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Half-Yearly Monetary and Financial Stability Report - March 2010

Hong Kong Monetary Authority

HONG KONG MONETARY AUTHORITY
香港金融管理局

HALF-YEARLY MONETARY AND FINANCIAL STABILITY REPORT

March 2010

This Report reviews statistical information between the end of June 2009 and the end of February 2010.

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1. Summary and overview

The Hong Kong economy bounced back in the last three quarters of 2009 from a sharp contraction in output caused by the global financial crisis. Consumer prices and employment stabilised in the final quarter of the year. The strong upward momentum in asset prices continued amid an unprecedented inflow of funds into the Hong Kong dollar. The money and foreign-exchange markets were functioning normally, and the banking system remained healthy, paving the way for an on-schedule withdrawal of the blanket deposit guarantee and expiry of the Contingent Bank Capital Facility by the end of 2010.

The main risks to monetary and financial stability in the local economy lie in a further increase in asset prices and a build-up of excessive leveraged positions by the private sector, spurred by the exceptionally easy monetary conditions; and potential interest rate volatility when major economies begin to exit from policy easing. Banks, particularly those relying more on wholesale funding, need to be alert to interest rate risks embedded in their mortgage portfolios, while continuing to guard against erosion in underwriting standards.

The external environment

The global economy has emerged from the deepest post-war recession, but the speed of recovery has differed from region to region. Although growth forecasts for advanced economies have been revised upwards, the recovery in most is expected to remain sluggish. Emerging market economies, particularly those in Asia, have rebounded strongly from the troughs in economic activity in late 2008 and early 2009, reflecting stronger initial conditions and greater room for policy support. Buoyant domestic demand and robust import growth in Mainland China have provided important support to its trading partners.

Global financial markets generally improved in the second half of 2009, with money markets stabilising and a moderation in the tightening of lending standards. However, rising equity markets and active corporate bond markets were overshadowed by nervousness in the sovereign debt markets. Increased risk appetite and optimism over the global economy reduced the safe-haven appeal of the US dollar, with investors shifting towards higher-yielding currencies and riskier assets. The US Federal Reserve assurance that interest rates will remain low for an extended period has created strong incentives for the US dollar to be used as the funding currency for carry-trade activities.

The external environment facing the Hong Kong economy is likely to remain volatile, reflecting a large degree of uncertainty over the strength and sustainability of economic recovery, difficulties in timing the exit strategies, growing concerns about fiscal sustainability in advanced economies, and volatility in cross-border capital flows.

The domestic economy

Economic recovery in Hong Kong continued in the second half of 2009, driven primarily by domestic demand. Private consumption staged a sharp rebound in 2009 Q2 from a large four-quarter consecutive decline, and maintained robust momentum in Q3 and Q4. With inventory re-stocking resuming in Q3, private investment spending revived strongly towards the latter part of the year. Government spending also contributed positively to domestic demand in 2009. In contrast, net exports dragged on growth for most of the year. Exports improved in the second half, and the momentum gathered pace in the final quarter with quarter-on-quarter growth of 6.9%, underpinned by strong economic recovery in Mainland China and the Asian region.

The labour market stabilised towards the final quarter, with the seasonally adjusted three-month moving average unemployment rate falling from 5.4% in Q2 to 4.9% in Q4. Indeed, the labour market was much more resilient in this crisis compared with a decade ago during the Asian financial crisis. With the unemployment rate about half a percentage point higher than the trend rate, some slackness still exists in the economy. Informal estimates put the negative output gap at around 1.7% in 2009 Q4, implying there is little pressure on core inflation at this juncture.

Nevertheless, quarter-on-quarter underlying consumer-price inflation turned positive in Q4, rising by an annualised rate of 2% from -0.7% in Q3, due to increases in both the price of imports and non-rental service charges. It is, however, doubtful whether the increases in non-rental service charges will be sustained, given the overall slack in the economy. Consumer-price inflation later this year will be significantly influenced by developments in rental charges, which will likely trend upwards, given the surge in housing prices and market rentals since early 2009. Overall, pressures on consumer-price inflation will become more visible in 2011.

The latest market consensus points to a mean forecast of 4.8% GDP growth for Hong Kong in 2010, leading to a virtual closing of the output gap by the end of the year. Box 3 discusses a model-based assessment of the likely deviations from this baseline forecast, if assumptions about the external environment are changed to reflect the likely volatility in the exogenous variables.

Monetary conditions and capital flows

With strong inflows into the Hong Kong dollar, the strong-side Convertibility Undertaking was triggered repeatedly in 2009. As a result, the Hong Kong-dollar Monetary Base almost tripled its pre-crisis level, consisting of a significant rise in the Aggregate Balance of the banking sector and the issuance of additional Exchange Fund Bills to unprecedented levels. The Hong Kong-dollar spot exchange rate stayed close to 7.75 throughout 2009 before weakening slightly in early 2010. Reflecting ample interbank liquidity, the overnight and one-month HIBORs were at near-zero levels, with small fluctuations during IPO activities. At the longer-end, the yield curve generally flattened in the second half of 2009, after rising in the first half. Retail deposit and lending rates remained virtually unchanged.

Domestic loan growth was broadly in line with the movements in nominal GDP, bouncing back by 1.6% in 2009 Q2 and Q3 before retreating in the final quarter. Residential mortgage loans were one of the major contributors to domestic credit growth. The pick-up in domestic credit, however, was a minor factor in driving the growth of Hong Kong-dollar broad money M3, which recorded double-digit year-on-year growth in the second half of 2009. This growth was mainly due to a rise in the net foreign currency assets of the banking system, i.e. fund flows into the Hong Kong dollar.

Indeed, total fund flows into the Hong Kong dollar amounted to HK$690.3 billion between 2008 Q4 and 2009 Q4, as measured by the increase in Hong Kong-dollar deposits of the banking system induced by acquisition of net foreign-currency assets by the Exchange Fund and the authorized institutions (AIs). The bulk of these inflows was reflected in an expansion of the Monetary Base by HK$663.2 billion. The nature of the inflows appeared to have evolved in two distinct phases.

In the first phase (2008 Q4 to 2009 Q1), following the collapse of Lehman Brothers, tightened credit conditions prompted local banks and corporations to repatriate funds from abroad to meet liquidity needs at home. Another reason underlying the inflows was the introduction of the full deposit guarantee, which made Hong Kong a "safe haven". In the second phase (2009 Q2 to 2009 Q4), as the various monetary and fiscal programmes introduced by the US and Europe showed their effects, financial markets and the real economy began to stabilise. Funds started flowing into Asia, especially Hong Kong, attracted by a pick-up in fund-raising activities, such as IPOs, rights issues and placements. More than HK$500 billion was raised through the Hong Kong stock market during 2009. Most of the offerings involved international placements with many overseas investors, thus attracting large amounts of funds flowed into the Hong Kong dollar.

It appears the majority of these fund inflows from 2008 Q4 to 2009 Q4 were not short-term speculative funds, but related to liquidity management and fund-raising activities. Therefore, the risk of a sharp reversal of such flows seems lower than it would be the case should the fund inflows be related to speculative activities. Even so, the resultant ultra-loose monetary conditions are conducive to asset price inflation. This could lead to instability when capital outflows eventually occur, particularly if vulnerabilities, such as excessive leverage, are built up in an environment of abundant liquidity.

Asset markets

Local equity prices rebounded strongly in the second half of 2009 on the back of ample liquidity, the surge in property prices, and robust growth in Mainland China. The price-earnings ratio of the Hang Seng Index (HSI) peaked at 20.53 times in November, nearly tripled the lowest level of the year in March. After the market consolidation in early 2010, the price-earnings ratio fell, but still stood at a level of 18.4 times, considerably above the long-term average (May 1973 to February 2010) of 14.9 times. With the HSI hovering around the 20,000 level, investors appeared to have become more cautious, as the appetite for taking more risk on equities has levelled off since August 2009. The market will likely remain volatile in 2010 because of the large degree of uncertainty in the external environment.

The residential property market remained buoyant in the second half of 2009 with flat prices and transaction volumes both continuing to rise. Given the tight supply of residential units, housing demand in Q3 was spurred on by the sustained low interest rate environment, renewed sentiment and increased buying interest from high net-worth individuals and companies. The momentum, however, slowed in Q4 amid prospective buyers' concerns over home affordability and the issuance of the HKMA's new guidelines on loan-to-value ratios for residential mortgages on high-value flats.

Nevertheless, the rapidly surging pace during most of 2009 resulted in a 27.6% price increase through the year. Prices in the upper-middle and luxury segment (flats with saleable area over 100 square metres) increased by 28.5% in 2009, faster than the 27.4% rise in the small and medium-sized segment (below 100 square metres). While the stock of units in the former segment accounts for only about 7.4% of the total housing stock in Hong Kong, price movements in this segment can have an important pass-through effect on the mass market and are worth monitoring closely.

The exceptionally low interest rates boosted housing affordability by lowering the income-gearing ratio, providing a strong incentive to buy as the buy-rent gap narrowed. However, when interest rates eventually rise, home buyers' repayment burden and the financing cost of owning a property will increase. In a simplistic scenario, a one-percentage-point increase in the mortgage rate from the prevailing level will raise the mortgage repayment amount by 9.4%, if there is no change in the repayment period, which is assumed to be 20 years. As a result, there is a potential risk that stresses in the mortgage market could escalate in the face of an increase in interest rates.

Banking sector performance

The banking sector showed a notable recovery in the second half of 2009 on the back of better economic fundamentals. Higher non-interest income, lower provisions and problem loans, and stronger capitalisation indicate the adverse impact of the global financial crisis is subsiding.

Capitalisation of the banking sector continued to be strong, with the aggregate consolidated capital adequacy ratio corresponding and the tier-one ratio of locally incorporated AIs being 16.9% and 12.9% at the end of December 2009 respectively. The improvements mainly reflected stronger growth in capital than assets, suggesting that banks in Hong Kong may not have faced significant constraints in accessing fresh capital after the crisis.

In the medium term, however, the ability of banks in Hong Kong to raise capital is clouded by two major developments in the global banking market. First, the current proposal on the strengthening of banks' capital requirements by the Basel Committee on Banking Supervision implies that banks may need to raise additional capital to meet the new capital rules. Secondly, a major portion of debt securities issued by US and European banks will mature from 2010 to 2012. The huge demand for capital could put significant pressure on the global capital market and hamper the fund raising activities of banks.

Banks in Hong Kong are in a better position to raise capital because of their generally healthier financial position compared with their US and European counterparts. Nevertheless, a reversal of market sentiment, due either to a failure of debt rollover by overseas banks or investors' reluctance to participate in banks' equity offerings, may have important implications for fund raising activities of internationally active banks in Hong Kong.

While the temporary 100% guarantee of customer deposits will expire at the end of 2010, the impact on the funding structure of banks' liabilities is not expected to be significant, given the favourable liquidity condition in the banking system. In particular, the potential funding risk arising from shifting of customer deposits across AIs or from AIs to banks overseas should be low. The proposal to enhance the Deposit Protection Scheme by raising the coverage limit from HK$100,000 to HK$500,000, and the establishment of the tripartite working group between the HKMA, Bank Negara Malaysia and the Monetary Authority of Singapore to co-ordinate the exit from full deposit guarantees are likely to mitigate the potential risk.

Looking ahead, the primary risk facing banks in Hong Kong depends critically on the external environment. On the upside, increases in US interest rates could expose the banks to significant interest rate risks. Indeed, banks' net-interest income remains under pressure, partly due to increased competition in the mortgage market in an environment of ample liquidity. The associated interest rate risk thus bears watching closely in view of a possible reversal of capital flows and normalised liquidity conditions in Hong Kong's banking system. In a downside scenario, higher credit risk of loan portfolios in an unfavourable economic environment could pose significant challenges for the Hong Kong banking sector. Therefore, banks should be vigilant to the possible risks arising from different scenarios.

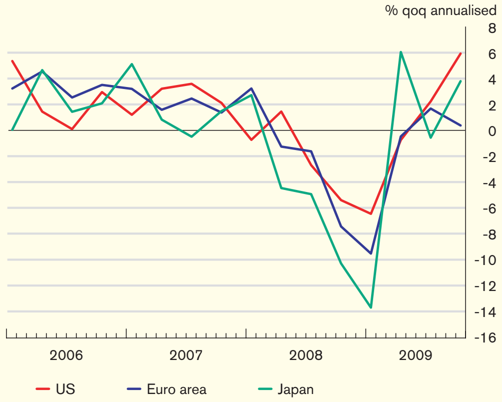
The Half-Yearly Report on Monetary and Financial Stability is prepared by the staff of the Research Department of the Hong Kong Monetary Authority.

2. Global setting and outlook

External environment

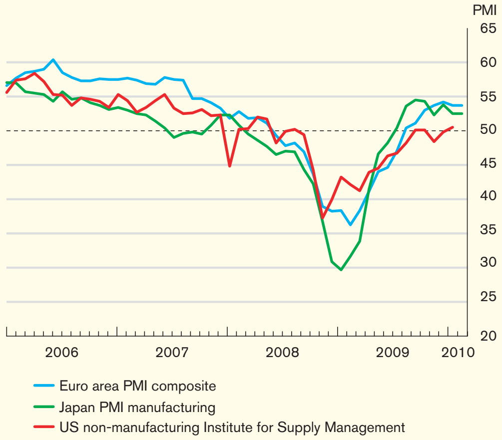
Most industrialised economies emerged from the recession in the second half of 2009, while recovery was more advanced in Asia. Nevertheless, major advanced economies still face growth constraints, and the balance of risks may be tilted towards a delayed exit from expansionary policies. Asian economies are expected to maintain their growth momentum, but a late exit may fuel inflationary pressures and raise the risk of asset-price bubbles.

Chart 2.1
US, euro area, and Japan: GDP



Sources: Bureau of Economic Analysis, Eurostat and Cabinet Office of Japan.

Chart 2.2
US, euro area, Japan: Purchasing Managers' Indices



Source: Bloomberg.

2.1 Real activities and trade

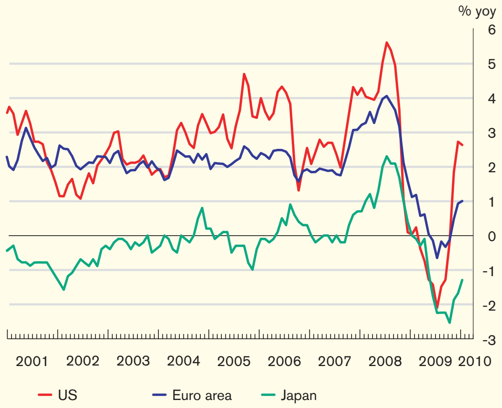
Advanced economies generally came out of the recession in 2009 Q3. The US, euro area and Japan grew by 5.9%, 0.5% and 3.8% respectively in Q4 (Chart 2.1).[1]

The stabilisation in real activity has become more broad-based, as the drag from inventory adjustment seems to have run its course. Retail sales and industrial production stabilised, while forward-looking surveys, such as the Purchasing Managers' Indices (PMI), showed a revival in business confidence (Chart 2.2). House prices also appeared to have stabilised recently. However, labour market conditions remained weak, with the unemployment rate hovering near record highs of around 10% in the US and euro area, and 5% in Japan.

Despite the pick-up in economic activity, inflationary pressure remained benign due to excess capacity and weak labour markets. Headline CPI inflation in the US

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

Chart 2.3
US, euro area, Japan: headline inflation



Sources: US Department of Labor, Eurostat and Japan Ministry of Internal Affairs.

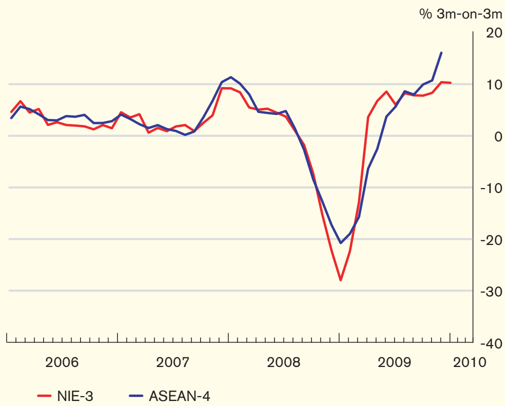
Table 2.A
Asia: real GDP growth

(% qoq, annualised)	2008 Q3	2008 Q4	2009 Q1	2009 Q2	2009 Q3	2009 Q4
NIE-3: [1]	**-4.1**	**-17.0**	**-3.5**	**13.7**	**12.3**	**5.7**
Korea	1.0	-18.8	0.5	11.0	13.6	0.7
Singapore	-4.1	-16.9	-7.1	16.2	11.5	-2.8
Taiwan	-13.7	-13.7	-9.8	18.1	10.2	18.0
ASEAN-4: [1]	**2.3**	**-5.9**	**-3.4**	**7.4**	**6.6**	**9.8**
Indonesia [2]	6.1	1.3	3.9	5.1	6.2	6.6
Malaysia [2]	-1.1	-8.4	-16.2	12.4	10.1	14.9
Philippines	3.2	-1.5	-5.1	6.0	3.1	3.5
Thailand	-1.9	-18.7	-5.7	8.8	6.9	15.3
East Asia: [1]	**-1.0**	**-11.6**	**-3.5**	**10.7**	**9.6**	**7.7**

Notes:
1. Weighted average (weighted by contribution to world GDP value at Purchasing Power Parity).
2. Seasonal adjustments are made by HKMA staff.

Sources: International Monetary Fund (IMF), CEIC and staff estimates.

Chart 2.4
Asia: merchandise export growth



Sources: CEIC and staff estimates.

and the euro area returned to positive levels after turning negative earlier, while inflation in Japan stayed negative (Chart 2.3).

The underlying strength of the major advanced economies is still unclear, as the rebound in economic activity has, to a considerable extent, been supported by government fiscal and monetary stimuli. In the US, for instance, the economic performance was boosted by fiscal measures such as the "cash-for-clunkers" programme (which lifted the sales of automobiles) and the first-time home buyer credit programme (which boosted home sales). In the coming months, the major advanced economies will face considerable constraints. On the monetary front, despite low interest rates, credit conditions in all three areas - although much less stringent than during the crisis - will be a drag on growth, as lending standards remain tight. High unemployment will also continue to restrain household consumption.[2] And, the need for fiscal consolidation and a potential increase in commodity prices will pose risks to growth. Against this backdrop, policymakers are likely to err on the side of protecting the economic recovery. Therefore, supportive policies, especially in the monetary area, may remain for some time until a stronger recovery is assured. If this outlook persists, the balance of risks will increasingly tilt towards a late exit from supportive policies which, in turn, could potentially lead to an inflationary environment later on. This could result in a more aggressive tightening in the major economies, and a more volatile global economic environment.

As emerging Asia was not burdened by the same degree of financial sector dislocation as experienced in the advanced economies, monetary and fiscal stimulus paved the way for an earlier recovery. Positive growth returned to all economies in the region in 2009 Q2 (Table 2.A). Exports were a big push factor, due to a surge in intra-regional trade and global inventory re-stocking (Chart 2.4). The regional economy continued to grow markedly in Q3 on the back of rising confidence and positive wealth effect amid strong rallies in equity markets. Nevertheless, growth momentum in some

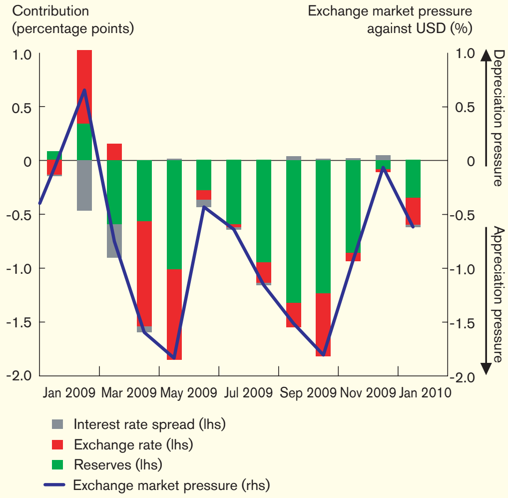
[2] Our analysis suggests there is still a risk the US economy could re-enter a recession, especially if its labour market conditions deteriorate further.

economies moderated somewhat in Q4, with Singapore recording a quarter-on-quarter decline in GDP growth. In contrast to the advanced economies, labour market conditions improved. The unemployment rate generally stabilised or receded slightly in some parts of the region, with the notable exception of Korea where the unemployment rate recently rose to a 10-year high.

With the direction of capital flows increasingly dictated by growth differentials between developed and emerging markets, policymakers in the region have found themselves facing formidable challenges. Although measured inflation generally remained subdued, there were initial signs of a pick up in inflationary pressure in some regional economies. Meanwhile, the monetary base has expanded sharply as foreign reserves were more frequently used as a tool to absorb the upward pressure on the exchange rate caused by capital inflows (Chart 2.5). This has created a highly accommodative monetary environment that might have in part contributed to asset price inflation. In response, central banks in the region began adopting a more cautious stance in setting policy interest rates towards the end of 2009, halting further reductions after a series of aggressive cuts starting from late 2008.

The regional economy is expected to maintain its growth momentum in 2010, although fiscal stimuli and other temporary factors such as inventory re-stocking will play a declining role in driving growth. Latest forecasts for the region's GDP growth, surveyed by Consensus Economics in February 2010, average 5.0% for the year. CPI inflation is expected to rise to 3.3%. Against this backdrop, a late exit from expansionary policies can potentially lead to a resurgence in inflation and the formation of asset-price bubbles, thus posing a threat to the monetary and financial stability of the regional economy.

