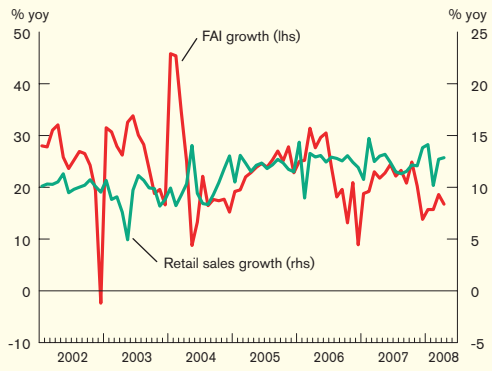
Real GDP growth continued to soften year on year to register 10.6% in 2008 Q1, 0.6 percentage points below that of the final quarter of 2007. The softening is due largely to deteriorating external demand, with net exports making a progressively reduced contribution to growth in the past four quarters, falling from 3.8 percentage points in the second quarter of 2007 to minus 1.8 percentage points in 2008 Q1 (Chart 1.13). Despite the disruption caused by snow storms around Chinese New Year (CNY), domestic demand rose steadily. Retail sales picked up by over 12% in real terms year on year in both Q1 and April on the back of a solid rise in income (Chart 1.14). The real growth in fixed assets investment (FAI), dragged down mainly by the construction sector, dropped by over two percentage points from the previous quarter year on year. The more stringent controls on credit expansion imposed since the latter part of 2007, coupled with the declining profitability of enterprises, might have helped to cool investment activity.

Chart 1.13
Mainland China: real GDP growth and the contribution from domestic demand and net exports



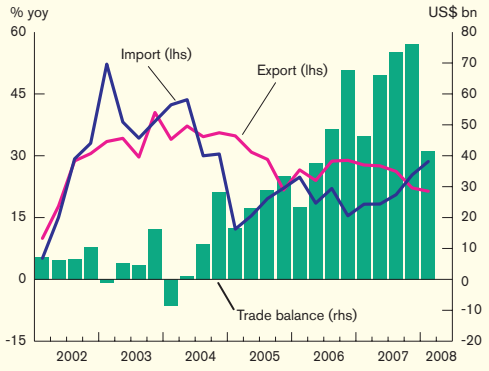
Note: Net exports are proxied by the merchandise trade balance adjusted by the GDP deflator.
Sources: CEIC and staff estimates.

Chart 1.14
Mainland China: real growth in FAI and retail sales



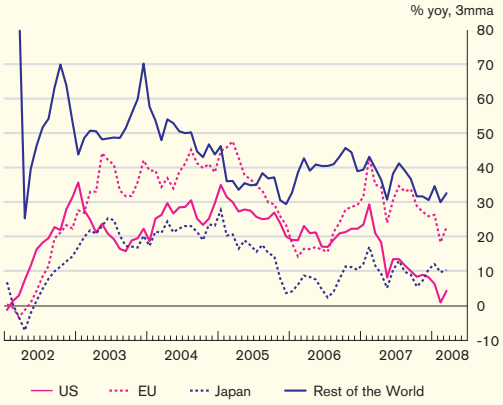
Sources: CEIC and staff estimates.

Chart 1.15
Mainland China: external trade



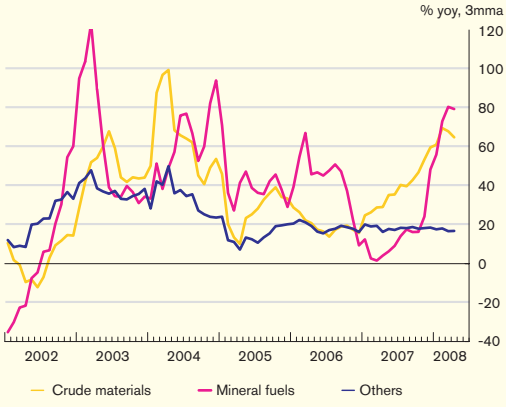
Sources: CEIC and staff estimates.

Chart 1.16
Mainland China: growth in exports to various regions



Sources: CEIC and staff estimates.

Chart 1.17
Mainland China: growth of imports



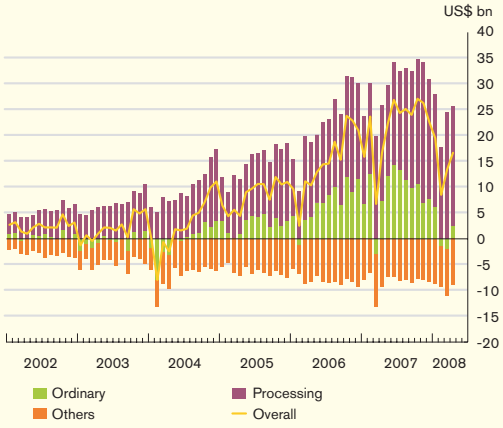
Sources: CEIC and staff estimates.

External trade

The year-on-year growth in exports continued to trend down in 2008 Q1, touching a seven-quarter low of 21.4% (Chart 1.15). In particular, the growth in exports to the US and Euro area has seen a sharp decline of about four percentage points from the previous quarter (Chart 1.16). The US moderation, alongside the accelerated appreciation of the renminbi exchange rate against the US dollar, seems to be the main factor constraining China's exports. Although the relative importance of the US market has been shrinking, the increasing slackness in the US economy may show more adverse impacts on Mainland exports over time. Our estimation suggests that the correlation coefficient between the growth in US consumption and its imports from China has been as high as 0.70 in the past four years. In addition, the notable economic synchronisation between the US and the Euro area, in the wake of a weaker US economy, may further dampen China's exports.

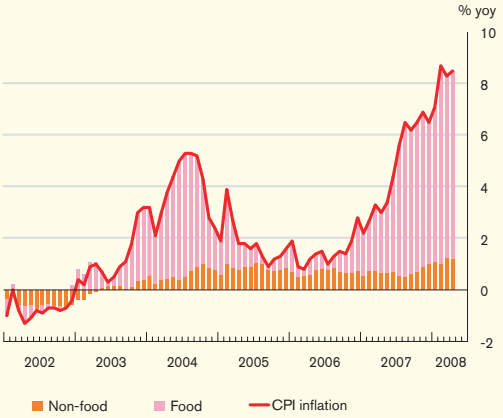
In contrast, the growth in imports has been rising and hit a 13-quarter high of 28.6% year on year in the first quarter of 2008, over three percentage points above that in 2007 Q4. As shown in Chart 1.17, the relentless growth in imports is largely due to the rapid expansion of primary products imports (particularly crude materials and mineral fuels), partly reflecting the upsurges of oil and raw materials prices. The narrowing gap between

Chart 1.18
Mainland China: trade balance by types of trade



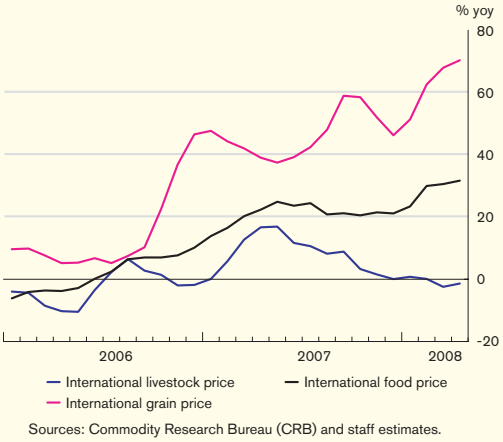
Sources: CEIC and staff estimates.

Chart 1.19
Mainland China: contributions to CPI inflation



Sources: CEIC and staff estimates.

Chart 1.20
Mainland China: global food prices inflation



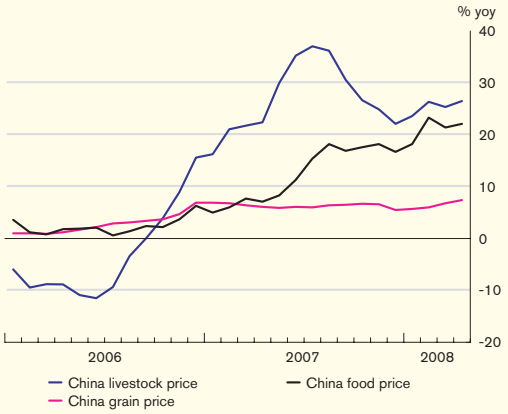
Sources: Commodity Research Bureau (CRB) and staff estimates.

exports and imports has led to a sharp drop in the quarterly trade balance from the historic high of over US$76 billion in the previous quarter to less than US$42 billion in 2008 Q1. In addition, the processing trade sector continued to be the pivotal contributor to the trade surplus as ordinary trade has seen a declining surplus since mid-2007 and even deficits in February-March 2008 (Chart 1.18). The trade balance may continue to stabilise given the worsening external conditions and rising cost pressures facing Mainland exporters.

Inflation

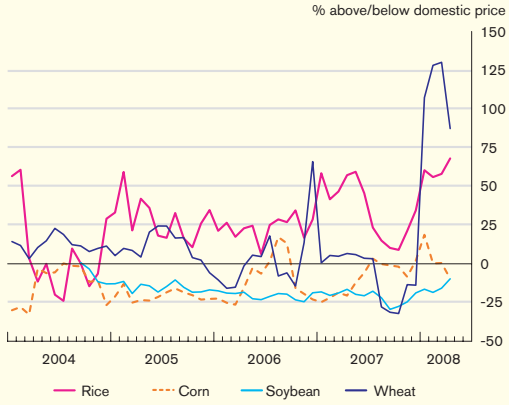
Headline CPI inflation accelerated and posted 8% year on year in 2008 Q1 (Chart 1.19), 1.3 percentage points higher than in the previous quarter, and registered 8.5% in April. While food prices (poultry products, pork and fresh vegetable prices in particular) continued to be the main driver of inflation, the snow storms around the CNY aggravated conditions. Although the recent episode of Mainland food price inflation has to some extent synchronised with that on the global market, there are signs suggesting that China's food price rises may have been mainly home grown. While global food price inflation has been largely led by increases in grain prices (Chart 1.20), that on the Mainland has been essentially

Chart 1.21
Mainland China: domestic food prices inflation



Sources: CEIC and staff estimates

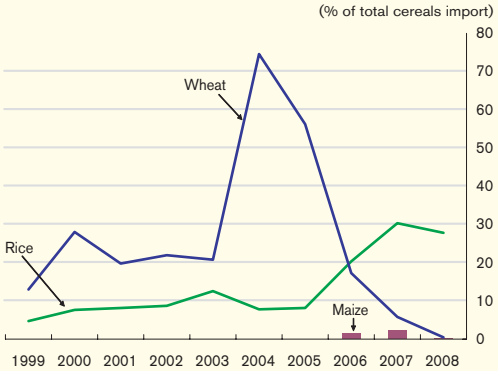
Chart 1.22
Mainland China: domestic and global price differentials of main grain items



Note: price differentials are measured by the percentage deviations of global prices from domestic prices.

Sources: CEIC and staff estimates.

Chart 1.23
Mainland China: imports of main grain items

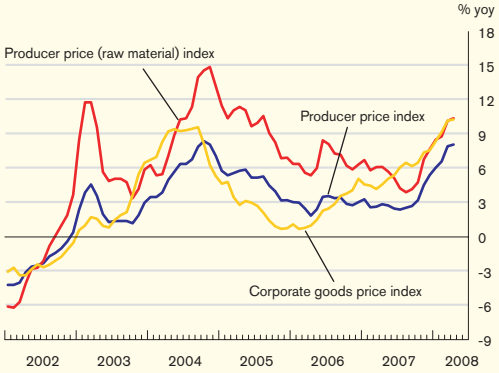


Sources: CEIC and staff estimates.

due to livestock price inflation (Chart 1.21). Furthermore, there has been no solid evidence that global grain price inflation has substantially prompted its domestic counterpart. As shown in Chart 1.22, the domestic prices of corn and soybean have generally been higher than their counterparts on the global market. Although the reverse is true for wheat and rice, their shares in China's total cereals imports have been immaterial in recent years (Chart 1.23).

Non-food price inflation, having been subdued for some time, increased in the first quarter of 2008, raising fears that food price increases have started to spill over into other prices. Underpinned mainly by upsurges in raw materials prices, PPI inflation continued to rise and recorded a recent high of over 8.0% year on year

Chart 1.24
Mainland China: other price indicators



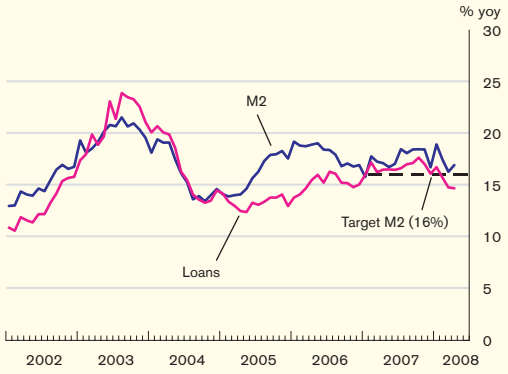
Source: CEIC.

(Chart 1.24). In tandem, the year-on-year corporate goods price inflation reached 10.3% in April 2008, the highest since October 1995. In order to stabilise inflation expectations and soothe concerns that upstream price increases will fuel consumer goods inflation, the authorities have implemented a series of tightening measures, including controls on prices of oil, energy, utilities and essential food items. Looking ahead, inflationary pressure may not ease notably in the near term in the light of rising labour costs and elevated global primary products prices.

1.6 Monetary conditions, asset prices and the renminbi exchange rate

Monetary conditions

Chart 1.25
Mainland China: growth in M2 and financial institution loans

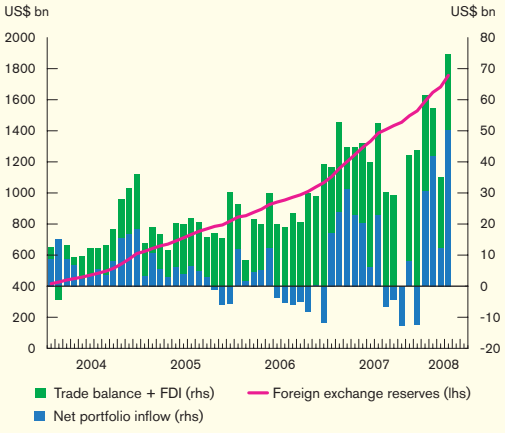


Sources: CEIC and staff estimates.

Broad Money (M2) expanded, but at a slower pace in 2008 Q1. The year-on-year growth of M2 was 16.3% close to the 16% target set by the PBoC, and slightly lower than the 2007 year-on-year growth of 16.7% (Chart 1.25). Loans by financial institutions also registered declining year-on-year growth rates in the same period. In Q1, credits grew by 14.8%, which was above the target rate of 12.9%[3], but lower than the average growth in 2007 of 16.1%.

Foreign exchange reserves increased to US$1,682 billion by the end of March, growing by a net amount of US$154 billion in 2008 Q1. Most of the increase was due to net portfolio inflows, which are calculated as the difference between the increase in foreign exchange reserves and the change in the trade balance and foreign direct investment (FDI). These flows have often been characterised as "hot money", but they may also reflect interest income on foreign assets, valuation gains of non-US dollar denominated foreign reserve assets and also possibly mark-to-market gains of US treasury bills and bonds, which could be sizable (Chart 1.26).

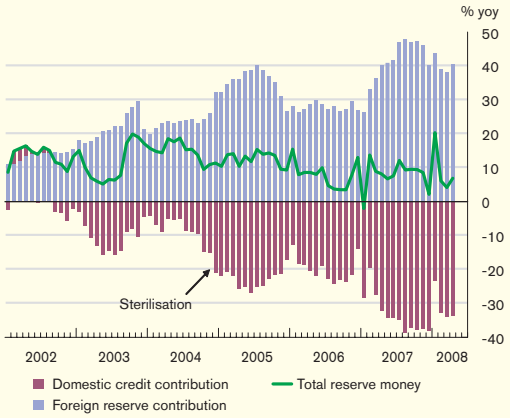
Chart 1.26
Mainland China: external capital flows



Sources: CEIC and staff estimates.

[3] Staff estimates of target loans year-on-year growth for 2007. No outstanding loans growth target is yet available for 2008.

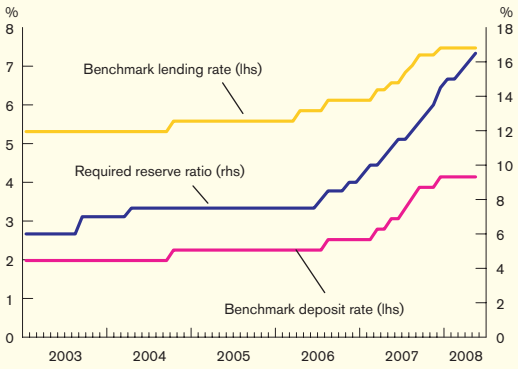
Chart 1.27
Mainland China: contribution to reserve money growth



Note: Total reserve money is adjusted for increases in reserve requirement ratio beyond 7.5%.

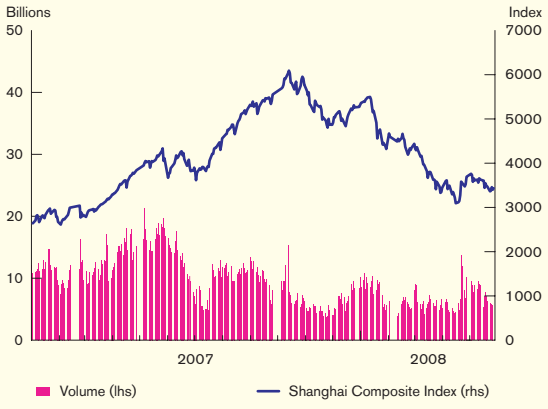
Sources: CEIC and staff estimates.

Chart 1.28
Mainland China: RRR and benchmark interest rates



Source: CEIC.

Chart 1.29
Mainland China: Shanghai stock market composite index and volume



Source: CEIC.

As the foreign exchange reserves have been climbing relentlessly, the PBoC continued its efforts to sterilise capital inflows during 2008 Q1. This was done by issuing central bank bills and by raising the reserve requirement ratio. Indeed, the reserve requirement ratio has risen substantially since the latter part of 2007 (16.5% in May 2008).[4] Adjusting for the increase in the reserve requirement ratio for commercial banks, growth in reserve money fluctuated on average around 10% in Q1 (Chart 1.27).

Apart from consistent sterilisation, the PBoC's monetary policy stance did not tighten during the first quarter of 2008. The deposit and lending rates remained at the same levels as in December 2007, 4.14% p.a. and 7.47% p.a. respectively (Chart 1.28). The 7-day inter-bank repo rate was slightly lower in 2008 Q1 at 3% on average compared with 3.4% and 3.8% in 2007 Q3 and Q4 respectively.

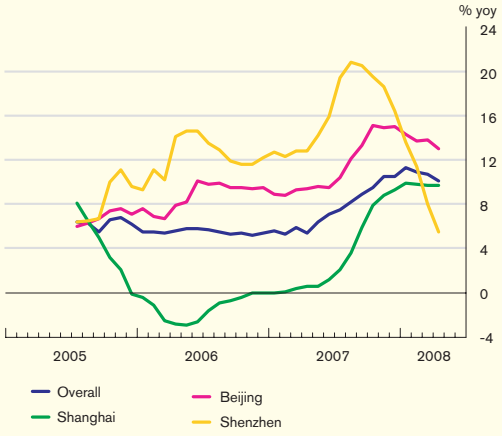
Asset prices

The Shanghai stock market declined steeply, experiencing even greater volatility than global markets, which have been adversely affected by the global credit crunch precipitated by the US sub-prime mortgage crisis. The Shanghai Stock Exchange Composite Index lost 1,789 points in 2008 Q1 compared with the 2007 market close. The price/earnings (PE) ratio was at a daily average of 42 in April 2008, which was comparable to the PE ratio of 2007 Q1, but lower than 2007 Q3 and 2007 Q4 (daily average of 57.8 and 60.9 respectively).

The volume of stocks turnover has been steadily declining since mid-2007. In May 2007, the stamp duty on stock transactions was raised (from 0.1% to 0.3%), which seemed to have a negative impact on the stock turnover volume throughout 2007 and 2008 Q1. In April 2008, the Ministry of Finance reversed its policy and cut stamp duty back to 0.1% and this seems to have stimulated the market by increasing the volume of shares traded (Chart 1.29).

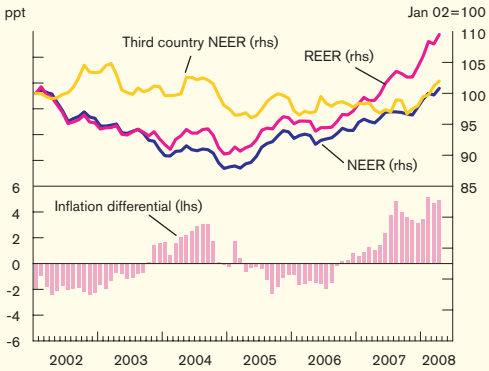
[4] It cannot be taken for granted that an increase in the reserve requirement ratio implies a net withdrawal of banking system liquidity. For example, in late 2007 RRR was often used as a substitute for issuing central bank bills. See He, D. and L. Pauwels (2008) "What prompts the People's Bank of China to change its monetary policy stance? Evidence from a discrete choice model," *HKMA working paper No. 6/2008*.

Chart 1.30
Mainland China: housing prices in major Chinese cities



Source: CEIC.

Chart 1.31
Mainland China: REER, NEER, and inflation differential between the Mainland and its trade partners



Note: The third-country NEER reflects China's external competitiveness in a third market. The third-country NEER takes into account the competition that China faces in foreign markets from other economies which export similar products. The methodology of constructing the third-country effective exchange rate is presented in Box 2 of the December 2006 issue of this Report.

Sources: CEIC and staff estimates.

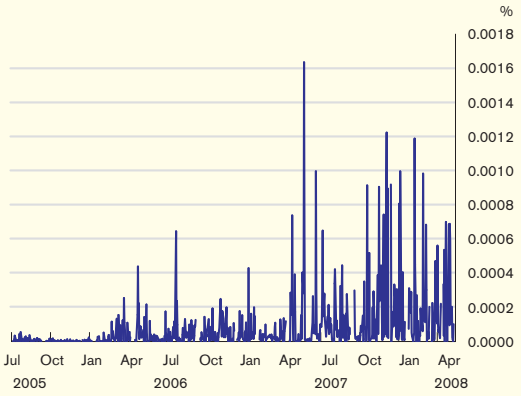
The growth in housing prices in China's major cities stabilised at around 10% year-on-year during 2007 Q4 and 2008 Q1, the highest recorded over the past three years. However, Shenzhen's year-on-year housing inflation declined substantially, dropping from 20% in August 2007 to 5.5% in April 2008 (Chart 1.30). This sharp decline was the result of several policy measures adopted by the Mainland authorities to tame property market speculation, such as raising down-payment requirements for residents buying a second home. Such policies have successfully tackled the overheated Shenzhen property market.

The renminbi exchange rate

The renminbi spot rate appreciated rapidly against the US dollar by about 4% between the beginning of January and the end of March 2008. Although the appreciation seemed to have stalled in April and May, it accelerated in effective terms. The nominal effective exchange rate (NEER) appreciated 1.7% by April 2008 from the beginning of the year (Chart 1.31).[5] In addition, the third-country NEER appreciated rapidly by 2.5% from January to April 2008, after remaining largely steady throughout 2007 and registering a small depreciation of 0.4%. This third-country NEER indicates that the renminbi has appreciated relative to its competing exporters to the US, EU and Japan. Secondly, the real effective exchange rate (REER) also appreciated strongly by 3.2%, reflecting higher inflation increases in China than its major trading partners.

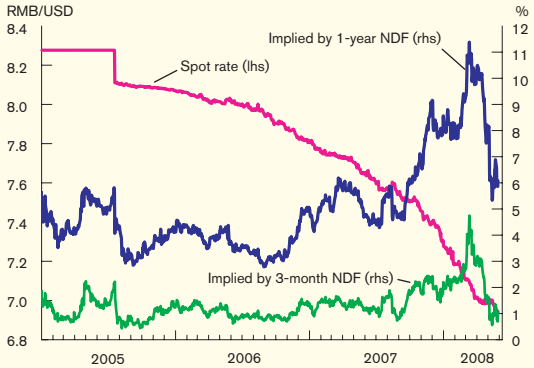
[5] The currency weights in the NEER are measured as the shares of China's exports to the following economies in its total exports (2008 weights): EU (Euro = 0.16), US (USD=0.25), Japan (JPY=0.12), UK (GBP=0.04), Korea (KRW=0.08), Taiwan (TWD=0.03), Singapore (SGD=0.03), Hong Kong (HKD=0.30).

Chart 1.32
Mainland China: RMB volatility



Sources: Bloomberg and staff estimates.

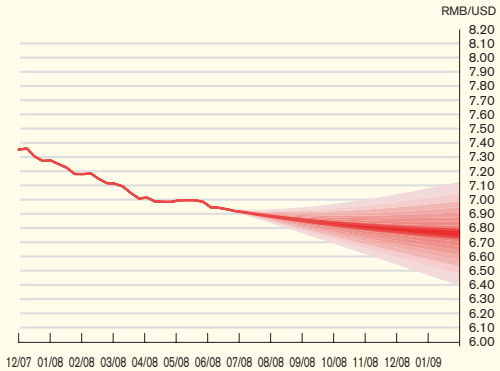
Chart 1.33
Mainland China: spot rate and expected appreciation of renminbi



Note: The expected rate of appreciation of the renminbi is calculated as the percentage difference between the spot rate and the non-deliverable forward rate.

Sources: Bloomberg and staff estimates.

Chart 1.34
Mainland China: fan chart forecasting of exchange rate



Note: Forecast is done with $y_t = \phi_0 + \sum_{l=1}^{4} \phi_l y_{t-l} + \varepsilon_t$, which features 4 lags of the exchange rate capturing the dynamics.

Sources: Bloomberg and staff estimates.

The RMB/USD central parity rate remained volatile throughout late 2007 and the first quarter of 2008, especially from December 2007 until February 2008 (Chart 1.32). The recent slowdown in the renminbi's appreciation does not yet seem to have had an effect on volatility, although it is somewhat lower than in the first three months of 2008.[6]

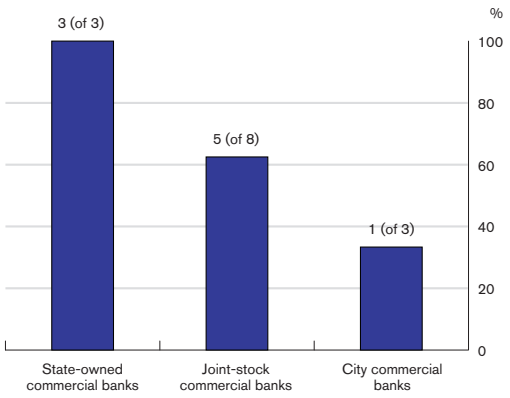
At the end of May 2008, the appreciation of the renminbi against the US dollar implied by the one year NDF had declined to around 6.1%, compared with a peak of 10% at the end of the first quarter of 2008 (Chart 1.33). A conservative forecast predicts a 7.1% appreciation of the renminbi against the US dollar for the whole of 2008, while an optimistic forecast predicts 12% as shown by the confidence bounds of the fan chart (Chart 1.34).

The renminbi exchange rate movements could be an important source of risk for the Chinese banking system. Using an econometric model and daily equity price data of 14 listed Chinese banks for the period between the renminbi exchange rate reform in July 2005 and the end of February 2008, Box 2 examines Chinese banks' foreign exchange exposure. The results suggest that an appreciation of the renminbi tends to generate negative impacts on the performance, and thus the equity values, of Chinese banks, in particular the larger banks.

[6] Since the July 2005 renminbi exchange rate reform, external political pressures have been exerted on the Chinese authorities to allow for a more rapid rate of appreciation of the renminbi. A recent HKMA working paper finds that external pressures do not seem to have systematic influence on the speed of the renminbi appreciation, but they do seem to influence the uncertainty in the daily changes of the renminbi exchange rate. For details, see Liu, Pauwels and Chan, "Do external political pressures affect the renminbi exchange rate?" *HKMA working paper No. 05/2008.*

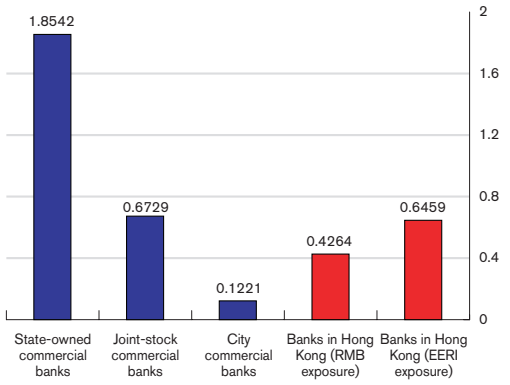
Box 2
The foreign exchange exposure of Chinese banks

Chart B2.1
Proportion of Chinese banks with non-zero FEE



Source: Staff estimates.

Chart B2.2
Average magnitudes of FEE of Chinese banks and Hong Kong banks



Notes: (a) Calculated by the simple average of the absolute value of banks' estimated FEE in the respective banking groups. A value of 1.85 implies that a 1% RMB appreciation would on average change a bank's equity value by 1.85%.

(b) The RMB exchange rate against the US dollar is used in estimating the average RMB exposure of banks in Hong Kong.

(c) The average nominal Hong Kong dollar effective exchange rate index (EERI) is used in estimating the overall foreign exchange exposure of banks in Hong Kong.

Source: Staff estimates.