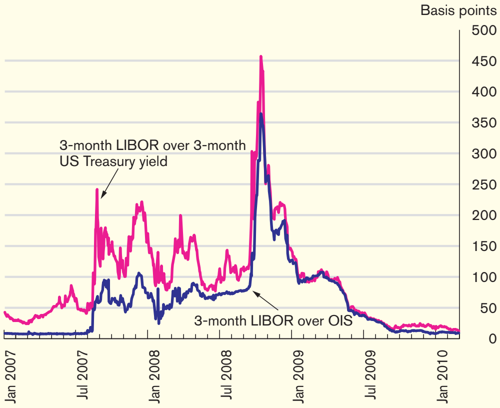
Chart 2.5
Selected economies in Asia: exchange market pressure index[1 & 2]



Notes:
1. The exchange market pressure index is a weighted average of the changes in exchange rates against the US dollar, foreign reserves (adjusted by Monetary Base) and one-month money-market interest-rate spread with the US counterpart.
2. Selected economies are Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. The six-economy aggregate index is a weighted average (weighted by contribution to world GDP value at purchasing power parity).

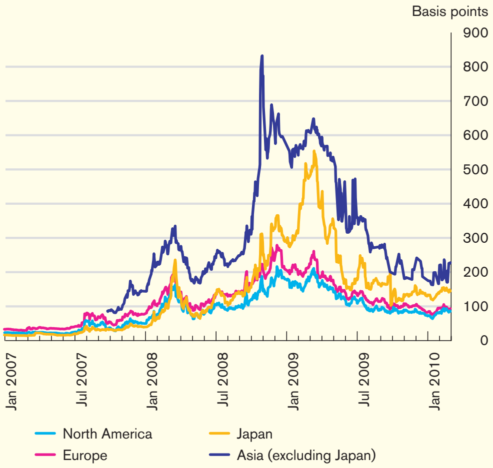
Sources: CEIC, EcoWin and staff estimates.

Chart 2.6
Three-month LIBOR over OIS and US Treasury yield



Source: Bloomberg.

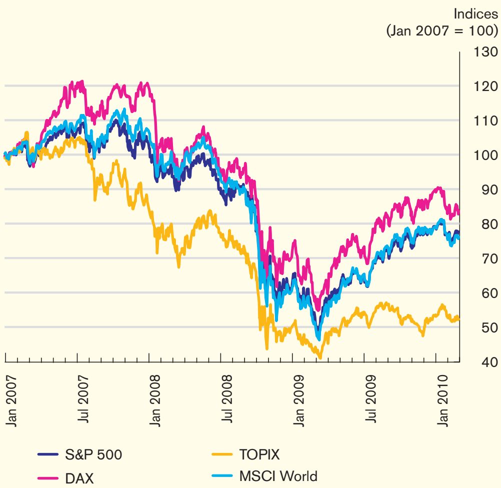
Chart 2.7
Credit default swap indices



Note: CDX investment grade 5-year index is used for North America, while the rest are based on iTraxx generic 5-year indices.

Sources: Bloomberg.

Chart 2.8
World equity indices



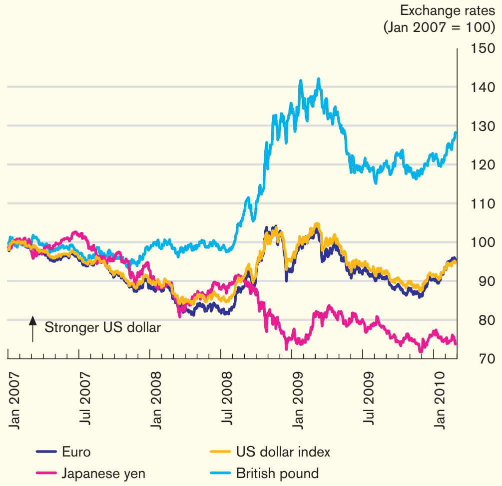
Source: Bloomberg.

2.2 Global financial conditions

Reflecting forceful government support action and recovery in economic activities, systemic risks in the global financial system declined in the second half of 2009. The operation of short-term funding markets showed signs of returning to normal, with the spread of three-month LIBOR against its corresponding overnight index swap (OIS) and the US Treasury yield narrowing to the level before the onset of the global financial crisis (Chart 2.6). In light of a more favourable appraisal of counterparty risks, credit default swap spreads of corporations have generally trended lower recently (Chart 2.7).

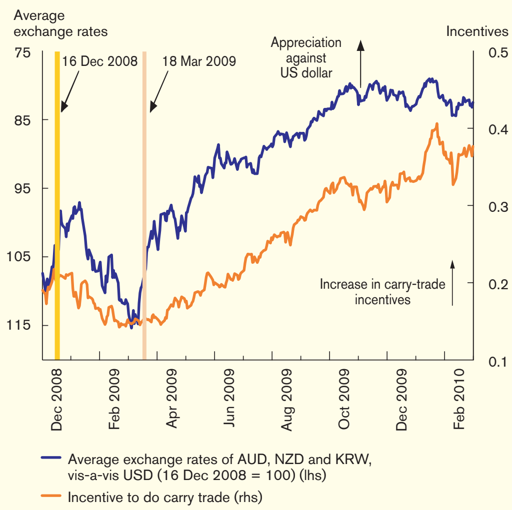
With a pick-up in output and positive corporate earnings in the last two quarters of 2009, global equities rebounded strongly, with major stock indices rising to their highest levels since Lehman Brothers collapsed in mid-September 2008 (Chart 2.8). However, sentiment deteriorated quickly in early 2010 amid worries about sovereign debt difficulties in Europe, concerns about financial sector reform proposals of the US administration, and signs of policy tightening in Mainland China. Overall, the MSCI World Index managed to register a gain of 16.8% over the past nine months.

Chart 2.9
US-dollar exchange rates



Source: Bloomberg.

Chart 2.10
Carry-trade incentives for the US dollar



Note: The carry-trade portfolio is a hypothetical investment currency portfolio of investing the Australian dollar (AUD), New Zealand dollar (NZD) and Korean won (KRW) with equal weighting using the US dollar as the funding currency. The carry-trade incentive is proxied by the average interest rate differential per unit of currency option-implied volatility of the portfolio.

Sources: Bloomberg and staff estimates.

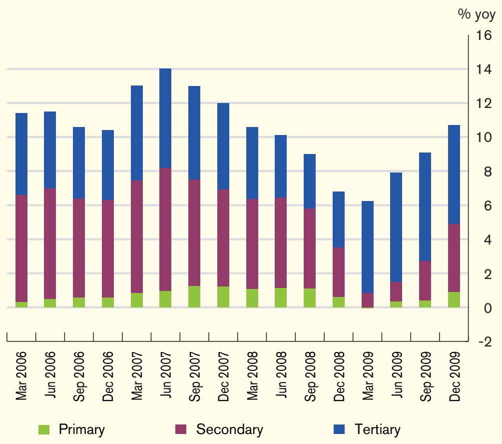
The second half of 2009 saw a weakening US dollar against most major currencies (Chart 2.9). Increased risk appetite and optimism over the global economy reduced the safe-haven appeal of the dollar, with investors shifting towards higher-yielding currencies and riskier assets. The weakening US dollar fuelled carry-trade activities of high-yielding currencies in the second half (Chart 2.10). In late 2009 and early 2010, however, the dollar rebounded notably on an improved prospect for US economic growth against other major currency regions, with the dollar index recovering from a loss of 5.6% in November 2009 to a gain of 1.3% over the past nine months.

The outlook for global financial conditions will be constrained by the durability of economic recovery in major economies, and the monetary policy stance of leading central banks. As a continued recovery is still heavily dependent on policy stimuli, uncertainty regarding the timing of an exit from the extraordinary measures implemented during the crisis implies that global financial markets will likely be volatile in the near term.

Mainland China

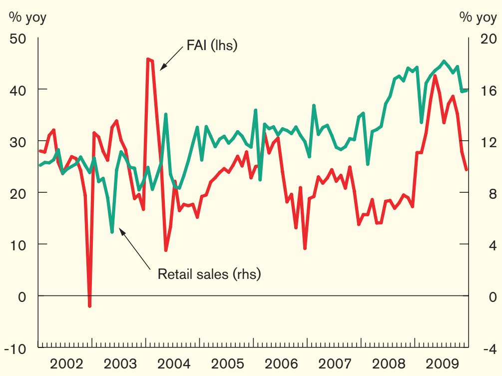
The Mainland economy continued its strong recovery in the second half of 2009, and robust import growth provided important support to regional economies. Property prices rebounded sharply and inflation picked up towards the end of the year. Against this backdrop, the authorities started to tighten monetary policy in early 2010. While domestic demand is likely to remain strong, exports are not expected to show significant growth given the still-weak global recovery.

Chart 2.11
Mainland China: real GDP growth and contributions by industries



Sources: CEIC and staff estimates.

Chart 2.12
Mainland China: real growth in fixed-asset investment and retail sales



Sources: CEIC and staff estimates.

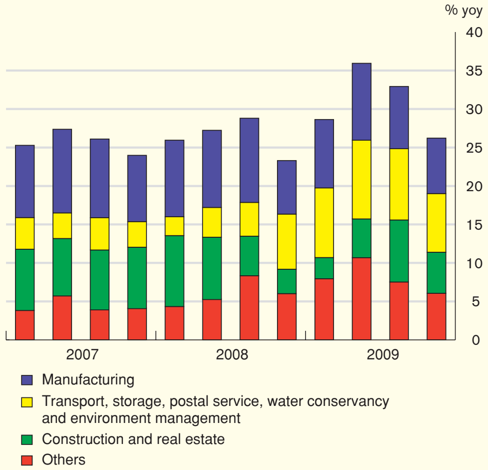
2.3 Output growth, external trade and inflation

Output growth

The Mainland economy achieved an impressive growth of 8.7% in 2009 despite the global financial crisis. Economic growth in the second half gathered momentum and recorded 10.7% year on year in Q4. Although the tertiary sector continued to be the major contributor to output growth, the industrial sector expanded much faster than in the first half (Chart 2.11). Domestic demand was the driving force of economic growth, as overall external conditions remained weak. According to the National Bureau of Statistics, domestic demand contributed 12.6 percentage points to output growth in 2009, while net exports subtracted 3.9 percentage points.

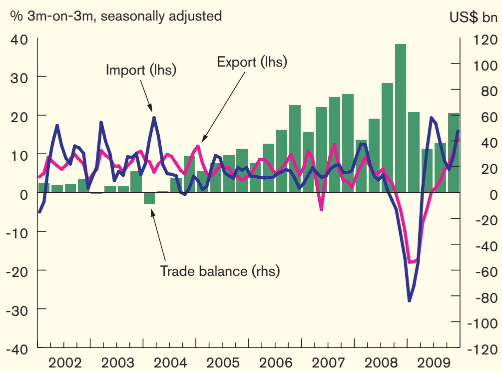
Consumption and investment both performed well in 2009 (Chart 2.12). Retail sales rose by 17.0% year on year in real terms in the second half. Sales schemes with government subsidies such as "going to the countryside" and "old for new" automobiles and electrical appliances bolstered overall retail sales. After registering strong growth in real terms of 39.9% and 36.4% respectively year on year in Q2 and Q3, fixed-asset investment (FAI) slowed in Q4 as the start of new projects stabilised from the sharp rise in the first half of the year. Investment growth in the second half of 2009 was supported by a sustained expansion of infrastructure projects and a

Chart 2.13
Mainland China: contributions to fixed-asset investment growth by sectors



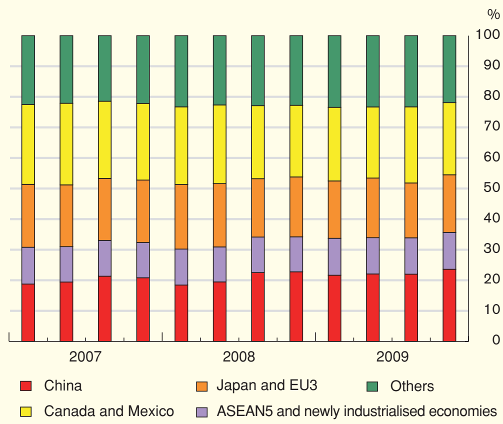
Sources: CEIC and staff estimates.

Chart 2.14
Mainland China: external trade



Sources: CEIC and staff estimates.

Chart 2.15
Mainland China: shares of US non-oil imports by source economies



Note: ASEAN5 refers to Indonesia, Malaysia, Thailand, the Philippines and Vietnam. EU3 refers to the United Kingdom, France and Germany. Newly industrialised economies include Korea, Singapore and Taiwan.

Sources: CEIC and staff estimates.

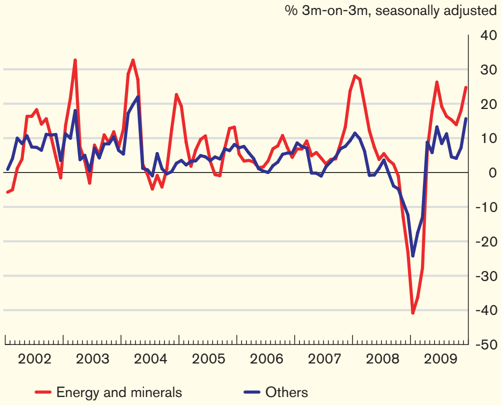
turnaround in the construction and real estate sector (Chart 2.13). Investment has been predominantly financed by domestic companies, as foreign investment has not recovered from the financial crisis.

GDP is likely to continue its growth momentum. Markets expect domestic demand, especially domestic consumption, to remain strong in 2010. Investment might slow as the Government tightens credit, and could be clouded by policies towards government-subsidised housing for lower-income groups. The prospect of investment growth may also be affected by volatility in international commodity prices. Our analysis shows that this volatility was a major trigger for the sharp economic slowdown on the Mainland in 2008 (Box 1).

External trade

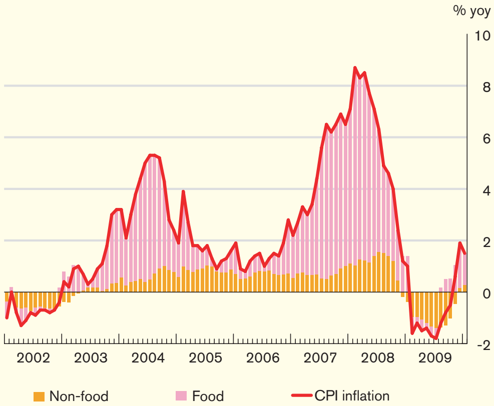
Exports continued to recover from the financial crisis and surprised on the upside in December, rising by 17.7% year on year compared with a decline of close to 14.0% in October and 1.2% in November. The base effect was not the only reason for the improvement in export performance, as the sequential growth in exports was also strong owing to the latest recovery in external demand (Chart 2.14). In particular, external demand for machinery and mechanical appliances was the main factor in the export recovery, contributing 12.6 percentage points to the year-on-year growth in exports in December. Exports to emerging market economies outpaced those to the developed economies, reflecting the relative strength of recovery in these emerging economies. Despite the high volatilities in export growth, China maintained its export competitiveness as its market shares in major economies remained largely intact (Chart 2.15).

Chart 2.16
Mainland China: imports of commodities and other goods



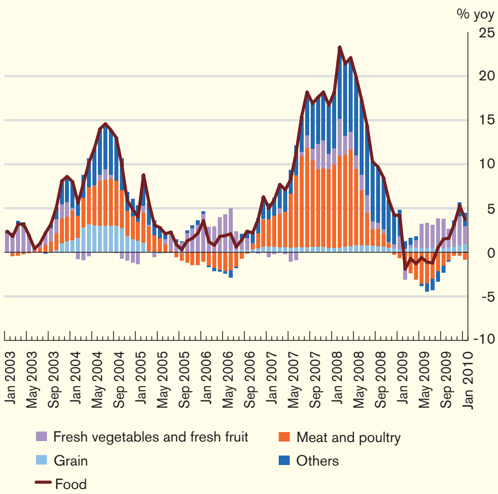
Sources: CEIC and staff estimates.

Chart 2.17
Mainland China: contributions to CPI inflation



Sources: CEIC and staff estimates.

Chart 2.18
Mainland China: contributions to food-price inflation



Sources: CEIC and staff estimates.

Imports started to recover in 2009 Q3 on the back of the strengthening domestic demand, rising by 22.7% year on year in Q4. Imports of both commodities and other products have gained momentum (Chart 2.16). Nevertheless, part of the recovery in commodity imports is due to rising commodity prices. Robust growth in imports from the Asia-Pacific region provided strong support to economic recovery in regional economies, such as Australia and Korea.

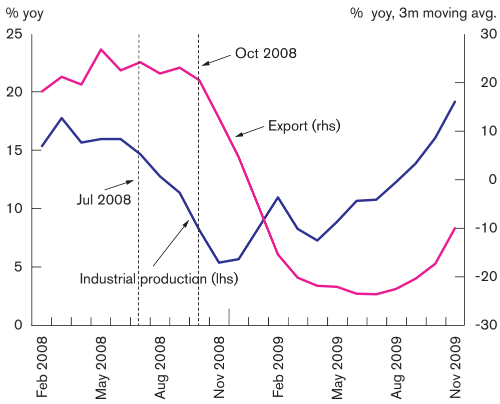
Despite the strong recovery in imports, the trade surplus increased from US$38.6 billion in Q3 to US$61.4 billion in Q4 because of the impressive growth in the value of exports. However, external demand is not expected to grow significantly in the near term given the still-weak global recovery, suggesting a moderate contribution of net exports to output growth.

Inflation

The year-on-year headline CPI inflation rose in the second half of 2009, reaching 1.9% in December and then softening to 1.5% in January 2010 (Chart 2.17). The rise in consumer prices was mainly driven by the food component, which, for example, contributed about 1.8 percentage points to the CPI inflation in December. The previous two episodes of high inflation since 2002 were both driven by food prices, while the contribution of non-food-price inflation stayed below two percentage points. The price for meat and poultry played an important role when food inflation rose in 2004 and in 2007-2008. Although the recent increase in food-price inflation can, in large part, be ascribed to surges in fresh vegetable and fruit prices caused by cold weather and snow storms in some provinces (Chart 2.18), it remains to be seen whether the price for meat and poultry will also rise to push overall inflation higher. The PPI inflation rate turned positive in recent months on a sequential basis, reaching 1.7% year on year in December 2009 and rising further to 4.3% in January 2010. This has raised market concerns that the upstream price inflation, if it continues to pick up, will add pressure to the price of consumer goods.

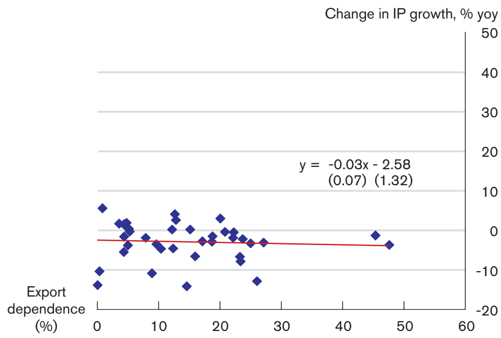
Box 1
What triggered the economic slowdown in Mainland China in 2008?[3]

Chart B1.1
Mainland industrial production and exports



Sources: CEIC and staff estimates.

Chart B1.2
Export dependence and industrial slowdown before Lehman Brothers' bankruptcy



Note: Each point represents a manufacturing industry. The vertical axis measures the change in annual growth rates of industrial outputs between May and August 2008. Numbers in parentheses are standard errors.

Sources: CEIC and staff estimates.

Economic growth in Mainland China slowed sharply in 2008, with the year-on-year growth rate declining from 10.6% in Q1 to 6.8% in Q4, and the quarter-on-quarter growth rate declining from 1.9% to 0.1% in the same period. The collapse of Lehman Brothers and the resultant downturn in external demand are commonly cited as the main reasons for the Mainland's economic slowdown. However, closer look at the production and trade data shows this argument is too simplistic. As Chart B1.1 illustrates, industrial production (IP) started to weaken in China in July 2008, but exports did not start to decelerate until October.

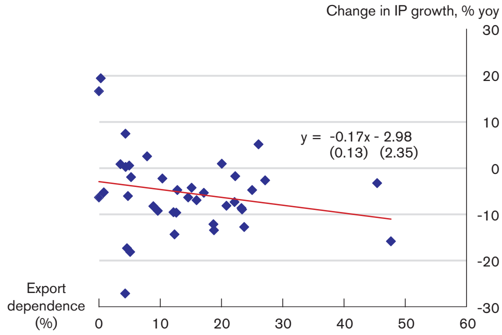
Another way to gauge the extent to which the economic slowdown was affected by the deceleration in export growth is to examine the correlations between IP and export dependence across industries. If exports were the main driver of the weakening in IP, the output of more export-dependent industries should decrease at a higher rate than that of industries which were less dependent on exports.

An accurate measure for export dependence should include both direct exports and indirect exports. For example, the direct exports of the coal mining industry were only 0.95% of the total output between January and November 2008, but some highly export-dependent industries used coal as important inputs, so its actual export dependence should be much higher. The Input-Output table is utilised to calculate actual export dependence for each industry, which includes both direct exports by each industry and indirect exports through its linkage to other industries.

Based on these data, Chart B1.2 shows that, before Lehman Brothers' failure, there was limited correlation between changes in IP growth and export dependence across industries. In other words, export dependence

[3] This Box is based on Zhang and Wang (2010), "What triggered China's economic slowdown in 2008? The role of commodity price volatilities", *HKMA Research Note 1/2010*, which provides more details on the methodology and findings.

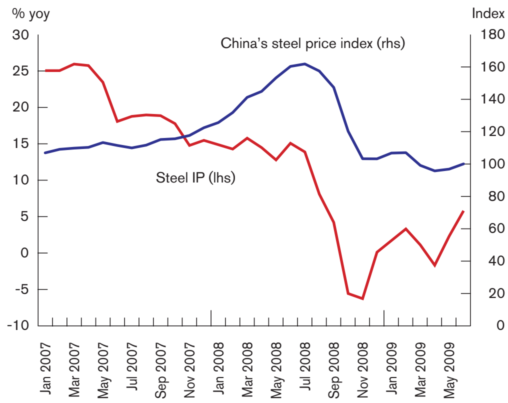
Chart B1.3
Export dependence and industrial slowdown after Lehman Brothers' bankruptcy



Note: The vertical axis measures the change in annual growth rates of industrial outputs between August and November 2008. Numbers in parentheses are standard errors.

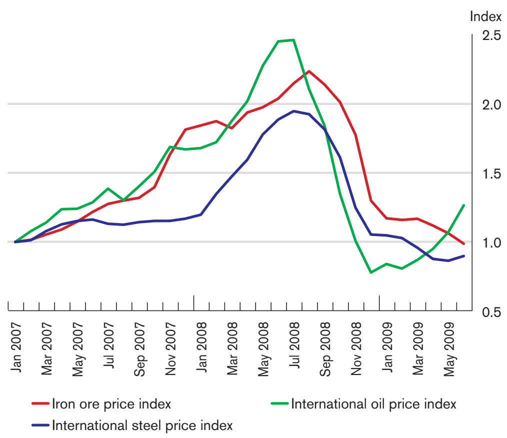
Sources: CEIC and staff estimates.

Chart B1.4
Mainland steel production and price



Sources: CEIC, Wind and staff estimates.

Chart B1.5
International steel, iron ore, and oil prices

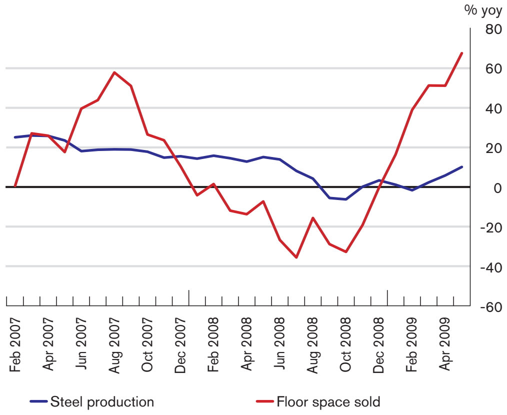


Sources: CEIC, Wind and staff estimates.

does not appear to be a major factor explaining the slowdown at industry level. After Lehman Brothers' failure, more export dependent industries seemed to suffer slower IP growth, although the correlation is not statistically significant (Chart B1.3).

If the external demand shock was not the trigger for economic slowdown on the Mainland, why did industrial production weaken in July 2008? To provide some clues, we conduct a case study on the Mainland steel industry, a key industry that experienced a slowdown during the corresponding period. The steel price in China rallied in the first half of 2008 by around 40% and collapsed some time around July 2008. The production of steel also collapsed (Chart B1.4). Why did the steel price rise so sharply in early 2008 and then drop so much in July? It transpires that the fluctuations in domestic steel prices were synchronised with volatilities in the international steel market, as well as the international commodity market in general (Chart B1.5). It is therefore likely that the slowdown in Mainland China's steel industry was triggered by a negative price shock on the international commodity market.

Chart B1.6
Steel production and floor space sold



Sources: CEIC and staff estimates.

At the same time, industry-level data indicates that the fall in the steel price, and hence the slowdown in the steel industry, was not likely to have been caused by domestic demand shocks. The construction sector (mainly real estate) accounted for about 50% of Mainland steel demand in 2008. The real estate market slowed in early 2008 when the steel price was still rising (Charts B1.4 and B1.6). Dynamics in other industries that consume steel output also did not match the fluctuating steel price. Therefore, international commodity prices appeared more likely to be the main driver of domestic steel price volatility.

The collapse of international commodity prices affects Mainland industrial production through two channels. First, the input prices (for example, iron ore) rose sharply in 2007 and early 2008. Manufacturers were led to expect further increases in input prices and built up inventory to minimise costs. They were seriously squeezed by the sudden decline in input prices and had to write down substantial valuation losses. Secondly, the output price also dropped, leading to a loss of revenue. The combination of input and output price collapses led to severe de-stocking and disruption in heavy industry starting in July 2008.

In other words, the slowdown on the Mainland in mid-2008 was triggered by a commodity price shock and the associated inventory adjustment rather than an external demand shock. While the export slump starting from November exacerbated the economic slowdown, it did not trigger the slowdown.

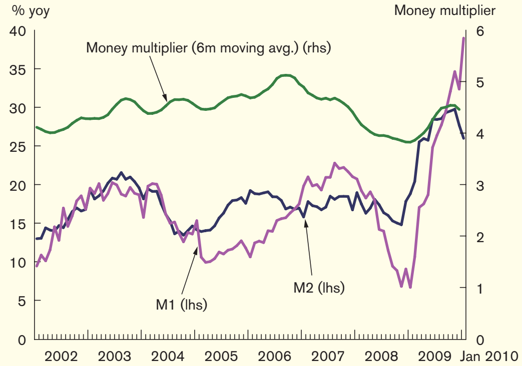
2.4 Monetary and financial conditions

Monetary conditions

The year-on-year growth in broad money (M2) rose further during the reporting period, driven in part by the rising money multiplier from its trough during the global financial crisis (Chart 2.19). Narrow money (M1) continued to surge and outpaced M2 in September 2009 for the first time since mid-2008, partly reflecting strengthening economic activity. The rapid growth in money has led to concerns among some investors over future inflationary pressures.

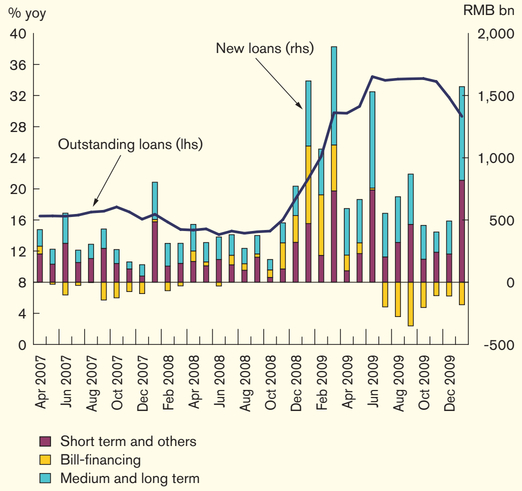
Monthly new loans in the last two quarters of 2009 declined notably from the first half, but increased dramatically in January 2010 (Chart 2.20). The drop in new credit in the second half was partly due to the expiry of some of the new loans for bill financing, and partly due to the fine-tuning of lending volume by banks. The underlying lending to the real economy (especially public infrastructure projects) appeared to have remained solid. The distribution of new medium and long-term loans has changed somewhat. While the share of the infrastructure sector rebounded in Q4 after falling by about eight percentage points in the previous quarter, that of the real estate sector has been trending up (Chart 2.21). The strong expansion in loans in January 2010 partly reflects banks' worries about potentially stricter controls over lending later in the year.

Chart 2.19
Mainland China: money growth and multiplier



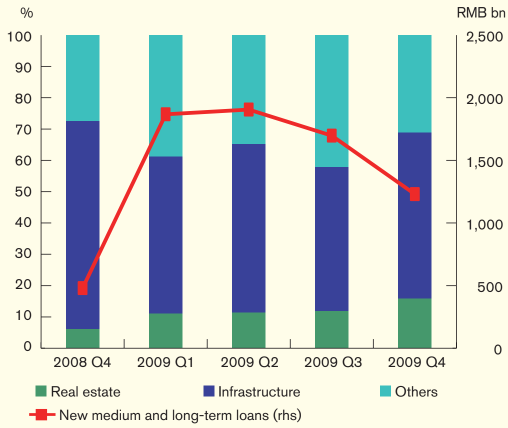
Note: The money multiplier is measured as the ratio of M2 to base money.
Sources: CEIC and staff estimates.

Chart 2.20
Mainland China: financial institution loans



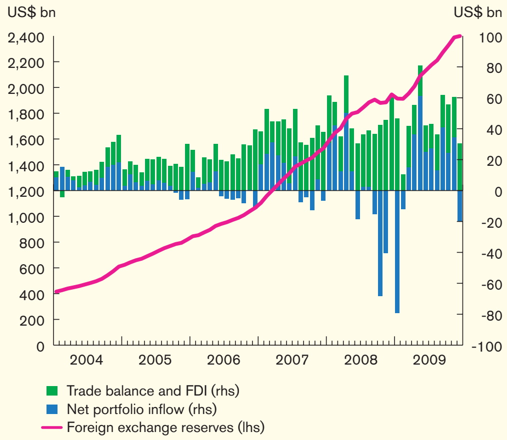
Sources: CEIC and staff estimates.

Chart 2.21
Mainland China: distribution of new medium and long-term loans



Sources: People's Bank of China and staff estimates.

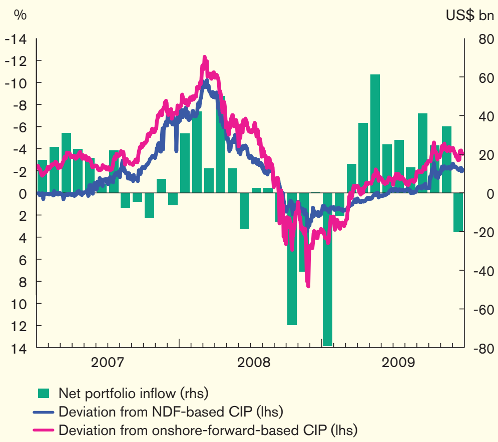
Chart 2.22
Mainland China: external capital flows



Note: Net portfolio inflow is calculated as the changes in foreign reserves minus trade balance and foreign direct investment. It includes valuation gains due to exchange-rate and asset-price movements.

Sources: CEIC and staff estimates.

Chart 2.23
Mainland China: net portfolio capital inflow and deviations from covered interest parity

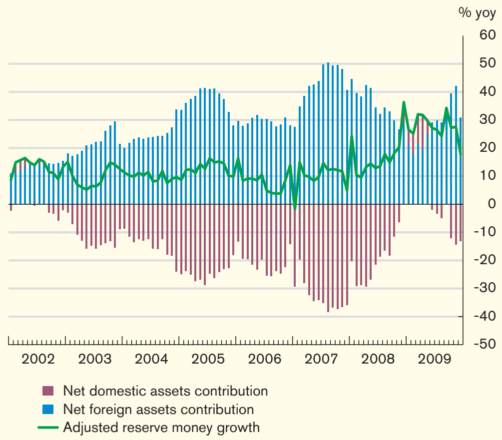


Note: Positive deviation from the CIP indicates incentives for capital outflows, and vice versa.

Sources: CEIC and staff estimates.

Foreign-exchange reserves rose further in the second half of 2009, reaching US$2,399 billion in December (Chart 2.22). While net portfolio capital inflows were the major contributor to the rising foreign-exchange reserves in Q2 and Q3, trade surplus and foreign direct investment (FDI) accounted for about 70% of the increase in total foreign-exchange reserves in Q4. Such a change in the pattern of capital flows does not necessarily imply the pressure of inflows has eased, as the slowdown in the net portfolio capital inflows in Q4 can, in large part, be attributable to the valuation losses of non-US dollar denominated foreign reserve assets in December. In fact, our estimates of the deviation from the covered interest parity (CIP) condition show that the incentives for capital inflows remained strong (Chart 2.23).

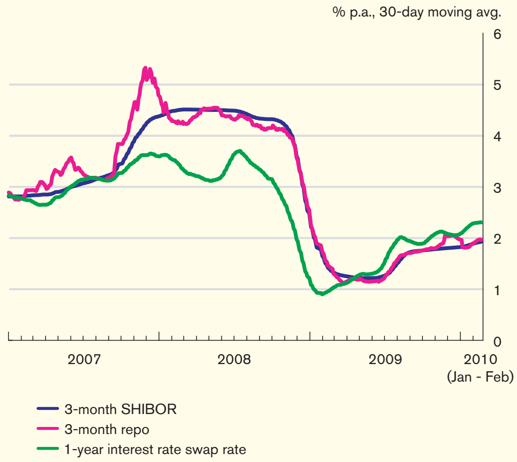
Chart 2.24
Mainland China: contribution to reserve money growth



Note: Total reserve money is adjusted for the changes in the reserve requirement ratio.

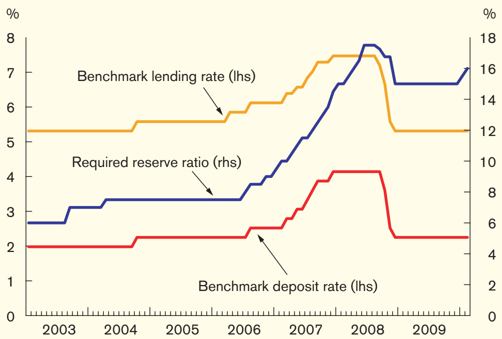
Sources: CEIC and staff estimates.

Chart 2.25
Mainland China: market interest rates



Sources: CEIC and staff estimates.

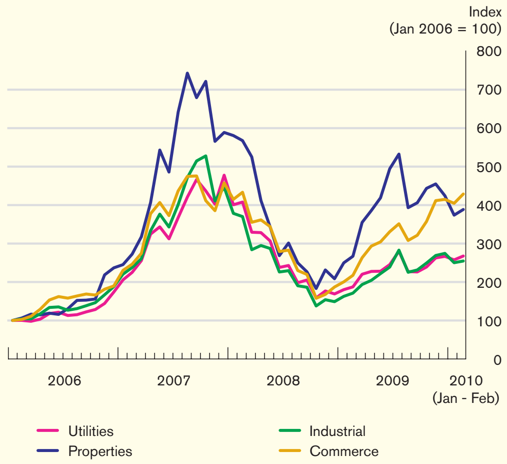
Chart 2.26
Mainland China: reserve requirement ratio and benchmark interest rates



Source: CEIC.

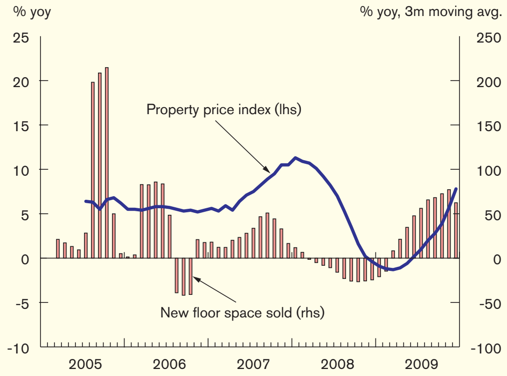
The People's Bank of China started to fine-tune its monetary policy stance in the second half and appeared to have quickened the pace in early 2010. The contribution of net domestic assets to the growth in reserve money, after staying positive in the first half of the year, returned to negative territory in the latter part of 2009 (Chart 2.24). Accordingly, market interest rates have also been trending up since mid-2009 (Chart 2.25). Although the benchmark one-year lending and deposit rates were kept unchanged, the People's Bank of China guided up the three-month and one-year central bank bill issuance rates in early 2010, and raised the reserve requirement ratio (RRR) twice, each by 50 basis points, in January - February 2010 (Chart 2.26). Further gradual tightening is expected during the year, should the current pace of economic recovery continue and inflationary pressures build up.

Chart 2.27
Mainland China: share price indices



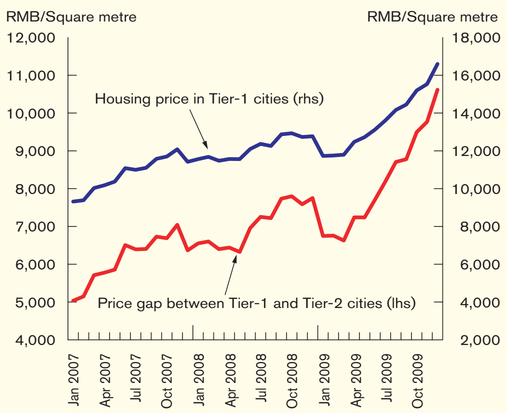
Sources: CEIC and staff estimates.

Chart 2.28
Mainland China: housing prices and housing sales



Source: CEIC.

Chart 2.29
Mainland China: housing prices across regions



Note: Tier-1 cities include Beijing, Shanghai, Hangzhou, Guangzhou and Shenzhen. Tier-2 cities include the rest of the provincial capitals plus Ningbo, Dalian, Xiamen and Qingdao.

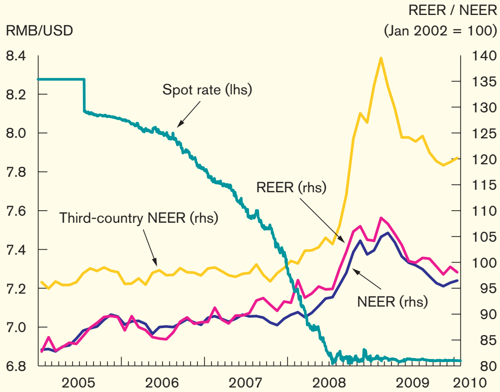
Sources: CEIC and staff estimates.

Asset prices

The stock market has been volatile following a steady revival in the first half of 2009. The deceleration in credit growth triggered a sell-off in the market in early August, but the strengthening economic performance and improving corporate profitability helped to push up stock prices afterwards. Property sector stock prices remained the most volatile across sectors and have not returned to their recent peaks recorded in July 2009 (Chart 2.27).

The property market boomed in the second half of 2009. Both the housing price index and monthly sales of new floor space experienced rapid growth throughout 2009 (Chart 2.28), while the gap between the housing prices of Tier-one and Tier-two cities widened (Chart 2.29). The authorities have recently taken steps to stabilise the housing markets. For instance, the regulation that the minimum down payment ratio for the second mortgage should not be lower than 40% will be strictly implemented. The transaction volume for apartments in major cities showed signs of declining in early 2010, but it is still not clear whether the recent slowdown has been induced by the tightening of policy. Given the importance of this sector in China's total investment and the strong linkages between real estate and other industries, concerns have emerged among investors about the impact of the potentially cooling property markets on real economic activity on the Mainland.

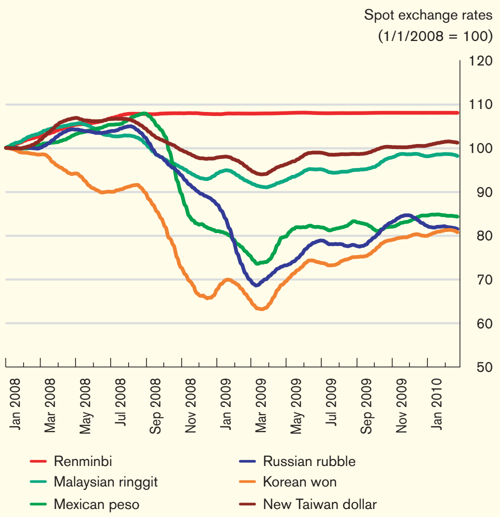
Chart 2.30
Mainland China: exchange rates of the renminbi



Note: A higher effective exchange rate index indicates a stronger renminbi. 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: BIS, Bloomberg, CEIC and staff estimates.

Chart 2.31
Mainland China: spot exchange rates of emerging market currencies against the US dollar



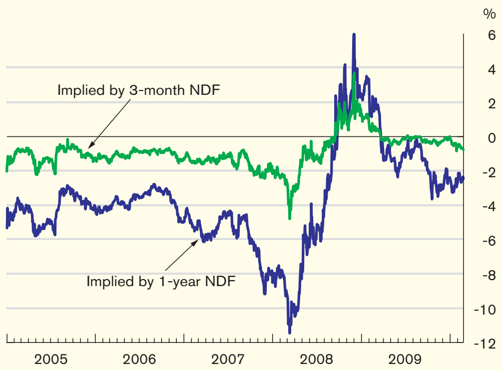
Note: An increase in the index implies an appreciation against the US dollar.

Sources: CEIC and staff estimates.

The renminbi exchange rate

The RMB/USD spot rate remained largely stable during the reporting period, whereas the effective exchange rates of the renminbi weakened (Chart 2.30). While the nominal effective exchange rate (NEER) and the real effective exchange rate (REER) have both depreciated by about 9.0% since their peaks in the early part of 2009, they have basically returned to their pre-crisis levels of 2008 Q3. The third-country NEER has weakened by nearly 14.0% from its peak in February 2009, but has appreciated by around 12.0% from the level before the collapse of Lehman Brothers. As shown in Chart 2.31, by the end of February 2010, the currencies of the Mainland's major export competitors had weakened in varying degrees against the US dollar since Lehman Brothers' failure, in contrast to a stable RMB/USD rate over the same period.

Chart 2.32
Mainland China: expected appreciation of the renminbi



Note: The expected rate of appreciation of the renminbi is calculated as the percentage difference between the spot rate and the NDF rate. A negative number implies an appreciation of the renminbi against the US dollar.

Sources: Bloomberg and staff estimates.

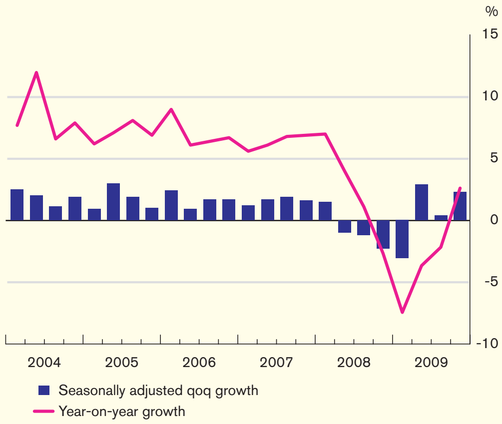
The non-deliverable forward (NDF) rates in the end of February suggest that markets expect the renminbi to appreciate moderately against the US dollar (Chart 2.32). This probably reflects market confidence in China's economic outlook as well as future export performance. Nonetheless, the size of the expected appreciation remains small relative to the pre-crisis period.

3. Domestic economy

Demand

As domestic demand revived and the drag from external trade lessened, Hong Kong's economy picked up in early 2009 with a return to real GDP growth on a seasonally adjusted quarter-on-quarter comparison. Economic recovery is expected to take hold in 2010 against the background of a firmer global recovery, low US interest rates and supportive asset markets. However, risks remain because of uncertainty in the global economic environment.

Chart 3.1
GDP at constant market prices



Source: Census and Statistics Department (C&SD).