Foreign exchange rate movements could be an important source of risk for banks. Measuring banks' foreign exchange exposure (FEE) has therefore long been a core interest of regulators. Using the capital market approach[7] and daily equity data of 14 listed Chinese banks for the period 21 July 2005 to the end of February 2008, this box summarises the results of a study that examines Chinese banks' overall FEE, which comprises the direct exposure arising from banks' unhedged foreign assets and liabilities, and the indirect exposure due to effects of exchange rate movements on cash flows and the credit risk of banks' customers.[8] The main findings are:

(1) Foreign exchange exposure tends to be different among Chinese banks, with larger banks – the state-owned commercial banks (SOCBs) and joint-stock commercial banks (JSCBs) – more likely to have a significant FEE, either positive or negative, than their smaller counterparts – the city commercial banks (CCBs) (Chart B2.1). In addition, the resulting volatility of equity values due to renminbi exchange rate movements, whether appreciation or depreciation, tended to be larger for larger banks, as suggested by the greater absolute value of the estimated coefficients of their exchange rate risk variable (Chart B2.2). This may be partly due to the fact that larger banks tend to have more significant foreign exchange operations and trading positions. Since they may also have more business with large and international corporations, whose competitiveness and profitability are sensitive to exchange rate movements, significant foreign exchange exposure of larger Chinese banks may arise from this macro-channel that transmits foreign

[7] Empirical studies using this econometric approach usually regress excess equity returns of banks on various risk factors, including excess returns of the market portfolio, the rate of change of risk-free interest rates, and that of exchange rates. The degree of a bank's overall FEE is gauged by the value and statistical significance of the estimated coefficient of the exchange rate variable.

[8] For details, see Wong et al. (2008) "*The Foreign Exchange Exposure of Chinese Banks*", HKMA working paper forthcoming.

exchange risk to banks via the impact of renminbi exchange rate movements on their customers.

(2) The average foreign exchange exposures of larger Chinese banks are higher than those of banks in Hong Kong (Chart B2.2), despite the fact that their participation in international banking businesses is still limited compared with their Hong Kong counterparts. This may reflect the lack of financial instruments available for Chinese banks to hedge their foreign exchange exposure, or that the banks were less experienced in managing foreign exchange risk.

(3) Negative foreign exchange exposures are more prevalent for larger Chinese banks, suggesting that an appreciation of the renminbi tends to reduce their equity values. Specifically, we find that an appreciation of the renminbi by 1% would on average reduce the excess equity returns for larger banks – SOCBs by 1.27% and JSCBs by 0.41% – but may boost the excess equity returns for smaller banks (CCBs), by 0.12%. Since larger banks constitute a major portion[9] of assets in the Chinese banking industry, this suggests that an appreciation of the renminbi is likely to hamper the Chinese banking sector's performance.

The empirical results suggest that an appreciation of the renminbi will likely have a negative impact on the performance, and thus the equity values, of Chinese banks, with the impact on larger banks being more pronounced. Together with the fact that decreases in equity values generally imply higher default risk, how the default risk of Chinese banks would be affected under different scenarios of renminbi appreciation should be closely monitored.

[9] According to the People's Bank of China (2007), *Almanac of China's Finance and Banking 2007*, the total asset values of SOCBs, JSCBs, and the banking sector as a whole are RMB24,236 billion, RMB5,445 billion, and RMB43,950 billion respectively at end-2006.

1.7 Policy response

The major macroeconomic policy challenge facing the Mainland authorities has been to contain inflationary expectations, while guarding against risks associated with slowing external demand and volatile asset prices. Senior government officials are well aware of these challenges and have said that 2008 could be one of the most difficult years for the economy. Although the authorities were still primarily concerned with overheating risks in the second half of 2007, by the first quarter of 2008 there had been a subtle shift of policy emphasis, with increasing concerns over the potential impact on the Chinese economy of the global credit market turmoil. While a semblance of normality appears to have returned to the external environment after dramatic policy actions by the US authorities, fighting inflation remains at the centre of the Mainland's macroeconomic policy agenda in the period ahead.

Quantity control (including central bank bill issuance, the reserve requirement and window guidance on credit) continued to be used extensively in the review period to rein in money and credit growth. The PBoC has raised the reserve requirement ratios four times so far this year, with the ratio reaching 16.5% on 20 May 2008. Net outstanding central bank bills increased by RMB500 billion in the first quarter. Despite these policy moves, interbank interest rates have remained broadly stable. The growth in broader monetary aggregates and credit has, however, slowed. Since the PBoC last raised interest rates on 20 December 2007, it has refrained from further rate rises. With consumer price inflation remaining elevated, rises in the benchmark deposit and lending rates are still needed to prevent prolonged negative real interest rates, but this is constrained by the concern over hot money inflows. While a growing consensus appears to have emerged that continued renminbi appreciation is a necessary component in the attempt to dampen foreign exchange inflows, there is continuing debate over whether a gradual appreciation path or a one-step revaluation will be more effective.

The National Development and Reform Commission (NDRC) introduced a package of price control measures in January 2008, probably out of concerns over persistent inflationary pressures in the run-up to the CNY, which is associated with strong seasonal demand for meat and other food items. The government justified the use of administrative tools on the grounds that inflation was still largely sectoral at that juncture, and monetary policy alone might not be adequate in tackling the situation. It was stated that the price controls would be 'temporary'. Administrative interventions are unlikely to provide the right incentives to food producers, and thus cannot be expected to relieve upward pressure on food prices in a fundamental way.

During the National People's Congress in March, the Ministry of Finance released the report on the fiscal position for 2007 and proposed budget for 2008. The report showed a continuation of the three major trends on the fiscal front – strengthening the fiscal position, a 'prudent' fiscal stance and attention to social issues. The fiscal balance turned to a surplus in 2007 for the first time since 1986, at RMB173.9 billion or 0.7% of GDP. The marked improvement was due to much stronger growth in revenue, which surged by a record 32.4% year on year, than the expansion of 22.6% in expenditure. Most notably, the corporate tax increased by 37.9% compared with 2006, contributing around one fifth of the total revenue growth, while stamp duty grew five-fold. The 2007 out-turn of a large fiscal surplus meant that the fiscal policy had a contracting effect on the economy in 2007, with a decline of underlying fiscal deficits equivalent to 1.1% of GDP. For 2008, a deficit of RMB230 billion, about 0.8% of GDP, is budgeted. This is broadly neutral when compared with the 2007 budget and is consistent with the government's statement that it will maintain a 'prudent' policy stance.

Another major policy concern has been asset price volatility. The A-share market was among the worst performers in the global market in 2008 Q1. Market sentiment remained fragile due to the continuing global financial market turmoil, uncertainties over an increasing supply of stocks, and investors' disappointment over the absence of any government bailout measures. The China Securities Regulatory Commission (CSRC) announced a new regulation on 20 April that makes it more difficult for listed firms to dispose of previously locked-up shares immediately upon the expiry of the lock-up period. The new regulation may provide a temporary boost to investor sentiment, but it is not clear whether it will be enough to revive the A-share market over the longer term as the supply overhang of these previously locked-up shares – amounting to around RMB3 trillion – will continue to be an uncertainty for the market. Also to shore up market confidence, the Ministry of Finance lowered the stamp duty on stock trading from 0.3% back to 0.1% on 23 April.

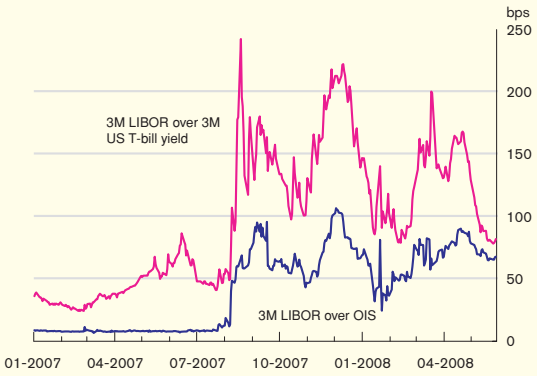
Monetary and financial conditions

The fallout from the US sub-prime mortgage sector has rippled through to broader credit markets, posing considerable risks to financial stability. While decisive action by major central banks has to a large extent restored stability, the challenge of balancing between the risks to growth and increasing threats from inflation will become tougher.

1.8 Interest rates

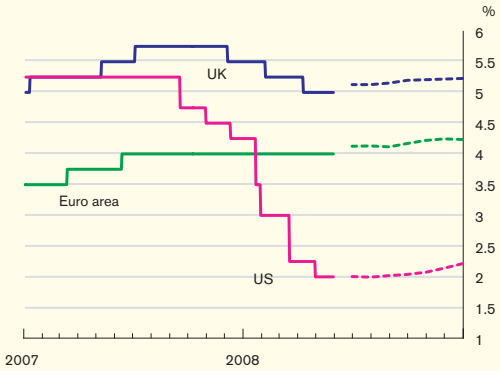
Global financial markets have continued to tread on fragile ground over the past six months. The impact of the US sub-prime crisis escalated sharply in Q1 2008, affecting credit markets more severely, and causing broader and more serious dislocations than last summer. The intensity of the resulting funding stress can be seen in the sharp increase in the spread of LIBOR over the corresponding US Treasury yield and overnight index swap (Chart 1.35). In response, the US Fed cut the Fed funds target and discount rates aggressively by 250 and 275 basis points to 2% and 2.25% respectively during the review period (Chart 1.36). It also took unprecedented moves to improve liquidity conditions, providing large-scale term funding to banks, accepting less liquid assets as collaterals, and extending liquidity through primary dealers. Overall, the Fed was reasonably successful in alleviating the credit market stress, reflected in the narrowing LIBOR spreads. Across the Atlantic, the Fed's actions were echoed by the Bank of England, which cut the Bank rate by a total of 75 basis points during the period and set up a Special Liquidity Scheme, allowing eligible financial institutions to swap high quality illiquid assets for UK Treasury Bills. In continental Europe, however, the ECB kept policy rates intact, citing inflation as its predominant policy concern.

Chart 1.35
USD LIBOR over US Treasury Yield and Overnight Index Swap



Source: Bloomberg.

Chart 1.36
Policy rates for the US, euro area and UK



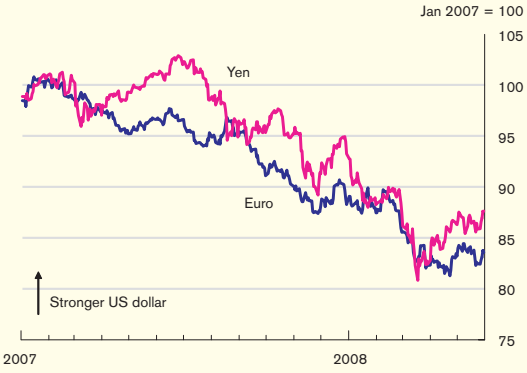
Note: Broken lines are future paths implied by future prices (based on changes in the three-month futures prices for euro area and UK) on 30 May 2008.

Sources: Respective central banks and Bloomberg.

Chart 1.37
US Treasury yields

Source: US Federal Reserve.

Chart 1.38
Bilateral US dollar exchange rates



Source: Bloomberg.

In the bond market, investors continued to favour US Treasuries as safe-haven assets over the period amid rising risk aversion (Chart 1.37). The intensifying financial market turbulence and concerns over the global economic outlook drove US Treasury yields lower, particularly at the shorter end of the yield curve. At the same time, despite the ailing economy, inflation expectations failed to recede, putting pressure at the long end and steepening the yield curve considerably. Since the last Report, the 1-year and 10-year US Treasury yields have declined by 104 and 9 basis points respectively.

1.9 Exchange rates

The US dollar continued to come under significant pressure from mounting market expectations of a US recession and aggressive easing by the Fed. In April, the dollar fell to record lows against the euro, which was firmly supported by the hawkish stance of the ECB. The weak dollar contributed to some extent to a surge in commodity prices, in turn cutting the room within which the Fed could manoeuvre with monetary policy. At the same time, as calm began to return to financial markets since the turbulence in March, the dollar rebounded against the yen, reportedly on the resumption of carry trades. With more signs emerging that the Fed might soon pause monetary easing, the dollar also strengthened against the euro. Since the last Report, the US dollar has depreciated by 6.3% and 5.1% against the euro and the yen respectively (Chart 1.38).

1.10 Equity markets

Chart 1.39
World equity indices

Source: Bloomberg.

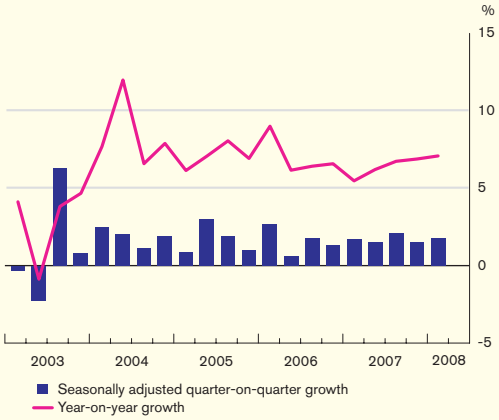
Global equities were off to a rough start in 2008, as negative news from the financial sector continued to weigh on the market. The threat of rating downgrade to the monoline insurance sector, the mounting sub-prime-related write-downs by financial institutions, and the near-collapse of Bear Stearns drove investors to safe-haven assets at the expense of equities. Fears of a US recession dampened investor sentiment further. Since March, investors have taken some relief from the efforts of central banks to address liquidity problems in funding markets and better-than-expected first quarter earnings results from some major corporations. This, coupled with the relatively more favourable economic data released recently, has provided support to the equity market. As a result, equity prices have rebounded significantly over the past two months. Overall, however, the S&P 500, DAX and TOPIX have declined by 5.5%, 9.8%, and 8.1% respectively since the last Report (Chart 1.39).

2. Domestic economy

Demand

The Hong Kong economy continued to register impressive growth, mainly driven by vibrant private consumption. Fixed asset investments held up well, underpinned by public investment. Despite the continued global economic slowdown, merchandise exports grew at a robust pace, while services exports further expanded on the back of rising offshore trade and visitor arrivals.

Chart 2.1
GDP at constant market prices



Source: C&SD.

Table 2.A
Real GDP growth by expenditure component

(% yoy)	2006	2007	2007 Q2	2007 Q3	2007 Q4	2008 Q1
Gross Domestic Product	**7.0**	**6.4**	**6.2**	**6.8**	**6.9**	**7.1**
Domestic demand	5.9	7.8	8.0	8.2	10.3	6.8
Consumption						
Private	6.0	7.8	6.6	10.6	9.5	7.9
Public	0.1	2.3	3.0	1.5	2.3	0.3
Gross domestic fixed capital formation	7.0	4.2	8.1	-0.5	8.2	8.9
Private	10.8	5.8	9.3	0.2	10.4	7.5
Public	-16.2	-9.4	-5.0	-8.4	-9.6	18.9
Change in inventories[1]	0.2	1.2	1.2	1.0	1.6	-0.4
Net exports of goods[1]	-0.5	-3.6	-3.7	-3.7	-5.3	-1.1
Net exports of services[1]	2.2	3.1	2.6	3.6	3.3	2.1

Note: 1. Percentage point contribution to annual growth of GDP.
Source: C&SD.

2.1 Aggregate demand

Real GDP grew 7.1% year on year in Q1, after rising by 6.8% and 6.9% in 2007 Q3 and Q4 respectively (Chart 2.1). On a seasonally-adjusted quarter-on-quarter basis, real GDP expanded by 1.8% in Q1, following growth of 2.1% in 2007 Q3 and 1.5% in Q4.

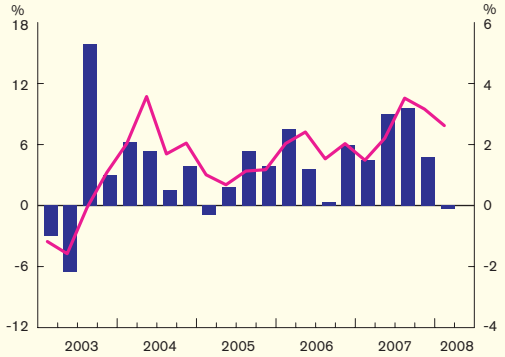
The strong growth momentum in Q1 was propelled by robust domestic demand, in particular by high private consumption, reflecting favourable labour market conditions and rising incomes. Investment activities held up well, supported by marked increases in public investment. The merchandise trade balance remained in deficit, as merchandise imports rose faster than exports. Exports of services registered strong growth, underpinned by increases in visitor arrivals and robust offshore trade, while imports of services also rose alongside strong domestic demand.

2.2 Domestic demand

Domestic demand remained the key driver of growth in Q1, growing by 6.8% year on year in Q1, following an increase of 10.3% in 2007 Q4 (Table 2.A). The expansion was led by increases in private consumption and government investment, while growth in public consumption remained moderate and inventories' contribution to economic growth turned negative because of de-stocking. The international credit market turbulence did not seem to have had a significant impact

on local sentiment to impair domestic demand, and confidence was partly bolstered by the cut in US interest rates and rising income.

Chart 2.2
Private consumption

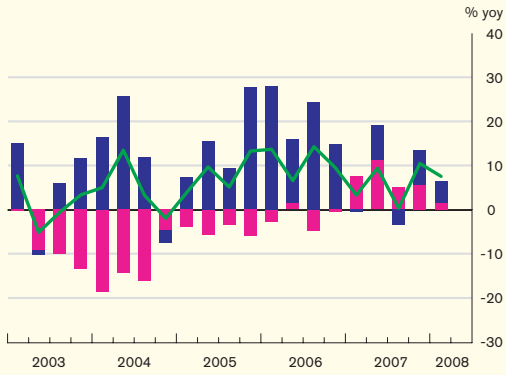


Source: C&SD.

Consumption

Private consumption expenditure increased markedly by 7.9% year on year in Q1, after growing by 9.5% in 2007 Q4. On a seasonally adjusted quarter-on-quarter comparison, private spending declined slightly by 0.1% in Q1, compared with the 1.6% growth in 2007 Q4 (Chart 2.2). The vibrant growth in private consumption was supported by favourable labour market conditions and growing household income. On the other hand, government consumption expenditure grew only modestly by 0.3% in Q1 from a year earlier, following an increase of 2.3% in 2007 Q4 (Table 2.A). Looking ahead, private consumption is likely to expand at a slower but still solid pace to remain the major contributor to economic growth in 2008.

Chart 2.3
Private investment by component



Source: C&SD.

Investment

Investment spending surged by 8.9% year on year in Q1, following the 8.2% growth in 2007 Q4. Analysed by components, private sector spending on machinery and equipment grew by 4.8%, while building and construction investment expanded by 1.4% in Q1 (Chart 2.3). After a year-on-year rise of 10.4% in 2007 Q4, private investment has shown some signs of moderation in 2008, possibly affected by increased uncertainties in the external environment. Nevertheless, business owners are still generally optimistic about their operating environment, as indicated by the results of the Q2 Quarterly Business Tendency Survey, which showed that sentiment was positive in such areas as business volume and selling price.

Public sector investment spending registered the first positive increase in Q1 after declining for 16 straight quarters, with investment in building and construction, and machinery and equipment rising by 16.3% and 25.6% year on year respectively. However, this momentum is unlikely to be sustained as the Route 8 project is close to completion, and there are no new infrastructure projects in the pipeline in the near future.

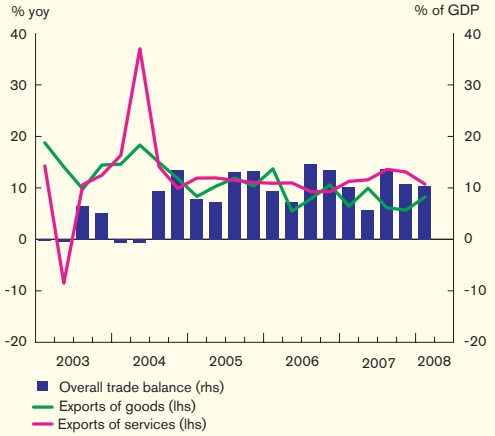
2.3 External trade

Merchandise exports rose 8.3% year on year in Q1, higher than the 5.7% increase in 2007 Q4 (Chart 2.4). The growth in merchandise exports continued to be led by increases in re-exports, which were supported by the Mainland's strong trade performance and a real depreciation in the Hong Kong dollar effective exchange rate (Chart 2.5). Re-exports grew by 8.7% year on year in Q1 after rising by 6.0% in 2007 Q4. Domestic exports, on the other hand, saw a modest decline of 1.9% year on year in Q1. Analysed by destination, merchandise exports to the Mainland, which made up almost half the total exports, maintained a double-digit growth rate in Q1 (Table 2.B). However, exports to the US and Japan declined. Imports of goods grew year on year by a high 8.4% in Q1, reflecting strong domestic demand as well as rising imports for re-export purposes.

Exports of services continued their strong growth in Q1, rising by 10.8% year on year, following an increase of 13.1% in 2007 Q4, to which exports of travel services and finance and insurance services made important contributions. Imports of services also grew steadily by 11.3% year on year in Q1, as the demand for financial and outgoing travel services stayed high.

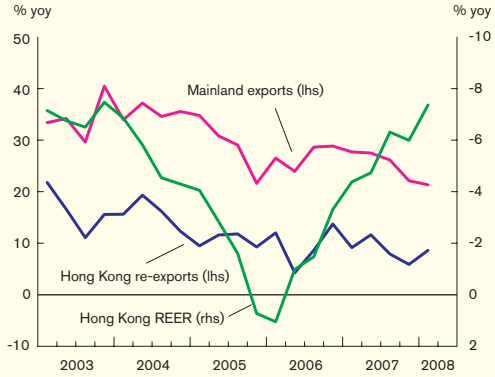
The overall merchandise and service trade surplus remained strong at 10.4% of GDP in Q1, compared with 10.8% in 2007 Q4.

Chart 2.4
Export growth and trade balance (in real terms)



Source: C&SD.

Chart 2.5
Re-export growth[1], real effective exchange rate (REER)[2] and Mainland exports[3]



Notes: 1. Re-export growth is in real terms.
2. Hong Kong REER is in reverted scale.
3. Mainland exports are in nominal terms.

Sources: C&SD and CEIC.

Table 2.B
Total exports of goods by major market[1]

(% yoy)	Share[2] %	2006	2007	2007 Q2	2007 Q3	2007 Q4	2008 Q1
Mainland China	49	14	13	16	13	11	11
United States	14	3	-1	1	-2	-3	-1
European Union	14	5	6	7	6	6	8
ASEAN5[3] + Korea	7	8	9	11	7	11	15
Japan	4	1	-1	4	-6	-1	-2
Taiwan	2	3	2	11	-4	-2	3
Others	10	11	18	20	17	20	30
Total	**100**	**9**	**9**	**12**	**8**	**8**	**10**

Notes: 1. Within the total, re-exports accounted for 96% in 2007.
2. Share in 2007.
3. ASEAN5 includes Indonesia, Malaysia, the Philippines, Singapore and Thailand.

Sources: C&SD and CEIC.

Output and supply

Output expanded at a solid pace, led by financial and external trade-related service sectors. As the economy sustained strong growth, labour market conditions remained tight. Labour productivity continued to rise as a result of faster output growth relative to employment growth.

Table 2.C
Real GDP growth by major economic sector (year-on-year)

(% yoy)	2006	2007	2007			
			Q1	Q2	Q3	Q4
GDP at factor cost	**6.2**	**6.7**	**6.0**	**6.5**	**6.5**	**6.8**
Industrial sector	-2.3	-0.8	-2.1	1.0	-1.4	-1.3
Of which:						
Manufacturing	2.2	-1.5	-1.5	-2.3	-2.1	-0.3
Construction	-9.8	-2.1	-6.2	3.7	-2.9	-4.0
Service sector	7.1	7.5	6.7	7.1	7.3	7.6
Of which:						
Wholesale, retail, restaurant and hotel	8.1	9.1	7.4	7.6	10.5	11.4
Import and export	9.0	6.7	6.7	7.5	6.7	6.0
Transport and storage	6.6	5.6	3.7	4.4	7.3	8.0
Financing, insurance and business services	15.6	16.3	15.2	15.2	16.9	16.3

Source: C&SD.

Table 2.D
Contribution to real GDP growth by major economic sector (year-on-year)

(% point)	2006	2007	2007			
			Q1	Q2	Q3	Q4
GDP at factor cost	**6.2**	**6.7**	**6.0**	**6.5**	**6.5**	**6.8**
Industrial sector	-0.2	-0.1	-0.2	0.1	-0.1	-0.1
Of which:						
Manufacturing	0.1	0.0	0.0	-0.1	-0.1	0.0
Construction	-0.3	-0.1	-0.2	0.1	-0.1	-0.1
Service sector	6.4	6.8	6.2	6.5	6.7	7.0
Of which:						
Wholesale, retail, restaurant and hotel	0.5	0.6	0.5	0.5	0.6	0.7
Import and export	1.9	1.4	1.4	1.6	1.7	1.5
Transport and storage	0.5	0.4	0.3	0.4	0.6	0.6
Financing, insurance and business services	3.0	3.4	2.9	3.1	3.0	3.1

Source: C&SD.

2.4 Output

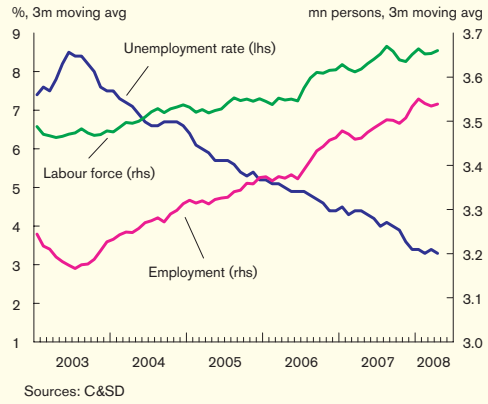
The service sector continued to lead growth in the second half of 2007 (Table 2.C). Finance, insurance and other business services increased by 16.5%, following a first-half rise of 15.2%, reflecting strong growth in banking services and other business activities. The financial sector continued to benefit from further liberalisation of the Mainland's capital account, including the extension of the Qualified Domestic Institutional Investors (QDII) scheme. As household consumption spending was strong, the wholesale, retail, restaurant and hotel sectors registered impressive growth and improved its share in GDP growth in 2007 H2. Other service sectors, such as imports and exports, and transport and storage also maintained healthy growth. However, there was no sign of improvement in the lacklustre performance of the manufacturing and construction sectors.

Activity in the financial and business services sector accounted for about 45% of the growth of total output in 2007 H2, which highlighted the gain in significance of the sector as a driver of growth. The import and export sector also made an important contribution to GDP growth (Table 2.D).

2.5 Labour and productivity

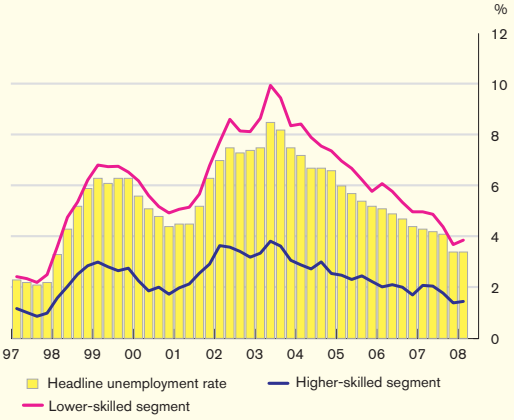
Robust economic growth supported employment, leading to a further decline in the unemployment rate. Output growth continued to outweigh employment growth in Q1, implying improved labour productivity.

Chart 2.6
Labour market conditions



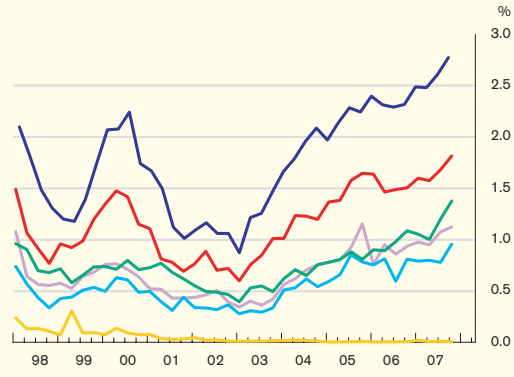
Sources: C&SD

Chart 2.7
Unemployment rates in the higher and lower-skilled segments



Sources: C&SD and staff estimates.

Chart 2.8
Vacancy rate by sector



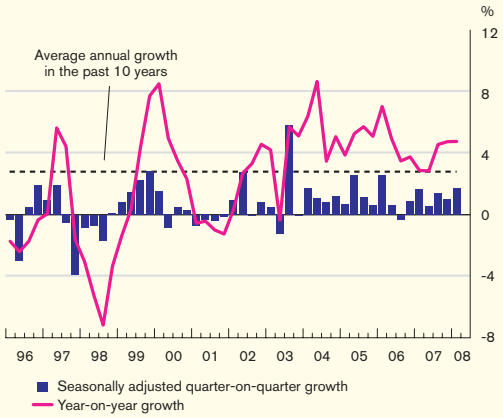
Sources: C&SD and staff estimates.

Labour market conditions

Labour market conditions improved further, with the number of people in employment reaching a record high in the six months to Q1. The seasonally adjusted three-month moving average unemployment rate remained at 3.4% in Q1, the lowest since mid-1998, compared with 4.3% a year earlier (Chart 2.6). Labour demand was particularly strong in the trade and tourism, and financing sectors, where the rate of unemployment has been falling since mid-2007. While the unemployment rate in the lower-skilled segment has declined at a faster pace in recent times, unemployment in those sectors has stayed relatively high in comparison with its pre-Asian financial crisis levels (Chart 2.7). The underemployment rate has remained low in recent months, at 1.9% (three-month moving average) in March 2008, down from 2.1% in December 2007.

Total employment is expected to rise gradually, underpinned by the solid expansion in domestic demand. Growing demand for financial and trade-related services from the Mainland is likely to boost labour demand in these sectors in Hong Kong, as the vacancy rate keeps rising. In addition, growth in incoming visitors could improve employment in tourism and related sectors, although the slower and gradual pick-up in vacancy rates in these sectors suggests that employment growth may not be as strong as in the financial and trade-related services sectors (Chart 2.8).

Chart 2.9
Output per worker



Sources: C&SD and staff estimates.

Productivity

Output per worker – an indicator of labour productivity – increased as the economy expanded further, growing by 4.8% year on year in Q1, the same rate as in the previous quarter (Chart 2.9). Productivity growth will probably remain strong in the near future. However, given the cyclical nature of productivity, a deceleration of productivity growth may occur if the economy slows more visibly in the latter part of the year.

Prices and wages

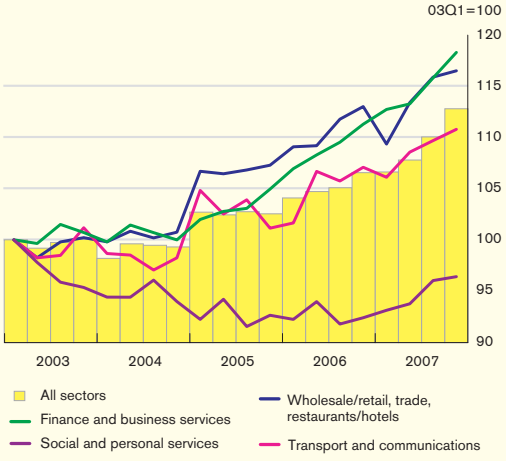
Rising domestic cost pressures and global food prices have driven up underlying consumer price inflation. The externally oriented nature of the Hong Kong economy suggests that rising inflationary pressures among major trading partners will continue to influence domestic consumer prices through higher import prices, while higher payroll and rental costs will also likely pass through to consumer prices in the coming months.

2.6 Labour costs

Tighter labour market conditions and strong growth in domestic demand continued to support a broad-based increase in labour earnings. On a quarter-on-quarter comparison, the nominal wage increased by 0.7% in 2007 Q4, similar to the rise in Q3, while nominal payroll per person rose by 2.5% in Q4 following a 2.1% expansion in Q3, reflecting larger increases in bonuses and other irregular earnings. With booming financial and trade activities, labour earnings in these two sectors registered remarkable growth in the second half of 2007, while the payroll in other sectors expanded steadily (Chart 2.10).

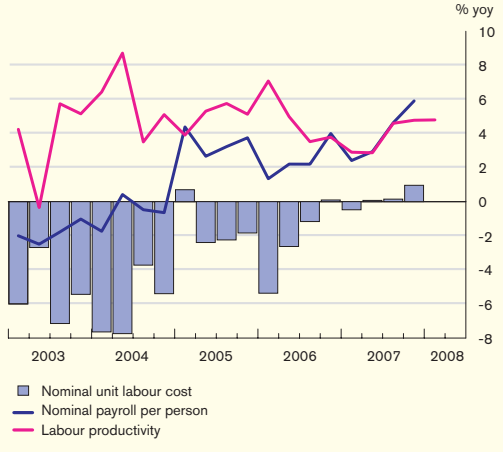
The growth in unit labour costs turned positive in the second half of 2007, rising to 1.0% year on year in Q4 from 0.1% in Q3 (Chart 2.11); this resulted from faster growth in nominal payroll per person relative to labour productivity. Given the cyclical nature of productivity, the moderation in economic growth is expected to be associated with lower labour productivity in the coming months. On the other hand, rising inflation may continue to drive up nominal payroll per person, in which case the unit labour cost might keep growing in the first half of 2008. With labour costs accounting for a significant part of the operating costs of the service industry, an increase in the unit labour cost will ultimately feed through to the retail level with higher prices for goods and services.

Chart 2.10
Nominal payroll per person by economic sector



Source: C&SD.

Chart 2.11
Unit labour cost and labour productivity



Sources: C&SD and staff estimates.

2.7 Commodity and import prices

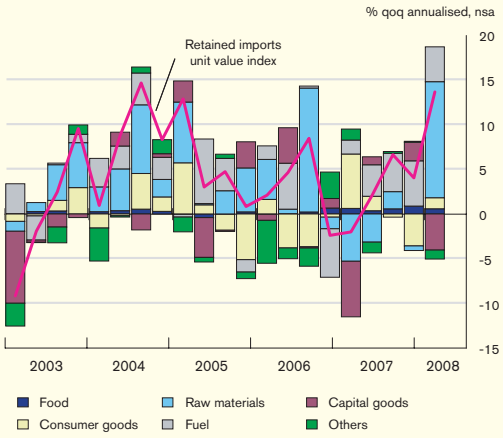
Rising global commodity prices pushed up import prices in Q1. On a quarter-on-quarter comparison, prices of retained imports increased by 13.7% (annualised) in Q1 after growing by 4.1% in 2007 Q4 (Chart 2.12). The import prices of fuel and food increased notably, by 7.3% (not annualised) and 1.7% respectively, as the average crude oil price rose above US$100 per barrel in March and global food prices grew by 16% during Q1. The faster growth in import prices also reflected rising inflationary pressures among major trading partners.

Import prices are expected to remain elevated in the coming months, as strong demand from the emerging market economies and the general weakness of the US dollar will likely keep commodity prices at high levels (Chart 2.13). In fact, the sharp rise in food prices has been the key driver of domestic inflation in recent months, with food costs making up more than one-quarter of household spending in the CCPI basket. The recent rise in food costs is mainly due to higher fresh food prices, particularly for meat and grain, in part reflecting the bottle-neck in food supply from Mainland China. Barring any severe changes in weather conditions, the Mainland's fresh food supply will expand over time to catch up with the growing demand, which can help contain food price inflation in Hong Kong.

2.8 Consumer prices

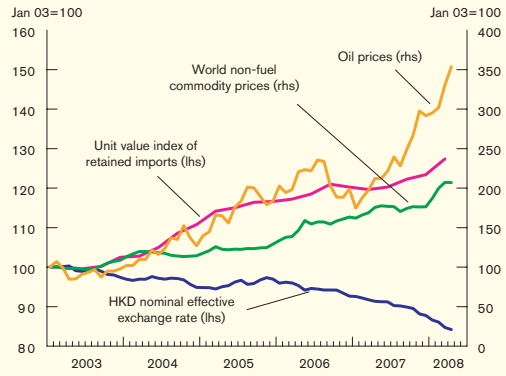
Consumer price inflation increased notably in early 2008, pushed up by higher food costs and housing rents. After removing the one-off effects of the government's relief measures, the annualised rate of CCPI inflation picked up to 8.9% in Q1 from 4.8% in 2007 Q4 quarter on quarter. Over the same period, the year-on-year inflation rate rose to 4.9% from 3.5%, the highest since 1998 Q1 (Chart 2.14). Disaggregate data show that food costs and housing rents rose by 10% and 5.3% respectively in Q1 from a year earlier, accounting for more than 80% of the overall increase in consumer prices. Excluding basic food, fuel and house rent, core CCPI inflation increased to 4.4% (annualised) in Q1 quarter on quarter, or 2.2% on a year-on-year basis, reflecting a broad-based increase in consumer prices.

Chart 2.12
Contributions to import price inflation



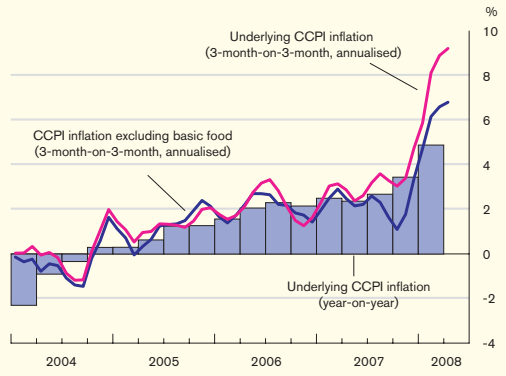
Sources: C&SD and staff estimates.

Chart 2.13
Commodity and Import prices



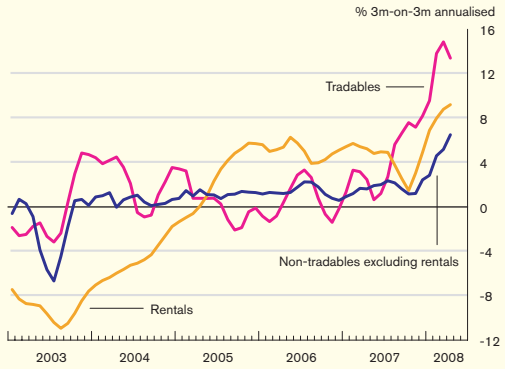
Sources: C&SD and IMF.

Chart 2.14
Different measures of consumer price inflation



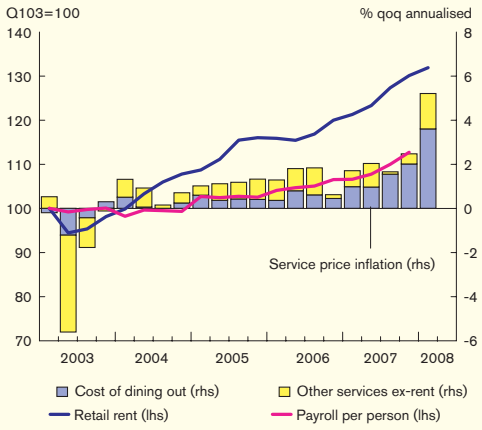
Sources: C&SD and staff estimates.

Chart 2.15
Consumer price inflation by broad component



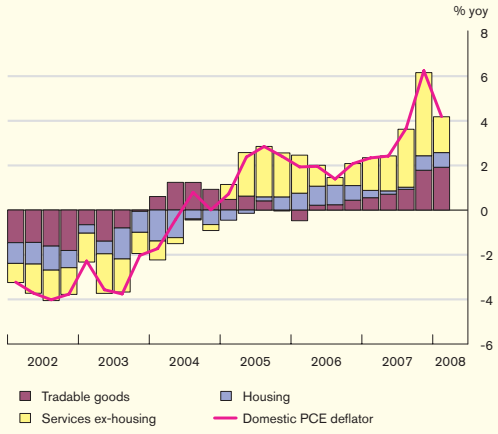
Sources: C&SD and staff estimates.

Chart 2.16
Service price inflation excluding rent



Sources: C&SD and staff estimates.

Chart 2.17
Contribution to inflation measured by the chain-dollar domestic PCE deflator



Sources: C&SD and staff estimates.

The surge in food prices, particularly for basic food items such as meat, rice and edible oil, drove up the inflation rate of tradable goods to 15% (quarter on quarter, annualised) in Q1, reflecting the combined effect of higher foreign prices and a weaker Hong Kong dollar (Chart 2.15). Higher primary food prices have dominated the recent increase in consumer prices, contributing two thirds to the quarter-on-quarter inflation rate of tradable goods and one third to the CPI in Q1.

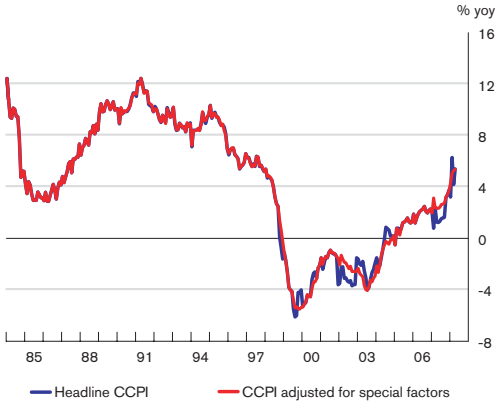
Domestic cost pressures have been building up. The steep rise in property prices raised housing rents by 6.8% (quarter on quarter) in Q1. Rising labour and rental costs also resulted in higher service charges. A quarter-on-quarter comparison shows service price inflation accelerated to 5.2% (annualised) in Q1 from 2.5% and 1.7% in the previous two quarters, mainly due to the higher cost of dining out, but also reflecting more broad-based rises in service costs (Chart 2.16). Inflation measured by the domestic personal consumption expenditure (PCE) deflator also shows rising service prices. It rose by 4.2% year on year in Q1 after growing by 6.2% in 2007 Q4, with the service component contributing more than one third of the increase in the domestic PCE deflator (Chart 2.17).

Given the small, open and service-oriented nature of the Hong Kong economy, both external and domestic factors have considerable influence on domestic inflation. An HKMA study shows that consumer prices are generally more sensitive to changes in unit labour cost than import prices, and exchange rate changes have not been a major driver of inflation. The key findings of the study are summarised in Box 3.

The near-term inflation outlook will hinge on price developments in our major trading partners, movements in global commodity prices and domestic cost pressures. Currently, there is no clear sign of a moderation in global inflation and commodity prices. The economic slowdown in the industrialised economies and tighter macroeconomic measures in Mainland China will help contain inflation expectations in Hong Kong, although, rising domestic cost pressures are likely to keep domestic inflation elevated in the months ahead.

Box 3
Exchange rate pass-through to domestic inflation in Hong Kong

Chart B3.1
Inflation rate in Hong Kong



Sources: C&SD and staff estimates.

Consumer price inflation in Hong Kong has been rising since mid 2004, but it is not a new phenomenon for the economy. The rate of inflation was moderately high and volatile in the 1980s and 1990s (Chart B3.1). When the Linked Exchange Rate system was adopted in October 1983, consumer price inflation was more than 12%. It declined to below 5% in the mid-1980s, rose to high single digits in the late 1980s, reached a peak of 12.5% in the spring of 1991, and declined to high single digits before the onset of the Asian financial crisis. The Hong Kong economy then experienced a five-year period of deflation from late 1998.

As a small and open economy under the Linked Exchange Rate system, Hong Kong's domestic inflation should ultimately be influenced by foreign factors in the long term. In the short and medium term, despite the importance of external factors, local factors also exert significant influence on domestic price developments, thus leading to incomplete exchange rate pass-through. Exchange rate pass-through refers to the effect of a change in nominal effective exchange rate on domestic prices. The pass-through is complete when the response of domestic prices to exchange rate is one for one. While it is not surprising that Hong Kong should experience incomplete pass-through, the exact nature and speed of exchange rate pass-through to domestic inflation is an empirical issue. This box summarises empirical estimates of exchange rate pass-through to domestic inflation in Hong Kong.[10]

The estimation of exchange rate pass-through to domestic inflation follows a two-step approach. We first estimate exchange rate pass-through to import prices and then from import prices to domestic inflation using a Phillips-Curve model. Combining the estimated coefficients of the two steps, we can find the degree of exchange rate pass-through to domestic prices.

[10] For details, please see "Exchange Rate Pass-through to Domestic Inflation in Hong Kong", *HKMA Working Paper 02/2008*.

Exchange rate pass-through to import prices

On the relationship between import prices and the exchange rate after adjusting for foreign production costs and domestic demand factors, we estimate the elasticity of pass-through from exchange rate to import prices using quarterly Hong Kong data from 1984 to 2007. Specifically, the exchange rate pass-through equation can be written as follows:

$$\Delta \ln (PM_t) = \beta_1 + \sum_{i=0}^{4} \beta_{2i} \Delta \ln (NEER_{t-i}) + \sum_{i=0}^{4} \beta_{3i} \Delta \ln (FPC_{t-i}) + \varepsilon_t \quad \text{(B3.1)}$$

where PM_t, $NEER_t$, and FPC_t refer to import prices, Hong Kong dollar nominal effective exchange rate, and foreign production costs of Hong Kong's key trading partners (we use foreign wages as a proxy for foreign producer cost[11]). The short-run (contemporaneous) elasticity between import prices and NEER is given by the estimated coefficient β_{20}. The medium-run (over one year) elasticity of the same relationship can be obtained by summing the coefficients on contemporaneous and four-quarter lags of exchange rate changes (i.e. $\sum_{i=0}^{4} \beta_{2i}$). We also first difference these variables to control for potential unit roots.

The estimation results of equation B3.1 are summarised in Table B3.A. We find that the pass-through elasticity is around 0.33 in the short run and 0.65 in the medium run for the sample period of 1984 to 2007. This implies that, other things being equal, a one percent depreciation of the Hong Kong dollar nominal effective exchange rate (NEER) would lead to an increase in import prices by about 0.3% in the short run and by about 0.6% in the medium run.

Compared to existing estimates for other economies, Hong Kong's pass-through elasticity appears to be more sensitive to changes in exchange rate in the medium run, possibly reflecting the small-country effect and the lack of capacity for import substitution from domestic

Table B3.A
Pass-through elasticities of exchange rate to import prices

	1984-2007 (full sample)	1984-1991	1992-2007
	(Dependent variable: import prices)		
Constant	-0.004	0.001	-0.007
NEER β_{20} (short run)	-0.33	-0.43	-0.31
$\sum_{i=0}^{4} \beta_{2i}$ (medium run)	-0.65	-0.82	-0.45
Foreign wage (control variable)	0.85	0.69	0.93
Adjusted R^2	0.56	0.57	0.59

Source: Staff estimates.

[11] Foreign production costs are approximated using the equation, $w_t^* = (NEER_t / REER_t)^* PM_t$, where w_t^* is foreign wage and NEER and REER refer to the IFS definition of nominal effective exchange rate and unit-labour-cost-based real effective exchange rate. The term $(NEER_t / REER_t)$ is in fact a measure of the foreign unit labour cost relative to the local cost. Therefore, w_t^* is defined as marginal product of labour (approximated by relative unit labour cost) multiplying by import prices.

sources. Indeed, these two factors may also explain the high impact of foreign production costs on import prices, as the coefficient is about 0.8 for the sample.

Pass-through from import prices to domestic inflation

To gauge pass-through from import prices to domestic inflation, we use a Phillips curve framework that allows us to disentangle domestic and external factors. The Phillips curve can be modelled by a system of two jointly determined or simultaneous equations.

Specifically, the two-equation system can be expressed as follows:

$$\Delta \ln(P_t) = \alpha_1 + \alpha_2 MA_n \Delta \ln(ULC_t) + \alpha_3 MA_n \Delta \ln(PM_t) + \varepsilon_{1,t} \quad \text{(B3.2)}$$

$$\Delta \ln(ULC_t) = \alpha_4 + \alpha_5 \Delta \ln(P^e_{t+1}) + \alpha_6 gap_{t-i} + \alpha_7 \Delta \ln(PM_{t-i}) + \alpha_{7a} DCrisis * \Delta \ln(PM_{t-i}) + \varepsilon_{2,t} \quad \text{(B3.3)}$$

where

$$\Delta \ln(\hat{P}^e_{t+1}) = (1-\delta)\sum_{i=0}^{n} \beta_i \Delta \ln(P_{t-i}) + \delta \Delta \ln(P^*_{t+1}) \quad \text{(B3.4)}$$

In the first equation (equation B3.2), domestic inflation is modelled as a function of both domestic and foreign factors, where P_t, ULC_t, and PM_t are CCPI, the unit labour cost, and import prices respectively; Δ stands for the first difference of the variable; MA_n represents n-period moving average. Specifically, the domestic factor is primarily represented by the unit labor cost, which is defined as nominal wage per person divided by output per person. In the second equation (equation B3.3), some specific domestic factors such as inflation expectation, GDP gap, and import prices are determinants for the unit labour cost, where P^e_{t+1}, gap_{t-1}, and *DCrisis* are inflation expectations, Hong Kong's real GDP gap estimated from a production function, and a dummy variable to reflect a possible structural break associated with the collapse of domestic demand after the 1997-98 financial crisis. In this two-equation framework, the foreign factor is represented by import prices only. This is because for a small and open economy like Hong Kong, import prices would affect domestic factors such as inflation expectations and eventually the unit labor cost, but

Table B3.B
Estimation results of the system of equations for inflation dynamics

Variable	*Coefficient*	*Standard errors*
	Inflation equation	
Constant	0.003	(0.001)
$MA_4(\Delta ln(ULC_t))$	0.581	(0.050)
$MA_4(\Delta ln(PM_t))$	0.290	(0.060)
Adjusted R^2	*0.56*	
	Unit labour cost equation	
$\Delta ln(P^e_{t+1})$	1.022	(0.139)
gap_{t-4}	0.150	(0.051)
$\Delta ln(PM_{t-4})$	0.241	(0.136)
$DCrisis*\Delta ln(PM_{t-4})$	-0.396	(0.211)
Adjusted R^2	*0.28*	

Note: Price expectation ($\Delta ln(P^e_{t+1})$) is formed by an autoregressive model
Source: Staff estimates.

Table B3.C
Pass-through elasticities of exchange rate to CCPI

	1984-2007 (full sample)	1984-1991	1992-2007
Foreign wage as a proxy of foreign producer cost			
Short run	0.10	0.13	0.09
Medium run	0.20	0.25	0.13

Source: Staff estimates.

Hong Kong's domestic factors cannot affect import prices.

This two-equation system is then estimated jointly by seemingly unrelated regressions (SUR). Our model estimates show that the coefficient of import prices pass-through to domestic inflation is around 0.29 and the estimated coefficient on the unit labour cost is much higher at 0.58 (Table B3.B). The findings show that even for a very small and open economy like Hong Kong, domestic factors still dominate inflation dynamics. We also find that Hong Kong's unit labour cost is sensitive to inflation expectations, after controlling for domestic demand and external factors.

How large is the exchange rate pass-through to domestic inflation?

By combining the above two estimates, we are able to calculate exchange rate pass-through to domestic inflation. In the short run and for the whole sample, a 1% depreciation of the Hong Kong NEER would lead to a 0.10% (0.33*0.30) increase in domestic prices, holding other things constant, with foreign wage being used as the foreign production cost indicator. Similarly, in the medium run and for the whole sample, a 1% depreciation of the Hong Kong dollar would lead to a 0.20% (0.65*0.30) increase in domestic prices, again holding other things constant (Table B3.C). These results suggest that a 1% depreciation of the Hong Kong dollar NEER would lead to an increase in domestic prices of 0.1% in the short run and 0.2% in the medium run. Put differently, a 10% depreciation of the US dollar against all currencies except the Hong Kong dollar would cause domestic prices to increase by 0.82% in the short run and 1.61% in the medium run. Using this estimated model, we can analyse the contribution to inflation by various factors. For the 2007 CPI inflation, the estimated contribution due to the depreciation of the Hong Kong dollar NEER was 0.6 percentage points, or about 20% of underlying inflation in 2007.

Compared with some OECD economies, Hong Kong's exchange rate pass-through to domestic inflation in the medium run is relatively high. For example, exchange rate pass-through to domestic prices was only 0.01% in the US and 0.17% in the OECD economies on average.

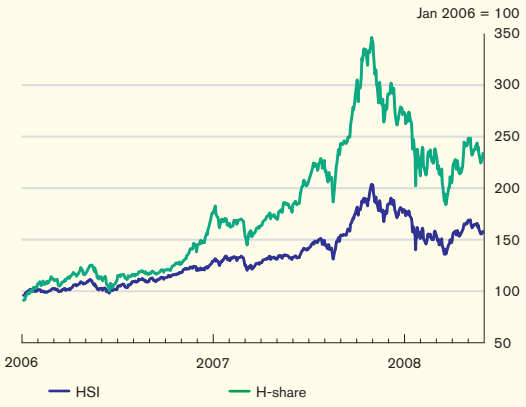
Asset markets

The local equity market lost substantial ground as the downbeat global economic outlook triggered sell-offs in markets around the world. In the property market, lower borrowing costs and stronger income growth improved housing affordability, driving up residential property prices in late 2007 and early 2008. However, increased uncertainty surrounding the economic outlook restrained transaction volumes. The demand for office premises remained strong, reflecting growing business demand and the tight supply of premium office space in prime locations.

2.9 Equity market

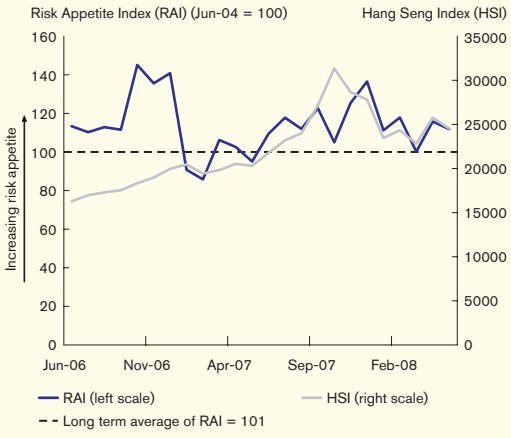
Local equities have corrected sharply in the past six months (Chart 2.18). Given that the market was overbought, a technical correction was considered overdue at the beginning of the Report period. But, as the downward adjustment continued into 2008, sentiment quickly deteriorated as a severe blizzard hit southern China and inflation finally showed up in official figures, despite continued monetary tightening by the PBoC. The market took a further blow when a renewed wave of financial market turbulence almost brought Bear Stearns down in March. Concerns over a worsening credit crunch and highly-strained credit markets in the US cast a shadow over the global economic outlook, prompting a major reappraisal of risk. Reflecting ailing investor sentiment domestically, a record number of companies withdrew or delayed their initial public offerings in 2008 Q1. Although the local market was able to recoup part of its lost ground as calm returned, to some extent, to overseas financial markets following the Fed's response, the Hang Seng Index (HSI) still registered a sizable 14.4% fall for the period. Risk appetite retreated from a high level in December 2007 to the long-term average in March 2008 before rebounding slightly toward the end of the review period (Chart 2.19).

Chart 2.18
Equity prices in Hong Kong



Source: Bloomberg.

Chart 2.19
Risk Appetite Index



Sources: Staff estimates and Bloomberg.

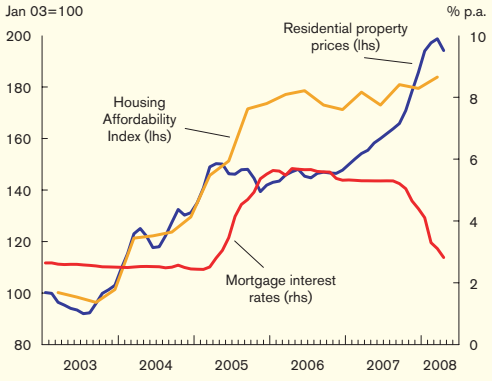
2.10 Property market

Residential property prices rose notably in 2007 Q4 and 2008 Q1, as falling borrowing costs and rising household income improved housing affordability for home-buyers. A favourable interest rate outlook and rising inflation also increased asset demand for real estate. On a quarter-on-quarter comparison, house prices rose by 10.3% in Q1 after rising by 8.8% in 2007 Q4 (Chart 2.20). However, the steep rise in house prices and increased uncertainty over the economic outlook have recently restrained housing market activity. Transaction volumes contracted by 8.9% in 2008 Q1 following an expansion of 37.8% in the preceding quarter, mainly reflecting the slowdown in secondary market transactions. Monthly indicators point to some moderation in house prices in the mass market. However, the pace of house price increases in the luxury segment (flat size of 160 m^2 or above) has gathered momentum, with the average transacted prices rising above the peak level of 1997 (Chart 2.21).

Underpinned by vibrant expansion in business activity, the demand for office space remained strong. Office rents rose by 4.5% quarter on quarter in Q1 after growing by 3.9% in 2007 Q4 (Chart 2.22). Rents for premium office space increased even faster by 5.2%. The average monthly rental price of grade A office space in Central rose to HK$812 per square metre in Q1, higher than the peak of HK$810 recorded in 1994 Q4, and is likely to grow further given the limited supply of new office premises in prime locations. Rentals of retail premises and factory space have been growing steadily over the past few quarters, while growth in residential property rents picked up to 6.8% in Q1 from 4.2% in the previous quarter following the steep rise in house prices.

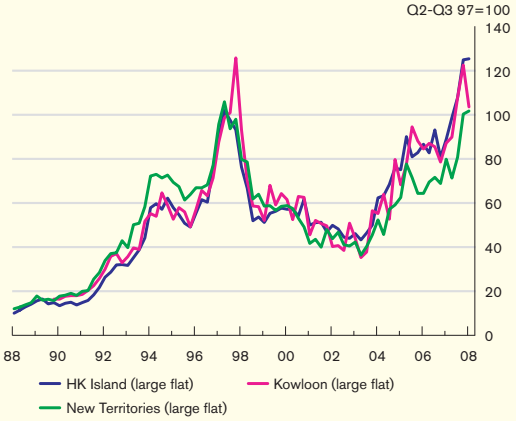
The rapid growth in house prices since mid-2007 has raised concerns about the risk of overheating in the property market against the background of negative real interest rates. Reflecting rising inflation and lower bank lending rates, real mortgage interest rates, defined as nominal mortgage rates minus the annual CCPI inflation rate over the past year, declined from 3% to 1% in 2007, and turned negative in early 2008. While property prices picked up notably during the same period, it is not clear

Chart 2.20
Property price, interest rate and housing affordability



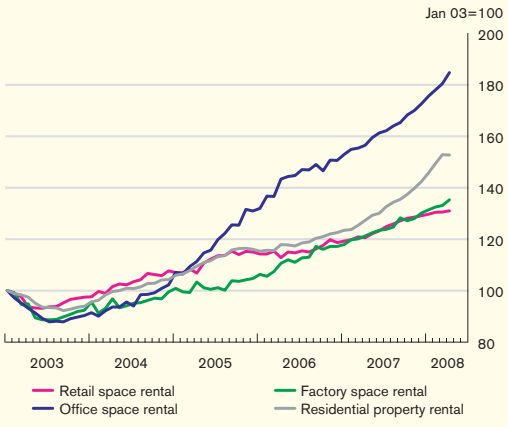
Sources: Rating & Valuation Department and staff estimates.

Chart 2.21
Average transacted prices of luxury flats



Source: Rating & Valuation Department.

Chart 2.22
Rental indices by property type



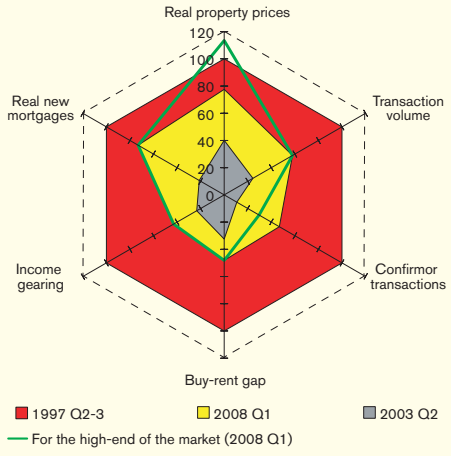
Sources: Rating & Valuation Department, C&SD and staff estimates.

if the recent increase in house prices has been solely attributable to the decline in borrowing costs, as strong growth in household income has also improved housing affordability of home-buyers. As a result, the income gearing ratio, which is a measure of housing affordability, remained at a comfortable level compared with the peak in 1997.[12] Past developments show that lower real interest rates could be a stimulant to property market activity, but it is unlikely to be the major contributor to the recent increase in house prices. Box 4 gives a more detailed assessment of the impact of real interest rates on the property market.

A graphical framework with key market indicators suggests a broadly healthy picture in the residential property market (Chart 2.23).[13] Despite the recent expansion in property market activity, average house prices in Q1 were 22% below the peak in 1997 in real terms. While prices of luxury flats rose above the peak in Q1, this largely reflected the growing demand for large-size housing units. Although the number of confirmor transactions expanded in Q1, its proportion to total transactions remained low at 3.3% in the mass market and 3.5% in the higher-end market.