3.1 Aggregate demand

The global financial crisis that tipped the world economy into its deepest recession in more than 60 years severely tested the resilience of the Hong Kong economy. As it transpired, however, the domestic economy fared better this time than during the 1997 - 98 Asian financial crisis (see Box 2 for a comparison of the impact of the two crises). Since the second quarter of 2009 there has been a gradual recovery in domestic demand and a stabilisation in the external environment. On a seasonally adjusted quarter-on-quarter comparison, real GDP grew by 2.9% in 2009 Q2 after contracting for four consecutive quarters by a cumulative 7.3%. Growth was sustained in Q3, although at a slower pace of 0.4% before the momentum gathered pace again in Q4 to growth of 2.3%. Still, for 2009 as a whole, real GDP fell by 2.7%, marking the first outright contraction since the Asian financial crisis. From the year-on-year profile, the brunt of the contraction was borne in the first half of 2009 with real GDP falling by 5.6%. The rate of decline tapered to 2.2% in Q3 before a positive growth resumed at 2.6% in Q4 (Chart 3.1).

The turnaround, however, featured an uneven path for the domestic sector on the one hand and the external sector on the other. Domestic demand swung from decline to growth over the course of 2009. Apart from a more notable decline in Q1, private consumption has strengthened markedly since then, in part helped by the government stimulus programmes. Inventory

Table 3.A
Real GDP growth by expenditure component

(% yoy)	2008	2009	2009 Q1	2009 Q2	2009 Q3	2009 Q4
Gross Domestic Product	**2.1**	**-2.7**	**-7.5**	**-3.7**	**-2.2**	**2.6**
Domestic demand	1.6	0.8	-8.1	-5.2	5.8	10.9
Consumption						
Private	2.3	-0.3	-6.1	-0.8	0.5	4.9
Public	1.8	2.0	1.6	2.1	2.9	1.7
Gross domestic fixed capital formation	0.8	-2.2	-11.1	-12.3	2.6	14.7
Private	0.2	-3.7	-13.0	-14.4	0.6	15.0
Public	6.2	11.4	1.7	11.1	24.2	12.9
Change in inventories[1]	-0.3	1.2	-1.4	-1.9	4.0	3.7
Net exports of goods[1]	0.0	-3.9	0.0	2.2	-7.8	-9.5
Net exports of services[1]	0.8	0.6	-0.2	-1.0	0.5	2.8

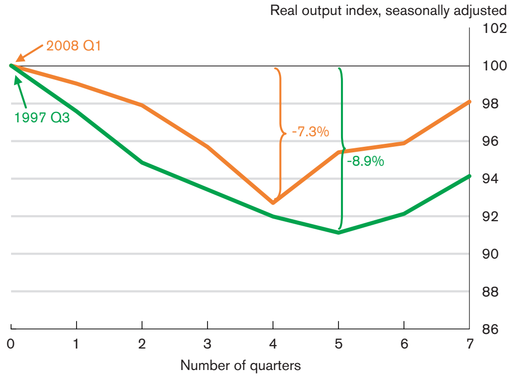
Note:
1. Percentage-point contribution to annual growth of GDP.
Source: C&SD.

re-stocking has resumed since Q3 and fixed investment revived strongly towards the latter part of the year. On the other hand, although the global economy has entered the initial phase of recovery, particularly with the swift turnaround in the Mainland and regional economies in the second half, import demand in advanced economies remained feeble and continued to weigh heavily on Hong Kong exports. Retained imports of consumer goods and intermediate products increased considerably in the second half, most likely to fill new and back orders. As a result, net exports were a drag on the economy for most of 2009 (Table 3.A).

Nevertheless, the economy is expected to achieve decent growth in 2010, against the background of a firmer global economic recovery, low US interest rates, and supportive asset markets. The consensus forecast points to 4.8% real GDP growth in 2010, a marked turnaround from the 2.7% contraction in 2009 (Box 3 discusses risks and uncertainties associated with the consensus forecast). The accommodative monetary environment and supportive asset prices are expected to continue to give a shot in the arm to consumer and business sentiments, underpinning the recovery in domestic demand.

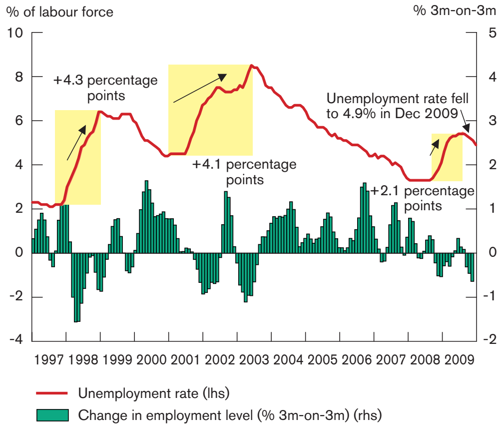
Box 2
Comparing the impacts on Hong Kong of the 1997 - 98 Asian financial crisis and the 2008 - 09 global credit crisis

Chart B2.1
Output loss during crises



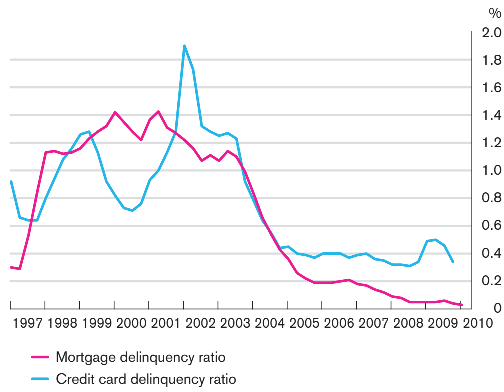
Sources: C&SD and staff estimates.

Chart B2.2
Labour market conditions



Sources: C&SD and staff estimates.

Chart B2.3
Delinquency ratios



Sources: C&SD and staff estimates.

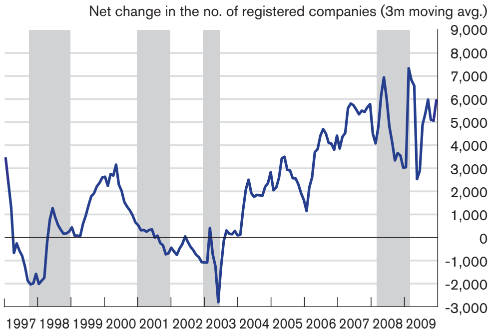
The 2008 - 09 global financial crisis caused a major output shock to Hong Kong with the seasonally adjusted real GDP experiencing a 7.3% peak-to-trough decline. This was similar in magnitude to the 8.9% fall recorded during the 1997-98 Asian financial crisis (Chart B2.1). Despite the similarity, Hong Kong's economy has fared better this time.

There has been a relatively moderate impact on the labour market during the current crisis. The unemployment rate rose by 2.1 percentage points compared with about four percentage points in the Asian financial crisis (Chart B2.2). The more resilient labour market in the current crisis can be explained by the fact that there were fewer corporate bankruptcies, and job losses from corporate bankruptcies were offset by job creation from the formation of new companies. The Government's proactive involvement in the job market, for example, through job creation programmes and speeding up the hiring of civil servants, also helped to cushion the blow to the labour market.

The private sector was resilient because of the solid balance sheets of households and corporations. On the household side, the mortgage delinquency ratio held steady at around 0.05%, throughout the current crisis (Chart B2.3). However, the mortgage delinquency ratio rose during the Asian financial crisis, from a low of 0.29% just before the crisis to over 1%, and stayed at that level until 2003 Q3. The credit card delinquency ratio rose modestly, and peaked at 0.5% at the end of June 2009, remaining far below its 10-year average, and well below the cyclical peaks reached in early 1999 and 2002.

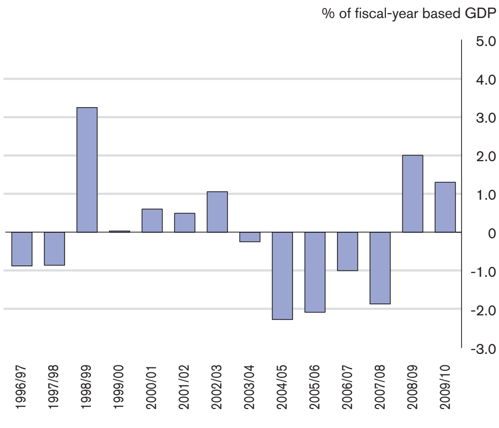
The solid corporate balance sheet in the current crisis has been evident in the continued net growth in the number of registered companies in Hong Kong, whereas previous recessions have usually led to net decreases in companies

Chart B2.4
Change in number of registered companies



Sources: C&SD and staff estimates.

Chart B2.5
Fiscal impulse



Note: A positive fiscal impulse indicates an expansionary fiscal policy.
Sources: The 2010/11 Budget, HKSAR Government and staff estimates.

(Chart B2.4). The comparatively lower number of bankruptcies is partly due to the Government's special efforts to support small and medium-sized enterprises (SMEs). These included the provision of an 80% guarantee under the Special Loan Guarantee Scheme on SME loans granted by the participating lending institutions, and the expansion of the scope of reimbursable items to eligible trade-website advertisements under the SME Export Marketing Fund. These measures have assisted SMEs in solving cash-flow and credit problems.

The solid balance sheet positions of the private sector largely reflected better conditions in the property market. After experiencing some corrections in the latter half of 2008, the residential property market turned buoyant in 2009, with property prices recording a yearly gain of around 27.6%. During the Asian financial crisis, however, the bursting of the property-price bubble resulted in a dramatic and continued decline in property prices for seven consecutive years, eroding the balance sheet of households and corporations.

Another crucial difference is that monetary conditions have remained accommodative during the current crisis. There has been a strong inflow of funds into the Hong Kong dollar, partly reflecting the better economic fundamentals and recovery prospects of the Mainland and Hong Kong economies and the increased demand for Hong Kong-dollar assets. The inflows were evidenced by the sharp rise in the Hong Kong dollar monetary base. The resulting increase in interbank liquidity, together with the aggressive easing in US monetary policy, caused Hong Kong-dollar interbank interest rates to decline to almost zero. This contrasts with the situation during the Asian financial crisis, when interbank interest rates were high, and then spiked sharply due to capital outflows and speculative attacks on the Hong Kong dollar.

Fiscal response in the current crisis was also more timely. In addition to helping the labour market and SMEs, the Government supported the economy through implementing a range of fiscal relief measures. Taking into account all measures introduced since 2008, expansionary fiscal impulses of 2.0% and 1.3% of GDP were injected into the economy in 2008 and 2009 respectively (Chart B2.5). The timing of these impulses compared favourably with those in the Asian crisis. In particular, fiscal policy was still contractionary in 1997 and turned expansionary only in 1998.

Box 3
Scenario analysis on the risks associated with the Consensus Forecasts for the Hong Kong economy

Table B3.A
Economic forecasts for Hong Kong in 2010

	2009 (% yoy)		2010 (% yoy)	
	GDP	CPI	GDP	CPI
HKSAR Government (Nov 2009 and Feb 2010)	-3.3	0.5	4.0-5.0	2.3
IMF (Dec 2009)	-2.0	-1.0	5.0	0.5
ADB (Dec 2009)	-3.0	–	3.5	–
Consensus (Feb 2010)	-3.0	0.6	4.8	2.5

Source: Market consensus.

Table B3.B
Baseline assumptions for sensitivity analysis

World GDP	Grow by 4.5%
World CPI	Grow by 2.0%
Best lending rate	Increase by 25 basis points in Q4
Hong Kong dollar effective exchange rate	Remain broadly stable
Property prices	Increase by 7.5%
Equity prices	Increase by 10%

Source: Market consensus.

Overview of growth forecasts

The latest market consensus predicts real GDP to grow by 4.8% in 2010, and the headline CCPI inflation rate to reach 2.5% (Table B3.A). While the consensus view seems reasonable, the projection could be subject to both upside and downside risks. We use the HKMA small forecasting model to conduct scenario analysis to assess the impact of possible risk factors. (Table B3.B shows the baseline assumptions used for the sensitivity analysis.) Among all possible sources of risks, the following three deserve special attention:

Scenario 1: Revival in credit growth

The implementation of timely and sizable monetary and fiscal policies in response to the global financial crisis helped prevent an economic meltdown in many countries, and financial markets have rebounded strongly on the back of abundant liquidity worldwide. If the lagged effects of the extremely loose monetary conditions turn out to be stronger and more prolonged than market expectations, particularly if credit in major economies starts to resume strong growth fuelling economic and financial market activities, the consensus assumptions regarding world GDP growth and asset-price increases will become too conservative. Sensitivity analysis shows that if global economic growth is one percentage point higher than the forecast, and the rate of increase in local property and equity prices are higher, then under such an optimistic scenario, real GDP growth in Hong Kong will be 0.5 percentage points higher than the consensus projection.

Scenario 2: A double-dip recession in the world economy

On the other hand, there is an alternative view that despite the recent improvements in global economic and financial conditions, recovery may falter resulting in a double-dip recession if worsened labour markets in advanced economies lead to renewed weakness in aggregate demand, and if the effects of various stimulus measures start to fade. Under such a scenario, fund flows in Hong Kong may undergo swift reversals on reduced risk appetite, and asset markets will inevitably suffer sharp corrections. Sensitivity analysis shows that in a hypothetical scenario of double-dip recession leading to a 0.5% sequential cumulative decline in world real GDP in the second half of 2010 (which reduces the full-year world real GDP growth by 1.5 percentage points in 2010 from the consensus assumption), together with corrections in local property prices and equity prices in the second half of 2010, real GDP growth in Hong Kong will be 0.7% lower than the consensus projection.

Scenario 3: A reversal of fund flows

Alternatively, capital flows into Hong Kong may still unexpectedly reverse direction abruptly even in the absence of a double-dip recession, leading to substantial volatilities in financial markets. Two possible trigger events for such a reversal are worth highlighting: a tightening of monetary policy in the US, or a reversal in the weakening of the US dollar. In particular, the latter may cause a sudden unwinding of US dollar-funded carry trades, which have become a prominent source of funding for various financial assets after quantitative easing in the US. In that case, declines in global financial markets may overshoot and fund flows may reverse abruptly. With assumptions of a 5% rebound in the Hong Kong-dollar effective exchange rate alongside the US dollar, a 75 basis-point increase in the local best lending rate and corrections in local property prices and equity prices, real GDP growth in Hong Kong will be 0.4% percentage points lower than the consensus scenario.

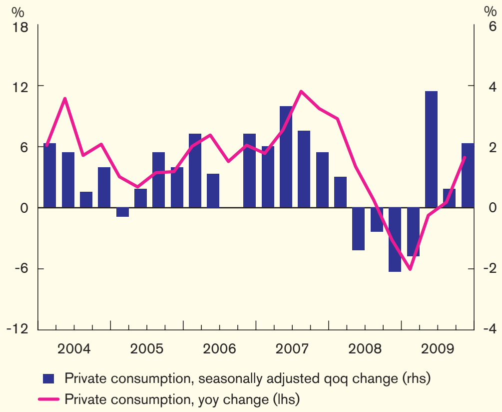
Table B3.C summarises the results of our sensitivity analysis. Overall, the global economy may be at an inflection point in 2010. On the upside, if the rebound in global financial markets and asset prices in Hong Kong are stronger than expected on the back of a solid rebound in credit growth, the consensus projection may turn out to be too conservative. On the other hand, downside risks of a double-dip recession and of policy tightening are also present. In either case, a sharp reversal of fund flows in Hong Kong may occur, but our sensitivity analysis suggests that it will unlikely derail a continued economic recovery in Hong Kong. Taking all possible factors into account, near term risks appear to be broadly balanced at present.

Table B3.C
Summary of the results of sensitivity analysis

Consensus projection	4.80%
change in economic growth versus consensus (±)	
Scenario 1: a revival in credit growth	+0.5%
Scenario 2: a double-dip in world economy	-0.7%
Scenario 3: a reversal in fund flows	-0.4%

Source: Staff estimates.

Chart 3.2
Private consumption



Source: C&SD.

Table 3.B
Change in private consumption expenditure by broad category and component

(% yoy)	2008	2009	2009 Q1	2009 Q2	2009 Q3	2009 Q4
Private consumption expenditure (PCE)	**2.3**	**-0.3**	**-6.1**	**-0.8**	**0.5**	**4.9**
Consumption expenditure in domestic market	3.0	0.4	-4.0	-1.5	0.8	6.2
Food	5.6	-2.0	-3.7	-2.4	-1.3	-0.7
Non-durable goods	7.2	-0.1	-5.7	-5.9	-1.4	11.8
Durable goods	11.0	0.9	-5.5	-7.9	-2.3	18.2
Services	0.0	1.0	-3.3	1.1	2.6	3.6
of non-residents	6.4	8.0	14.4	-1.5	3.2	14.3
Consumption expenditure of residents abroad	0.0	1.6	-3.7	7.3	0.5	3.1

Source: C&SD.

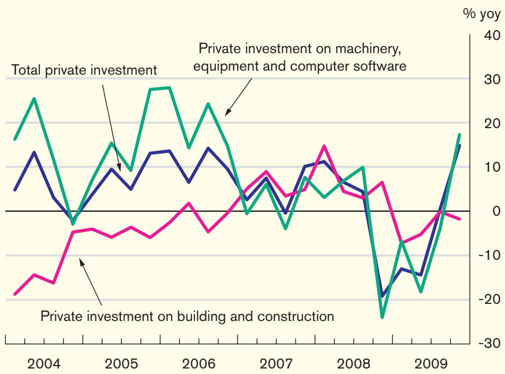
3.2 Domestic demand

Consumption

With the overall improvement in economic prospects and stabilisation in the labour market, private consumption bottomed out in 2009 Q3 and rose further at a robust pace in Q4 on a year-on-year comparison. For the whole of the second half, private consumption reverted to an increase of 2.7% compared with a decrease of 3.4% in the first half. Sequential momentum also strengthened to a quarter-on-quarter growth rate of 2.1% in Q4 (Chart 3.2). Service consumption has improved since Q2, in part reflecting the distinct rebound in financial market activities. Although the recovery of durable and non-durable goods consumption arrived late in the year, the pace of the pick-up was remarkably strong at 14.0% in Q4, underpinned by pent-up demand, improving labour market conditions and a recovery in net worth (Table 3.B). The Government's move to shore up demand in the economy was reflected in the steady growth in government consumption throughout 2009, by 1.8% in the first half and 2.3% in the second half.

Developments in 2010 are likely to turn more favourable for private consumption. The economic environment has broadly stabilised and the asset markets already rebounded. Labour market conditions also continued to improve with some employment growth and increase in real labour earnings. Consumer surveys have continued to point to an improvement in consumer confidence and job prospects. Such positive dynamics, in combination with easy credit access, will likely induce stronger private consumption. The market consensus expects private consumption growth of 4.2% in 2010, versus the 0.3% decrease registered in 2009. Government consumption will continue to increase in 2010, albeit more moderately. Details of the Government Budget for 2010/11 and its economic impacts are discussed in Section 3.4.

Chart 3.3
Private fixed investment by component



Source: C&SD.

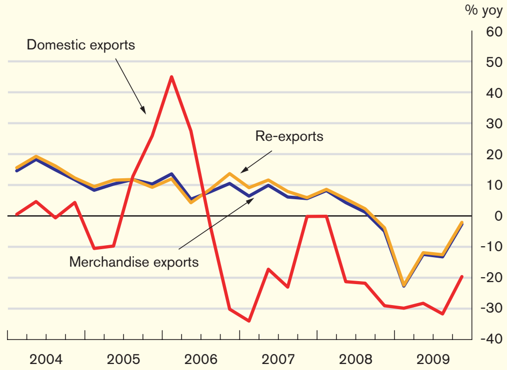
Investment

Fixed investment rose by 8.2% year on year in the second half of 2009 after falling conspicuously by 11.7% in the first. The increase was particularly notable in Q4 at a pace of 14.7% compared with 2.6% in Q3. Throughout the year, public fixed investment was the main source of strength as the Government sought to expedite infrastructure projects and increase capital spending. It was not until Q4 when private fixed investment was revived with the return of business confidence. However, the recovery was confined to private spending on machinery and equipment. Private building and construction activity remained in slight decline, in part reflecting the fall in actual completion of new private residential units and non-residential floor space (Chart 3.3).

Inventory re-stocking resumed in Q3 and remained remarkably strong in Q4 by historical standards. This inventory re-building cycle contributed to a substantial part of real GDP growth in both Q3 and Q4, with the change in inventories adding 4.0 and 3.7 percentage points to the change in GDP respectively.

It is expected that growth in fixed investment will continue to take hold. Indeed, the prospects for ongoing expansion of private capital spending have been strengthening. Recent rounds of the Quarterly Business Tendency Survey indicated that business sentiment has improved visibly, while corporate profitability and financial positions were returning to more solid levels. Corporate access to credit also became easier. Therefore, with the economic recovery gathering pace and excess capacity reducing in tandem, private capital spending is projected to rise further. However, private building and construction activity will likely remain quiet in the near term given that new issuance of Consents to Commence Work has been moderating. On the other hand, new government infrastructure projects should further contribute to the rebound in fixed investment. Overall, the market consensus expects gross fixed investment to grow by 6.8% in 2010, a marked improvement from the 2.2% decline in 2009. Inventory re-building is expected to continue amid sustained recovery in final demand, but likely at a more measured pace from the strong build-up in 2009.

Chart 3.4
Merchandise exports by component (in real terms)



Source: C&SD.

Table 3.C
Merchandise exports by major market (in nominal terms)[1]

(% yoy)	Share[2] %	2008	2009	2009 Q1	Q2	Q3	Q4
Mainland China	51	5	-8	-24	-5	-8	4
United States	12	-2	-21	-21	-21	-24	-16
European Union	12	6	-20	-18	-22	-26	-15
ASEAN5[3] + Korea	7	4	-20	-32	-25	-18	-3
Japan	4	1	-10	-13	-18	-8	-2
Taiwan	2	4	-1	-26	-6	3	25
Others	12	18	-13	-17	-18	-18	0
Total	**100**	**5**	**-13**	**-22**	**-13**	**-14**	**-2**

Notes:
1. Within the total, re-exports accounted for 98% in 2009.
2. Share in 2009.
3. ASEAN5 includes Indonesia, Malaysia, the Philippines, Singapore and Thailand. Figures are percentage changes over a year ago except for major export markets' shares in Hong Kong's total exports.