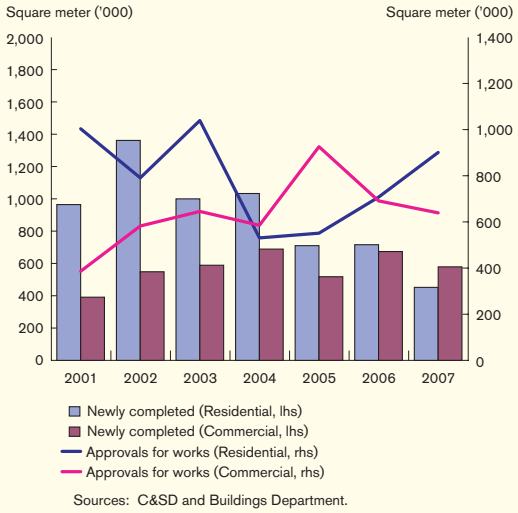
Reflecting the slowdown in land supply in recent years, newly completed residential properties (measured in terms of floor area built) contracted by 37% in 2007, following tepid growth of 1% in 2006. Nevertheless, approvals for commencement of building residential units increased strongly by 27% in 2007 after rising by 28% the previous year, as developers become more optimistic about the near-term outlook for the residential property market (Chart 2.24). In the commercial property segment, both newly completed units and approvals for commencement of building works declined in 2007, suggesting that the supply of office and shopping space may remain tight in the coming years.

Chart 2.23
Graphical analysis of the housing market



Sources: Rating & Valuation Department, Land Registry, Census & Statistics Department, Centaline Property Agency Limited, and staff estimates.

Chart 2.24
Supply of residential and commercial properties



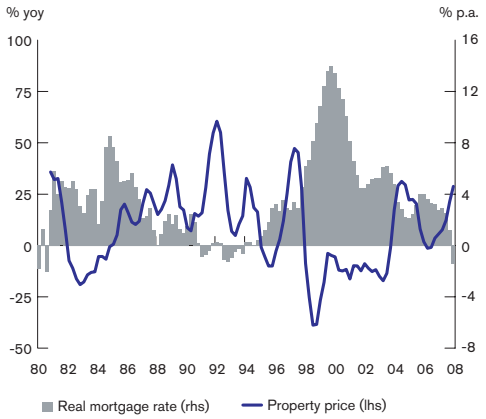
Sources: C&SD and Buildings Department.

[12] A higher income-gearing ratio indicates lower housing affordability.

[13] See Chan, N., W. Peng and K. Fan (2005), "A graphical framework for monitoring the property market in Hong Kong", *HKMA Quarterly Bulletin*, March 2005.

Box 4
Negative real interest rates and property prices

Chart B4.1
Real mortgage interest rates and house price appreciation



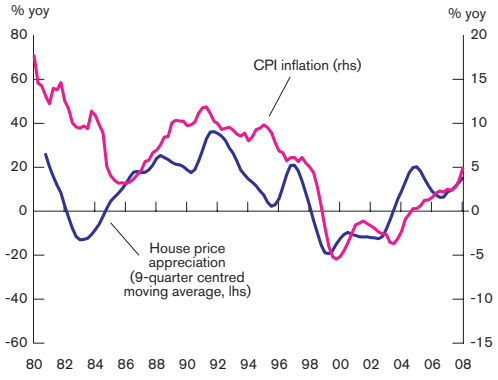
Sources: R&VD and staff estimates.

The rapid increase in house prices since the second half of 2007 has raised concerns about the risk of overheating in the property market. While there were a number of factors driving the house price appreciation, market commentators appeared to focus on the stimulus provided by negative real interest rates, as the nominal mortgage rates fell below the CCPI inflation rate (Chart B4.1). This box analyses the key determinants of property price movements in Hong Kong and assesses the role played by negative real interest rates in the recent upsurge in property prices.

Relationship between inflation, interest rates and property prices

One of the commonly cited factors driving the recent house price appreciation is the negative real mortgage interest rate. It is argued that, when nominal mortgage rates fall below the CCPI inflation rate, and if property prices rise at a rate that is at least as high as the CCPI inflation rate, house price appreciation will be higher than the borrowing cost, thus yielding positive gains from property investment and stimulating both user and speculative demand for property.

Chart B4.2
CPI inflation and house price appreciation



Sources: C&SD, R&VD and staff estimates.

Whether this argument is valid depends on the implicit assumption that property prices increase at a rate comparable to the general inflation. Historical data show that there are strong co-movements between house price appreciation and consumer price inflation. Over the past two decades, the nine-quarter centred moving average of house price appreciation appeared to closely track the CCPI inflation rate (Chart B4.2). This remains the case even if the property price is measured in real terms (i.e. deflated by the CCPI excluding the rental component). This simple graphical comparison suggests that CCPI inflation may be an important fundamental determinant of property price movements in Hong Kong.

Apart from the funding cost channel, there may be other channels through which inflation affects property prices. In an environment of rising inflationary expectations, there are usually concerns about the loss of the purchasing power of money, and investment in fixed assets like real estate can be regarded as a hedge against inflation (the inflation hedging channel). Higher inflation also affects price-setting behaviour on the supply side. For example, higher construction costs in an inflationary environment would lead property developers to set higher prices for their newly completed residential units in the primary market, driving up the overall property price (the cost channel).

What drives property price increases?

To better understand the movement in property prices, statistical analysis is conducted to identify the relationship between real property prices and a number of fundamental determinants. Based on a sample of quarterly data from 1986 to 2007, it is found that there is a long-run equilibrium (co-integrating) relationship among real property prices, GDP per capita, real interest rates, land supply, and the price deflator of private residential investment. The estimated long-run equilibrium relationship is shown in Table B4.A and the short-run adjustment equation is shown in Table B4.B. The estimated long-run relationship and the short-run adjustment equation suggest that real GDP per capita (a measure of household income) is positively related to real property prices, and the real interest rates (a measure of real funding cost) are negatively related to house prices in real terms. Given a certain level of property prices, these two variables provide an indication of housing affordability. On the production side, land supply is found to be negatively related to real property price. The price deflator of private residential investment (excluding the property developer's margin) is found to be positively related to house prices in real terms.

Table B4.A
Long-run determinants of real property prices

	Beta	Standard error	t-ratio
Constant	189.566	60.835	3.116
Real GDP per capita	0.714	0.382	1.871
Real interest rate	-3.087	1.322	-2.335
Two-quarter lag of land supply	-27.138	8.904	-3.048
Residential investment deflator	0.023	0.003	8.751
Adjusted R^2: 0.856			

Note: The relationship is estimated by dynamic ordinary least square method with heteroskedasticity-autocorrelation consistent (HAC) standard errors. The leads and lags of the dynamic terms are not shown in the table.

Source: Staff estimates.

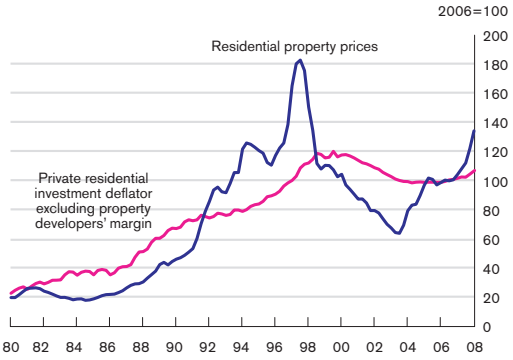
Table B4.B
Short-run adjustment equation of real house prices

	Beta	Standard error	t-ratio
Error-correction term	-0.102	0.025	-4.081
Lag of real house price	0.588	0.065	9.057
Real GDP per capita	0.717	0.325	2.208
Real interest rate	-0.857	0.360	-2.378
Residential investment deflator	0.010	0.003	3.806
Real Hang Seng Index	0.188	0.038	4.899
Adjusted R^2: 0.630			

Note: All variables are either in first difference or log-difference, except for the error-correction term.

Source: Staff estimates.

Chart B4.3
Residential property price and private residential investment deflator

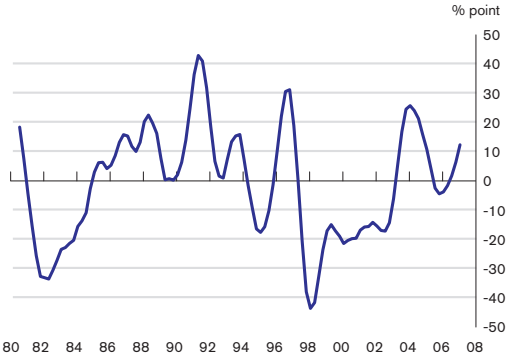


Sources: C&SD and R&VD.

The price deflator of private residential investment, which by definition is affected by the general inflation and real construction cost, is used to capture the effect of inflation through channels other than the interest rates. The high statistical significance of the private residential investment deflator suggests that inflation can affect real property prices not only through real interest rates (the funding cost channel), but also through the inflation hedging and the cost channels. In fact, graphical comparison shows that there are strong co-movements between property prices and the price deflator of private residential investment (Chart B4.3).

A breakdown of the contribution of different factors to movements in property price shows that, during 1990-94, the fall in real interest rates into negative territory only accounted for a small proportion of the increase in house prices in real terms, while the sharp rise in real interest rates in the late 1990s and early 2000s was an important factor in the decline in real property prices when the domestic economy entered into a deflationary period in the aftermath of the Asian financial crisis. In the recent housing market up-turn, the rise in household income and the residential investment deflator explained much of the appreciation of real house prices during 2005-07, while the impact from lower real interest rates was not significant.

Chart B4.4
One-year ahead house price appreciation less mortgage interest rate



Sources: R&VD and staff estimates.

The key messages from these empirical findings are that the interest rate is just one of the drivers of property prices, and different factors may dominate property price movements in different periods. Our analysis suggests that CCPI inflation, together with the steady growth in household income, are the major factors in the current increase in house prices. While public interest appears to concentrate on the upside potential in property investment in the present low interest rate environment, it should be noted that house price appreciation does not always outweigh the borrowing costs. Chart B4.4 shows that the expected capital gain from property investment, defined as the one-year-ahead house price appreciation less nominal mortgage interest rate, has been very volatile over the two past decades, and any reversal in the current trend of interest rates or CCPI inflation may erode the expected capital gain or turn it into a loss.

Public finances

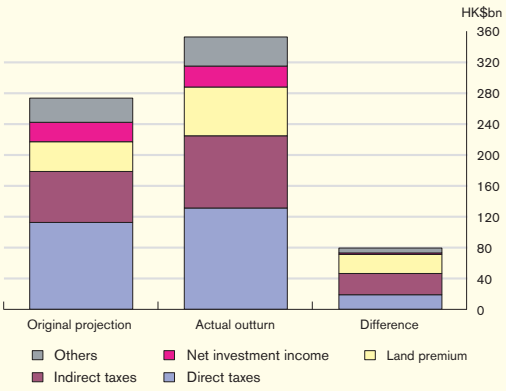
The fiscal outturn in 2007/08, with a consolidated surplus of 8% of GDP, was much stronger than budget forecasts and generally reflected higher-than-projected increases in stamp duties from property transactions and equity trading, as well as strong growth in land premiums. The government's 2008/09 budget proposed a number of tax concessions and one-off relief measures to alleviate the burden of taxpayers and the low-income group.

2.11 Public finances

The fiscal outturn in 2007/08 of a HK$124 billion (8% of GDP) surplus was significantly stronger than previous estimates of HK$25 billion, and doubled the surplus of HK$59 billion (4% of GDP) in 2006/07. The positive outturn was mainly due to a marked increase in stamp duties collected from property transactions and equity trading, as well as strong growth in land premiums and direct tax revenue (Chart 2.25). Both operating and capital expenditure were lower than earlier estimates, which also contributed to the increase in the fiscal surplus.

On the back of a record fiscal surplus, the government proposed a number of tax concessions and one-off relief measures to alleviate the burden of taxpayers and the low-income group. Together with increased spending on infrastructure and various allowances, the consolidated fiscal balance is projected to turn negative in 2008/09. Table 2.E shows the breakdown of projected revenue and expenditure items for the current fiscal year. On the revenue side, the one-off salaries tax rebate, waivers of rates and other tax concessions will reduce government revenue by HK$38 billion. These relief measures are expected to boost private consumption and help offset part of the negative income effect of higher inflation.

Chart 2.25
Projected and actual government revenue for 2007/08



Sources: The 2008/09 Budget and Treasury.

Table 2.E
Analytical presentation of fiscal account

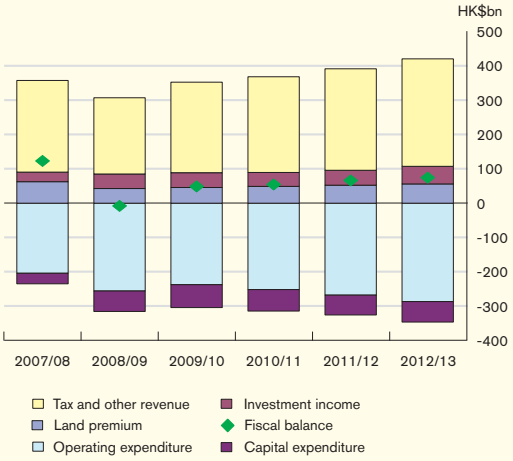
Fiscal year[1]	2006/07	Original projection 2007/08	Actual outturn 2007/08	Projection 2008/09
	(In percent of fiscal-year based GDP)			
Revenues[2]	19.2	16.7	21.8	17.5
Tax	12.6	10.9	14.0	10.7
Non-tax	6.6	5.8	7.8	6.8
Land premium	2.5	2.3	3.9	2.5
Asset sales / privatisations	0.0	0.0	0.0	0.0
Investment income (net)[3]	1.9	1.5	1.7	2.4
Others	2.2	1.9	2.3	1.9
Expenditure	15.1	15.1	14.3	17.8
Recurrent	12.9	13.1	12.4	14.6
Capital[4]	2.1	2.0	1.8	3.2
Overall balance before net borrowing	4.1	1.6	7.5	-0.3
Overall balance after net borrowing[5]	3.9	1.6	7.5	-0.4
Fiscal reserves	24.6	23.9	30.1	27.2
Net fiscal reserves	23.1	22.5	28.7	26.1

1. Figures are based on the 2008/09 Budget.
2. Exclude proceeds from the issuance of government bonds.
3. Netting out interest expenses of government bonds.
4. Exclude interest expenses and repayments of government bonds.
5. The headline balance reported by Hong Kong SAR Government.

Sources: Budget Speech, Treasury and staff estimates.

On the expenditure side, the government plans to spend HK$22 billion on various infrastructure projects, and to put aside an upfront endowment of HK$21.6 billion to finance the West Kowloon Cultural District project. Together with increased investment in education and spending on transfer payments and various allowances, government spending is projected to increase by HK$75 billion in 2008/09. Increased public spending and reduced revenue will turn the overall fiscal balance to an estimated deficit of HK$7.5 billion (0.4% of GDP) in 2008/09. The expansionary fiscal policy stance is expected to boost domestic demand, which will help cushion part of the negative impact of a slowdown in external demand on the domestic economy. Box 5 assesses the possible impact of the 2008/09 Budget on economic growth and inflation.

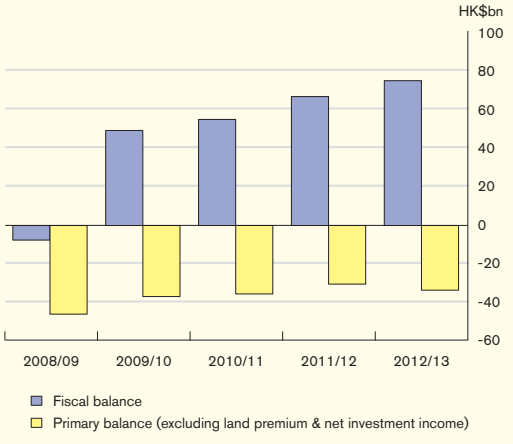
Chart 2.26
Contribution to the medium-term projection of fiscal surplus



Sources: The 2008/09 Budget and Treasury.

The medium-term fiscal outlook remains favourable. Despite a small fiscal deficit in 2008/09, the government projects both operating and consolidated fiscal balances will return to surplus in subsequent fiscal years. The expected increase in the budget surplus reflects faster growth in revenue than expenditure over the next four fiscal years, with tax revenue remaining the major source of income to the government (Chart 2.26). The proceeds from land sales are expected to remain volatile, while investment income will become more predictable under the new income-sharing arrangement between the Exchange Fund and fiscal reserves. While internal revenue from direct and indirect tax remains the largest income component, asset income continues to play an important role in public finances. This can be seen from the persistent deficits in the primary balance (excluding land premiums and net investment income) throughout the projection period (Chart 2.27).

Chart 2.27
Projected overall fiscal balance and primary balance



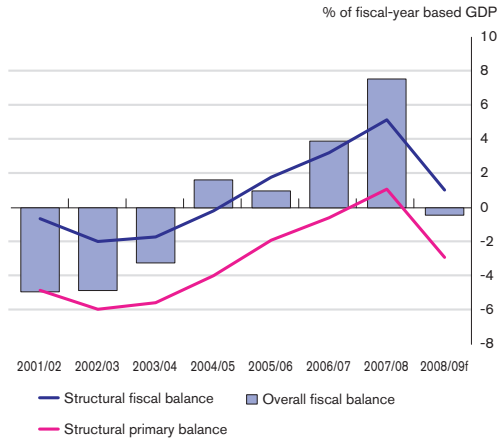
Sources: The 2008/09 Budget and staff estimates.

Given the sizable infrastructure outlays and the government's commitment to health reform, it is expected the financing needs of the government will continue to rise in the years ahead. The government has earmarked HK$50 billion as the start-up capital for the implementation of health care reform to prepare for the ageing population.

Box 5
Macroeconomic impact of the 2008/09 government budget

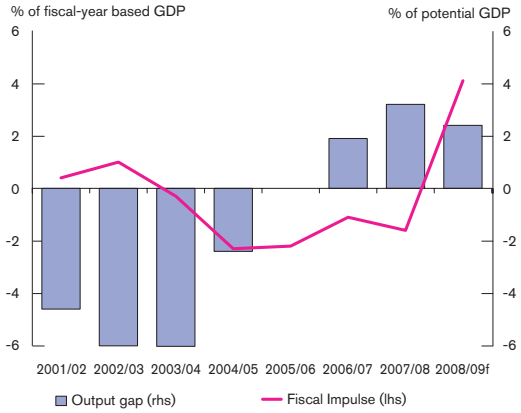
The Financial Secretary outlined in his 2008/09 Budget Speech a spending plan which covers the long-term infrastructural development in Hong Kong. He also proposed a number of tax concessions and one-off measures to relieve the burden of taxpayers and the low-income group. These fiscal measures are expected to boost domestic demand and mitigate part of the negative impact of a slowdown in external demand on the domestic economy. This box assesses the impact of the 2008/09 government budget on economic growth and inflation.

Chart B5.1
Structural fiscal balance and structural primary balance



Sources: Budget Speech, Treasury and staff estimates.

Chart B5.2
Fiscal impulse and output gap



Note: A positive fiscal impulse indicates an expansionary fiscal policy stance. The output gap estimates are on calendar-year basis.

Sources: Budget Speech, Treasury and staff estimates.

Structural fiscal balance and fiscal impulse

The government recorded a sizable fiscal surplus of HK$124 billion (about 8% of GDP) in 2007/08. The ample surplus provides room for the government to cut taxes and increase public spending in 2008/09. As a result, the government expected to register a small budget deficit for the year.

After stripping out the effect of cyclical fluctuations on the revenue and expenditure sides and excluding fiscal operations with neutral economic impact, the structural fiscal balance is projected to remain positive at around 1.0% of GDP in 2008/09, down from 5.2% of GDP in 2007/08 (Chart B5.1).[14] Netting out the land premium and net investment income, the projected structural primary balance turns to a deficit of -2.9% of GDP in 2008/09, following a surplus of 1.1% of GDP in 2007/08.[15] The fiscal impulse, defined as the change in the structural primary balance, is estimated to be 4.1% of GDP. This suggests an expansionary fiscal policy stance against the background of a positive output gap (Chart B5.2).

[14] Fiscal operations with no immediate economic impact include the establishment of a Research Endowment Fund of HK$18 billion, the one-off injection of HK$8.5 billion to the MPF accounts of employed persons with earnings of not more than HK$10,000 a month, and the amortisation of the upfront endowment of HK$21.6 billion for the West Kowloon project.

[15] Structural primary balance is purged of the effect of cyclical fluctuations on the primary balance. The primary balance is derived by subtracting the land premium, net investment income and proceeds from asset sales from the overall fiscal balance.

Impact on economic growth and inflation

With increased uncertainty in the external environment, an expansionary fiscal policy stance supports economic growth and employment. However, this inevitably raises concerns about the impact on consumer price inflation given the relatively tight labour market and vibrant domestic demand. To assess the macroeconomic impact of the 2008/09 Budget, we incorporate the new fiscal measures into our small forecasting model and estimate their effects on growth and inflation for 2008.[16]

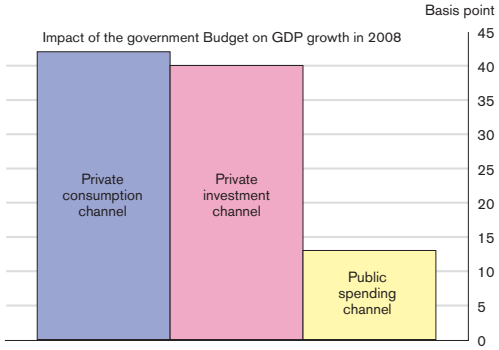
Simulation results suggest the fiscal stimulus would raise GDP growth and CPI inflation by 0.95 percentage points and 0.12 percentage points respectively from the baseline projections in 2008. The proposed fiscal measures would affect economic growth mainly through three channels – public spending, private consumption and private investment. Estimates obtained from the small forecasting model show that increased government expenditure would boost GDP growth by 0.13 percentage points. The 30% increase in public spending in budgetary terms would only translate into a 6% increase in government spending (consumption and investment) under the national income account, as the former includes transfer payments, which mainly affect private consumption. Adjustment is also made to infrastructure outlays which are usually drawn down over a time span beyond the current fiscal year.[17]

Government transfer payments and various tax relief measures are estimated to boost private consumption growth by 0.5 percentage points from the baseline scenario. This would translate into an increase of 0.42 percentage points in GDP growth in 2008. Increased spending on infrastructure and other public capital works would raise private investment growth by 1.3 percentage points from the baseline, which would

[16] A detailed description of the specifications of the small forecasting model is found in "A Small Macroeconomic Model of Hong Kong" by Jiming Ha, Cynthia Leung and Chang Shu, *HKMA Research Memorandum June 2002* and in "Revised Small Forecasting Model for Hong Kong" by Janet Kong and Cynthia Leung, *HKMA Research Memorandum December 2004*.

[17] For example, we assume that the upfront endowment for the West Kowloon project will be drawn down in equal amounts over a 5-year horizon from 2008/09 to 2012/13, which is consistent with the adjustment made in our estimation of the structural fiscal balance.

Chart B5.3
Impact of the 2008/09 Budget on economic growth through different GDP components



Source: Staff estimates.

add another 0.40 percentage points to output growth. Chart B5.3 summarises the impact of the proposed fiscal measures on economic growth in 2008 through different GDP components.

Consistent with the positive impact on the projected GDP growth rate, the new fiscal measures would raise the rate of CPI inflation by 0.12 percentage points from the baseline projection. The relatively small effect on inflation reflects the leakages through higher private savings and increased imports. The expansionary fiscal operations are not likely to increase import prices, which are largely driven by international supply and demand conditions as Hong Kong is a price-taker of tradable goods in international markets. The expansion in infrastructure outlays is expected to have limited effect on overall wage rates given the subdued residential investment and high unemployment rate in the construction sector.

3. Monetary and financial sector

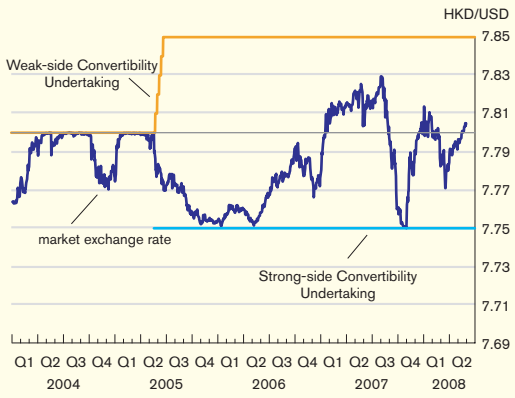
Exchange rate, interest rates and monetary developments

Monetary stability in Hong Kong remained intact despite the external shocks. The Hong Kong dollar spot exchange rate stayed near the centre of the Convertibility Zone, activities in the interbank market were smooth and orderly, and the tap issue of short-term Exchange Fund paper in mid-January was well received by the market. Local monetary conditions eased as interest rates declined and the Hong Kong dollar nominal effective exchange rate depreciated.

3.1 Exchange rate and interest rates

Despite the recent global financial market turmoil, successive cuts in the US policy interest rates, continued injection of liquidity in the money market by major central banks and rising global inflationary pressures, monetary stability in Hong Kong remained intact. This underlines the resilience of the Linked Exchange Rate system in the face of external shocks. The Hong Kong dollar spot exchange rate stayed near the centre of the Convertibility Zone and the HKMA did not conduct any foreign exchange operations during the reporting period.

Chart 3.1
Hong Kong dollar exchange rate

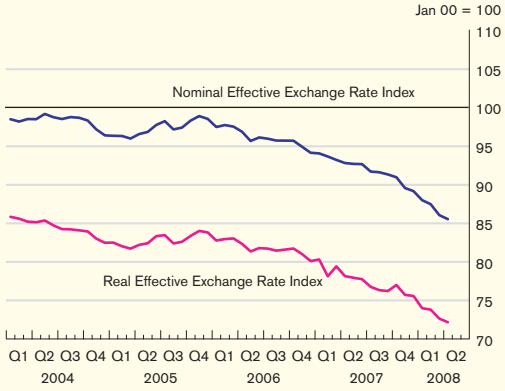


Source: HKMA.

After the market operations by the HKMA in late October last year, the Hong Kong dollar spot exchange rate depreciated towards the central parity rate of 7.80 and fluctuated around that level between December 2007 and mid-February 2008 (Chart 3.1). The exchange rate then strengthened in late February and mid-March and reached a low of 7.7710 on 17 and 18 March, partly reflecting broad-based weakness in the US dollar and the expected narrowing of negative HIBOR-LIBOR spreads.

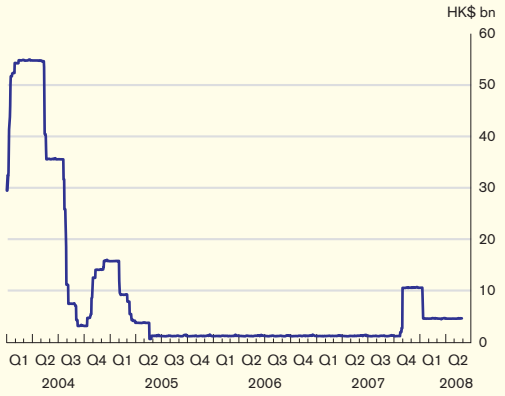
The Hong Kong dollar weakened somewhat in April and May, under the influence of interest rate arbitrage amid widened negative interest rate spreads. The market remained calm in mid-April when the trading band of the Singapore dollar was re-centred and the renminbi first appreciated beyond the psychological level of RMB7 yuan per US dollar, suggesting market confidence in the Linked Exchange Rate system.

Chart 3.2
Nominal and real effective exchange rates



Note: Real Effective Exchange Rate Index is seasonally adjusted.
Source: HKMA staff estimates.

Chart 3.3
Aggregate Balance (before Discount Window Activity)



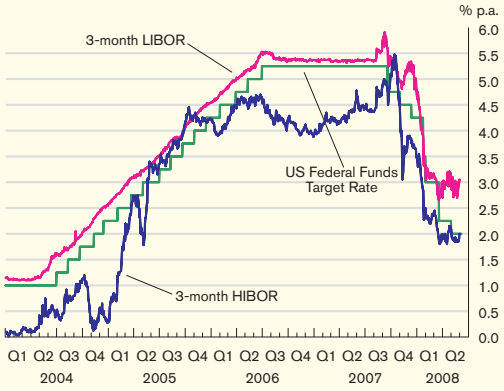
Source: HKMA.

While the Hong Kong dollar nominal exchange rate moved within a narrow range of 7.7710-7.8137 in the first four months of 2008, the trade weighted nominal and real effective exchange rate indices of the Hong Kong dollar depreciated by 2.8% and 2.5% respectively over the same period (Chart 3.2). This was due to the continued depreciation of the US dollar against other major currencies.

In the money market, activities were smooth and orderly. There were no signs of a spillover from the US sub-prime mortgage crisis causing stress in the local credit market, thanks in part to limited exposures to sub-prime-related investments by local banks and a liquid and well-capitalised banking sector.

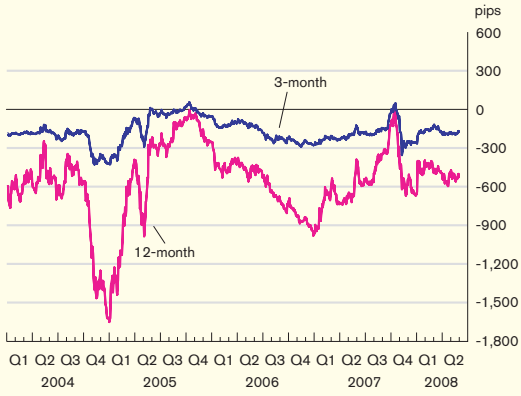
Between September and December last year, the demand for short-dated Exchange Fund papers increased alongside a rise in equity market transactions. As banks need to hold Exchange Fund papers as collateral for repurchase arrangements with the HKMA, the demand for such papers increased along with the heightened demand for intraday liquidity due to rapidly growing interbank transactions. Against a virtually constant supply, the yields of such papers declined markedly, resulting in a divergence between these yields and the corresponding interbank interest rates. Taking into account market conditions, the HKMA decided to increase the supply of Exchange Fund paper via a tap issue in mid-January to meet increased market demand. The additional issue of the paper was consistent with Currency Board principles because the issue only represented a shift within the Monetary Base from the Aggregate Balance to the Exchange Fund paper. The tap issue was well received by the market. As a result, the Aggregate Balance declined from around $10.6 billion to $4.6 billion on 14 January and stayed at this level for the remainder of the reporting period (Chart 3.3).

Chart 3.4
Interest rates of the Hong Kong dollar and US dollar



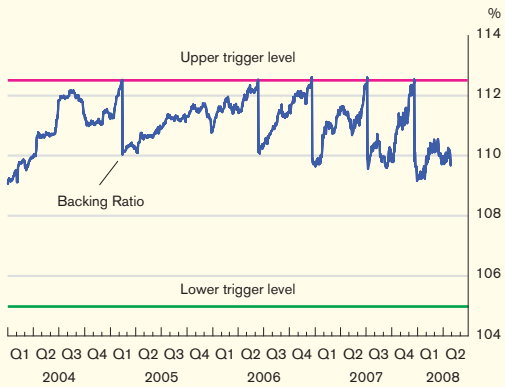
Source: HKMA.

Chart 3.5
Hong Kong dollar forward exchange rate



Source: HKMA.

Chart 3.6
Backing Ratio



Note: The Backing Ratio is the ratio of Backing Assets to the Monetary Base. Under the arrangements for transferring assets between the backing portfolio and the investment portfolio of the Exchange Fund, when the backing ratio reaches 112.5% (the upper trigger level), sufficient assets will be transferred from the backing portfolio to the investment portfolio to reduce the ratio to 110%. Should the backing ratio drop to 105% (the lower trigger level), assets will be transferred from the investment portfolio to the backing portfolio to restore the ratio to 107.5%.

Source: HKMA.

Hong Kong dollar interbank interest rates eased further and broadly tracked their corresponding US dollar rates, with only temporary deviations between late February and early March due to increased funding demand ahead of a number of initial public offerings (Chart 3.4). The US Federal Reserve has lowered its target rate by a cumulative 325 basis points to 2% since the easing cycle began on 18 September 2007, on the grounds of looming recession risk and persistent credit concerns triggered by the US sub-prime mortgage problems. The three-month HIBOR declined to 2% on 30 May 2008, compared with 4.80% on 18 September last year.

The negative HIBOR-LIBOR spreads narrowed in January and February as short-term HIBORs fell less than their US dollar counterparts, but widened afterwards. Broadly in line with the movements in the interest-rate differentials, the Hong Kong dollar forward discounts also narrowed in the first two months of 2008 and generally expanded towards the end of the review period (Chart 3.5). The three-month and 12-month forward discounts closed at -171 and -525 pips respectively on 30 May.

3.2 *Monetary Base and the Backing Ratio*

As interest income and valuation gains more than offset the effect of an increase in the Aggregate Balance in late October last year, the Backing Ratio rose to 112.53% on 21 January this year, surpassing the Upper Trigger Level of 112.5% (Chart 3.6). Under the arrangements approved by the Financial Secretary in January 2000, assets were transferred out of the backing portfolio to the investment portfolio of the Exchange Fund to reduce the Backing Ratio to around 110% on 22 January 2008. After that, the Backing Ratio fluctuated around 110% and closed at 109.67% on 30 May.

3.3 Money, credit and monetary conditions

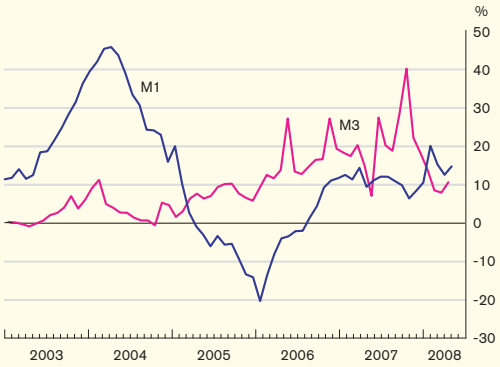
Despite recent signs of moderation, the year-on-year growth rates of Hong Kong dollar M1 averaged 15.5% between January and April, higher than the annual growth rate of 10.4% in 2007 (Chart 3.7). The demand for narrow money was in part supported by steady economic growth and the lower opportunity cost of holding liquid deposits following decreases in term deposit interest rates. On the other hand, Hong Kong dollar M3 has been generally declining since October last year. The contraction in time deposits was a main contributor, reflecting marked decreases in time deposit interest rates. As a result, the year-on-year growth rate of Hong Kong dollar M3 dropped to 10.5% in April, compared with an annual growth rate of 18.1% in 2007.

In contrast with the decline in Hong Kong dollar M3 and time deposits, domestic renminbi deposits have risen rapidly since October last year. The recent popularity of renminbi deposits has been a result of investment choices of the general public, driven by low interest rates in Hong Kong dollar deposits, expected valuation gain arising from the renminbi's appreciating trend, and local stock market adjustments from its peak in October last year. Still, renminbi deposits remain small, representing less than 2% of total deposits in Hong Kong.

Local monetary conditions continued to ease in the early part of 2008, as indicated by further decreases in the monetary conditions index (MCI) (Chart 3.8). A low real interest rate and the depreciation of the Hong Kong dollar real effective exchange rate have contributed significantly to the easing.

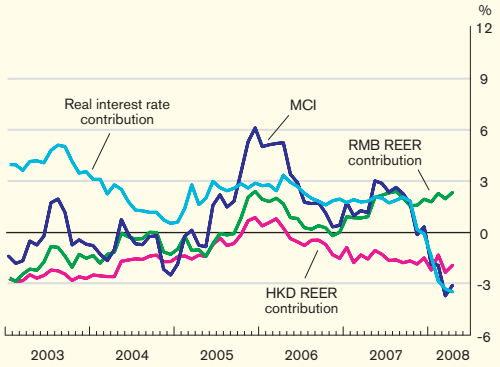
Domestic loan growth has been trending upwards since early 2007, broadly tracking movements in nominal GDP growth (Chart 3.9). Lower interest rates caused by the interest rate cuts in the US and higher expected inflation stimulated loan demand. Analysed by economic uses, most types of loans increased in the first quarter of 2008, but loans to stockbrokers fell on the back of diminishing initial public offering activity and local stock market adjustments (see Section 3.8 for more details).

Chart 3.7
Year-on-year growth in monetary aggregates



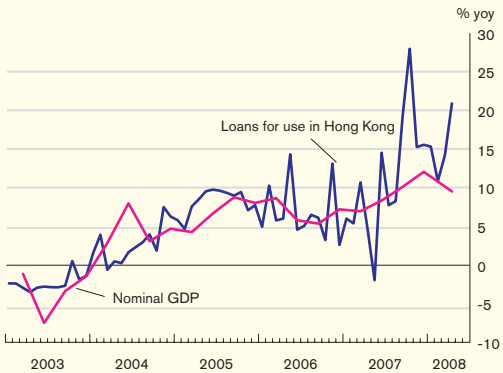
Note: Hong Kong dollar M1 is seasonally adjusted.
Source: HKMA.

Chart 3.8
Monetary conditions index



Note: MCI is a weighted sum of the real interest rate and the 4-quarter changes in the Hong Kong dollar and renminbi real effective exchange rates.
Source: HKMA, staff estimates.

Chart 3.9
Loans for use in Hong Kong and nominal GDP



Sources: HKMA and Census & Statistics Department.

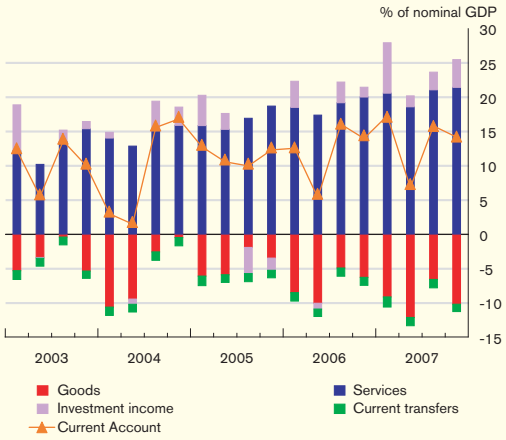
3.4 Capital flows

Latest Balance of Payments (BoP) statistics showed an expansion in reserve assets for the tenth consecutive quarter. Reflecting investment incomes from foreign currency reserve assets as well as purchases of US dollars by the HKMA in late October last year, reserve assets surged by HK$78.3 billion in the fourth quarter of 2007, representing the largest quarterly increase since the compilation of the BoP statistics in 1999.

The current account remained in surplus in 2007 Q4, with the surplus in service trade exceeding the deficit in merchandise trade (Chart 3.10 and Table 3.A). The service trade surpluses were due mainly to trade-related services, while the contribution of net exports of financial services shrank slightly alongside local stock market corrections.

The non-reserve financial account recorded net inflows in the final quarter of 2007, as the net inflows from direct investment, portfolio investment and financial derivatives exceeded the net outflows from other investment (Table 3.A). Both gross capital inflows and outflows were sizable in this period, mainly driven by two-way portfolio flows and other investments due to initial public offering activities and stock market trading. The conversion of Hong Kong dollars into renminbi deposits by Hong Kong citizens in their local bank accounts also increased the gross capital outflows because this kind of transaction is largely recorded as capital outflows in the "other" investment accounts in the BoP statistics.

Chart 3.10
Contributions to current account surplus



Source: Census & Statistics Department.

Table 3.A
Balance of payments account by standard components

In percent of GDP	2005	2006	2007 Q1	2007 Q2	2007 Q3	2007 Q4
Current Account	**11.4**	**12.1**	**17.2**	**6.8**	**15.8**	**14.1**
Capital and Financial Account	**-13.2**	**-14.2**	**-14.5**	**-10.6**	**-19.4**	**-17.0**
Capital transfers	-0.4	-0.2	-0.3	1.0	1.7	0.2
Financial non-reserve assets (net change)	**-12.1**	**-10.9**	**-10.8**	**-8.9**	**-17.7**	**0.2**
Direct investment	3.6	0.0	0.3	6.3	5.4	1.1
Portfolio investment	-17.7	-14.1	1.6	-5.3	2.9	8.6
Financial derivatives	2.2	1.8	7.1	4.2	3.0	0.8
Other investment	-0.2	1.4	-19.8	-14.2	-29.0	-10.4
Reserve assets (net change)	**0.8**	**3.2**	**3.3**	**2.6**	**3.4**	**17.4**
Net errors and omissions	**1.8**	**2.2**	**-2.8**	**3.8**	**3.6**	**2.8**

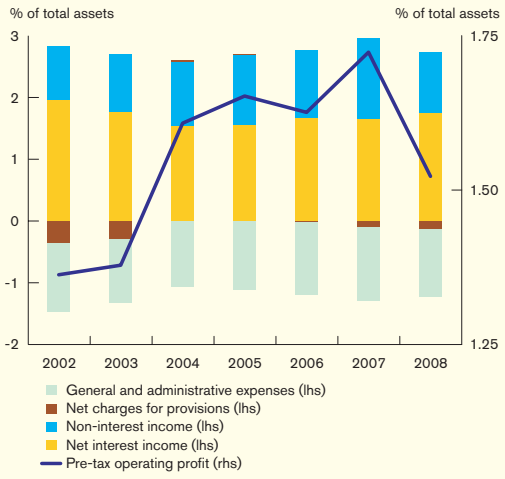
Source: Census & Statistics Department.

Banking sector performance

Retail banks continued to register healthy profits during the assessment period, even if they were slightly reduced, as improved interest margins largely offset increases in operating expenses, rises in provisions for investment portfolios due to the sub-prime turmoil, and decreases in non-interest income amid less vibrant stock market activities. Capitalisation and liquidity remained strong; and the quality of bank assets, other than sub-prime-related securities, improved on the back of solid domestic economic fundamentals. This indicates that the banking sector has, so far, weathered the US sub-prime crisis well. Nevertheless, some tentative signs have appeared of a modest deterioration in the credit risk of corporate lending, amid increased financial market volatility, and banks should be vigilant for any possible further adverse developments. On the whole, the composite early warning system of banking distress shows that the banking sector remains resilient, and the risk of an occurrence of banking distress is well contained. However, prevailing global financial instability and the unsettled sub-prime crisis, coupled with the increased credit risk of corporate exposures and possible further rises in operating costs, may continue to pose challenges to banks.

3.5 Profitability and capitalisation

Chart 3.11
Profitability of retail banks



Note: Figures for 2008 are annualised figures of the first quarter of 2008.

Source: HKMA.

Profitability

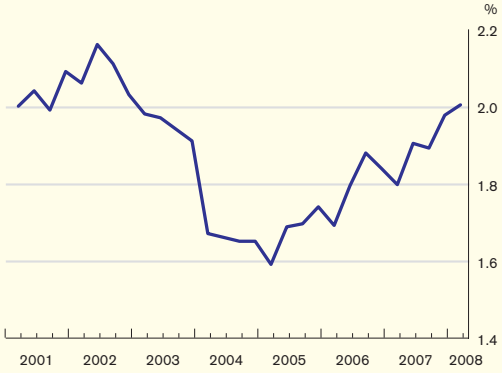
Retail bank profitability, measured by pre-tax operating profit as a percentage of total assets, fell moderately in the six-month assessment period[18] to March 2008 (Chart 3.11). Profitability was constrained by significant rises in operating costs, including increases in general and administrative expenses, and rises in net charges for other provisions[19] because of the deterioration in the quality of banks' investment in structured credit products, mainly sub-prime-related securities.

[18] Unless otherwise stated, the assessment period in this chapter refers to the six-month period from the end of September of 2007 to the end of March 2008.

[19] Net charge for provisions other than debt provisions.

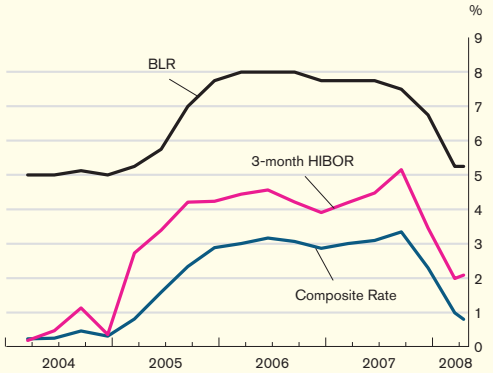
So far, the mark-to-market losses of structured credit investment of Hong Kong's retail banks as a whole have been immaterial in terms of the total asset size. However, if the crisis deepens, some banks may need to make further write-downs on their structured credit investment. Box 6 estimates the evolution of the market-implied loss distributions of some underlying assets for structured credit products in the assessment period, by which the likelihood of further occurrence of losses of retail banks' structured credit investment could be revealed. It is found that the larger loss implied by market information from the end of September 2007 to the end of March 2008 was in line with the net charges of provisions made by retail banks in the period. With the market-implied losses showing some tentative signs of stabilising since April, due to improved confidence, the risk of further large-scale write-downs does not appear large, provided that the banks' write-downs up to the first quarter of 2008 already fully reflect the then fair values of their investment. Nevertheless, since the crisis may still be far from settled, banks should be alert to possible implications of changes in the market for structured credit investment.

Chart 3.12
Net interest margin of retail banks



Note: Quarterly annualised figures.
Source: HKMA.

Chart 3.13
Composite interest rate



Note: End of period figures.
Source: HKMA.

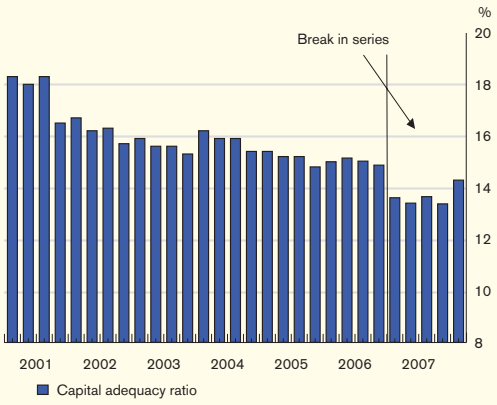
On the income side, retail banks' non-interest income, which comprises trading income and fees and commission income, registered a significant decrease in the first quarter of 2008 along with stock market corrections, exerting downward pressure on retail bank profitability. This was partially offset by growth in net interest income. The increase in net interest income was due mainly to an improvement in net interest margins in the assessment period (Chart 3.12), which outweighed the contraction of interest-bearing assets, including lending to other authorized institutions (AIs) and negotiable debt instruments held.

The improvement in net interest margins was partly attributable to a slight increase in the interest margin of Best Lending Rate (BLR)-priced lending, with the BLR decreasing by 225 basis points from the end of October 2007 to the end of April 2008, but the composite interest rate, which reflects the average cost of funds of retail banks, down by 246 basis points (Chart 3.13). On the other hand, interest margins of HIBOR-based lending narrowed, as the three-month HIBOR declined by

261 basis points in the same period, partly as a result of a significant decrease in funding demand associated with initial public offering (IPO) activities.[20, 21]

During the assessment period, it appears that some available funds in the banking sector were shifted to overseas interbank markets. Reflecting this, the Hong Kong dollar amount due from AIs of retail banks decreased by 53% from September 2007 to March 2008, while the foreign currency amount due from banks abroad registered an increase of 23%. As a result, the share of foreign currency amount due from banks abroad in the total assets of retail banks increased from 16% to around 21%. It is not clear if this reflects increased funding demand for retail banks' overseas related institutions or an intended shift seeking higher yields. However, since lending to overseas financial institutions may involve higher counterparty risk, especially in the US and European markets, it should be monitored for any implications for banks' credit risk if the trend persists.

Chart 3.14
Capitalisation of locally-incorporated AIs



Source: HKMA.

Capitalisation

The aggregate consolidated capital adequacy ratio of locally incorporated AIs increased to 14.3% at the end of March 2008, compared with 13.6% at the end of September 2007(Chart 3.14).[22] This level remains well above the minimum international standard of 8%.

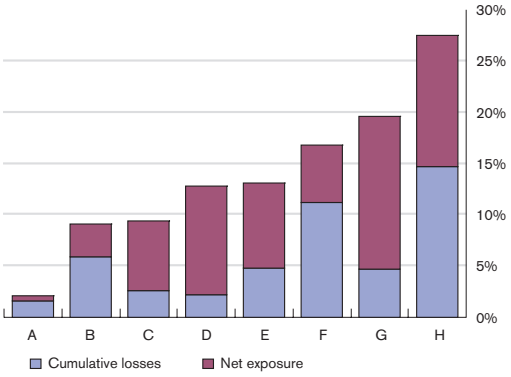
[20] During the period, HIBORs decreased more rapidly than the cost of funds. In addition, retail banks as a whole are a net lender in the interbank market.

[21] HIBORs, in particular those with short-term maturity, were affected by IPO activities in the stock market, as demand for short-term funds in the market decreased along with the slowdown in IPO activities.

[22] With effect from 1 January 2007, a revised capital adequacy framework ('Basel II') was introduced for locally incorporated AIs. The capital adequacy ratios from March 2007 onwards are, therefore, not directly comparable with those up until December 2006.

Box 6
Market-implied credit losses of US sub-prime mortgages and corporate debt, and implications for further write-downs of retail banks' structured credit investment

Chart B6.1
Cumulative losses[a] and net exposure[b] of structured securities[c] (as % of equity[d]) of some retail banks as at end-December 2007



Notes:
(a) Cumulative losses via profit and loss account and available for sale reserve by the end of 2007.
(b) Gross exposure minus cumulative losses.
(c) Includes sub-prime and non sub-prime RMBS, CDOs, and securities issued by SIVs.
(d) Total equity attributable to equity shareholders.

Source: Fitch Ratings (April 2008), "Banks in Asia excluding Japan: Update on exposure to sub-prime and structured credit products", available at http://www.fitchratings.com/corporate/reports/report_frame.cfm?rpt_id=383210&sector_flag=3&marketsector=1&detail=

The market value of US sub-prime residential mortgage-backed securities (RMBS) and corporate collaterised debt obligations (CDOs) decreased substantially in the assessment period along with the increased credit risk of their underlying assets, that is, US sub-prime mortgages and corporate debt respectively. As a result, various Hong Kong retail banks investing in such structured securities or notes issued by special investment vehicles (SIVs)[23] reported significant mark-to-market losses by the end of 2007, although the scale of the cumulative losses and the remaining exposure seemed to be moderate in terms of their equity (Chart B6.1).

To reveal the likelihood of further significant losses being reported by retail banks in the first half of 2008, this Box examines the market-implied credit loss distributions[24] of US sub-prime mortgages and those of corporate debt, by which market expectations on the value of sub-prime RMBS and corporate CDOs could be revealed respectively. To the extent that cash flows and thus prices of these structured securities are derived from their underlying assets, the market-implied loss distributions of the underlying assets should reflect, at least partially, market expectations on the quality of the structured securities. It should be noted, however, that the method adopted to derive the loss distributions in this study is

[23] Banks that have no direct exposure to sub-prime RMBS and CDOs could still be affected by the sub-prime crisis if they hold notes issued by some SIVs that heavily invest in sub-prime RMBS and CDOs.

[24] Credit losses are losses due to debtors who fail to meet their payment obligations. In this study, credit loss distributions are presented graphically by plotting different combinations of probabilities in y-axis and losses (as per cent of the portfolio value) in x-axis.

simple and relies on some broad but reasonable assumptions.[25] So, the result can best serve as a rough approximation rather than an accurate quantification of losses.

The market-implied loss distributions of US sub-prime mortgages are derived from the prices of tranches of the ABX index, with each tranche being associated with a defined class of credit rating of sub-prime RMBS.[26] The trading of a tranche of the ABX index is analogous to trading a credit default swap (CDS) contract written on 20 US sub-prime RMBS reference entities with the same credit rating class. Because of this, the prices of tranches of the ABX index are generally adopted to reflect market expectations on credit losses of US sub-prime mortgages, and thus the quality of sub-prime RMBS.[27]

Regarding US corporate debt, the market-implied loss distributions are derived from the spreads of tranches[28] of the CDX North American Investment Grade (CDX.NA.IG) index. Trading of the CDX.NA.IG index is comparable to the trading of an equally weighted basket of 125 CDS of US firms with investment grade. Therefore, the spreads of tranches of the CDX.NA.IG index could be used to reveal market expectations on US corporate defaults, and thus the value of US corporate CDOs.

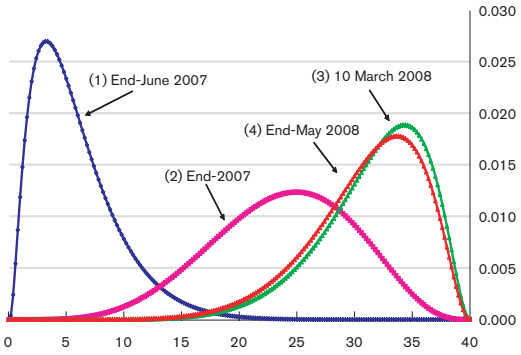
[25] The derivation of the loss distributions is similar to that described in Section IV, Valuing Tranches, in Longstaff and Rajan (2008), "An empirical analysis of the pricing of collateralised debt obligations", *Journal of Finance*, April 2008, pages 529-563, but the loss distributions used in this study are assumed to follow that proposed by Vasicek (2002), "The distribution of loan portfolio value", *Risk*, December 2002. In addition, for simplicity, there are some assumptions on the value of asset correlation and loss-given-default. The loss distributions are estimated by finding a 1-year risk-neutral default probability (*PD*) that minimises the sum of squares of the difference between theoretical and market spreads across the tranches. In estimations, the cumulative default probability in year *t*, where *t* = 0.25, 0.75,..., 5 is assumed to be *1-exp(-PD*t)*. Risk-free interest rate is assumed to be 5%.

[26] They are AAA (ABX.HE.AAA), AA (ABX.HE.AA), A (ABX.HE.A), BBB (ABX.HE.BBB) and BBB- (ABX.HE.BBB-).

[27] See, for example, Bank of England (2008), "Comparison of measures of sub-prime losses", *Financial Stability Report*, April 2008, pages 18-20.

[28] They contain six tranches, namely the 0-3%, 3-7%, 7-10%, 10-15%, 15-30%, and 30-100% tranches. Each tranche absorbs a specific segment of loss of the CDX.NA.IG index. For example, the 0-3% tranche absorbs the first 3% of losses.

Chart B6.2
Market-implied loss distributions of US sub-prime mortgages



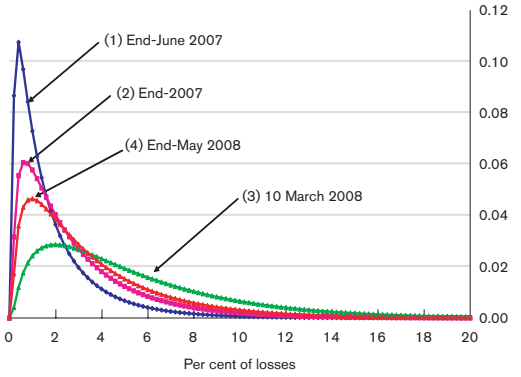
Notes:

(1) Loss distributions are estimated using the prices of tranches of the 2007 H1 ABX index. The underlying sub-prime mortgage portfolio is assumed to have an average expected life of 10 years, with no early repayments by the mortgagors. The 10-year cumulative loss distributions are presented in the chart.

(2) All mortgages are assumed to be homogeneous, with same value of loss-given-default and asset correlation, which are 40% and 0.15 respectively. In estimations, the attachment (detachment) points for BBB-, BBB, A, AA and AAA tranches are assumed to be 3% (5%), 5% (7%), 7% (10%), 10% (15%), and 15% (30%) respectively. The prices of all tranches are assumed to reflect credit risk of the underlying assets only.

Sources: Staff estimates and JPMorgan Chase & Co.

Chart B6.3
Market-implied loss distributions of US investment grade corporate debt



Notes:

(1) Loss distributions are estimated using the spreads of the six tranches of the five-year on-the-run CDX.NA.IG index. The 5-year cumulative loss distributions are presented in the chart.

(2) All firms are assumed to be homogeneous, with same value of loss-given-default and asset correlation, which are 40% and 0.2 respectively.

Sources: Staff estimates and JPMorgan Chase & Co.

Chart B6.2 shows the market-implied credit loss distributions of US sub-prime mortgages of four selected time points for the period June 2007 to end-May 2008[29], while Chart B6.3 shows those of US corporates. The apparent rightward shift in credit loss distributions from the end of June 2007 (before the onset of the sub-prime crisis) to the end of 2007 (after the onset of the crisis) in Charts B6.2 and B6.3 reflected expectations of increased credit losses on US sub-prime mortgages and corporate debt respectively. This is largely in line with losses booked against investment on sub-prime related securities and corporate CDOs by retail banks by the end of 2007.

As can also be seen, there was another obvious rightward shift of loss distributions from the end of 2007 to 10 March 2008 (when the sub-prime crisis was further amplified by the liquidity problem of Bear Stearns). This suggests that additional losses are likely to be booked by retail banks in the first half of 2008.[30] With the market-implied losses showing some tentative signs of stabilising recently, reflected by a moderate leftward shift of the loss distributions from March to May 2008 due to improved confidence, the risk of further large-scale write-downs does not appear large, provided that the banks' write-downs up to the first quarter of 2008 already fully reflect the then fair values of their investment. Nevertheless, banks should be alerted to possible implications of changes in the market for structured securities as the crisis may still be far from settled, and the tail risk of losses, which measures the chance of occurrences of extreme losses, is still much higher than before the crisis[31].

[29] The four time points separately represent the market expectations (1) before the onset of the sub-prime crisis (end-June 2007); (2) when mark-to-market losses were booked for banks' end-2007 financial results (end-2007); (3) when the sub-prime crisis was amplified by the liquidity problem of Bear Stearns, which further eroded investor confidence in the market of structured securities (10 March 2008); and (4) on end-May 2008, the latest developments at the time of preparing this assessment.

[30] This is consistent with public announcements by some retail banks that additional write-downs had been booked in the first quarter of 2008.

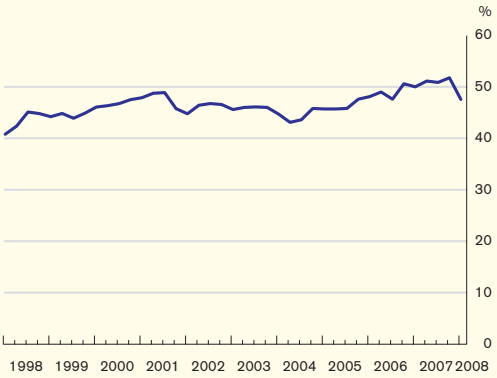
[31] This is particularly apparent for US sub-prime mortgages. Based on the estimated loss distributions shown in Chart B6.2, it is found that before the onset of the crisis (end-June 2007), there was a 5% of chance that the credit loss would be more than 13% of the portfolio value. However, after the onset of the crisis (end-2007), the corresponding estimate increased significantly to 33%. This value was estimated to further increase to 38% in March 2008, although it decreased somewhat to 37% recently (end-May 2008).

3.6 Liquidity and funding

As intermediaries transforming deposits into less liquid loans, banks inevitably are subject to liquidity risk. It is important to monitor such risk and ensure that banks have sufficient liquidity to fulfil both expected and unexpected financial commitments as they arise.

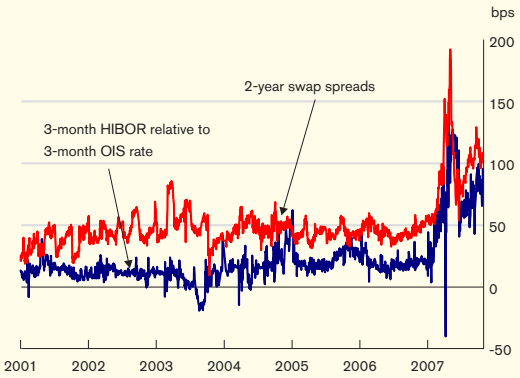
In 2008 Q1, the average liquidity ratio of retail banks decreased to 47.7%, after rising to 51.9% in 2007 Q4 from 51.0% in 2007 Q3. However, at the current level, the average liquidity ratio remains substantially higher than the regulatory minimum of 25% (Chart 3.15).