Sources: C&SD and CEIC.

Chart 3.5
Exports and imports of services (in real terms)

Sources: C&SD and CEIC.

3.3 External trade

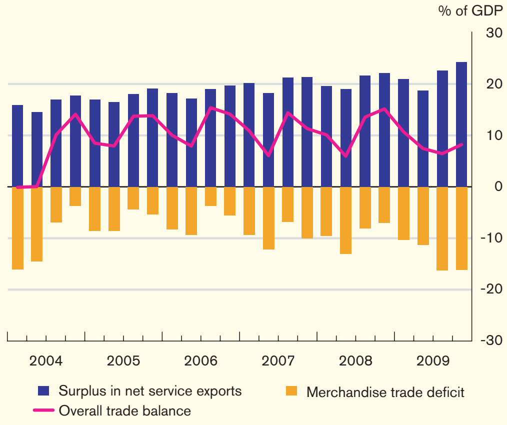
With the external environment turning progressively better, Hong Kong's merchandise exports showed improvement during the second half of 2009. Measured in real terms, the year-on-year rate of decline in exports of goods narrowed from 17.4% in the first half to 8.0% in the second. In particular, growth resumed in November and December, partly due to a low comparison base, leading to a much tapered rate of decline at 2.6% in Q4 from 13.2% in Q3. As the momentum gathered pace, there was a remarkable growth of 7.5% in Q4 on a quarter-on-quarter comparison (Chart 3.4).

Improving merchandise trade performance during the second half was underpinned by the swift turnaround in the Mainland and a few major Asian economies that helped bolster their import demand and regional trade. The recovery path of the advanced economies remained patchy and their stumbling consumption demand continued to weigh heavily on Hong Kong's exports, although less so in the latter part of the year. As a result, exports of goods to these destinations showed larger declines than to the Mainland and other Asian economies (Table 3.C).

While exports of goods continued to fall in the second half, exports of services fared much better, already bottoming out from the 5.4% decrease in the first half to show a 3.6% increase. The recovery in services exports was driven early in Q3 by increases in financial activities and inbound tourism led by Mainland travellers, and it became more broad-based in Q4 with both transportation services and trade-related services (mainly merchanting and merchandising) also reverting to growth.

Given the resurgence in domestic demand and relative improvement in re-export trade, imports of goods improved notably during the second half. From a year-on-year profile, the rate of decline in real terms narrowed successively in each quarter throughout 2009 and returned to positive growth of 3.1% in Q4. Imports of services also entered into a sustained recovery path over the course of 2009 and resumed positive growth of 2.4% in Q4 (Chart 3.5).

Chart 3.6
Trade balance by component



Sources: C&SD and CEIC.

While total imports fared better than exports in relative terms (with lesser declines) in 2009, the overall trade surplus shrank to 8.2% of GDP from 11.3% in 2008 (Chart 3.6). Net exports made a negative contribution to GDP growth for most of 2009. For the second half as a whole, net exports offset almost all the gains from domestic demand, leaving GDP growth to 0.2%.

Hong Kong exports are poised to grow further in 2010 with the global economy emerging from a deep recession. Some earlier positive impact can be expected from a turn in the inventory cycle. The fast-growing Mainland economy and rejuvenating industry activities in Asia are also expected to buttress Hong Kong's exports. As for advanced economies, since their overall recovery path will likely be uneven, the possibility of a fully-fledged comeback in Hong Kong's exports to these destinations is small. Overall, market consensus expects merchandise exports to grow by 10.5% in nominal terms in 2010. In comparison, the outlook for Hong Kong's services exports is more encouraging given the early signs of increasing inbound tourism, sustained growth in financial activities and the modest recovery in transportation and trade-related services. The upswing in imports of goods and services looks set to continue with domestic consumption poised for further solid growth in 2010.

Public finances

The Government's fiscal position is projected to shift from surplus to deficit in 2010/11 with falling revenue and rising expenditure led by infrastructure spending. The overall policy stance is estimated to be moderately expansionary, with a new round of relief measures worth HK$20.4 billion providing stimulus for the economic recovery to take hold while guarding against downside risks.

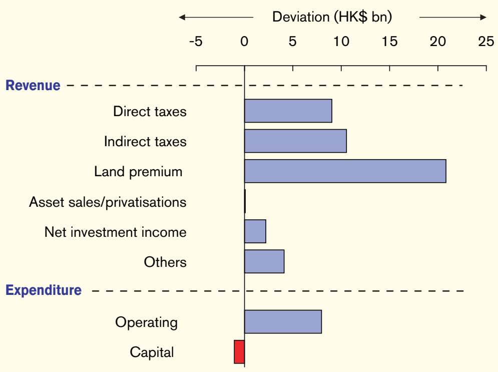
Table 3.D
Analytical presentation of the fiscal account

Fiscal year[1]	2008/09	Budget 2009/10	Outturn Estimate 2009/10	Budget 2010/11
	(% of fiscal-year based GDP)			
Revenues[2]	19.2	15.8	18.6	16.8
Tax	13.3	11.0	12.2	11.3
Non-tax	5.9	4.8	6.5	5.5
Land premium	1.0	1.0	2.3	2.0
Asset sales/privatisations	0.0	0.0	0.0	0.0
Investment income (net)[3]	2.8	1.9	2.0	1.7
Others	2.1	2.0	2.2	1.8
Expenditure	18.9	18.0	17.6	18.3
Recurrent	15.7	14.8	14.3	14.5
Capital[4]	3.3	3.2	3.3	3.8
Overall balance before net borrowing	0.3	-2.2	1.0	-1.5
Overall balance after net borrowing[5]	0.1	-2.4	0.8	-1.5
Fiscal reserves	30.0	27.1	30.8	27.9
Net fiscal reserves	28.8	26.0	29.8	26.9

Notes:
1. Figures for 2009/10 and 2010/11 are based on the 2010/11 Budget.
2. Excluding proceeds from the issuance of government bonds and notes.
3. Netting out interest expenses of government bonds and notes.
4. Excluding interest expenses and repayments of government bonds and notes.
5. The headline balance reported by HKSAR Government.

Sources: The 2010/11 Budget and staff estimates

Chart 3.7
Deviation of the 2009/10 estimated out-turn from the Budget[1]



Note:
1. This chart shows the contribution of each revenue and expenditure item to the higher-than-expected fiscal balance in 2009/10. The sign of deviation is reversed for expenditure items so that under-spending against the budgeted amount is treated as positive deviation and vice versa.

Source: The 2010/11 Budget.

3.4 Public finances

Estimated out-turn for 2009/10

The Government is on track to post an overall surplus of HK$13.8 billion (equivalent to 0.8% of GDP) after repayment of government bonds in 2009/10, in contrast to the original budget projection of a HK$39.9 billion deficit (Table 3.D). This will be the sixth consecutive year in surplus. The deviation from the original budget forecast is mainly due to higher-than-expected revenue from stamp duties, salaries tax, profits tax and land premium, and to a lesser extent under-spending in operating expenditure (Chart 3.7).

Table 3.E
Fiscal measures announced in fiscal years (FYs) 2008/09, 2009/10 and 2010/11

	HK$ billion	% of GDP
FY2008/09 (Budget + July 2008 Relief)	62.4	3.6%
FY2009/10 (Budget + May 2009 Relief)	25.2	1.5%
FY2010/11 (Budget)	20.4	1.2%
Total	108.0	6.3%

Sources: The 2010/11 Budget and staff estimates.

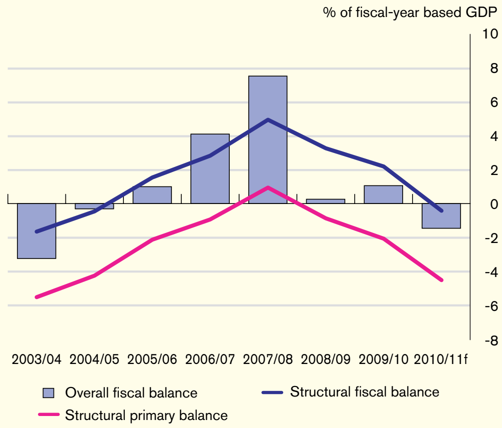
Budget for 2010/11

In 2010/11, the Budget projects a deficit of HK$25.2 billion (1.5% of GDP) on the back of a fall in revenue and rising expenditure mainly through increased spending on infrastructure. A highlight of the Budget is a range of relief measures worth HK$20.4 billion to support economic recovery. The latest package covers tax rebates, rates concessions, public housing rental cuts, waiving business registration charges, and additional allowances for recipients of welfare. It will supplement previous rounds of relief measures totalling HK$87.6 billion (Table 3.E).

Government revenue is projected to fall by 5.3% to HK$292.0 billion (16.9% of GDP) in 2010/11, with tax collections, land premiums and investment income decreasing by 2.7%, 8.7% and 9.3% respectively. The latest relief measures will also contribute to the fall in revenue as it involves a considerable sum in government transfers.

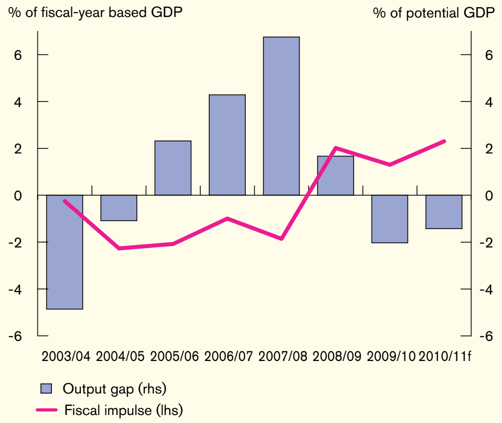
Expenditure is projected to increase by 8.9% to HK$317.2 billion in 2010/11 (18.3% of GDP), comprising a 6.5% rise in operating expenditure and a notable 19.3% surge in capital spending. Most policy areas will see spending increases from 2009/10, part of which are earmarked for one-off and recurring government programmes to strengthen medical services and to provide support to job seekers, students from poor families and other needy groups. In addition, infrastructure spending will rise by 5.4% to HK$49.7 billion – a level not seen for at least a decade. This also largely explains the big jump in capital spending in 2010/11. With a number of projects approaching their construction peaks, the Budget Speech notes that infrastructure spending will go beyond HK$50 billion for each of the next few years.

Chart 3.8
Fiscal balance, structural fiscal balance and structural primary balance



Sources: The 2010/11 Budget and staff estimates.

Chart 3.9
Fiscal impulse and output gap



Sources: The 2010/11 Budget and staff estimates.

Structural fiscal balances and the fiscal impulse

The underlying policy stance of the Budget is considered moderately expansionary. The structural fiscal balance in 2010/11, a measure that removes the effects of automatic stabilisers[4] and fiscal operations that are neutral to economic activities[5] from the headline fiscal balance, is estimated to be a deficit equivalent to 0.4% of GDP, reversing from a surplus of 2.2% of GDP in 2009/10 (Chart 3.8). The structural primary balance, derived by netting out land premium and net investment income from the structural balance, is estimated to be equivalent to a deficit of 4.5% of GDP in 2010/11, further widening from a deficit of 2.1% of GDP in 2009/10. As a result, the fiscal impulse, defined as the change in the structural primary balance, will reach 2.3% of GDP in 2010/11 (Chart 3.9).

The Budget's impact on economic growth and inflation

Simulation results based on multiplier estimates and the HKMA's small forecasting model suggest that the fiscal measures announced in the 2010/11 Budget will, on average, increase economic growth by about half a percentage point in 2010.[6 & 7] These fiscal measures will help strengthen the recovery and minimise the risks to economic growth. Nevertheless, our estimate takes into account only the impact of the 2010/11 Budget on 2010 GDP. If the remaining effects from the measures for the 2009/10 Budget are also taken into account, the effect will be larger. In this regard, the Government estimated

4 The headline fiscal balance is determined by both policy and the state of the economy. For example, if the economy contracts, tax revenue will drop and government transfers will rise, causing the budget deficit to increase (or the budget surplus to decrease) automatically. To determine whether fiscal policy is expansionary or contractionary, a measure that removes the automatic changes in tax revenue and government transfer (i.e. automatic stabilisers) is used.

5 In particular, some capital injection to public bodies and government funds may not be spent within the fiscal year and may not have any immediate economic impact. In 2010/11, the part of capital injection that will not be spent within the year is estimated to be around HK$8.1 billion and is excluded in our structural balance calculation.

6 Fiscal impulse and multiplier estimation are discussed in "Hong Kong: macroeconomic impact of recent fiscal measures", *HKMA Quarterly Bulletin*, February 2000.

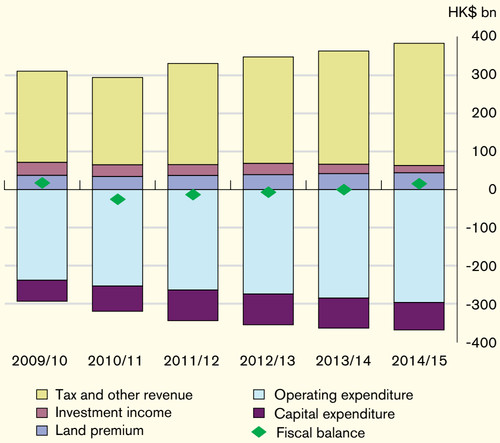
7 For a detailed description of the specifications of the small forecasting model, see Ha, Leung and Shu (2002), "A small macroeconomic model of Hong Kong", *HKMA Research Memorandum*, June 2002, and Kong and Leung (2004), "Revised small forecasting model for Hong Kong", *HKMA Research Memorandum*, 13/2004.

the impact to be a boost of 1.3 percentage points to real GDP growth in 2010. The effect of the 2010/11 Budget measures will be negligible on the underlying CCPI inflation in 2010, according to our small forecasting model.

Medium-term fiscal outlook

Over the medium term, the Government expects to run deficits in the next three years before returning to a balanced budget by 2013/14 (Chart 3.10). Fiscal reserves will be drawn down but later rise gradually to HK$468.7 billion at the end of 2014/15. In terms of GDP share, fiscal reserves will nevertheless decrease from over 30% to 21.7% five years later. Having said that, the new medium-term projection is more favourable than the picture portrayed in the 2009/10 Budget, which projected five consecutive years of fiscal deficit and the reserves to drop below HK$400 billion from 2012/13 onwards.

Chart 3.10
Medium-term projection of the fiscal balance by component



Sources: The 2010/11 Budget and staff estimates.

Expenditure will rise modestly and at a decreasing rate, while its share as a percentage of GDP will decline. Operating expenditure will grow steadily at around 4% each year through 2014/15. Capital expenditure will peak in 2012/13, although it will remain substantial by historical standards with major infrastructure projects in the pipeline. In tandem with the improving economic conditions, revenue growth is expected to resume from 2011/12 onwards, first with a notable pick-up in 2011/12 and then returning to around 5% growth per annum through 2014/15.

Labour market conditions and output gap

With unemployment rate reducing and total employment stabilising, the labour market continued to improve in the second half of 2009. However, labour market conditions remained weak in general. A margin of supply slack relative to final demand also developed in the early stage of the economic recovery, though the negative output gap is expected to narrow gradually as the recovery takes hold in 2010.

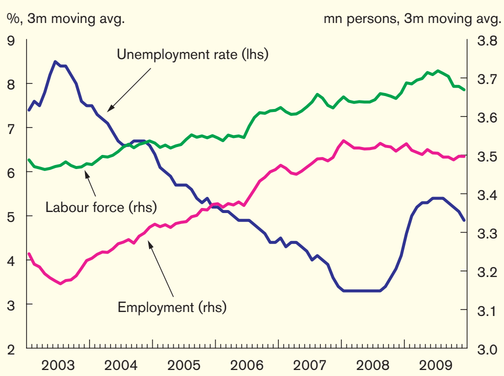
3.5 Labour market conditions and output gap

Labour market conditions

While still broadly weak, labour market conditions improved in the second half of 2009 in tandem with the gradual recovery of the domestic economy. The seasonally adjusted unemployment rate reduced progressively from a high of 5.4% in mid-2009 to 4.9% in Q4 (Chart 3.11). At the sectoral level, the unemployment rate also moderated on a broad front in the second half. This was particularly noticeable in the construction sector, due to an increase in government projects, and in retail trade, accommodation and food services with the support of the reviving inbound tourism and domestic spending. Since these sectors are major providers of low-skilled work, the unemployment rate of low-skilled workers decreased more visibly than that of their high-skilled counterparts (Chart 3.12).

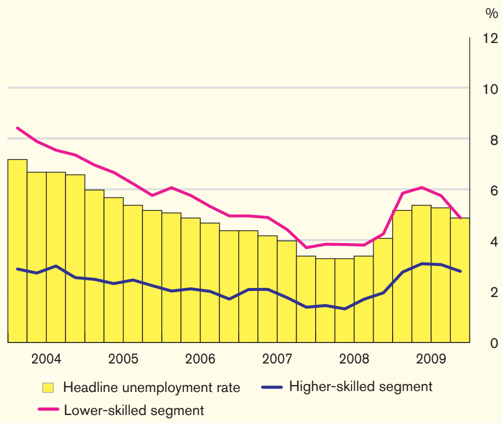
On the labour demand side, total employment stabilised in 2009 Q4 after four consecutive quarters in decline. In parallel with the recovery path of the domestic economy, there were employment gains in most sectors, except in export-oriented ones where employment losses remained substantial. The use of short-time working arrangements was still widespread as the median hours of work remained stable after the sharp fall in May 2008. The labour supply decreased markedly in Q4 alongside a fall in the labour force participation rate. While the labour supply decline was likely a readjustment after the surge in the labour force participation rate in the first half of the year, which led to an above-trend growth in labour supply during that period, it also partly reflected discouraged job seekers dropping out of the labour force. These developments, however, will adversely affect the potential supply of labour and, in turn, the supply potential of the economy (see the following sub-section for further details).

Chart 3.11
Labour market conditions



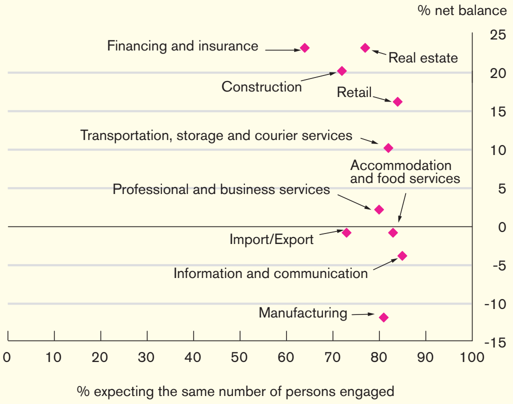
Source: C&SD.

Chart 3.12
Unemployment rates in the higher and lower-skilled segments



Sources: C&SD and staff estimates.

Chart 3.13
Quarterly business tendency survey for 2010 Q1 – employment



Notes:
1. Net balance refers to the difference between the percentage points of respondents expecting a rise over those expecting a decline.
2. Sectors are classified according to the new Hong Kong Standard Industrial Classification Version 2.0 (HSIC V2.0).

Source: C&SD.

Nevertheless, labour market conditions are expected to improve modestly. The market consensus expects the unemployment rate to be 4.7% in 2010, down from 5.2% in 2009. The latest Quarterly Business Tendency Survey also indicates that more of the respondents expect the number of people engaged to increase in 2010 Q1 (Chart 3.13). In particular, the construction sector has turned optimistic, probably due to the start of some large scale infrastructure projects, such as the Hong Kong-Zhuhai-Macao Bridge and the Disneyland expansion in 2010. In addition, recent private-sector surveys, including the Manpower Employment Outlook Survey and the PMI, all point to an improvement in the recruitment sentiment of employers.

Output gap

The overall supply potential of the Hong Kong economy or its capacity to produce goods and services is expected to have been depressed during the global recession. Capital stock accumulation has likely moderated as a result of the sharp fall in investment spending, and the potential supply of labour could be impaired by the drop-out of some job seekers, and the loss of job skills due to lay-offs. As a result, the overall supply potential of the economy may have grown at a more moderate pace than before the recession. However, some favourable developments on investment spending and labour market conditions in the final quarter of 2009 may have helped improve the overall position.

The contraction in final demand during the recession left a margin of supply slack. The HKMA's conventional measure of the output gap suggested that the economy was operating at 1.7% below its supply potential in Q4, albeit tapering from a gap as high as 4.4% in Q1, as final demand picked up gradually.[8] Given the negative output gap, inflationary pressure has been weak, leaving the current inflation rate at a benign level. With further recovery in the final demand, the negative output gap is expected to narrow gradually in 2010 while the drag of spare capacity on inflation will likely subside.

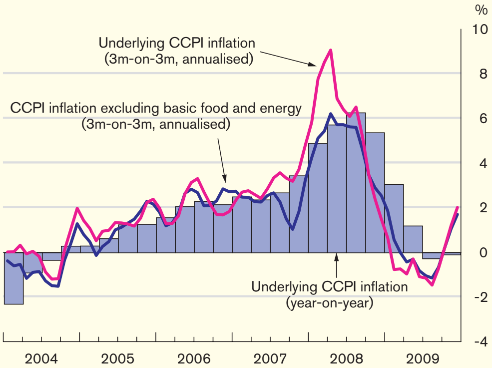
[8] The techniques used by the HKMA to calculate the output gap is discussed in Ha and Leung (2001), "Estimating Hong Kong's output gap and its impact on inflation", *HKMA Research Memorandum*, November 2001.

Prices and costs

The improving domestic and global economic environments has led to a slight rise in domestic cost pressures and import-price inflation in recent months, but the underlying inflationary pressure is likely to remain modest in the near term because of excess capacity worldwide. Nevertheless, increases in the cost of new rental leases and a narrowing output gap, may fuel Hong Kong's inflation rate in 2010, although the size of the increase is not expected to be a cause for concern.

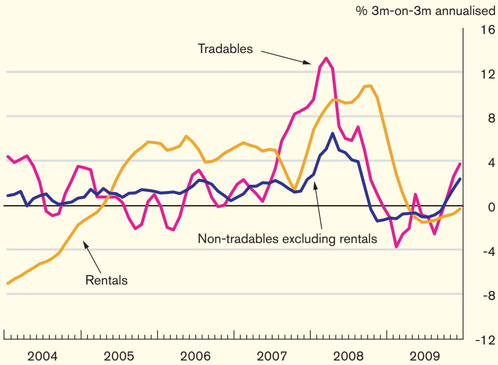
3.6 Consumer prices

Chart 3.14
Different measures of consumer price inflation



Sources: C&SD and staff estimates.

Chart 3.15
Consumer-price inflation by broad component

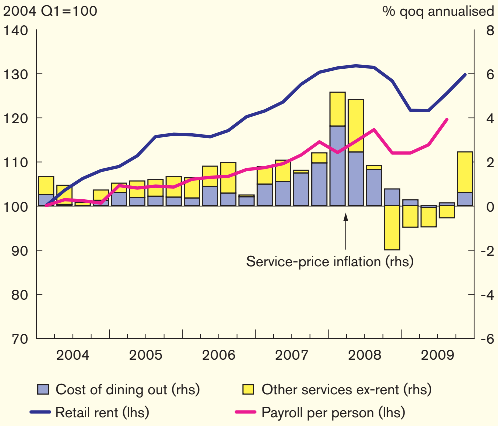


Sources: C&SD and staff estimates.

Downward price pressure in the economy dissipated during the second half of 2009. Netting out the effects of government relief measures, the year-on-year underlying inflation rate edged up to -0.1% in Q4 from -0.3% in Q3 (Chart 3.14). On a quarter-on-quarter comparison, the annualised rate of underlying inflation turned positive at 2.0% in Q4 from -0.7% in the previous quarter, partly reflecting increases in the price of food imported from Mainland China. Excluding basic food and energy, the annualised quarter-on-quarter core inflation rate also edged up to 1.7% in Q4 from -0.7% in Q3, driven by increases in miscellaneous goods and services charges, the price of clothing and footwear, and costs of transport and meals away from home.

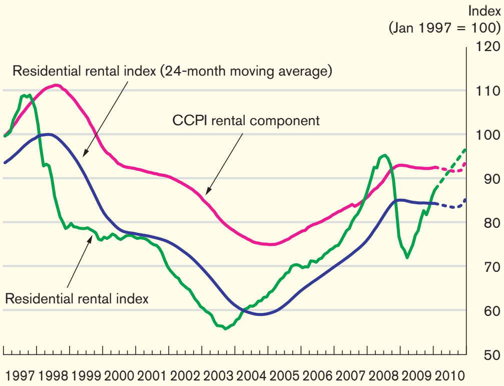
A breakdown of the data showed similar developments in price pressure among the main components. On a three-month-on-three-month (annualised) comparison, prices of tradable goods rose by 3.8% in Q4 after declining in Q2 and Q3 (Chart 3.15), mainly due to a higher food-price inflation. Services prices registered their first positive growth in Q4 after dropping for four consecutive quarters, reflecting the stronger cost

Chart 3.16
Service price inflation excluding rent



Sources: C&SD and staff estimates.

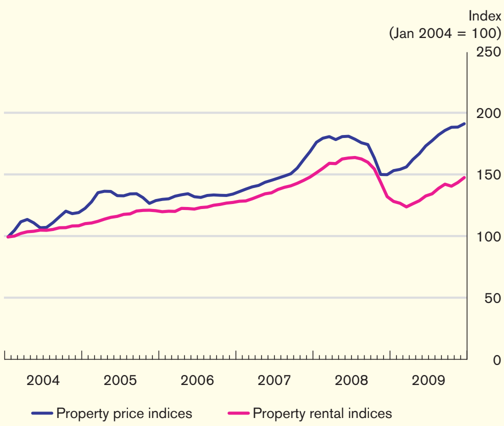
Chart 3.17
CCPI rental component and market rents



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

Sources: Rating and Valuation Department (R&VD), C&SD and staff estimates.

Chart 3.18
Residential property price and rental indices



Sources: Rating and Valuation Department (R&VD).

pressures from retail rents and labour payrolls (Chart 3.16). On the other hand, rental-cost inflation on a three-month-on-three-month annualised basis remained negative, reflecting the lagged effect of the correction in property prices in the second half of 2008 on the rental market. The rate of decline, however, moderated to -0.3% in Q4 from -1.0% in Q3.

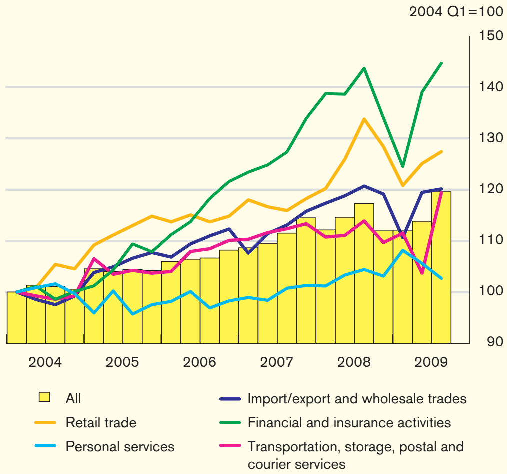
Inflationary pressure is likely to remain moderate in the near future, given subdued labour cost pressure, import-price inflation, and a negative output gap. Nevertheless, the continued rise in residential property prices since the beginning of 2009 has renewed upward pressure on the cost of new leases. The high correlation between the 24-month moving average of the private residential rental index and the CCPI rental component suggests that the year-on-year CCPI rental inflation may continue to decline in the first half of 2010 and rebound afterwards (Chart 3.17). This, coupled with a narrowing negative output gap, will inevitably raise inflation, possibly as early as the second half of 2010. However, we do not expect the magnitude to be substantial. The following section discusses in detail the developments and outlook of the major cost drivers of consumer-price inflation.

3.7 Rental costs

The buoyant residential property market in 2009 has led to an increase in rentals alongside rising property prices. After experiencing some corrections from the second half of 2008, overall rentals of new leases finally bottomed out in March 2009, three months later than property prices (Chart 3.18). Thereafter, overall new rentals tracked property prices closely, registering an increase of 17.7% over the rest of the year. Nevertheless, overall new rentals at the end of 2009 remained 9.9% below the recent peak in 2008, whereas property prices have surpassed the pre-crisis level and climbed even higher.

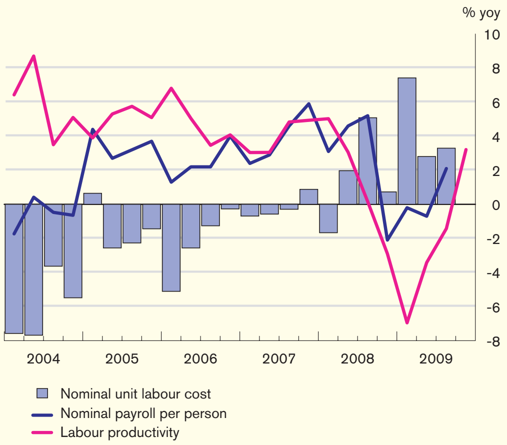
The cost of new leases is likely to rise amid higher property prices. After the HKMA announced prudential measures on residential mortgages and government officials voiced concerns about rising property prices, the property market showed signs of stabilising towards the end of 2009 (see Chapter 4 for further details).

Chart 3.19
Nominal payroll per person by economic sector



Note: Economic sector by HSIC Version 2.0.
Source: C&SD.

Chart 3.20
Unit labour cost and labour productivity



Sources: C&SD and staff estimates.

Nevertheless, the latest reading of the Centa-City leading index suggests the upward trend in property prices was largely uninterrupted, and continued into early 2010. As such, incentives to negotiate new lease contracts with higher rentals remain, generating increased cost pressures on new leases.

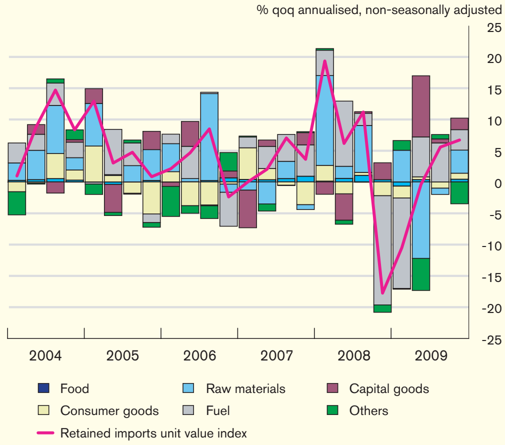
3.8 Labour costs

Labour earnings grew notably in 2009 Q3 with nominal payroll per person increasing by 5.1% from Q2. This followed a tepid rise of 1.7% in Q2 and virtually no growth in Q1 (Chart 3.19). On a year-on-year comparison, nominal payroll per person grew for the first time in four quarters by 2.1% in Q3. It is also encouraging to note that nominal payroll per person has risen above the level reached before the onset of the global financial crisis. The recent sequential increase in labour earnings was found in all major sectors except social and personal services. In particular, payroll in the financial and insurance sector has risen visibly since Q2, with the rebound in business in this sector. In line with the improving consumer sentiment and inventory re-stocking, payroll in retail, import/export and wholesale trades has also increased since Q2.

Nominal unit labour costs rose 3.3% year on year in Q3, after rising by 2.8% in Q2 and 7.4% in Q1 (Chart 3.20). The increase in the unit labour cost in Q3 was due to a rise in labour earnings, although offset to a limited extent by a lesser decrease in labour productivity.

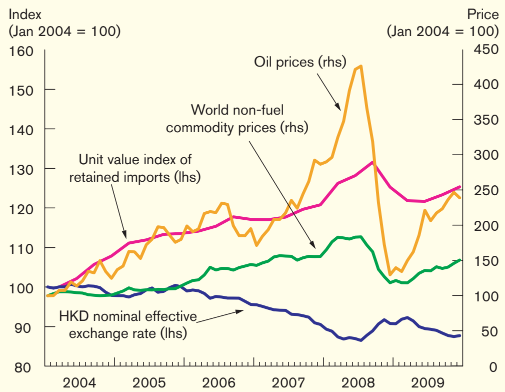
While payroll statistics for Q4 has not been released at the time of publication of this Report, more up-to-date information from the General Household Survey showed continued, yet modest, improvement in the average employment earnings in Q4. In fact, given that the economy is still in its early stage of recovery and some degree of slackness in businesses continues to exist, domestic cost pressures stemming from payroll increases will probably remain modest. It is also likely that labour productivity will improve in tandem with economic recovery. Thus, while the unemployment rate has been moderating, nominal payroll and nominal unit labour costs are not likely to rise sharply for a time.

Chart 3.21
Contributions to import price inflation



Sources: C&SD and staff estimates.

Chart 3.22
Commodity and import prices



Sources: C&SD and IMF.

3.9 Commodity and import prices

Import-price inflation picked up in the second half of 2009 as oil and other commodity prices rose further and the Hong Kong-dollar nominal effective exchange rate broadly weakened alongside the US dollar (Chart 3.21). On a quarter-on-quarter annualised basis, import prices reverted to an increase of 5.6% in Q3 and grew further by 6.7% in Q4 after edging down by 0.4% in Q2 and experiencing sharp falls in the earlier two quarters. Analysed by component, pressures on import-price inflation mainly came from fuels and capital goods, while pressures from food and consumer goods remained contained.

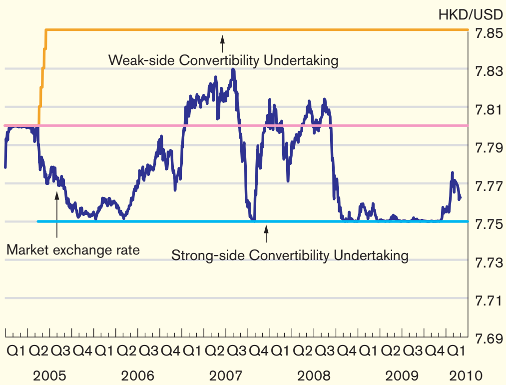
Import price pressure is expected to be mild given that the global recovery is still slow and uneven. That said, the prices of fuel, food and raw materials tend to be volatile because of fluctuations in supplies and rapidly changing financial and monetary conditions, thus posing certain risks to the import-price inflation outlook (Chart 3.22). For example, imported food prices from Mainland China may go up sharply if the adverse weather conditions during December distort short-term food supply.

4. Monetary and financial conditions

Exchange rate, interest rates and monetary developments

The Hong Kong-dollar spot exchange rate stayed close to 7.75 throughout 2009 before weakening slightly in early 2010. Licensed banks triggered the strong-side Convertibility Undertaking repeatedly in 2009, signalling strong inflows into the Hong Kong dollar. Local monetary conditions were expansionary, with the Monetary Base and liquid deposits sharply increasing and interbank interest rates at near-zero levels. Domestic credit generally picked up, albeit at a moderate pace, due to a revival in economic activity and buoyant asset markets.

Chart 4.1
Hong Kong-dollar exchange rate



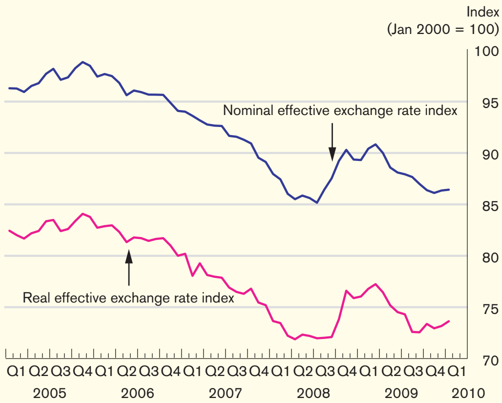
Source: HKMA.

4.1 Exchange rate and interest rates

The Hong Kong-dollar spot exchange rate was stable and firm, staying close to the strong-side Convertibility Undertaking (CU) of 7.75 between late March and early December 2009 (Chart 4.1). Amid strong demand for Hong Kong-dollar assets, licensed banks triggered the strong-side CU repeatedly, prompting the HKMA to passively inject liquidity into the banking system. Narrow interest rate discounts between the Hong Kong and US dollars also restrained the weak-side potential of the Hong Kong dollar by reducing the appetite for arbitrage trades. Despite the strength of the exchange rate, there were little signs of exchange-rate speculation. The Hong Kong-dollar forward exchange rates were generally stable, with the 12-month forward discounts trading at a narrow range between 165 and 265 pips in the second half of 2009.

The Hong Kong-dollar spot exchange rate then weakened in late December 2009 and early 2010, partly due to the conversion of IPO proceeds into the US dollar and capital outflows amid tentative signs of a monetary tightening in Mainland China. The latest market consensus (February 2010) suggests that the Hong Kong-dollar spot exchange rate will weaken to 7.77 against the US dollar by the end of February 2011, partly reflecting market expectation of a rebound in the US dollar against other currencies.

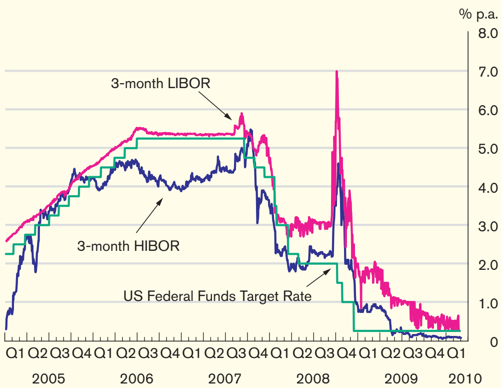
Chart 4.2
Nominal and real effective exchange rates



Note: Monthly average figures. Real effective exchange rate index is seasonally adjusted.

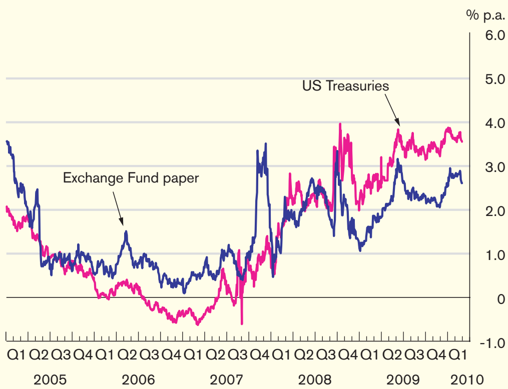
Sources: HKMA staff estimates and C&SD.

Chart 4.3
Interest rates of the Hong Kong dollar and US dollar



Source: HKMA.

Chart 4.4
Yield difference between 10-year and 3-month government bonds



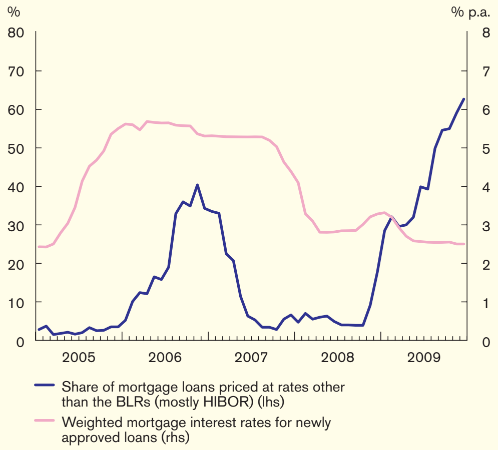
Source: HKMA.

From March to November 2009, the US dollar depreciated by around 15% in effective terms against other major currencies, partly due to worries about the negative impact of quantitative easing and deteriorating fiscal deficits in the US. In line with the movements in the US dollar, both the trade weighted nominal and real effective exchange rate indices of the Hong Kong dollar declined to around their pre-crisis levels (Chart 4.2). The real exchange rate index depreciated at a faster rate because Hong Kong's headline inflation rate was lower relative to the weighted average of its trading partners. Market participants generally expect the US dollar will continue to strengthen against other major currencies.

With ample interbank liquidity, interbank interest rates for the Hong Kong dollar remained low. The overnight and one-month HIBORs were at near-zero levels, with small fluctuations due to short-term funding demand associated with IPO activities. Tracking their US dollar counterparts, the three-month and 12-month HIBORs declined slightly (Chart 4.3). The LIBORs also decreased to historic lows and this partly reflected central banks' aggressive efforts to increase liquidity and bolster interbank money markets. (Box 4 discusses the effectiveness of policy actions by the HKMA and the Government during the recent financial crisis.) The mean of *Consensus Forecasts* in February 2010 suggests that the three-month HIBOR will be 0.7% by the end of February 2011, 60 basis points higher than the actual figure on 31 December 2009.

After steepening sharply in the first half of 2009, the Hong Kong-dollar nominal yield curve generally flattened in the second half. Specifically, the differences between the 10-year and three-month yields of Exchange Fund paper tapered off, consistent with the movements in the corresponding yield spreads of US Treasuries (Chart 4.4). Yields of long-term Exchange Fund paper moved within a narrow range. The very low yields of short-dated Exchange Fund paper persisted, with the implied yields of one-week and one-month Exchange Fund Bills declining to below zero in late June and early July 2009, due to strong market demand for high-quality, liquid money-market instruments. In September 2009 the inaugural issue of the two-year Government Bonds under the Institutional Bond Issuance Programme was well received by institutional investors. The yields of

Chart 4.5
Mortgage interest rates for newly approved loans



Sources: HKMA and staff estimates.

Table 4.A
Deposit interest rates (period-average figures)

(% p.a.)	Savings deposits (HK$)	1-month time deposits (HK$)	1-month time deposits (RMB)
2008 Q4	0.01	0.23	0.63
2009 Q1	0.01	0.01	0.63
2009 Q2	0.01	0.01	0.63
2009 Q3	0.009	0.01	0.64
2009 Q4	0.009	0.01	0.65

Source: HKMA.

two-year Government Bonds averaged 0.5% between September and December 2009, around five basis points higher than the corresponding yields of Exchange Fund Notes.

At the retail level, banks kept their Best Lending Rates (BLRs) unchanged at either 5.00% or 5.25%, which was in line with the stable US Federal Funds Target Rate. Market participants expect the BLR will remain stable or rise slightly by the end of February 2011, to 5 - 6% according to *Consensus Forecasts*. On the mortgage front, effective mortgage interest rates for newly approved loans remained low and more customers chose HIBOR-based products to take advantage of low interbank interest rates (Chart 4.5). Survey data indicate that newly approved mortgage loans priced at rates other than the best lending rates (mostly HIBOR) increased to a record high of 62.6% in December 2009. In view of the intensified competition on mortgage pricing, the HKMA issued a letter on 17 September 2009 aiming at raising banks' awareness of better risk management.

The average interest rates offered by major banks on savings and time deposits were virtually unchanged at near zero, while the interest rates for renminbi deposits in Hong Kong rose marginally (Table 4.A). The pilot scheme for renminbi trade settlement was launched on 6 July 2009, and banks appeared to have slightly raised their renminbi deposit interest rates to attract such deposits. The composite interest rate, which indicates the average cost of funds of banks, declined to 0.11% at the end of December 2009 from a high of 1.28% at the end of October 2008. The decline was driven by downward adjustments in both time-deposit and interbank interest rates.

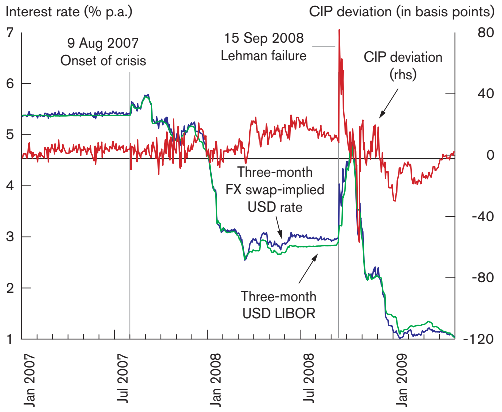
Box 4
Effects of policy actions on foreign-exchange swap and money markets in Hong Kong during the 2008 - 09 global financial crisis

When US dollar interbank markets malfunctioned during the recent financial crisis, many non-US financial institutions relied heavily on foreign-exchange (FX) swap markets to raise US dollars using local currencies. Such a one-sided market induced a risk premium on the FX swap-implied US dollar rate (across a range of funding currencies) that the non-US financial institutions had to pay over the corresponding dollar LIBOR rate, i.e. a deviation from the covered interest parity (CIP) condition.[9] This unusual pricing behaviour reflected dislocations in the FX swap markets. The turbulence in the global interbank markets, therefore, spilled over to the FX swap markets including that in Hong Kong.