Chart 3.15
Liquidity ratio of retail banks



Source: HKMA.

Chart 3.16
Spreads of the 3-month HIBOR relative to 3-month overnight index swap rate and the 2-year Hong Kong dollar swap spreads

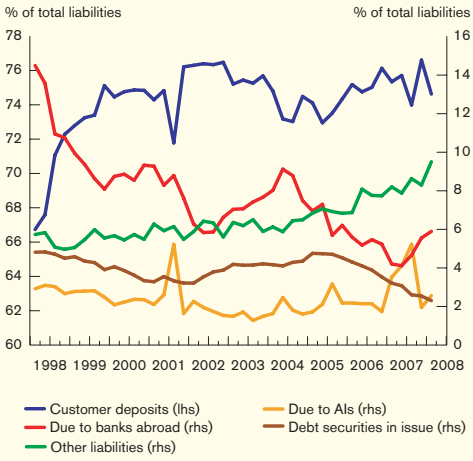


Source: Bloomberg.

Liquidity conditions in the interbank market form a major determinant of banks' vulnerability to liquidity risk, as they govern how easily banks can raise funds with short notice through interbank borrowing. Interbank liquidity in Hong Kong appeared to be ample and stable compared with the US or some European markets where banks generally faced liquidity pressures during the sub-prime crisis. Nevertheless, it is worth noting that the spread of the three-month HIBOR relative to the three-month Hong Kong dollar overnight index swap (OIS) rate, which is an indirect measure of the availability of funds in the Hong Kong dollar interbank market, appeared to signal less willingness among interbank participants to lend for longer maturity in the assessment period (Chart 3.16).[32] While the situation seems to have improved somewhat in the first quarter of 2008, banks that are more reliant on funds from the interbank market should be vigilant for any possible adverse developments. Meanwhile, the two-year Hong Kong dollar swap spreads (Chart 3.16) that can be interpreted as an effective proxy for banking liquidity

[32] An overnight index swap is an interest rate swap in which the floating leg is linked to an index of daily overnight rates. The two parties agree to exchange at maturity, on an agreed notional amount, the difference between interest rate accrued at the agreed fixed rate and interest accrued at the floating index rate over the life of the swap. The fixed rate is a proxy for expected future overnight interest rates. As overnight interest rates generally bear lower credit and liquidity risks, the credit risk and liquidity risk premiums contained in the overnight index swap rates should be small. Therefore, the spread of the 3-month HIBOR relative to 3-month overnight index swap rate generally reflects the credit and liquidity risks of the interbank market. For details, see "What drives interbank rates? Evidence from the LIBOR panel", *BIS Quarterly Review*, March 2008.

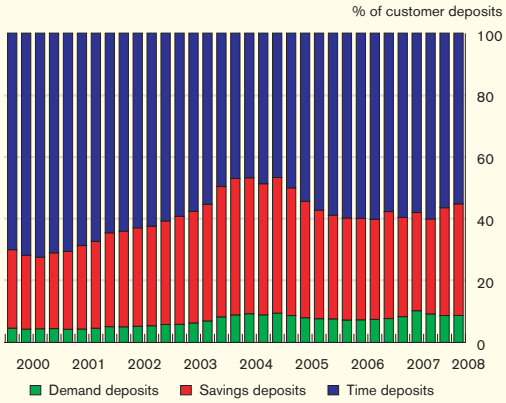
Chart 3.17
Liabilities structure of retail banks



Note: Debt securities comprise negotiable certificates of deposits and all other negotiable debt instruments.

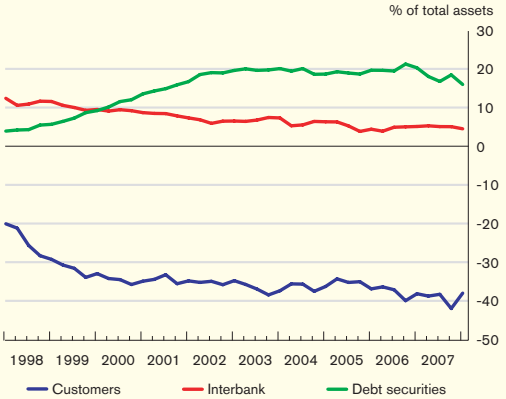
Source: HKMA.

Chart 3.18
Structure of customer deposits of retail banks



Source: HKMA.

Chart 3.19
Retail banks' funding gaps, by type of funding



Notes: 1 Measured as assets less liabilities in the balance sheet categories shown, as a percentage of total assets.
2 'Customers' comprises all non-AI borrowers and depositors.
3 Debt securities comprise negotiable certificates of deposits and all other negotiable debt instruments.

Source: HKMA.

surged in October 2007.[33] This indicates the uncertainty of the availability of funds in the interbank market during the assessment period.

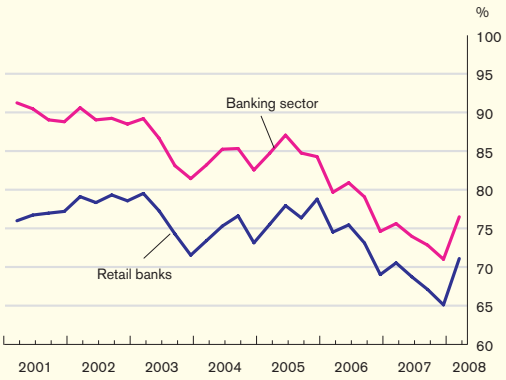
The structure of banks' liabilities is a longer-term factor influencing the degree of liquidity risk. Customer deposits, which are typically less expensive and less volatile than most other funding sources such as interbank borrowings, remained principal sources of retail banks' funding and their share of total liabilities was stable at 75% in March 2008 (Chart 3.17).

The liquidity risk of retail banks is affected by the composition of customer deposits. Among the different types of deposits, time deposits are usually more stable than savings deposits, which are in turn more stable than demand deposits. Since the *December Report*, there has been an apparent shift of deposits from the less liquid time deposits to savings deposits as a result of the continued decline in time deposit rates following the reduction in US interest rates. Reflecting this, the share of savings deposits increased to 36.1% in March 2008 from 30.7% in September 2007, whereas that of time deposits dropped to 55.2% from 60.1% (Chart 3.18). The share of demand deposits fell slightly to 8.7% from 9.2%. This could have an impact on the maturity mismatch of banks' assets and liabilities.

The liquidity level of banks also depends on the extent to which customer deposits are used to finance illiquid loans. As a whole, retail banks in recent years have maintained a negative 'customer funding gap', with the amount of customer loans being smaller than the amount of customer deposits. The customer funding gap in March 2008 was sustained at -37.7%, which was slightly reduced from -38.0% in September 2007 (Chart 3.19). The customer funding gap has continued to make retail banks in the aggregate a net provider of interbank loans, which typically have short maturities, and net holder of debt securities, which are relatively liquid.

[33] Swap spreads are differences between "fixed-for-floating" interest rate swap rates and corresponding Exchange Fund paper yields of the same maturity.

Chart 3.20
Hong Kong dollar loan-to-deposit ratios



Source: HKMA.

At the end of March 2008, the all currencies loan-to-deposit ratio for the banking sector as a whole and for retail banks increased to 55.0% and 49.4%, from 53.4% and 48.6% in September 2007 respectively. At the same time, the Hong Kong dollar loan-to-deposit ratio also increased to 76.5% for the banking sector, and to 71.1% for retail banks, from 72.9% and 67.1% respectively (Chart 3.20). This was due to a larger drop in Hong Kong dollar deposits than loans, reflecting probably partly an outflow of equity-related funds, and partly a shift of Hong Kong dollar deposits into foreign currency deposits in search of higher interest incomes and foreign exchange gains. Nevertheless, with the current levels of loan-to-deposit ratios, the liquidity risk may not be a major concern.

The extent of liquidity risk stemming from counterparty exposures among AIs is of great importance because a shock that originates at one AI may quickly spread to the rest of the banking sector. For retail banks as a whole, the amount due to other AIs in Hong Kong accounted for only 2.6% of total liabilities by March 2008, while the amount due from other AIs in Hong Kong contributed to 7.4% of their total assets. The former decreased from 5.2% in end-September 2007, while the latter dropped from 10.6%, reflecting lower funding demand associated with stock market-related activities. Overall, given interbank exposures among AIs in Hong Kong only shared a small portion of retail banks' balance sheets, the contagion risk arising from interbank exposures in the domestic market is not a significant concern.

Chart 3.21
Retail banks' gap of Hong Kong dollar deposits and loans

Note: Defined as Hong Kong dollar deposits minus Hong Kong dollar loans.

Source: HKMA.

3.7 Interest rate risk

The gap between Hong Kong dollar deposits and loans of retail banks narrowed significantly in the assessment period, after widening for five consecutive quarters since June 2006, probably reflecting some outflows of equity-related deposits amid stock market corrections since November 2007, as well as a shift of Hong Kong dollar deposits into foreign currency deposits. At the end of March 2008, the gap amounted to HK$742 billion, or 24.9% of retail banks' Hong Kong dollar assets, compared with HK$939 billion or 26.6% in September 2007 (Chart 3.21). In particular, there has been a larger reduction in Hong Kong dollar time deposits, relative to

the contraction of loans. Nevertheless, the impact on interest rates, especially interbank interest rates, appeared moderate, suggesting that the adverse effect of possible outflows of equity-related funds may have been partially or even more than offset by the effect of the easing of monetary policy in the US. However, should the current phase of US monetary easing come to an end, as expected by some market players, the impact of any further outflows of equity-related funds on liquidity, particularly on interbank loans, could be felt more adversely.

With the pricing of a sizable part of interest-bearing assets of banks on a floating rate basis, intermediation spreads should remain relatively stable in the face of volatile interest rates. However, it should be noted that for some banks, a large portion of their assets is priced with reference to the BLR, particularly the mortgage portfolio, but their funding is partly determined by HIBORs and time deposits linked to HIBORs. The different responses of BLR and HIBORs to changes in US interest rates could put pressure on banks' interest margins.

This risk appeared to have persisted in the mortgage market, where most of the loans are priced with reference to the BLR. Latest surveys on mortgage lending reveal that about 85% of new loans approved were priced at more than 2.5% below the BLR.[34] With the BLR declining by a total of 225 basis points in the assessment period, the effective mortgage rate was lowered to less than 2.5% to 2.75%. With the three-month interbank rate hovering around 2% lately, the risk buffer for banks relying heavily on interbank placements for funding appears to be small.

[34] Market information showed that the new loans were usually priced at BLR minus 2.75% to 3.0%.

3.8 Credit risk

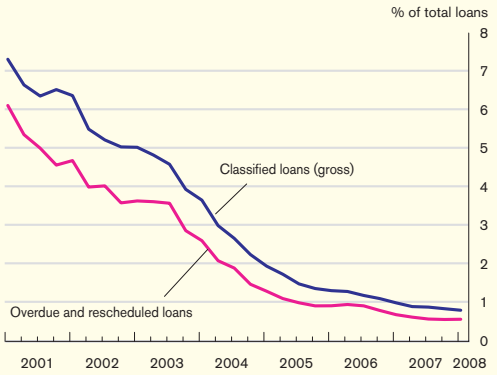
The asset quality of retail banks continued to improve during the six months to March 2008 on the back of robust growth in the domestic economy, despite some tentative signs of a modest deterioration in the credit risk of corporate lending, in particular China exposures. The proportion of classified loans and overdue and rescheduled loans in total loans fell further, with the former improving to 0.81% from 0.89%, and the latter decreasing to 0.57% from 0.58% (Chart 3.22).

Domestic lending by AIs expanded by 6.3% in the first quarter of 2008, after declining by 4.5% in the fourth quarter of 2007. The performance of loans to different economic sectors varied (Table 3.B). Property-related loans increased steadily, supported by rising property prices due to improved market sentiment and the low interest rate environment. Credit for building, construction, property development and investment increased further by 4.2% and 6.2% in 2007 Q4 and 2008 Q1 respectively. The outstanding stock of residential mortgage loans also registered increases of 2.2% and 2.4% in 2007 Q4 and 2008 Q1 respectively, as new loans more than offset repayments of existing loans (Chart 3.23). As a result, the share of property-related loans in total domestic lending increased to 47.9% in March 2008, from 45.2% in the *December Report*.

Lending to stockbrokers shrank by 86.4% and 4.2% in 2007 Q4 and 2008 Q1 respectively, in line with reduced enthusiasm for IPOs and share investment as the stock market became less buoyant from November 2007. Despite this, lending to financial concerns, which mainly comprises lending to investment companies, continued to grow by 7.2% in 2008 Q1, after expanding by 9.5% in 2007 Q4. As the outlook for the global financial markets is still clouded by possible contagion effects arising from the US sub-prime mortgage crisis, the effects on asset quality of lending to financial institutions should be closely monitored.

Among other sectors, lending to the wholesale and retail trade, manufacturing, trade financing, and transport and transport equipment sectors registered significant growth, while loans to the information technology sector reversed the decline of 11.7% in 2007 Q4, and expanded

Chart 3.22
Asset quality of retail banks



Note: Classified loans are those loans graded as "substandard", "doubtful" or "loss".

Sources: HKMA.

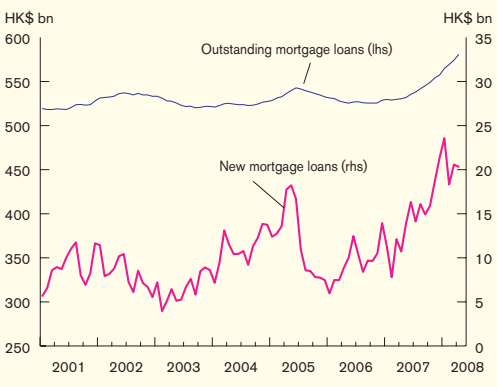
Table 3.B
Loans for use in Hong Kong by AIs

	Quarter-on-quarter % changes				Share of total (%)
	Jun-07	Sep-07	Dec-07	Mar-08	Mar-08
Loans for use in Hong Kong[1]	**6.4**	**5.8**	**-4.5**	**6.3**	
Of which:					
Trade financing	12.2	4.2	4.1	8.4	7.6
Mortgages[2]	1.2	1.4	2.2	2.4	24.4
Manufacturing	7.4	4.8	1.7	16.1	5.4
Transport and transport equipment	1.2	6.0	6.1	5.0	5.8
Electricity and gas	4.6	-5.1	9.4	-2.1	1.1
Information technology	-18.1	10.4	-11.7	34.6	1.1
Building, construction, property development and investment	6.2	5.7	4.2	6.2	23.5
Wholesale and retail trade	4.0	1.8	2.8	16.6	5.2
Financial concerns[3]	10.2	6.2	9.5	7.2	10.3
Stockbrokers	35.6	11.8	-86.4	-4.2	0.7
Credit card advances	2.2	7.0	8.7	-6.1	2.6

Notes: [1] Including trade financing loans.
[2] Mortgage loans include loans for the Home Ownership Scheme, the Private Sector Participation Scheme and the Tenants Purchase Scheme.
[3] Loans for financial concerns include loans to investment and insurance companies, futures brokers and finance companies.

Source: HKMA.

Chart 3.23
Outstanding and new mortgage loans of surveyed AIs



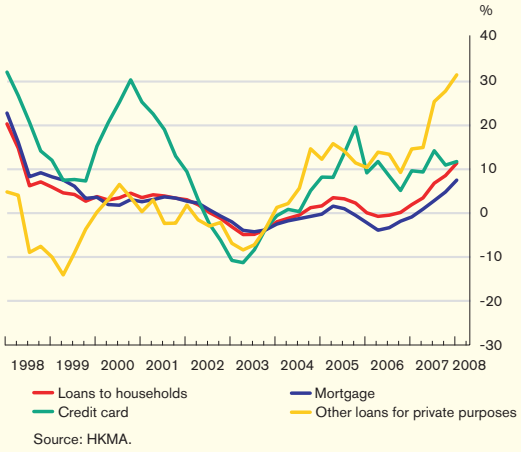
Source: Monthly Survey of Residential Mortgage Lending.

significantly by 34.6% in 2008 Q1. By contrast, loans to the electricity and gas sector decreased by 2.1% in 2008 Q1, after expanding by 9.4% in 2007 Q4. Meanwhile, credit card lending also fell by 6.1% in 2008 Q1, having increased sharply by 8.7% in 2007 Q4 due to festive spending and payments of salaries tax.

Household exposures

The share of loans to households[35] among loans for use in Hong Kong[36] had been on a downward trend since September 2002. However, this was reversed to increase in March 2008 to 32.7% from 31.3% in September 2007. This was mainly due to the significant growth in both mortgage lending and unsecured loans including credit cards and other personal credit for private purposes.

Chart 3.24
Annual growth of lending to households by AIs



Source: HKMA.

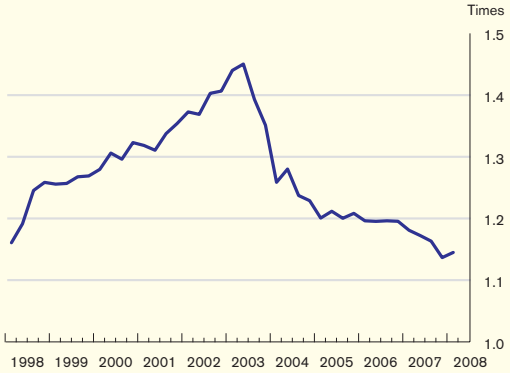
Loans to households grew by 11.2% year on year in March 2008, further accelerating from the 6.7% increase in the *December Report* (Chart 3.24). Credit card lending and other loans for private purposes registered strong yearly growth of 11.6% and 31.3% respectively in March 2008, while mortgage loans grew by 7.4%. As a result, the share of unsecured consumer lending measured by the sum of credit card lending and other personal lending for private purposes rose to 25.3% in March 2008, from 24.3% in September 2007. This indicates that banks have generally increased their exposures to lending with higher credit risk. How this trend may affect the asset quality of banks' portfolios needs to be monitored.

The various factors affecting the asset quality of banks' exposures to the household sector mostly improved further in the assessment period. The rebound in property prices in recent years has strengthened the balance sheet of households. This has generally improved the quality of banks' mortgage portfolios. The effective housing capital gearing, defined as the ratio of market value of total housing stocks to their net asset value (the market value less the outstanding mortgage

[35] Loans to households constitute lending to professional and private individuals, excluding those for business purposes. Mortgage lending accounts for a major proportion of loans to households, while the remainder comprises mainly unsecured lending via credit cards and other personal loans for private purposes.

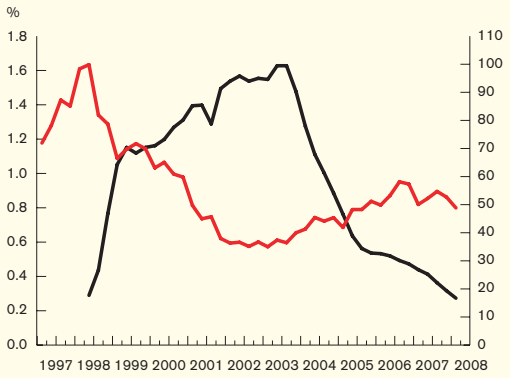
[36] Loans for use in Hong Kong include trade financing loans.

Chart 3.25
Effective housing capital gearing ratio



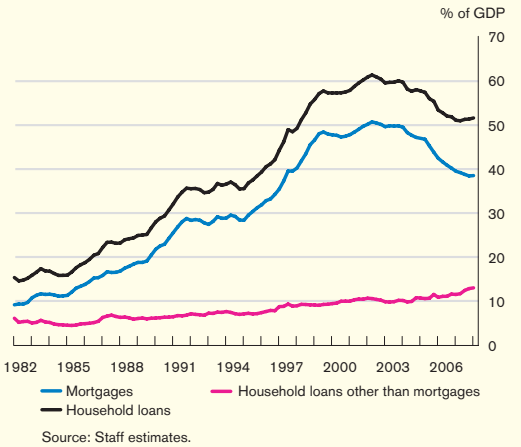
Source: Staff estimates.

Chart 3.26
Household debt-servicing burden of new mortgages



Source: Staff estimates.

Chart 3.27
Household debt leverage



Source: Staff estimates.

lending from banks), decreased substantially from 2003 to 2006. As residential property prices have picked up since 2007, the gearing ratio improved further to 1.14 in March 2008, from 1.16 in September 2007 (Chart 3.25).

Likewise, the index of debt-servicing ratio for new mortgage loans[37], which serves as an indicator of the debt burden of mortgagors, decreased to 48.9 in 2008 Q1 from 54.8 in 2007 Q3 (Chart 3.26). The improvement in the debt-servicing burden of households for new mortgages was mainly due to rises in household incomes and decreases in mortgage rates, which more than offset the effect of rising loan amounts.

On the other hand, the ratio of household debt to GDP, another widely adopted indicator of the vulnerability of household sector debt, increased slightly to 52% at the end of March 2008, from 51% in September 2007, mainly because of increased debt burden arising from unsecured household loans. Note that the ratio started declining in the second quarter of 2002, having reached its recent peak at around 61%[38] (Chart 3.27). At 52%, the current level of household debt burden is still significantly lower than its peak level and the average of major mature economies (58% in 2005[39]).

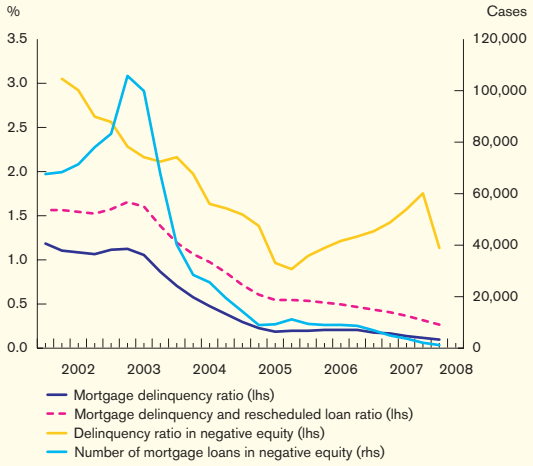
Supported by the robust economic growth and enhanced debt-servicing capacity of households, the asset quality of banks' overall mortgage portfolios improved. The delinquency ratio reached a record low of 0.08% in April 2008, down from 0.12% in October 2007. The rescheduled loan ratio also fell to 0.16% from 0.21%. At the same time, the delinquency ratio of negative mortgage loans decreased to 1.13% in March 2008, from 1.57% in September 2007.

[37] A higher value of the index of debt-servicing ratio indicates that there is either a drop in household incomes, or an increase in interest rates, or an increase in the average mortgage loan amount drawn by households. Historical movements of the index suggest that a sharp rise in the index may lead to a deterioration in the asset quality of household debt.

[38] It mainly reflected the increase in residential mortgage lending before the Asian financial crisis and the slowdown in economic activity after the crisis.

[39] These include Italy, France, Japan, Germany, Spain, Australia, Ireland, New Zealand, and the US. For details, see International Monetary Fund (2006), "Household credit growth in emerging market countries", *Global Financial Stability Report*.

Chart 3.28
Negative equity and mortgage delinquency ratio of surveyed AIs

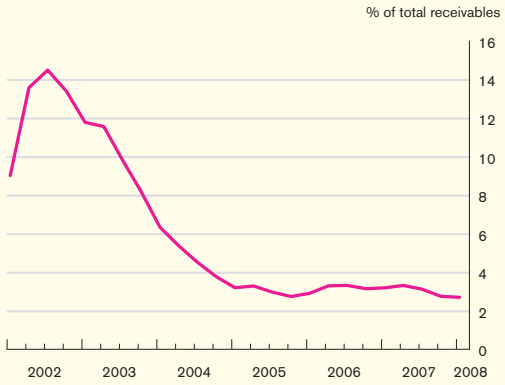


Notes:

1. The earliest available date for the delinquency ratio of mortgage loans in negative equity is 2002 Q2.
2. The mortgage delinquency ratio refers to the ratio of total amount of loans overdue for more than three months to total outstanding loans.
3. The number of mortgage loans in negative equity was at its peak of about 106,000 cases at end-June 2003.

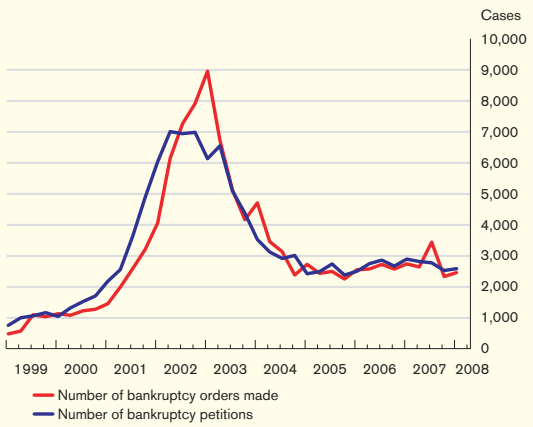
Source: HKMA.

Chart 3.29
Charge-off ratio for credit card receivables of surveyed AIs



Note: Quarterly annualised figures.
Source: HKMA.

Chart 3.30
Number of bankruptcies



Source: Official Receiver's Office.

Underpinned by the significant increase in property prices, the number of negative equity cases fell further by 72.6% to 953, representing a 99% decline from the peak level of 106,000 cases in June 2003 (Chart 3.28).

Regarding the asset quality of the credit card portfolio, the annualised charge-off ratio decreased to 2.68% in 2008 Q1 from 3.10% in 2007 Q3 (Chart 3.29)[40]. In the first four months of 2008, the numbers of bankruptcy orders made and petitions presented fell to 3,464 and 3,519 respectively, representing decreases of 3.5% and 7.4% compared with the same period last year (Chart 3.30).

Corporate exposures[41]

In March 2008, loans to corporations accounted for 66.8% of loans for use in Hong Kong[42]. The amount of such loans increased by 15.7% from a year ago.

The various indicators for the credit risk of the corporate sector remained healthy, although some have shown signs of a moderate deterioration amid increased volatility in financial markets and an uncertain global economic outlook.

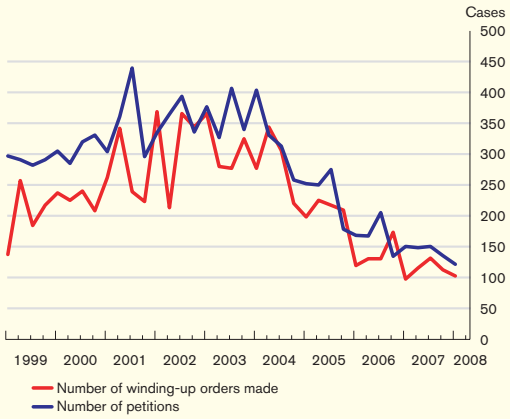
Credit risk of the corporate sector, as revealed by the statistics on compulsory winding-up of companies, was mixed. In the first four months of 2008, the number of

40 The combined delinquent and rescheduled ratio also declined to 0.4% at the end of March. However, there were some signs of weakening of the quality of the portfolio, as the amount of rescheduled receivables registered a slight increase to HK$54 million in the first quarter of 2008.

41 Exposure to non-financial corporates.

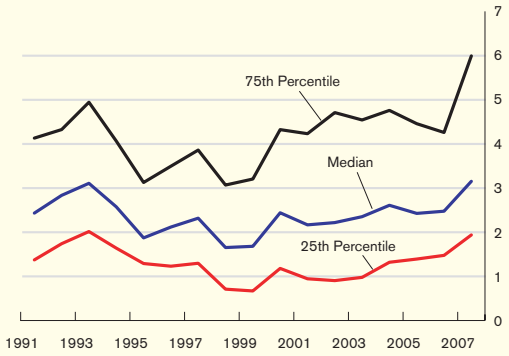
42 Loans to corporations comprise loans for use in Hong Kong (including trade financing loans) except lending to professional and private individuals.

Chart 3.31
Winding-up orders and petitions



Source: Official Receiver's Office.

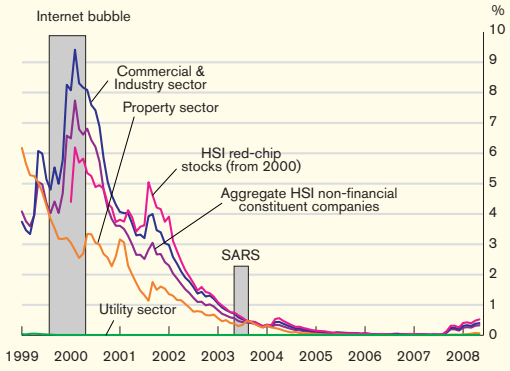
Chart 3.32
Bankruptcy risk indicators of listed non-financial companies: Altman's Z-score



Note: A lower Z-score indicates a higher likelihood of a company default.

Source: Staff estimates.

Chart 3.33
Aggregate default probabilities of HSI non-financial constituent companies



Source: Staff estimates.

bankruptcy petitions presented by companies decreased by 9.5% from a year ago to 171, while the number of orders made rose by 7.1% to 150 (Chart 3.31).

The Altman's Z-score[43], which is a typical credit risk measure to assess the financial health of the corporate sector based on an array of financial ratios reported in companies' financial statements, indicates that the financial health of the non-financial corporate sector in Hong Kong improved in 2007 (Chart 3.32).[44] The improvement was broad-based, including not only corporations with higher credit quality (75% percentile and median), but also corporations with relatively lower credit quality (25% percentile). However, the level of corporate credit risk may have deteriorated somewhat more recently, as suggested by the aggregate default probability estimates of the Hang Seng Index (HSI) non-financial constituent companies obtained from a structural model[45]. This increased generally to 0.32% in April 2008, from 0.20% in the previous *Report*, reflecting higher volatility in the Hong Kong stock market. Nevertheless, compared with the recent peak level of 7.74% following the bursting of the internet bubble and the level of 0.65% during the SARS epidemic, the current level of default risk appears to be moderate. The estimates for all individual HSI constituent sectors and the red-chip constituent stocks also exhibited similar movements (Chart 3.33).