In Chart B4.1, the red line measures how much the FX swap-implied three-month US dollar funding rate deviates from the corresponding LIBOR – the risk premium demanded by dollar lenders in the swap market or the departure from the CIP condition in the local financial markets. As can be seen, before the Summer of 2007 it oscillated around 0% but after that it followed an upward trend. Around the beginning of September 2008, the FX swap-implied rate fluctuated widely.

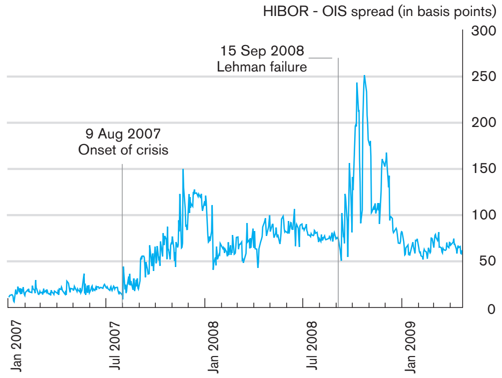
The stress in the interbank market is measured by the spread of the three-month HIBOR relative to the three-month overnight indexed swap (OIS) rate (HIBOR-OIS spread). Chart B4.2 shows that the three-month HIBOR-OIS spread increased when the crisis emerged in August 2007 and surged to more than 200 basis points after the Lehman failure.

Chart B4.1
FX swap-implied US dollar rate, LIBOR and CIP deviation



Sources: Bloomberg and HKMA estimates.

Chart B4.2
Three-month HIBOR-OIS spread



Source: HKMA estimates.

[9] In CIP theory, the equilibrium forward exchange rate is equal to the spot exchange rate multiplied by the interest differential between the currencies concerned. In normal circumstances, a deviation of the forward exchange rate from the equilibrium rate would present opportunities for arbitrage, which would eventually bring the rate back to equilibrium. See Fung and Yu (2009), "Dislocations in FX swap and money markets in Hong Kong and policy actions during the financial crisis of 2008", *HKMA Working Paper 17/2009* for the calculation of the CIP deviation.

Table B4.A
Policy actions by the HKMA and the Government

Announcement date	Measures
2008	
(1) 30 September	Five temporary liquidity measures
(2) 8 October	Modification of the Base Rate formula
(3) 14 October	Two precautionary measures to support confidence in the Hong Kong banking system
(4) 20 October	Additional supply of three-month Exchange Fund Bills
(5) 6 November	Two refinements to the temporary liquidity measures
(6) 24 November	Additional supply of three-month Exchange Fund Bills
2009	
(7) 26 March	HKMA to continue the provision of liquidity assistance to banks

Source: HKMA.

In response to the pressure of the global financial crisis on the Hong Kong dollar interbank market, the HKMA and the Government announced a series of measures to help contain the liquidity and solvency risks in the domestic banking system. Table B4.A presents the policy initiatives since September 2008.

If these policy actions were effective, they should have been able to alleviate the dislocations in the FX swap market and reduce the CIP deviations. To assess whether policy actions were effective on easing the distress in the Hong Kong-dollar interbank market and mitigating the dislocations in the FX swap market, we use a standard exponential GARCH model to assess whether the policy actions were able to influence the level and volatility of the CIP deviations and the HIBOR-OIS spread.[10]

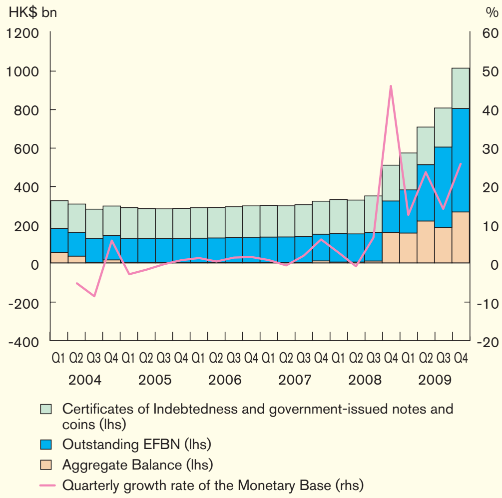
The results show that the measures effectively reduced the CIP deviations during the crisis. After the Lehman failure, the HKMA's policy actions helped mitigate the dislocations and, therefore, improved efficiency in the money and FX swap markets to facilitate arbitrage transactions. In particular, the five temporary measures provided additional longer-term funding to banks against a wider range of collaterals at a potentially lower interest cost. Banks were more assured of the availability of funds, and more willing to lend in the interbank market.

On the other hand, the results find there was no material impact on the HIBOR-OIS spread. This finding is consistent with the recent study by the IMF, which shows that the liquidity support measures initiated by several major central banks did not have a significant impact on the LIBOR-OIS spread after the Lehman failure.[11] The IMF study suggests that the finding does not necessarily mean the policy actions on providing liquidity to the banking system were not effective, but that the actions may have been anticipated by market participants. Therefore, their effects on the LIBOR-OIS spreads are not noticeable in the empirical tests. The same market reactions might also have happened in Hong Kong, resulting in the effects of the policy actions on the HIBOR-OIS spread not being visible in our empirical analysis.

[10] The details of the model can be found in Fung and Yu (2009).

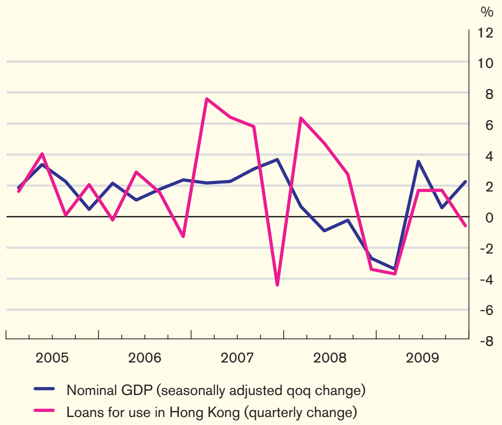
[11] See IMF (2009), *Global Financial Stability Report*, September.

Chart 4.6
Monetary Base



Source: HKMA.

Chart 4.7
Loans for use in Hong Kong and nominal GDP



Sources: HKMA and C&SD.

Table 4.B
Loans for use in Hong Kong by sector

	2008		2009			
	Q3	Q4	Q1	Q2	Q3	Q4
	(Quarterly percentage change)					
Loans for use in Hong Kong	2.7	-3.5	-3.8	1.6	1.6	-0.7
of which:	(Percentage-point contribution)					
Trade finance	-0.2	-1.3	-1.0	0.2	0.1	0.3
Property development and investment	1.1	0.5	-0.2	-0.1	-0.6	0.8
Residential mortgage loans	0.2	-0.3	-0.1	0.5	0.9	0.5
Manufacturing	0.2	-0.3	-0.1	-0.3	0.1	-0.1
Financial concerns	1.0	-0.6	-1.5	-0.8	0.2	-1.2
Stockbrokers	-0.1	0.0	0.0	1.6	-0.3	-1.1
Wholesale and retail trade	0.0	-0.2	-0.3	0.1	0.2	0.1
Other loans	0.6	-1.4	-0.5	0.5	1.0	0.0

Source: HKMA.

4.2 Money and credit

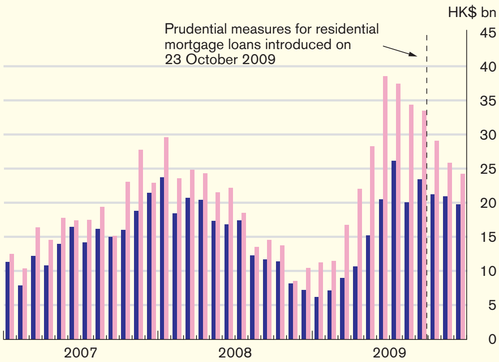
After the global financial crisis intensified in September 2008, the Monetary Base almost tripled due to the additional supply of Exchange Fund paper and the increase in the Aggregate Balance (Chart 4.6). To meet the strong demand, the HKMA supplied additional Exchange Fund Bills to the market, bringing the ad hoc issues to around $386 billion by the end of December 2009. Despite the resultant transfer within the Monetary Base from the Aggregate Balance to Exchange Fund paper, the Aggregate Balance remained high as a result of the repeated triggering of the strong-side CU. On 31 December 2009 the Aggregate Balance was HK$264.6 billion, accounting for 26% of the Monetary Base.

Reflecting the impact of the expansion in the Monetary Base, the Backing Ratio declined to around 105% in July 2009. The expansion in the Monetary Base exerted a downward influence on the Backing Ratio because, while the Backing Assets rose by the same amount as the Monetary Base (as required under the Currency Board arrangements), the proportional increase was smaller in the former due to its larger size. On 13 November 2009 the Backing Ratio declined to 105%, reaching the Lower Trigger Level. Under the arrangements approved by the Financial Secretary in January 2000, US-dollar assets were transferred from the investment portfolio to the backing portfolio of the Exchange Fund to restore the Ratio to 107.5%.

Despite the burgeoning Monetary Base, domestic loan growth was broadly in line with the movements in nominal GDP (Chart 4.7). Domestic loans bounced back by 1.6% in the second and third quarters of 2009 before retreating somewhat in the final quarter (Table 4.B). The pick-up in domestic loans was supported by an economic turnaround, a buoyant property market and occasional surge in loan demand associated with equity IPO activities. Credit demand is expected to recover gradually. According to the HKMA Survey on Credit Condition Outlook, the proportion of surveyed AIs expecting domestic loan demand to "increase somewhat" in the next six months rose from 24% in June 2009 to 52% in December 2009, while no AIs expected the loan demand to "increase considerably". In addition, outstanding domestic loans at the end of 2009 were still 4.8% below their peak at the end of September 2008.

Analysed by economic use, the residential mortgage loan was one of the main contributors to domestic loan growth in the second and third quarters of 2009 (Table 4.B). Amid a vibrant property market, the rise in mortgage loans went from 2.0% in Q2 to 3.5% in Q3. On 23 October 2009 the HKMA announced residential mortgage loan measures aimed at reducing banks' mortgage lending risks to ensure banking stability (see Chapter 5 for further details). The measures included capping the loan-to-value ratio at 60% for luxury properties. Subsequently, growth in mortgage loans slowed in the fourth quarter of 2009. New mortgage loans approved and drawn down also declined in Q4, continuing the downward trend in Q3 (Chart 4.8).

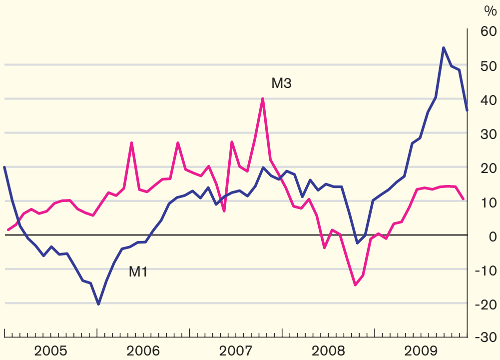
Chart 4.8
Mortgage loans



Source: HKMA.

From July to December 2009, Hong Kong-dollar M3 broadly trended upwards and recorded a double-digit year-on-year growth rate (Chart 4.9). Analysed by the asset-side counterparts of Hong Kong-dollar M3, the increase in the broad money was due to a rise in net foreign currency assets signalling an inflow of funds into the Hong Kong dollar, and, to a lesser extent, a pick-up in domestic credit. As Hong Kong-dollar M3 rose at a slower rate than the Monetary Base, the Hong Kong-dollar money multiplier continued to fall. Underpinned by a buoyant stock market, transaction demand for money increased. Depositors were also more willing to hold demand deposits because savings and term-deposit interest rates were extremely low. Driven by an expansion in demand deposits, Hong Kong dollar M1 rose markedly and its year-on-year growth rate accelerated to over 30%.

Chart 4.9
Year-on-year growth in monetary aggregates

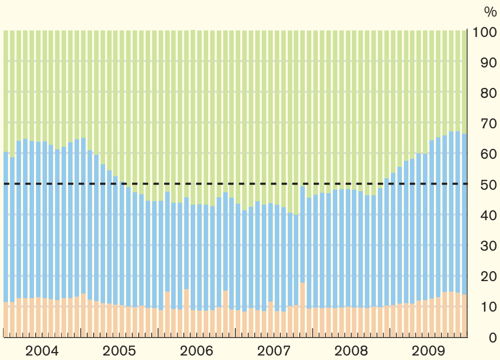


Note: Hong Kong-dollar M1 is seasonally adjusted.

Source: HKMA.

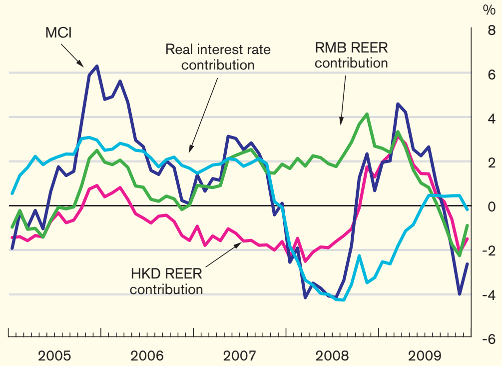
Within Hong Kong-dollar deposits, a shift from time deposits to liquid (demand and savings) deposits continued in a low interest-rate environment, signalling abundant liquidity in the market. Liquid deposits accounted for 67.3% of Hong Kong-dollar deposits at the end of November 2009, a record high since 1981 (Chart 4.10). As foreign-currency deposits expanded at a slower rate than Hong Kong-dollar deposits, the share of

Chart 4.10
Hong Kong-dollar deposits by type



Source: HKMA.

Chart 4.11
Monetary conditions index



Note: MCI is a weighted sum of the real interest rate and the four-quarter changes in the Hong Kong-dollar and renminbi real effective exchange rates.

Sources: HKMA and staff estimates.

Hong Kong-dollar deposits in total deposits rose, pointing to increased demand for Hong Kong-dollar assets. Despite a roughly stable renminbi exchange rate against the Hong Kong dollar, renminbi deposits in Hong Kong generally rebounded between May and December 2009. The demand for such deposits was partly boosted by investment activities in local renminbi bonds and the pilot scheme for renminbi trade settlement launched in July 2009, and was at times reduced by a repatriation of funds to the Mainland by renminbi bond issuers.

Expansionary monetary conditions were also reflected in the downward trend of the Monetary conditions index (MCI). Owing to the real exchange rate depreciation of the Hong Kong dollar and the renminbi, the MCI decreased between March and November 2009, suggesting looser local monetary conditions (Chart 4.11). The index rebounded somewhat in December as the real exchange rates of the Hong Kong dollar and the renminbi increased due to a strengthening of the US dollar.

Capital flows

Strong inflows into the Hong Kong dollar continued in the second half of 2009, reportedly reflecting factors such as better recovery prospects for the Hong Kong and Mainland economies, equity-related demands alongside vibrant stock market activities, and a broader global asset allocation into Asia. The fund flow directions in 2010 are highly uncertain, as the balance between equity-related inflows and carry trade-related outflows will be influenced by global financial conditions.

4.3 Capital flows

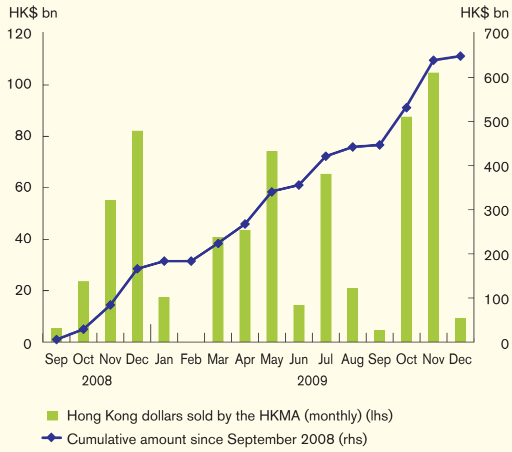
Fund flows into or out of the Hong Kong dollar can be traced to one of the three sources of net demand or net supply of Hong Kong dollars: transactions between Hong Kong residents; transactions between Hong Kong residents and non-residents; and transactions between non-residents. While the monetary survey provides an overall picture of the scale of net fund flows into or out of the Hong Kong dollar, it does not reveal the sources of the flows. The balance-of-payments (BoP) statistics record transactions between residents and non-residents, but they do not capture transactions between non-residents, and there is no currency breakdown in the recorded cross-border flows.[12] Therefore, a comprehensive view on the scale and nature of capital flows in Hong Kong requires a joint analysis using both monetary and BoP statistics, in addition to information gathered through market intelligence.

Fund flows into and out of the Hong Kong dollar

After the global financial crisis intensified in September 2008, strong inflows into the Hong Kong dollar emerged. Between late October 2008 and early December 2009, the strong-side CU was repeatedly triggered, prompting the HKMA to passively inject liquidity into the banking system. Taking into account the proactive foreign-exchange operations conducted in September and October 2008, the HKMA purchased a

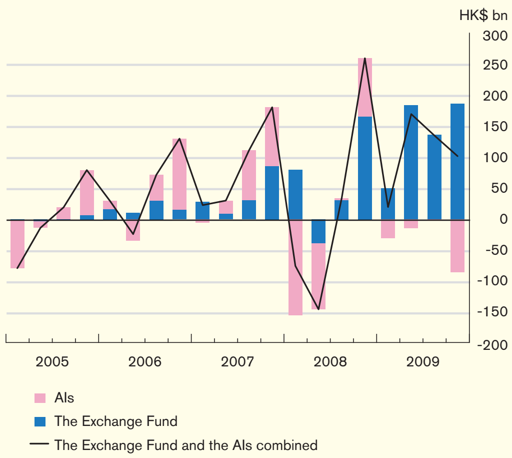
[12] For more details on how to monitor capital flows in Hong Kong, see He, Leung and Ng (2009), "A framework for monitoring capital flows in Hong Kong" , *HKMA Working Paper 16/2009*.

Chart 4.12
Foreign-exchange operations by the HKMA



Source: HKMA.

Chart 4.13
Quarterly changes in the net foreign-currency assets



Note: A positive value indicates Hong Kong-dollar inflows.
Sources: HKMA and staff estimates.

Table 4.C
Quarterly changes in deposits

	2008	2009			
(HK$ bn)	Q4	Q1	Q2	Q3	Q4
Hong Kong-dollar deposits	88.6	43.7	204.3	110.1	-18.5
Foreign-currency deposits	123.8	-81.3	47.7	40.2	-24.8

Source: HKMA.

total of US$83.4 billion from banks, equivalent to HK$646.2 billion (Chart 4.12). As a result, the Aggregate Balance rose markedly to a peak of HK$320.0 billion on 24 November 2009 before declining to HK$264.6 billion on 31 December as more Exchange Fund Bills were issued.

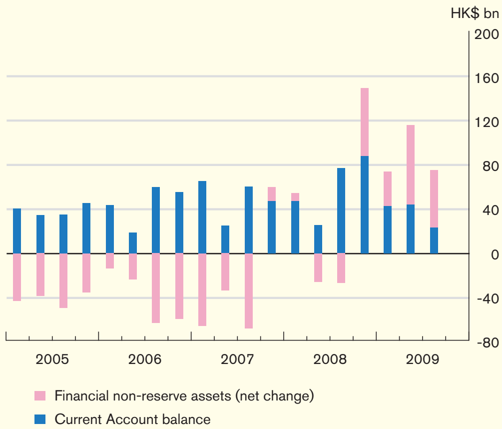
Increases in the net foreign-currency assets of the AIs and the Exchange Fund combined indicated strong net Hong Kong-dollar inflows since the fourth quarter of 2008 (Chart 4.13). In particular, the inflows reached a record high in 2008 Q4. Customers of Hong Kong banks, namely Hong Kong non-bank residents and foreign entities, greatly increased their demand for the Hong Kong dollar, leading to a swift strengthening of the Hong Kong-dollar exchange rate against the US dollar and a substantial rise in the net foreign-currency assets of the AIs. Subsequently, licensed banks repeatedly triggered the strong-side CU, resulting in a large increase in the net foreign-currency assets of the Exchange Fund during that quarter.

Market information suggests that unwinding of Hong Kong dollar-funded carry trades and repatriation of funds by individuals and corporations were the main sources of local currency inflows in the fourth quarter of 2008. Despite a sharp contraction in loans, Hong Kong-dollar deposits rose considerably by HK$88.6 billion, in line with reports of a repatriation of funds (Table 4.C). Hong Kong's robust banking system and the introduction of the full deposit guarantee might also have attracted some safe-haven inflows. In addition, foreign-currency deposits in the local banking sector registered a large expansion alongside Hong Kong-dollar deposits in the final quarter of 2008.

After decreasing somewhat in the first quarter of 2009, strong net inflows resumed in the remainder of the year, and the rise in net foreign-currency assets was largely absorbed by the Exchange Fund through the repeated triggering of the strong-side CU (Chart 4.13). With liquidity conditions in the local banking sector stabilising and global economic conditions improving, the nature of the inflows in 2009 appeared to differ from that in the earlier period. The strong inflows between March and early December reportedly reflected equity-related demand alongside vibrant stock market activities, and increased demand for Hong Kong-dollar assets amid abundant global liquidity and a broader global asset allocation into Asia, partly due to better recovery prospects of the Hong Kong and Mainland economies. In general, Hong Kong-dollar deposits grew at a faster pace than foreign-currency deposits in 2009. The ratio of Hong Kong-dollar deposits to foreign-currency deposits also increased to 112% at the end of 2009 from 100% a year earlier, in part confirming stronger demand for the Hong Kong dollar than for foreign currencies.