[43] See Altman E. (2000), "Predicting Financial Distress of Companies: Revisiting the Z-scores and ZETA models", working paper, New York University. The accounting ratios used to derive the Z-score are working capital/total assets, retained earnings/total assets, earnings before interest and taxes/total assets, market value of equity/book value of total liabilities, and sales/total assets.

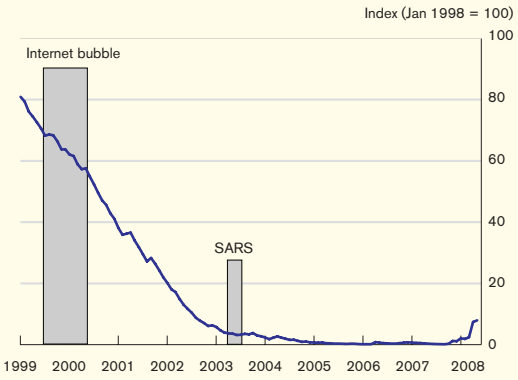
[44] Non-financial corporations refer to companies listed on the Hong Kong Main Board and the Growth Enterprise Market, excluding H-shares companies, investment companies, and those engaged in banking, insurances and finance. Data are from Thomson Financial. The 2007 figures are preliminary and cover only a limited number of companies that had reported their 2007 final results by the time of writing. They are subject to revision and should be used with caution.

[45] Details of the methodology can be found in Yu and Fung (2005), "A Structural Approach to Assessing the Credit Risk of Hong Kong's Corporate Sector", *HKMA Research Memorandum*, http://www.info.gov.hk/hkma/eng/research/RM24-2005.pdf.

Systemic risk of the banking system

In this issue, a composite early warning system of banking distress in Hong Kong is introduced. The system is produced by a leading indicator model (specifically a probit econometric model), which identifies a set of leading indicators for impending banking problems and is capable of estimating banking distress probability. These leading indicators, including macroeconomic fundamentals, currency crisis vulnerability, credit risk of banks and non-financial companies, asset price bubbles, credit growth, and the occurrence of banking distress in other Asia-Pacific economies, were shown to have reasonably good predictive power for banking distress. A summary of the model is given in Box 7. Based on the latest available information in the first quarter of 2008, the risk of an occurrence of banking sector distress in Hong Kong appears to be contained, with the estimated probability of banking distress continuing to fall within the range of the lowest fragility category.[46]

Chart 3.34
Multiple default risk index of the banking system in Hong Kong (Jan 1998 = 100)



Source: Staff estimates.

It should, however, be pointed out that a number of individual leading indicators recently showed some unfavourable movements.[47] In addition, another frequently used default risk indicator, as measured by the multiple default risk index (January 1998 =100) of banks in Hong Kong, appears to have deteriorated since the *December Report*, with the index rising to 7.4 in April 2008, from 0.3 in October 2007, mainly due to increased stock price volatility of some banks (Chart 3.34). While the index was still significantly lower than that during the Asian financial crisis (around 100), it was already higher than that in the SARS period (around 4). Although the index is more a partial indicator compared to the composite early warning system[48], the deterioration in the index does highlight latest market views on the risk of banks, probably reflecting the current tight credit condition in international financial markets and the uncertain global economic outlook.

[46] For details, see footnote 58 of Box 7.

[47] For the major leading indicators, see Box 7. Recently, the real property price bubble and the rate of change of real GDP per capita have somewhat deteriorated.

[48] An indicator of banks' default probability in the composite early warning system, which, by construction, is similar to the multiple default risk index, also indicated that the level of default risk of banks had deteriorated since the *December Report*.

Box 7
A leading indicator model of banking distress – developing an early warning system for Hong Kong

The economic costs of banking distress to an economy can be severe.[49] Indeed, the prevention of banking distress is one of the key duties of central banks. Therefore, the development of leading indicators of banking distress and early warning systems has long been a core interest of central bankers and academics.

Internationally, a number of empirical investigations have been carried out by adopting the econometric approach for developing the indicators. However, in general they are subject to a number of restrictions, which have limited the usefulness of their findings for developing early warning systems.[50]

By improving on past works, this study aims to construct a model that is capable of providing a reliable early warning of impending banking problems. Specifically, a probit econometric model is built to identify a set of leading indicators of banking distress, using quarterly data from 1990 Q2 to 2007 Q4 of 11 selected East Asia-Pacific economies[51], which are then used to estimate banking distress probability for Hong Kong. By using the panel data of the selected economies in the study, it is possible to make an assessment of the contagion effect within Asia. It also remedies the problem of a lack of distress observations in the quantitative analysis.[52]

[49] For example, according to estimations by the IMF and World Bank, the fiscal costs of restructuring a banking sector to restore its intermediate functions effectively after a banking crisis or an occurrence of banking distress can be as large as half a country's annual GDP.

[50] For a brief discussion on this, see Wong et al. (2007), "A Leading Indicator Model of Banking Distress – Developing an Early Warning System for Hong Kong and Other EMEAP Economies", *HKMA Working Paper*, 22/2007.

[51] These are member economies of Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) in the Asia-Pacific region, namely Australia, China, Hong Kong (of China), Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore, and Thailand.

[52] This approach faces the same drawbacks as most other international studies by implicitly assuming that there are common causes of banking distress for the economies in the region, and they in general share similar economic characteristics. However, given the geographical proximity of these economies and their significant economic and financial linkages, the extent of the problem may be less severe. In the study, similar to other international studies, institutional factors are introduced to take care of the shortcoming.

Table B7.A
Leading indicators of banking distress

Indicators	Key findings
Macroeconomic fundamentals: - Real GDP growth rate - Inflation rate - Real credit expansion	Banking distress is typically preceded by weakening macroeconomic fundamentals, such as slow economic growth and high inflation rate.
- Ratio of money supply to foreign reserves	Strong credit expansion is found generally ahead of banking distress by around 2 years. M2 to foreign reserves ratio is an indicator of currency crises. An economy that is more susceptible to currency crises is more likely to suffer from banking sector problems.
Default risk of individual banks and non-financial companies	A default of a single bank or a few banks may pose a major threat of systemic banking distress through the contagion effect within the banking sector. Similarly, the effect of corporate defaults may be transmitted from the non-financial corporate sector to the banking sector, given that banks have substantial exposures to the corporate sector.
Asset price bubbles: - Equity prices - Property prices	Significant misalignments of property and equity prices over their fundamental values could lead to widespread defaults and systemic banking problems when the asset price bubbles burst.
Contagion indicator	The chance of a banking distress in the home economy increases with the occurrence of distress in its neighbouring economies.
Institutional factor - Real GDP per capita	An economy with higher institutional quality is less vulnerable to banking distress.

Table B7.B
Definition of banking distress*

A distress event is defined as if any one, or more than one, of the following four conditions are satisfied:

1. the non-performing loan ratio is larger than 10%**
2. the rescuing costs of the banking sector is larger than or equal to 2% of GDP
3. there is a large-scale nationalisation of banks
4. a systemic bank run takes place or emergency measures are enacted for rescuing systemic banking problems.

* The definition follows Demirgüc-Kunt and Detragiache (1998), "The Determinants of Banking Crises in Developing and Developed Countries", *International Monetary Fund Staff Paper*, 45(1), pp.81-109.

** For Hong Kong, it is proxied by the gross classified loan ratio of retail banks.

Table B7.C
Contingency table

Event	The model issues a distress signal	The model does not issue a distress signal
Distress actually occurs	**A**	**B** (= type I error)
No distress occurs	**C** (= type II error)	**D**

Quarterly panel data are used for estimations to facilitate more timely detection of possible distress.[53] To obtain a better understanding of the issue, we analyse banking distress with both macro and micro level information. For the latter, default risk measures for banks and for non-financial companies derived from firm-level data are introduced to explain banking distress.

The empirical results of the model suggest that weakening macroeconomic fundamentals, including a slowdown in economic growth, rising inflation, rapid domestic credit expansion and fast growth of money supply relative to foreign reserves, deteriorations in the creditworthiness of banks and companies, and significant asset price misalignments over their fundamental values in property and equity markets are useful leading indicators of banking distress (Table B7.A). Since all the explanatory variables in the model are lagged at least by three quarters, the model, in practice, could produce three-quarter-ahead forecasts of the likelihood of banking crises based on currently available information of the explanatory variables.

As the objective of this study is to develop an early warning system for banking distress, the predictive power of the leading indicator model is crucial. One conventional method to evaluate a model's predictive power is to construct a two-way contingency table by classifying the number of predictive outcomes into the cells in a two-by-two matrix based on the available sample (Table B7.C).[54]

In order to construct the contingency table, a threshold[55] level, α, for the estimated probability of banking distress must be identified such that an occurrence of distress is signalled if the estimated probability from the model is above α.

[53] For a detailed discussion of data treatments, see Wong et al. (2007).

[54] See Kaminsky, G., and C. M. Reinhart (1999), "The Twin Crises: the Causes of Banking and Balance-of-payments Problems", *American Economic Review*, 89(3), pp.473 -500.

[55] Definition of banking distress used in this study is given by table B7.B.

There are alternative ways to determine the level of α. In this study, we assume a central bank places equal weights on the type I and type II errors, and therefore α is selected by minimising the sum of in-sample type I and type II errors. The value of α is found to be 0.0217.

Table B7.D
In-sample and out-sample evaluation of the model – Aggregate sample

Events	In-sample	Out-sample
Distress actually occurred		
Distress signal was issued	35	30
Distress signal was not issued	1	6
No distress occurred		
Distress signal was issued	72	81
Distress signal was not issued	291	282
Performance statistics	**In-sample**	**Out-sample**
(1) The proportion of correct classification	82%	78%
(2) The proportion of correct classification conditional on occurrences of distress	97%	83%
(3) Type I error	3%	17%
(4) Type II error	20%	22%

Table B7.D shows the in-sample and out-sample performances of the estimated model for the aggregate sample of the 11 selected economies. In the in-sample evaluation, the model correctly predicts 35 out of the 36 distress events and 291 out of 363 non-distress events. Specifically, the proportion of correct classification is 82%, the share of correct signals conditional on occurrences of distress is 97%, type I error is 3%, and type II error is 20%. In the out-sample evaluation[56], the model correctly predicts 30 out of the 36 distress events and 282 out of 363 non-distress events. The share of correct classification and that of correct signals conditional on occurrences of distress are 78% and 83% respectively. Type I and type II errors are 17% and 22% respectively. Overall, the accuracy of the model to predict an occurrence of distress is reasonably good.

Table B7.E
In-sample and out-sample evaluation for Hong Kong

Events	In-sample	Out-sample
Distress actually occurred		
Distress signal was issued	4	4
Distress signal was not issued	0	0
No distress occurred		
Distress signal was issued	7	8
Distress signal was not issued	34	33
Performance statistics	**In-sample**	**Out-sample**
(1) The proportion of correct classification	84%	82%
(2) The proportion of correct classification conditional on occurrences of distress	100%	100%
(3) Type I error	0%	0%
(4) Type II error	17%	20%

Focusing on Hong Kong, the model's predictive power also appears quite good (Table B7.E). An examination of the evolution of the estimated probability of banking distress over time shows that the first distress signal was produced for 1998 Q1, which was a false alarm that was issued based on the data of 1997 Q2. It is worth noting that by the time the model produced the distress signal, the classified loan ratio of retail banks in Hong Kong remained at a very low level (2.12% at the end of June 1997) and there was no obvious upward trend of the

[56] The out-sample forecasts are generated by the following method: we first split the full sample into two blocks, Block A and Block B, with Block A containing the data of the "Home" economy and Block B containing the data of the remaining 10 economies. Using the same set of explanatory variables reported in Table B7.A, a new set of estimated coefficients are estimated and a α (which minimises the in-sample sum of type I and type II errors) is selected using the data of Block B (the block with 10 economies). Based on the new set of estimated coefficients and α, we generate the out-sample forecasts for the sample of Block A, the "Home" economy. We repeat the above process by 11 times and each of the 11 economies will be held out one time to obtain their out-sample forecasts.

Table B7.F
In-sample predictive power for Hong Kong

	Q1	Q2	Q3	Q4
1996				○
1997	○	○	○	○
1998	✘	✘	✘	✘
1999	✘	✘	✘	✘
2000	✘	○	○	○
2001	○	○	○	○
2002	○	○	○	✘
2003	✘	○	○	○
2004	○	○	○	○
2005	○	○	○	○
2006	○	○	○	○
2007	○	○	○	○

Notes:
○ no distress signal was issued
✘ distress signal issued
correct signal false alarm

ratio to indicate rising potential risks. It was not until the second half of 1998 that the classified loan ratio began to increase.[57] Subsequently, the model was able to produce a distress signal three quarters ahead of the onset of distress in the first quarter of 1999. In addition, it produced another three correct distress signals for 1999 Q2 to 1999 Q4. Overall, the system had an 84% successful classification rate. The model combined with the estimated threshold of issuing distress signals has thus performed well as an early warning system for banking distress in Hong Kong.

Using the four-level risk rating system proposed by Demirgüc-Kunt and Detragiache (2000), the latest available information to the first quarter of 2008 suggests that the current value of banking distress probability in Hong Kong is low and falls within the lowest fragility class.[58] This indicates that currently the risk of an occurrence of banking distress in Hong Kong is small.

[57] The quarterly average of the ratio between March 1997 to March 1998 was 2.3%. The ratio was 4.07% in June 1998. It then increased and reached the peak of 10.61% in September 1999.

[58] We follow Demirgüc-Kunt and Detragiache (2000) (see Demirgüc-Kunt and Detragiache (2000), "Monitoring Banking Sector Fragility: A Multivariate Logit Approach", *World Bank Economic Review*, 14(2), pp. 287-307) to choose the upper bounds of each of the four fragility classes so that type I error associated with the bounds are 10, 30, 50 and 100 percent respectively. Based on our data, the implied range of the probability for the lowest fragility class is from 0.000 to 0.033, probabilities between 0.033 to 0.122 are in the second lowest fragility class, up to 0.302 are in the third class, and above 0.302 are in the highest fragility class.

China exposures

Retail banks' aggregate exposures to non-bank Chinese entities increased to HK$628.8 billion (8.7% of total assets) at the end of March 2008, from HK$377.5 billion (5.3% of total assets) at the end of September 2007. For the banking sector as a whole, the total amount of non-bank Chinese exposures also increased to HK$890.8 billion (7.5% of total assets) from $561.3 billion (5.0% of total assets). The increases partly reflect the amendment in reporting requirements to include exposures to non-bank Chinese entities incurred by retail banks' banking subsidiaries in Mainland China starting from December 2007.[59] The banking sectors' aggregate exposures to companies and individuals for purchasing properties in China increased to HK$11.6 billion at the end of March 2008, from HK$9.9 billion at the end of September 2007.

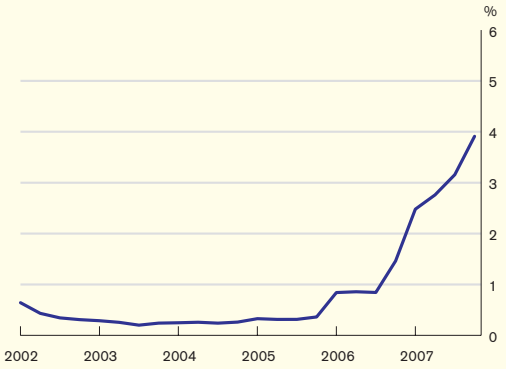
As exposures to non-bank Chinese entities share a significant portion of banks' assets, the default risk of non-financial Chinese companies needs to be watched closely. This is particularly so given that the on-going monetary tightening on the Mainland may undermine companies' liquidity and growth capacity, and thus increases their default risk.

In this *Report*, a new default risk indicator for the Chinese corporate sector is introduced. Using the same methodology for deriving the default probability estimates for the Hong Kong corporate sector (Chart 3.33), with equity prices and financial data of non-financial constituent companies of the Shanghai Stock Exchange (SSE) 180 A-share Index, a quarterly series of the aggregate default probabilities of non-financial Chinese companies is developed to assess default risk of the Chinese corporate sector.[60]

[59] Before the amendment, only exposures incurred by the banks (i.e, including branches but excluding subsidiaries) were reported. Many banks converted their Mainland China branches into banking subsidiaries during the first half of 2007. Therefore, exposures previously booked in the banks' branches were taken out from the time series of data until the latest amendment to the reporting requirement.

[60] Non-financial corporations refer to all non-financial constituent companies (i.e. excluding investment companies and those engaged in banking, insurances and finances) of the Shanghai Stock Exchange 180 A-share index. The default probabilities are derived from a structural model proposed by Merton (1974), in which equity prices, equity volatility, and companies' financial liabilities are the determinants of default risk. Details of the methodology can be found in Yu and Fung (2005).

Chart 3.35
Aggregate default probabilities of SSE 180 A-share index non-financial constituent companies



Source: Staff estimates.

It is found that the aggregate default probabilities of the Chinese corporate sector have been increasing since 2006 and reached 3.9% in March 2008, owing to higher stock market volatility (Chart 3.35). This suggests that banks in Hong Kong involved in lending to China may be exposed to increasingly high credit risks. How this may affect the asset quality of the non-bank Chinese exposure of banks in Hong Kong needs to be monitored.

Macro stress testing of credit risk

To assess the vulnerability of banks in Hong Kong to macroeconomic shocks, stress testing is performed on banks' credit exposures with the macro stress testing framework.[61, 62] A variety of shocks, similar to those occurring during the Asian financial crisis, are individually introduced into the framework for the tests. These shocks include reductions in Hong Kong's real GDP, falls in the Mainland real GDP, rises in real interest rates, and reductions in real property prices.[63]

Table 3.C
The mean and VaR statistics of simulated credit loss distributions

		Stressed scenarios			
Credit loss (%)	Baseline scenario	GDP shock[a]	Property price shock[b]	Interest rate shock[c]	Mainland China GDP shock[d]
Mean	0.15	0.78	0.70	0.39	0.21
VaR at 90% CL[e]	0.34	1.39	1.24	0.76	0.47
VaR at 95% CL	0.45	1.69	1.53	0.98	0.62
VaR at 99% CL	0.76	2.43	2.28	1.57	1.04
VaR at 99.9% CL	1.36	3.63	3.52	2.58	1.81
VaR at 99.99% CL	2.10	5.07	5.34	3.94	3.35

Notes: a) Reductions in Hong Kong's real GDP (2005 Chain) by 2.3%, 2.8%, 1.6%, and 1.5% respectively in each of the four consecutive quarters starting from 2008 Q2 to 2009 Q1

b) Reductions in Hong Kong's real property price by 4.4%, 14.5%, 10.8%, and 16.9% respectively in each of the four consecutive quarters starting from 2008 Q2 to 2009 Q1

c) A rise in real interest rates (HIBORs) by 300bps in the first quarter, followed by no change in the second and third quarters and another rise of 300bps in the fourth quarter

d) A fall in Mainland China's real GDP by 3.0% in only the first quarter (i.e. 2008 Q2)

e) CL denotes the confidence level.

Source: Staff estimates.

The stress testing is done by taking the macroeconomic conditions in 2008 Q1 as the current environment, and by producing a simulated future path with eight time points covering a two-year period from 2008 Q2 to 2010 Q1. Salient statistics are presented in Table 3.C, which provides highlights of the distribution of credit losses for the baseline scenario and for the four stressed scenarios with different macroeconomic variables as the stress origin.[64] In the baseline scenario, the percentage of credit loss that is expected to prevail in 2010 Q1 (or the mean of the credit loss distribution) is 0.15% of the outstanding loan amount. Introducing the artificial shocks substantially increases the expected percentage of

61 Macro stress testing refers to a range of techniques used to assess the vulnerability of a financial system to "exceptional but plausible" macroeconomic shocks. See Blaschke et al. (2001) "Stress Testing of Financial Systems: An Overview of Issues, Methodologies, and FSAP Experiences", International Monetary Fund; and Sorge (2004) "Stress-testing Financial System: An Overview of Current Methodologies", *BIS Working Papers*, no. 165.

62 Details of model specification can be found in Wong et al. (2006), "A Framework for Stress Testing Banks' Credit Risk," *HKMA Research Memorandum*, 15, October 2006. An updated framework is used for the current estimations. In particular, a new set of coefficients in the model was estimated based on the newly released chain volume measures of GDP statistics by the Census and Statistics Department.

63 For details of the shocks, see notes of Table 3.C.

64 Baseline scenario is the no-shock scenario.

credit loss. For example, it becomes 0.78% in the stressed scenario where Hong Kong's real GDP growth rate is shocked from 2008 Q2 to 2009 Q1.

Focusing on the tails of the credit loss distributions, Table 3.C shows that even for the value-at-risk (VaR) at the confidence level of 90%, banks would continue to make a profit in most of the stressed scenarios, suggesting that the current credit risk of the banking sector is moderate. However, under the extreme case for the VaR at the confidence level of 99.9%, banks' maximum credit loss with shocks from different origins would range from 1.81 % (Mainland China GDP shock) to 3.63% (GDP shock) of the portfolios. The estimated maximum losses are less than those experienced by the market one year after the Asian financial shock.[65] Nevertheless, the occurrence of such extreme scenarios would have a very small probability.

3.9 Foreign currency position

The overall foreign currency position, including both spot and forward, for all AIs stood at HK$49.7 billion at the end of March. In general, the position has been declining from its record high of HK$98.5 billion at the end of May 2003.

Key performance indicators of the banking sector are provided in Table 3.D.

[65] In the event, the credit loss of banks is estimated to have risen from 1.4% before the Asian financial crisis to 6.0% one year after the shock. These rough estimates are based on an assumed loss-given-default of 70%, and the actual default rates of overall loans at 2.01% in 1997 Q3 and 8.58% in 1998 Q4.

Table 3.D
Key performance indicators of the banking sector[1] (%)

	Mar-07	Dec-07	Mar-08
Interest rate[2]			
1-month HIBOR	4.08	4.04	2.33
3-month HIBOR	4.15	4.17	2.45
BLR[3] and 1-month HIBOR spread	3.67	3.11	3.63
BLR[3] and 3-month HIBOR spread	3.60	2.98	3.51
Composite interest rate	3.00	2.29	0.98
		Retail banks	
Balance sheet developments[4]			
Total deposits	4.4	-1.0	-2.1
Hong Kong Dollar	6.8	-6.4	-3.9
Foreign currency	0.8	8.6	0.6
Total loans	8.4	-7.2	6.2
Loans to customers inside Hong Kong[5]	8.7	-8.2	6.0
Loans to customers outside Hong Kong[6]	4.2	7.7	8.7
Negotiable instruments			
Negotiable certificates of deposit issued	-5.1	-10.7	-19.1
Negotiable debt instruments held	0.1	3.9[r]	-12.5
Asset quality[7]			
As percentage of total loans			
Pass loans	97.11	97.59[r]	97.72
Special mention loans	1.89	1.57[r]	1.47
Classified loans[8] (gross)	1.00	0.85[r]	0.81
Classified loans (net)[9]	0.76	0.65[r]	0.62
Overdue > 3 months and rescheduled loans	0.69	0.57	0.57
Profitability[10]			
Bad debt charge as percentage of average total assets	0.03	0.04	0.05
Net interest margin	1.80	1.90[r]	2.00
Cost-to-income ratio	39.6	40.6[r]	39.6
Liquidity ratio[11]	50.1	51.9	47.7
		Surveyed institutions	
Asset quality			
Delinquency ratio of residential mortgage loans	0.17	0.11	0.09
Credit card receivables			
Delinquency ratio	0.39	0.35	0.32
Charge-off ratio — quarterly annualised	3.17	2.73	2.68
— year-to-date annualised	3.17	2.90	2.68
		All locally incorporated AIs	
Capital adequacy ratio (consolidated)	13.6	13.4	14.3

Notes:

1 Figures related to Hong Kong office(s) only except where otherwise stated.

2 With reference to the HKD Interest Settlement Rates released by the Hong Kong Association of Banks.

3 With reference to the rate quoted by the Hong Kong and Shanghai Banking Corporation Limited.

4 Quarterly change.

5 Loans for use in Hong Kong plus trade-financing loans.

6 Includes "others" (i.e. unallocated).

7 Figures relate to retail banks' Hong Kong office(s) and overseas branches.

8 Classified loans are those loans graded as "substandard", "doubtful" or "loss".

9 Net of specific provisions/individual impairment allowances.

10 Year-to-date annualised.

11 Quarterly average.

r Revised figure.

4. Outlook, risks and uncertainties

The global economy is likely to weaken further, reflecting both the sluggishness of US demand and its impact on other economies through the trade channel, and a policy environment that may need to become tighter to rein in inflation. Asian economies face the uncomfortable task of gauging the inflation outlook against the backdrop of an expected slowdown in external demand. In Hong Kong, economic growth will likely moderate and inflation pressures will remain high. A reoccurrence of higher-than-expected market volatility cannot be ruled out, and market participants should be alert to the risks of lower growth and higher inflation.

4.1 Global outlook

The global economic outlook has deteriorated following the financial turmoil in March. In its April World Economic Outlook, the IMF cut its projection for global growth for 2008 to 3.7% from 4.8% in its October forecast (Table 4.A). Growth in 2009 is expected to remain broadly unchanged. The divergence in performance between the advanced and emerging economies is expected to continue. While growth in the advanced economies is generally expected to fall well below potential, the emerging economies are projected to continue their solid growth, albeit at a slower pace. The Consensus Forecasts project real GDP in 2009 to recover slightly from the 2008 levels.

Table 4.A
Global growth and inflation 2007-09

(% yoy)	2007	2008F	2009F
IMF			
Global growth[1]	**4.9**	**3.7**	**3.8**
	(5.2)	**(4.8)**	**(n.a.)**
US	2.2	0.5	0.6
Euro area	2.6	1.4	1.2
Japan	2.1	1.4	1.5
Emerging Asia	9.7	8.2	8.4
Global inflation	**4**	**4.8**	**3.7**
G-7 economies	2.2	2.4	1.8
Emerging Asia	5.3	5.9	4.1
Consensus Forecasts			
Global growth[2]	**3.8**	**2.8**	**3.0**
US	2.2	1.3	1.9
Euro zone[3]	2.6	1.5	1.6
Japan	2.0	1.3	1.6
North East Asia	9.6	8.0	7.7
South East Asia	6.4	5.5	5.7
Global inflation[2]	**3.1**	**4.0**	**2.9**
US	2.9	3.8	2.4
Euro zone[3]	2.1	3.1	2.1
Japan	0.0	0.8	0.5
North East Asia	3.9	5.3	3.5
South East Asia	4.1	7.1	5.1

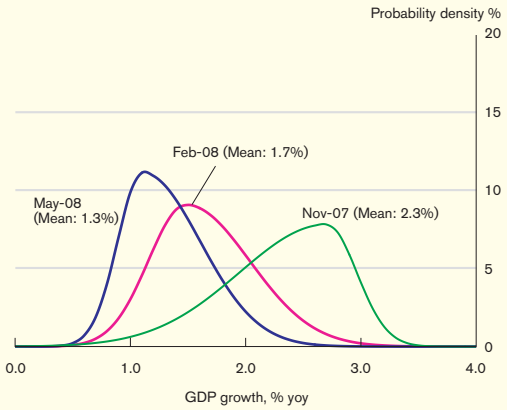
Note 1: Global growth is weighted by GDP at PPP exchange rates. Figures in brackets are previous forecasts.

2: Global growth and inflation are weighted by 2006 GDP at average 2006 exchange rates.

3: Euro zone covers the 15 European countries that adopted the euro and are united by a common monetary policy. North East Asia covers Mainland China, Hong Kong, South Korea and Taiwan, while South East Asia includes the ASEAN economies.

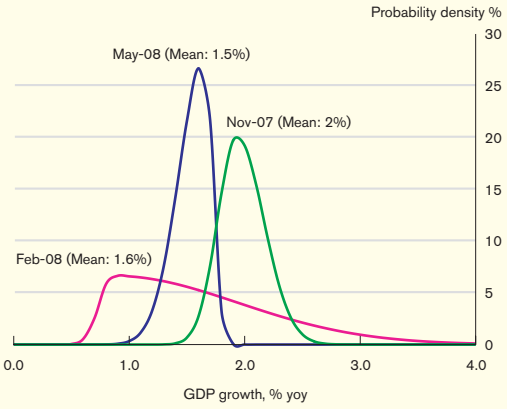
Sources: IMF World Economic Outlook, April 2008 and Consensus Forecasts, May 2008.

Chart 4.1
US: probability distribution of growth forecasts for 2008



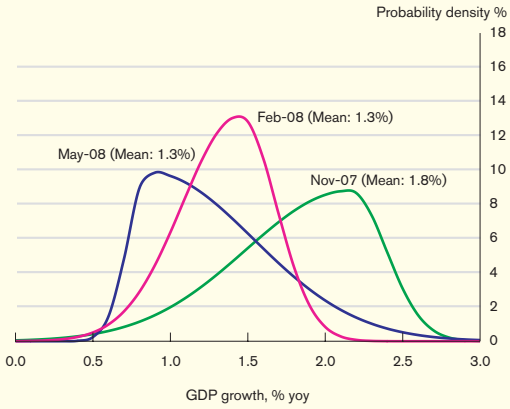
Source: Staff calculations based on Consensus Forecasts.

Chart 4.2
Euro area: probability distribution of growth forecasts for 2008



Source: Staff calculations based on Consensus Forecasts.

Chart 4.3
Japan: probability distribution of growth forecasts for 2008



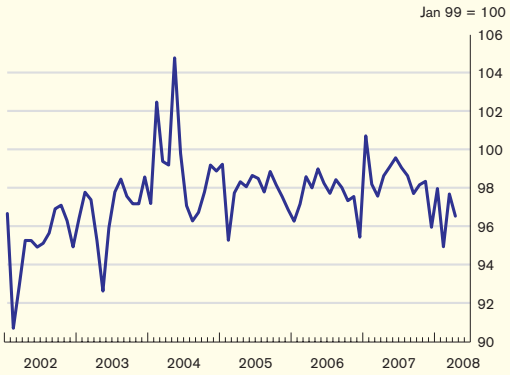
Source: Staff calculations based on Consensus Forecasts.

In the US, the economy is projected to tip into a mild recession in 2008, despite aggressive rate cuts by the Fed and timely implementation of a fiscal stimulus package. The IMF forecasts real GDP growth to slow significantly to 0.5% this year and to maintain broadly the same pace in 2009. The mean of Consensus Forecasts for US growth in 2008 has been declining since November last year to 1.3% (Chart 4.1). The economy is being hit simultaneously by the housing crisis, the credit crunch, higher fuel and food costs, and, more recently, deteriorating labour market conditions. While the debt work-out process due to impaired household balance sheets may lengthen the time taken for households to spend again, house prices will continue to fall until the excess inventory is worked off. At the same time, the rise in inflation is also reducing real wages. It is, therefore, likely that the position of consumers will worsen in the coming months, although the substantial easing of monetary policy in the US should have a positive effect on consumer finances.

The mean of Consensus Forecasts for euro area growth in 2008 has been declining since November last year to 1.5%, and the distribution has become less dispersed (Chart 4.2). Growth in the euro area is expected to slow to well below potential, dampened by both trade and financial channels. But financial sector linkages appear to be the major source of spillovers in the current environment. Exposure to the US sub-prime mortgage market has already strained banks' capital in a number of countries and, as a result, credit conditions are tightening, which will adversely affect domestic demand.

In Japan, the mean of Consensus Forecasts for growth in 2008 was maintained at 1.3%, the same as in February (Chart 4.3). The economy appears to have slowed with deteriorating business and consumer confidence, and export growth shows signs of moderating. The main direct channel through which the global slowdown might spillover to economic activity would be through slowing export growth. Nevertheless, the continued strength of domestic demand in emerging Asian economies remains a key support for Japanese exports, as these economies now account for nearly half of its total exports.

Chart 4.4
Mainland China: real activity index



Source: staff estimates.

Table 4.B
Mainland China: trade multiplier across economies

	Multiplier	Exp/GDP	Elasticity
HK	0.35	1.50	0.53
Japan	1.24	0.10	0.12
Korea	1.08	0.30	0.32
Taiwan	1.08	0.35	0.38
US	0.95	0.08	0.08
China	0.60	0.36	0.22

Note: The sample periods of estimation for HK, Korea, Taiwan, Japan, the US and China are 1990-2006, 1985-2006, 1970-1995, 1982-2006, 1972-2006 and 1990-2006, respectively. The exp/GDP figures are the average values of the exports to GDP ratios of the aforementioned sample periods except China for which we take the average export/GDP ratio of 2005-2007.

Source: Staff estimates.

Economic momentum may soften slightly in the coming months on the Mainland. Our real activity index (RAI), a precursor of near-term growth, has fluctuated and moderated recently (Chart 4.4).[66] Meanwhile, consensus forecasts in May indicate that the Mainland economy may grow by 10.0% in 2008, almost two percentage points below the rate in 2007.

Private consumption is expected to grow steadily due to a solid rise in income. Despite the declining profitability of firms and the tightening bias of monetary policy, investment will probably expand at a healthy pace as the central government looks set to invest more in infrastructure. The new terms of local governments and the re-construction following the major earthquake in Southwest China may also stimulate investment activity. In contrast, the external environment is likely to deteriorate further and provide less support to GDP growth. Consensus forecasts show that in 2008, China's merchandise exports may grow at a rate about eight percentage points below that of 2007. Our estimate of the trade multiplier suggests that a one percentage point decrease in export growth may lead to a slide in GDP growth of around 0.20 percentage points on the Mainland (Table 4.B).

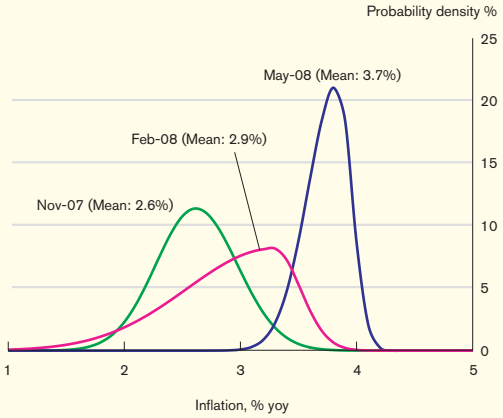
Inflationary pressure continues to pose a threat to the Mainland economy. Although prices of major food items have shown signs of softening recently, overall inflationary pressure may not ease significantly in the near term as raw materials prices stay elevated and domestic wages are boosted by heightened inflation expectations. The recent earthquake in Sichuan, though expected to reduce production in the affected areas, may induce more investment demand nation wide associated with reconstruction activities and could add some additional pressure to inflation.

Taking China and other emerging Asian economies as a group, the IMF expects growth to decelerate, but remain robust at around 8.2% in 2008, compared with its high

[66] The index is constructed using seven monthly indicators that include growth in industrial production, electricity generation, exports, real retail sales, real fixed asset investment (FAI), passenger volume, and volume of freight transport. Details of the methodology can be found in Liu, Zhang, and Shek, (2007), "A Real Activity Index for Mainland China" *Working Paper 07/2007*, HKMA.

of 9.7% in 2007. Growth is projected to pick up slightly to 8.4% in 2009. The slowdown reflects efforts to prevent overheating in some countries as well as trade and financial spillovers and some moderation in commodity prices. Growth in China is projected to moderate to 9.3% in 2008, with strong domestic demand helping to balance slowing export growth. While growth in the NIEs is expected to slow in 2008, growth in the ASEAN economies is projected to soften, with activity strengthening in Thailand as domestic demand recovers from recent sluggishness.

Chart 4.5
US: probability distribution of inflation forecasts for 2008



Source: Staff calculations based on Consensus Forecasts.

Global consumer price inflation is projected by the IMF to rise to 4.8% in 2008 from 4% in 2007, reflecting mainly higher energy and food prices. Headline inflation will remain elevated in the first half of 2008, but will moderate gradually thereafter, reflecting the receding impact of recent increases in commodity prices and the emergence of slack in some economies. For the US, the mean of Consensus Forecasts for CPI inflation in 2008 has been revised upwards to 3.7% since November (Chart 4.5). The IMF forecasts global consumer price inflation to ease back to 3.7% in 2009, while the Consensus Forecasts also project inflation to ease from the 2008 level.

The outlook for global financial conditions has improved from six months ago. Although the sub-prime crisis continues, the worst appears to be over. For the next six months or so, the outlook critically depends on how developments unfold on two fronts. The first important variable is the speed and scale of the adjustment in property prices in the US property market, which is crucial in defining how much consumers and financial institutions will need to repair their balance sheets. This will impinge on consumer spending as well as determining the intensity of the credit crunch, influencing in turn credit growth and eventually the shape and timing of economic recovery. Secondly, inflationary pressure is rising as a result of the considerable depreciation of the US dollar, the sharp rise in oil and commodity prices, and escalating inflation in important emerging markets, such as China. The balance of risk now appears to argue for a shift in monetary policy towards a more neutral stance, with some uncertainties over how the Fed might respond if inflation does pick up momentum given that the

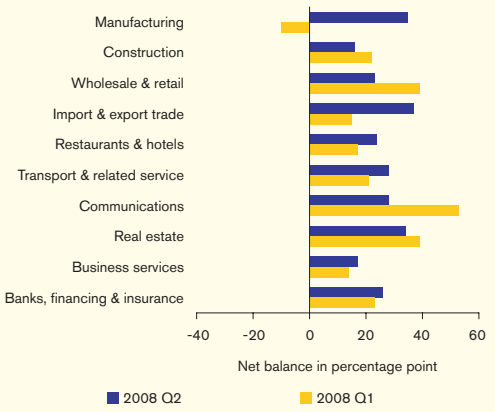
economy is still fragile. With the easing bias fading, the focus of the foreign exchange market may shift to Europe given its weakening economic outlook, and the outcome will hinge on how much longer European economies can remain resilient to high interest rates and the strong euro. Asia, which has largely been immune to the sub-prime crisis, may see a resurgence in capital inflows, especially given that the outlook for the US and European markets remains relatively uncertain. However, it is worth noting that the risks to the Asian financial outlook have risen appreciably, as consumer and asset price inflation continues to climb.

4.2 Domestic outlook

The outlook for the Hong Kong economy remains favourable in the near future, although a slowdown is likely in view of the deteriorating external environment. The Quarterly Business Tendency Survey indicated that all the sectors covered expect the volume of business and output to increase in 2008 Q2 (Chart 4.6). With all the surveyed sectors taken together, the difference between the proportion of respondents expecting the business situation to get better and those expecting it to worsen remained unchanged at 26 percentage points in Q2. This suggests companies are still positive about the near-term business climate. The Purchasing Managers' Index dropped modestly to 50.1 in April from an average of 51.1 in Q1, pointing to continued expansion in business activities. Overall, these indicators still suggest respectable growth in real GDP in Q2. Market consensus projects 4.4% year-on-year real GDP growth in Q2, lower than the 7.1% growth registered in Q1.

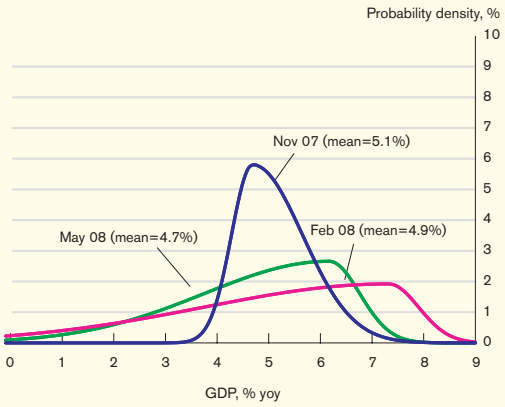
Economic growth is expected to remain solid in 2008, although growth momentum will probably abate more visibly in the second half of the year. Market consensus projects a deceleration of real GDP growth from 6.4% in 2007 to 4.7% in 2008, driven by a slowdown in domestic and external demand. Reflecting heightened uncertainties in the external environment, the dispersion of the range of consensus forecasts has increased notably since the last Report, with a downward bias (Chart 4.7).

Chart 4.6
Results of Business Tendency Survey: Views on expected changes in volume of output in 2008 Q1 and Q2



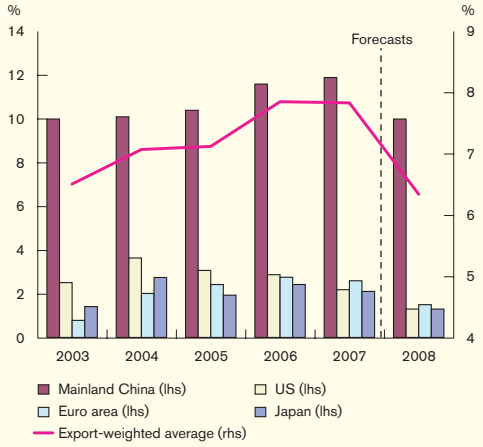
Note: Net balance refers to the difference between the percentage of respondents expecting a rise over those expecting a decline.
Source: C&SD.

Chart 4.7
Hong Kong: probability distribution of growth forecasts for 2008



Source: Staff estimates based on market consensus.

Chart 4.8
Growth in Hong Kong's main trading partners

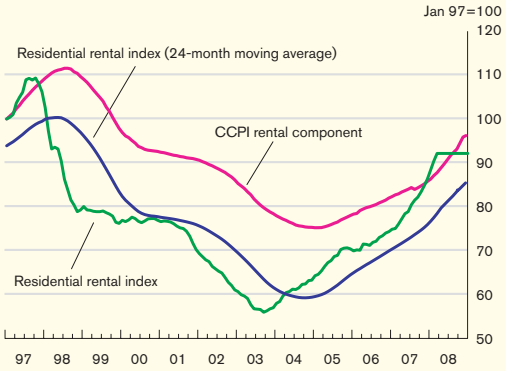


Sources: Consensus Forecasts and staff estimates.

Market consensus expects merchandise exports to register solid growth of 7.2% in 2008. Although the global economic slowdown is expected to reduce the trade-weighted average output growth of Hong Kong's key trading partners by about 1.5 percentage points in 2008 (Chart 4.8) and continued appreciation of the renminbi is expected to reduce Hong Kong's re-exports from the Mainland to the rest of the world, their combined negative effects are expected to be offset partly by the lagged effects of the depreciation of the US dollar, to which the Hong Kong dollar is linked. In addition, exports to emerging market economies are likely to be strong, as domestic demand in these economies has been insulated from a deteriorating external environment. Exports of services are projected to grow strongly in 2008, underpinned by expansion in offshore trade, liberalisation of the financial sector on the Mainland, as well as an anticipated increase in tourists travelling to the Mainland, via Hong Kong, for the 2008 Beijing Olympics.

Domestic demand is expected to register solid growth in 2008, although a slowdown is likely because of the base year effect. Private consumption will continue to be supported by income and wage growth amid tight labour market conditions. However, given the correction in the local equity market and dampened momentum in the property market, the wealth effect on consumption may not be as prominent as last year. Private investments are expected to slow more noticeably this year for two reasons. First, higher uncertainty about the external environment, especially the outlook for the US economy, may affect business confidence. Secondly, although real interest rates remain at a low level, further stimulus from interest rate cuts is unlikely. It is widely believed that local banks will not cut interest rates further even if there are more rate cuts in the US, as local deposit rates have dropped close to zero. Growth in public fixed asset investment is expected to moderate as well, as the Route 8 project is close to completion and there are no new major infrastructure projects in the pipeline for the remainder of the year. The exact timing for the implementation of a number of large-scale infrastructure projects announced in the Policy Address is still uncertain. Meanwhile, government consumption is expected to rise due to increases in wages and salaries of civil servants.

Chart 4.9
CCPI rental component and market rents

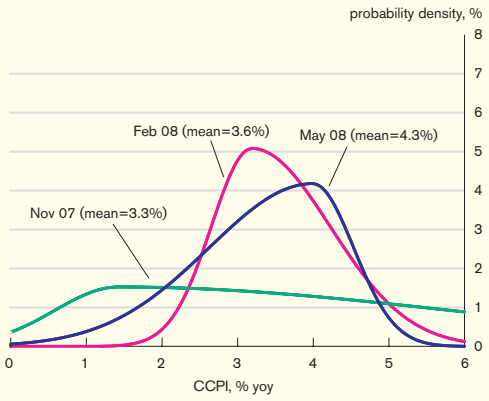


Note: CCPI rental component is excluding the effects of one-off special relief measures.

Sources: Rating & Valuation Department, C&SD and staff estimates.

The underlying inflation is expected to accelerate in 2008 on the back of solid domestic demand and continued pass-though of import prices. Domestically, a sharp increase in property prices since the second half of 2007 has been putting upward pressure on private housing rents. Given that there is a close relationship between the 24-month moving average of the private residential rental index and the CCPI rental component (Chart 4.9), even if the private residential rental index stabilises at the current level, the CCPI rental component is projected to increase by 8.5% in 2008. The non-rental component of CCPI inflation is also expected to pick up further. The pass-through of rising external prices to domestic CCPI is likely to accelerate, largely reflecting rising global food prices, the weak US dollar and the continued appreciation of the renminbi. Although rapid labour productivity growth helped lower the unit labour cost and thus partly ease inflationary pressures in previous years, the downward trend in unit labour costs was reversed in the second half of 2007 because of the persistently positive output gap and a tight labour market. Based on the indicator model developed by the HKMA,[67] the non-rental component CCPI inflation is expected to increase to 4.0%-4.8% in 2008. Overall, the underlying CCPI inflation in 2008 is expected to fall in a range of 5.2% to 5.8%, higher than the 2.8% inflation rate registered in 2007.

Chart 4.10
Hong Kong: probability distribution of inflation forecasts for 2008



Source: Staff estimates based on market consensus.

Although the underlying inflationary pressures are picking up quickly, headline inflation may rise at a slower pace than the underlying one, mainly reflecting the effects of a number of one-off special relief measures such as the rates waiver for the whole 2008/09 fiscal year and waiver of electricity fees. Taking these into consideration, the HKSAR Government projected headline CCPI to increase by 3.4% in 2008, which is 1.1 percentage points lower than the forecast for the underlying inflation. The latest market consensus predicts headline CCPI inflation to rise by 4.3% in 2008 (Chart 4.10).

[67] Details of the methodology can be found in Li-gang Liu, Jian Chang and Andrew Tsang (2006), "Forecasting the Non-Rental Component of Hong Kong's CCPI Inflation – an Indicator Approach", *HKMA Research Memorandum* 03/2006.

4.3 Uncertainties and risks

A sentiment of "the worst is over" has permeated global financial markets since the US Fed orchestrated a rescue of Bear Stearns in mid-March 2008. The market appears to view the rescue as an implicit guarantee given by the Fed to troubled financial institutions. But, lingering uncertainty about the magnitude of losses in financial institutions persists, as credit spreads remain wide and the inter-bank market continues to be under stress.

Despite improved market sentiment, a resurfacing of higher-than-expected market volatility cannot be ruled out. Global financial markets may be jolted again by larger-than-expected losses in the financial institutions, particularly if the US housing market continues its slide and default rates on residential mortgages continue to climb. There is also no guarantee that the kind of assistance given by the Fed to Bear Stearns will be provided to other international banks by their respective national regulatory authorities.

Even in the event capital flows are not reversed by the financial turmoil, the re-pricing of risk could still affect Asian economic growth by raising the cost of refinancing external liabilities. As major international banks will be preoccupied with replenishing their capital base, they are expected to become more discriminating in their lending decisions, and credit will also become more expensive. While there is an absence of economy-wide funding difficulties, tiering in credit markets has been more pronounced since the crisis, with the result that lower quality borrowers are finding it difficult to arrange financing in international markets.

As banks in emerging Asia are the main originators of domestic credit, and their leverage and exposure to problem securities are limited, the risk of a credit crunch in the region seems low. And, while the global credit market turmoil does not appear to have posed any immediate and observable systemic risk to the financial systems in the region, there are a number of potential challenges. A significant increase in credit costs for banks operating in Europe and the US, the sharp rebound in risk premiums globally, and continuing pressure on access to funds at reasonable market rates, terms and maturities are areas to be monitored closely.

GDP growth remained firm throughout the Asian region despite some signs of moderation, and recent trade performance continued to be positive. Instead, rising inflationary pressures appear to be a more immediate threat to the region than slowing growth. Increasing inflationary pressures in emerging markets probably reflect capacity constraints after five or six years of strong growth and to some extent the spillover effect of the monetary policy loosening in the US. This may have fuelled inflationary pressures in the emerging market economies by weakening the exchange rate of the US dollar and pushing up prices of commodities and agricultural products.

Indeed, rising food and fuel prices could test emerging Asia's resilience. Economies that are net fuel and food importers are likely to suffer from adverse movements in their terms of trade. Food costs alone are already of great concern, with escalating prices prompting some countries to impose export limits in an effort to protect domestic consumers. Along with heightening social disquiet, higher food price inflation has triggered worries over broader price stability. The consequence of continued upward pressure on cost inflation could be demands for higher wages or increased fiscal outlays to subsidise food and fuel consumption. This, in turn, could eventually lead to an inflationary spiral of prices and costs.

But would a US-led slowdown in the region's growth be enough to counter inflationary pressure from rising food and fuel prices? First, there may be a time lag for slower growth in the US to have an impact on growth in the region. Secondly, even if slower growth materialises, it may not be sufficiently severe to dampen inflation, given that the slowdown will take place mainly in exports, while domestic demand continues to hold up. Thus, policy tightening may be required to achieve a significant reduction in the region's inflation rate. The strength of economic activity in the region may weaken, reflecting both the sluggishness of external demand and a tighter policy environment.

At this stage, the risks to monetary and financial stability in Hong Kong originate mainly from the global and regional economic environment. There are risks of both higher inflation and lower growth. Asset prices and capital flows are likely to remain volatile in such an environment. Although the balance sheets of both the public and the private sectors in Hong Kong remain healthy, it is important for market participants to exercise caution and guard against the risks associated with an environment of rising inflation and volatile asset prices – a warning from the December 2007 Report that is worth repeating.

Glossary of terms

Aggregate Balance

The sum of balances in the clearing accounts and reserve accounts maintained by commercial banks with the central bank. In Hong Kong, this refers to the sum of the balances in the clearing accounts maintained by the banks with the HKMA for settling interbank payments and payments between banks and the HKMA. The Aggregate Balance represents the level of interbank liquidity, and is a part of the Monetary Base.

Authorized Institution (AI)

An institution authorized under the Banking Ordinance to carry on the business of taking deposits. Hong Kong maintains a Three-tier Banking System, which comprises licensed banks, restricted licence banks (RLBs) and deposit-taking companies (DTCs).

Backing Assets/Backing Portfolio

Specific US dollar assets of the Exchange Fund that have been designated to provide backing to the Monetary Base.

Backing Ratio

The ratio between the Backing Assets and the Monetary Base. When the Currency Board Account was first set up, sufficient US dollar assets were transferred to the Currency Board Account to provide a 105% backing of the Monetary Base (the Backing Portfolio). Under a new arrangement approved by the Financial Secretary in January 2000, when the Backing Ratio reaches 112.5% (the upper trigger point), assets will be transferred out of the Backing Portfolio to the Investment Portfolio of the Exchange Fund assets to reduce the ratio to 110%. Conversely, should the ratio drop to 105% (the lower trigger point), assets will be injected from the Investment Portfolio to restore it to 107.5%. This arrangement enables a higher investment return on excess assets while ensuring sufficient liquid assets in the Backing Portfolio.

Best Lending Rate

A benchmark interest rate that banks use to price loans. In Hong Kong, the Best Lending Rate is often used as a base for quoting interest rates on mortgage loans.

Certificates of Indebtedness (CIs)

Certificates issued by the Financial Secretary under the Exchange Fund Ordinance, to be held by note-issuing banks as cover for the banknotes they issue.

Closer Economic Partnership Arrangement (CEPA)

A free trade agreement between the Government of the Hong Kong Special Administrative Region and the Central People's Government of the People's Republic of China (the Mainland) signed on 29 June 2003. CEPA aims to strengthen trade and investment co-operation between the Mainland and Hong Kong, through progressively reducing tariff and non-tariff barriers on trade in goods and services, and facilitating trade and investment activities.

Composite Consumer Price Index

The headline consumer price index (CPI) for Hong Kong. The Census and Statistics Department compiles three separate CPI series relating to households in different expenditure ranges. The CPI(A) relates to about 50% of households in the relatively low expenditure range; the CPI(B) relates to the next 30% of households in the medium expenditure range; and the CPI(C) relates to the next 10% of households in the relatively high expenditure range. The Composite CPI is compiled based on the aggregate expenditure pattern of all of the above households taken together.

Composite Interest Rate

The composite interest rate is a weighted average interest rate of all Hong Kong dollar interest bearing liabilities, which include deposits from customers, amounts due to banks, negotiable certificates of deposit and other debt instruments, and Hong Kong dollar non-interest bearing demand deposits on the books of banks. Data from retail banks, which account for about 90% of the total customers' deposits in the banking sector, are used in the calculation. It should be noted that the composite interest rate represents only average interest expenses. There are various other costs involved in the making of a loan, such as operating costs (e.g. staff and rental expenses), credit cost and hedging cost, which are not covered by the composite interest rate.

Consolidated Account

A government account, which gives an overview of the financial position and cash resources of the Government of the Hong Kong Special Administrative Region. It is prepared on a cash basis and comprises the General Revenue Account and the eight government funds: Capital Works Reserve Fund, Capital Investment Fund, Civil Service Pension Reserve Fund, Disaster Relief Fund, Innovation and Technology Fund, Land Fund, Loan Fund and Lotteries Fund.

Convertibility Undertaking

An undertaking by a central bank or currency board to convert domestic currency into foreign currency and vice versa at a fixed exchange rate. In Hong Kong, the HKMA operates Convertibility Undertakings on both the strong side and the weak side. Under the strong-side Convertibility Undertaking, the HKMA undertakes to buy US dollars from licensed banks at 7.75. Under the weak-side Convertibility Undertaking, the HKMA undertakes to sell US dollars at 7.85. Within the Convertibility Zone between 7.75 and 7.85, the HKMA may choose to conduct market operations consistent with Currency Board principles with the aim of promoting the smooth functioning of the money and foreign exchange markets.

Convertibility Zone

The Hong-Kong-dollar-US-dollar exchange rate band, defined by the levels of the strong- and weak-side Convertibility Undertakings, within which the HKMA may choose to conduct market operations consistent with Currency Board principles.

Delinquency Ratio in Negative Equity

Negative equity residential mortgage loans (RMLs) delinquent for more than three months as a percentage of total negative equity RMLs.

Discount Window

In Hong Kong, the facility through which banks can borrow Hong Kong dollar funds overnight from the HKMA through repurchase agreements using eligible securities as collateral.

Exchange Fund Bills and Notes

Debt instruments issued by the HKMA for the account of the Exchange Fund. Introduced in March 1990, the Exchange Fund Bills and Notes programme has expanded over the years, with a maturity profile ranging from three months to 15 years. These instruments are fully backed by the foreign reserves. The HKMA has undertaken that new Exchange Fund paper will only be issued when there is an inflow of funds, thus enabling the additional paper to be fully backed by the foreign reserves. Since 1 April 1999, interest payments on Exchange Fund paper have been allowed to expand the Monetary Base. Additional Exchange Fund paper is issued to absorb such interest payments. This is consistent with the Currency Board discipline since interest payments on Exchange Fund paper are backed by interest income on the US dollar assets backing the Monetary Base.

Liquidity Ratio

All authorized institutions in Hong Kong are required to meet a minimum monthly average liquidity ratio of 25%. This is calculated as the ratio of liquefiable assets (e.g. marketable debt securities and loans repayable within one month subject to their respective liquidity conversion factors) to qualifying liabilities (basically all liabilities due within one month). The method of calculation and its components are specified in the Fourth Schedule to the Banking Ordinance.

Monetary Base

A part of the monetary liabilities of a central bank. The monetary base is defined, at the minimum, as the sum of the currency in circulation (banknotes and coins) and the balance of the banking system held with the central bank (the reserve balance or the clearing balance). In Hong Kong, the Monetary Base comprises Certificates of Indebtedness (for backing the banknotes issued by the note-issuing banks), government-issued currency in circulation, the balance of the clearing accounts of banks kept with the HKMA, and Exchange Fund Bills and Notes.

Monetary Conditions Index (MCI)

An index that shows the overall monetary conditions of an economy. It is defined as a weighted sum of some measures of real interest rate and real effective exchange rates, with the weights reflecting their relative effects on aggregate demand or inflation.

Mortgage Delinquency Ratio

The ratio of total amount of loans overdue for more than three months to total outstanding loans. It is obtained from the Residential Mortgage Survey, which is a monthly survey covering 23 authorized institutions.

Mortgage Loans in Negative Equity

A mortgage loan with the outstanding loan amount exceeding the current market value of the mortgaged property.

Nominal and Real Effective Exchange Rate (NEER and REER)

An indicator of the overall exchange rate value of the Hong Kong dollar against a basket of currencies of Hong Kong's principal trading partners. The nominal effective exchange rate (NEER) is a weighted average of the exchange rates between Hong Kong and its principal trading partners. The real effective rate (REER) is obtained by adjusting the NEER for relative movements in the seasonally-adjusted consumer price indices of those selected trading partners.

Operating Account

A government account comprises mainly the General Revenue Account, including investment income of the Land Fund but excludes those revenue items which are treated as capital revenue.

Rescheduled Loan Ratio

The ratio of total rescheduled loans to total outstanding loans.

Underemployment Rate

The number of underemployed persons, who are involuntarily working for less than 35 hours a week, as a proportion of the labour force.

Abbreviations

3m moving avg/3mma	Three-month moving average
3m-on-3m	Three-month-on-three-month
ASEAN	Association of Southeast Asian Nations
AIs	Authorized Institutions
bn	Billion
BLR	Best Lending Rate
BoE	Bank of England
BoJ	Bank of Japan
BoP	Balance of Payments
CBRC	China Banking Regulatory Commission
CCPI	Composite Consumer Price Index
C&SD	Census and Statistics Department
CNY	Chinese New Year
CPI	Consumer Price Index
CSRC	China Securities Regulatory Commission
CU	Convertibility Undertaking
DAX	Deutscher Aktien Index
ECB	European Central Bank
E/P	Earnings/Price Ratio
EU	European Union
FAI	Fixed Assets Investment
FDI	Foreign Direct Investment
Fed	Federal Reserve Board
FOMC	Federal Open Market Committee
FX	Foreign exchange
GDP	Gross Domestic Product
HIBOR	Hong Kong Interbank Offered Rate
HICP	Harmonised Index of Consumer Prices
HKMA	Hong Kong Monetary Authority
HSI	Hang Seng Index
IMF	International Monetary Fund
IPOs	Initial public offerings
IT	Information technology
ISM	Institute for Supply Management
JGB	Japanese Government Bond
JPY	Japanese yen
LIBOR	London Interbank Offered Rate

lhs	Left-hand scale
MCI	Monetary Conditions Index
mn	Million
n.a.	Not available
NDF	Non-deliverable forward
NDRC	National Development and Reform Commission
NEER	Nominal effective exchange rate
NIEs	Newly Industrialised Economies
NPLs	Non-performing loans
OECD	Organisation for Economic Co-operation and Development
p.a.	Per annum
PBoC	People's Bank of China
PCE	Private consumption expenditure
PD	Default probability
PE	Price/Earnings
PMI	Purchasing Managers' Index
PPP	Purchasing Power Parity
PPI	Producer Price Index
qoq	Quarter-on-quarter
QDII	Qualified Domestic Institutional Investors
QFII	Qualified Foreign Institutional Investors
RAI	Real Activity Index
REER	Real effective exchange rate
REIT	Real Estate Investment Trust
rhs	Right-hand scale
RMB	Renminbi
RML	Residential Mortgage Lending
ROE	Return on equity
RRR	Reserve requirement ratio
Sa	Seasonally adjusted
SAFE	State Administration of Foreign Exchange
SARS	Severe Acute Respiratory Syndrome
S&P 500	Standard and Poor's 500 Index
tn	Trillion
TOPIX	Tokyo Stock Price Index
UK	United Kingdom
US	United States
USD	US dollar
WTI	West Texas Intermediate
yoy	Year-on-year
ytd	Year-to-date

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