Although net inflows remained strong by historical standards, the size of inflows moderated beginning from the second quarter of 2009 (Chart 4.13). The moderation in the size of inflows was driven by the smaller increase in the net foreign-currency assets of the Exchange Fund in Q2 (reflecting reduced purchases of US dollars by the HKMA) and the contraction in the net foreign-currency assets of the AIs in the final quarter of 2009. The latter might be a result of some Hong Kong-dollar outflows by banks' customers in December and this was consistent with the weakening of the Hong Kong-dollar exchange rate away from the strong-side CU. Changes in Hong Kong-dollar deposits followed a similar pattern, recording a larger increase in 2009 Q2 than Q3 but ending Q4 with a slight contraction (Table 4.C).

Chart 4.14
Cross-border capital flows



Note: A positive value indicates capital inflows.
Source: C&SD.

Balance of Payments and cross-border capital flows

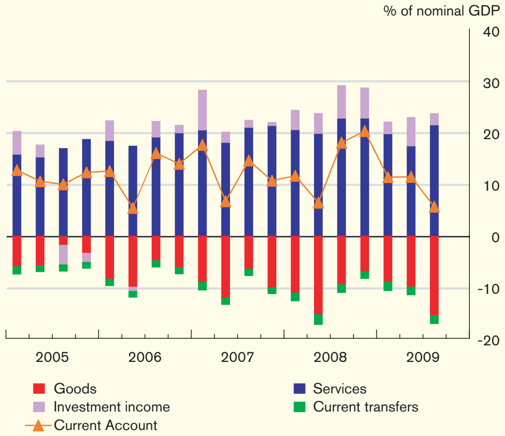
After the collapse of Lehman Brothers, strong cross-border net inflows emerged in the fourth quarter of 2008. Total cross-border net inflows amounted to HK$150.2 billion, including the current account surplus of HK$88.4 billion and private financial net inflows of HK$61.8 billion (Chart 4.14). Private financial net inflows were mainly due to a reduction in currency, deposits and loans held abroad, with gross inflows amounting to HK$529.4 billion. This was consistent with anecdotal evidence that Hong Kong residents repatriated funds from abroad and unwound carry-trade positions which had been built up earlier. At the same time, Hong Kong residents increased their debt portfolio investments abroad (outflows) by HK$305.1 billion, in line with reports that banks in Hong Kong increased their holdings of US Treasuries. At the height of the global financial crisis, non-residents were net sellers of resident equities and debts, totalling HK$25.6 billion and HK$22.2 billion respectively. They also reduced their holdings of currency, deposits and loans in Hong Kong by HK$138.2 billion.

Total cross-border net inflows continued in the first three quarters of 2009 although quarterly net inflow was not as strong as that in 2008 Q4 (Chart 4.14). Within the total, current account surpluses were roughly stable at HK$43.0 billion in 2009 Q1 and HK$44.5 billion in Q2 before shrinking to HK$27.5 billion in Q3. The decline in Q3 was due to the widening deficit in merchandise trade (Chart 4.15). Private financial net flows remained positive and the inflow was particularly strong in 2009 Q2, amounting to HK$72.2 billion and higher than the HK$61.8 billion in 2008 Q4.

Private financial net inflows mainly took the form of a reduction in currency and deposits held abroad by Hong Kong residents in the first nine months of 2009 (totalling HK$513.9 billion) (Table 4.D). Although non-residents continued to reduce their holdings of currency, deposits and loans in Hong Kong in Q1 and Q2, this trend was reversed in Q3 alongside a turnaround in the global economy. While non-residents were net sellers of resident equities in the fourth quarter of 2008, there were equity portfolio investment inflows by non-residents (totalling HK$21.8 billion) in the first three quarters of 2009 (Table 4.E). During that period, local stock market indices rebounded strongly along with regional markets, equity IPO activities were vibrant and the Hong Kong economy gradually recovered. These equity-related cross-border inflows might have partly boosted the demand for Hong Kong dollars, but the amount appeared to be small compared with the Hong Kong-dollar inflows over the same period.

That said, BoP equity flow statistics may underestimate the net inflows of funds into the Hong Kong dollar for equity investment purposes. First, non-residents' subscriptions for Mainland-related new shares in Hong Kong, which normally involve Hong Kong-dollar inflows, are not recorded in the BoP statistics as the transactions are among non-residents. More than

Chart 4.15
Contributions to current account surplus



Source: C&SD.

Table 4.D
Cross-border flows relating to currency, deposits and loans

(HK$ bn)	2008 Q4	2009 Q1	2009 Q2	2009 Q3
By Hong Kong residents				
Currency and deposits	386.5	82.3	350.5	81.1
Loans and trade credits	142.9	-21.7	99.5	-46.3
By non-residents				
Currency and deposits	-82.3	-85.7	-95.1	94.5
Loans and trade credits	-55.9	-76.5	-5.9	30.3

Note: A positive value indicates capital inflows.
Sources: HKMA and C&SD.

Table 4.E
Cross-border portfolio investment flows

(HK$ bn)	2008 Q4	2009 Q1	2009 Q2	2009 Q3
By Hong Kong residents				
Equity securities	-35.7	-89.0	-49.0	-29.1
Debt securities	-305.1	165.0	-198.8	-49.0
By non-residents				
Equity securities	-25.6	4.8	16.5	0.5
Debt securities	-22.2	-6.0	3.9	2.4

Note: A positive value indicates capital inflows.
Sources: HKMA and C&SD.

HK$500 billion was raised through the stock market during 2009, and it was estimated that about 70%, or HK$340 billion, was raised by companies from the Mainland. As most of the offerings involved international placement and thus many overseas investors, large amounts of funds might have flowed into the Hong Kong dollar for this purpose. Secondly, Hong Kong residents' subscriptions for Mainland company IPOs in Hong Kong, which normally do not involve Hong Kong-dollar outflows, are subtracted from the BoP net equity flow figures. By definition, these transactions between Hong Kong residents and a non-resident Mainland entity are treated as cross-border capital outflows under BoP accounts. The first three quarters of 2009 saw substantial equity outflows by Hong Kong residents and these outflows were likely to be linked to Mainland-related IPOs (Table 4.E).

Outlook for capital flows

The directions of Hong Kong-dollar fund flows in 2010 remain highly uncertain. If global financial conditions deteriorate, the Hong Kong dollar may again attract safe-haven inflows. On the other hand, if monetary conditions in the US normalise and interest rate differentials between the US dollar and the Hong Kong dollar widen, there will be stronger incentives for arbitrage trades which will involve outflows from the Hong Kong dollar.

On balance, fund flows into and out of the Hong Kong dollar in the period ahead are likely to be dominated by equity-related flows. The repatriation of funds by Mainland issuers could exert weakening pressure on the Hong Kong-dollar exchange rate. Anecdotal evidence suggests that at the end of November 2009, about three-quarters of the funds (roughly HK$260 billion) raised by these Mainland corporations might still be held as Hong Kong-dollar deposits within the Hong Kong or Mainland banking systems instead of being exchanged into renminbi or other currencies. On the other hand, since fund-raising activities will likely remain vibrant in 2010, further inflows of funds into the Hong Kong dollar are expected.

Asset markets

Hong Kong equity prices rallied in the second half of 2009 on the back of ample liquidity in money markets, a surge in property prices and robust growth in the Mainland economy. However, the market is likely to be volatile in 2010 over uncertainty about how and when global central banks will exit from current policy.

The residential property market remained largely buoyant in the second half although signs of cooling off emerged towards the end of the year. Nevertheless, with exceptionally low interest rates and other favourable conditions, the risks and incentives to take on excessive leverage in the asset market still exist, and this requires vigilance from the public and the HKMA.

4.4 Equity market

Chart 4.16
Equity prices in Hong Kong

Source: Bloomberg.

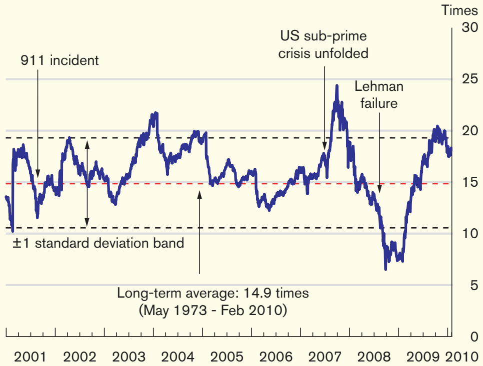
Local equities continued their strong rebound in the second half of 2009 (Chart 4.16). Amid strong capital inflows to Hong Kong, the Hang Seng Index (HSI) hit a 16-month high of 22,943 points in mid-November. Bullish sentiment sustained the breakthrough, driven by a strong revival in the initial public offering market and a low interest rate environment. The local share prices were also supported by improved economic prospects across the border, particularly with the Mainland's real GDP growth rising further to 8.9% and 10.7% year-on-year in the third and fourth quarters respectively. In addition, the option-implied volatility of local stocks retreated sharply to pre-crisis levels (Chart 4.17), suggesting that short-term uncertainty in the equity market had receded in the face of a protracted liquidity-driven market and a more favourable outlook.

Chart 4.17
Option-implied volatility of the HSI

Source: Bloomberg.

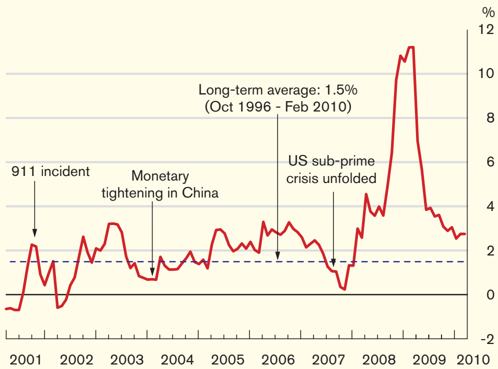
The rally, however, lost its momentum towards the end of 2009 after Dubai World's attempt to reschedule its debt repayment, which raised the risk of possibly the largest government default since the Argentine debt restructuring in 2001. The market was further weighed down by increasing talk about potential asset bubbles and the risk of a reversal of fund flows. Investors' sentiment gradually sagged on uncertainties about further monetary tightening on the Mainland after the unexpected rise in the reserve requirement ratio by the People's Bank of China in January 2010. The US

Chart 4.18
Price-earnings ratio of the HSI



Source: CEIC.

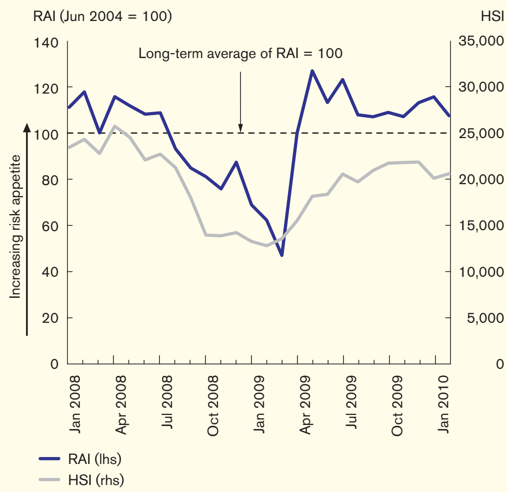
Chart 4.19
Spread between earning yield of the HSI and return of risk-free bonds



Note: The spread is given by the difference between the earning yield of the Hang Seng Index and the yield of the 10-year Exchange Fund Notes.

Sources: Bloomberg and staff estimates (*HKMA Research Memorandum 10/2006*).

Chart 4.20
Risk appetite index of the HSI



Sources: Bloomberg and HKMA staff estimates (*HKMA Working Paper 05/2007*).

President's proposals to limit proprietary trading and the size of financial institutions in the US also sparked concerns over the sustainability of the current stock valuations. As shown in Chart 4.18, the price-earnings ratio of the HSI nearly tripled between March and November 2009, breaking the level of 20 times. With the recent market consolidation, the price-earnings ratio fell, but was still at a level of 18.4 times, considerably above the long-term average of 14.9 times. Nevertheless, the HSI and the H-share Index managed to hold on to their earlier gains and rose by 13.4% and 10.7% respectively from June 2009 to February 2010.

The longer-term attractiveness of investing in local stocks has declined as the spread between the earning yields of HSI constituent stocks and the returns of risk-free assets has fallen considerably from a peak of 11.2% to 2.7% since the beginning of 2009. As the spread approaches the long-term average of 1.5%, stocks are considered more expensive now than several months ago (Chart 4.19).

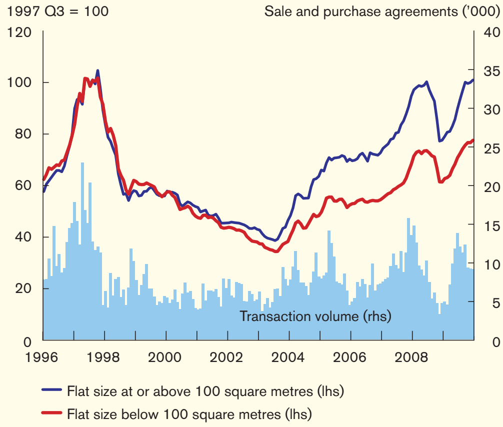
With the HSI hovering around the 20,000 level, investors appear to have become more cautious, and the appetite for taking more risk on equities has levelled off since August 2009 (Chart 4.20). The local equity market will likely remain volatile in 2010 as investors will be looking for further confirmation of global economic recovery at a time when uncertainty surrounds how and when central banks around the world will exit from policy easing.

4.5 Property market

Residential property market

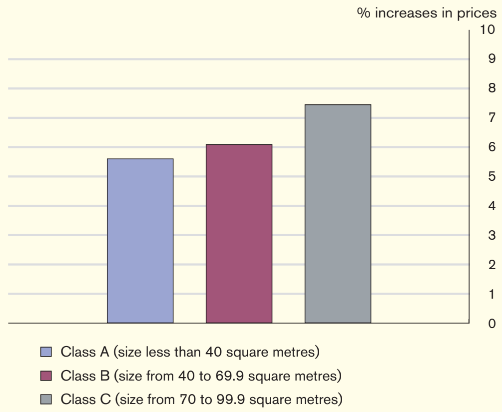
The residential property market remained broadly buoyant in the second half of 2009 with flat prices and transaction volumes both rising. Given the tight supply of residential units, housing demand gained new impetus in Q3 by the sustained low interest-rate environment, resurgent sentiment and increased buying interest from high net-worth individuals and companies (including those from the Mainland and overseas). However, the market slowed in Q4 amid prospective buyers' concerns over home affordability and the issuance of the HKMA's new guidelines on loan-to-value ratios for residential

Chart 4.21
Residential property prices and transaction volumes



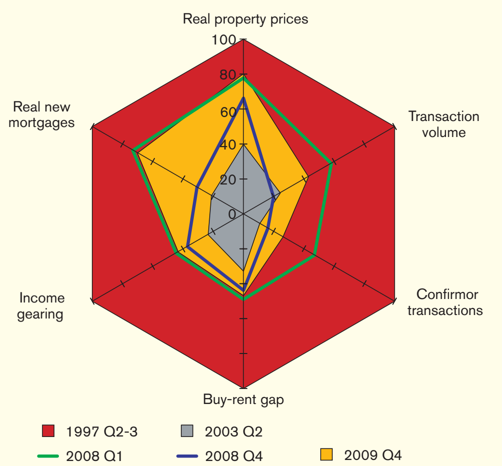
Source: R&VD.

Chart 4.22
Pass-through effect on flat prices from the upper-middle and luxury segment to the mass market (based on a 10% price increase in the former segment)



Source: Staff estimates.

Chart 4.23
Graphical analysis of the housing market



Sources: R&VD, Land Registry, C&SD, Centaline Property Agency Limited, and staff estimates.

mortgages on high-value flats.[13] Reflecting these developments, the total number of transactions decreased successively from a buoyant state of over 11,000 a month from May to September to 9,108 in December.

Residential property prices turned more benign in Q4 with the quarter-on-quarter rate of increase receding from more than 8% in each of the earlier two quarters to 4.2%. Latest readings of the Centa-City Leading Index and the Midland Property Price Chart also seem to suggest a fairly steady trend during early 2010. In any event, the surge in pace during most of 2009 resulted in a remarkable 27.6% price increase through the year. Prices in the upper-middle and luxury segment (flats with a saleable area over 100 square metres) increased by 28.5% in 2009, faster than the 27.4% rise in the small and medium-sized segment (below 100 square metres) (Chart 4.21). While the stock of units in the former segment accounts for around 7.4% of the total housing stock in Hong Kong, price movements in this segment can have an important pass-through effect on the mass market and are worth close monitoring. A simple regression analysis suggests that a 10% price increase in the upper-middle and luxury segment is followed by a 5 - 8% increase in the small and medium-sized segment (Chart 4.22).[14]

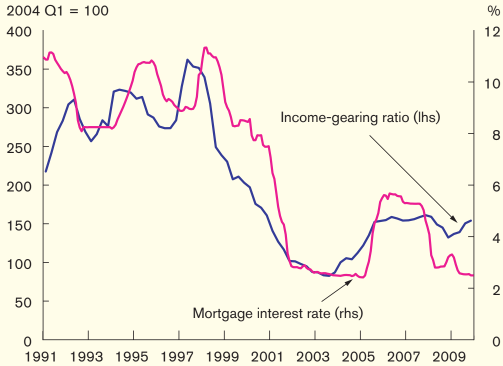
The six property market indicators in the graphical framework are a useful tool for analysing the latest conditions in the residential property market. These metrics – real house prices, real new mortgages, transaction volumes, confirmor transactions, income-gearing ratio, and buy-rent gap – all swung sharply over the past two years, from a fairly buoyant state in 2008 Q1 to one of sluggishness in 2008 Q4 and then a rebound by 2009 Q4, except for transaction volumes and confirmor transactions (Chart 4.23).[15] It is worth noting

[13] On 23 October 2009 the HKMA required AIs to lower from 70% to 60% the maximum loan-to-value ratio for properties with a value of HK$20 million or more. For properties valued at below $20 million, the 70% loan-to-value ratio will be maintained, but the maximum loan amount will be capped at $12 million.

[14] The regression analysis uses the larger-sized properties (classes D and E flats with a saleable area over 100 square metres) to proxy for the upper-high and luxury market, and the small and medium-sized properties (classes A, B and C flats with a saleable area below 100 square metres) for the mass market.

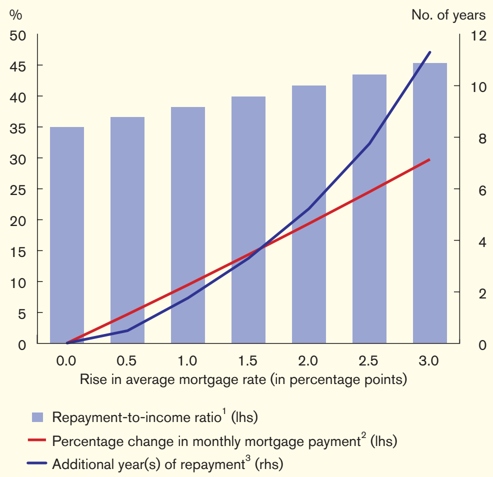
[15] The ratio of confirmor transaction is subject to data breaks in 1999 and 2007 due to changes in the stamp duty rates.

Chart 4.24
Income-gearing ratio and mortgage interest rates



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

Chart 4.25
Relationships among mortgage interest rate, repayment amount, repayment period and the repayment-to-income ratio



Notes:
1. An initial repayment-to-income ratio of 35% with a constant repayment period of 20 years.
2. No change in the repayment period.
3. No change in repayment amount.

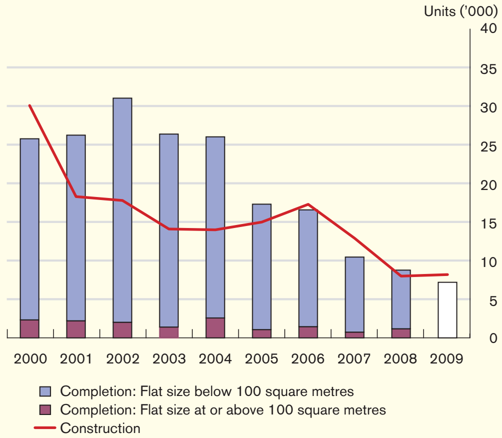
Source: Staff estimates.

that the recent trend of the income-gearing ratio and the buy-rent gap has hinged heavily on the exceptionally low interest-rate environment. The income-gearing ratio, although rising in the second half of 2009, remained low compared with the long-term average because lower mortgage repayments helped cushion the impact of rising flat prices and reduced household income (Chart 4.24). As rental costs played catch-up with flat prices, the buy-rent gap or the cost of owner-occupied housing (comprising mortgage repayment and the foregone interest on home equity) relative to rentals has fallen.

The rapid increases in property prices in 2009 Q2 and Q3 raised public concerns about an overheating property market. Sensitivity analysis by the HKMA at that time suggested that if the pace of increase continued unabated for another six months, the risk of overheating would increase markedly. Fortunately, market momentum has abated since then, and economic fundamentals have shown firmer signs of improvement. As such, the imminent risk of overheating has diminished, at least temporarily. Nevertheless, the risks and incentives to take on excessive leverage in the asset markets still exists because of the prevailing favourable market conditions of low interest rates, excess liquidity and strong growth in Mainland China. This situation warrants vigilance on the part of the public and the HKMA, particularly if some mortgage holders are unprepared for rising interest outlays. In a simplistic scenario, a one-percentage-point increase in the mortgage rate from the prevailing level will raise the amount of mortgage repayment by 9.4% if there is no change in the repayment period, which is assumed to be 20 years. Alternatively, the repayment period will be extended by 1.8 years if the repayment amount is unchanged (Chart 4.25). Therefore, a potential risk exists if stresses in the mortgage market escalate in the face of increases in interest rates.

There has been increasing discussion on the potential role of monetary policy in controlling asset-price inflation against the background of substantial capital inflows and emerging risks of asset market overheating in certain regional economies. Box 5 analyses the challenges faced by small open economies in their use of monetary policy and the role of the exchange rate in the management of asset-price inflation.

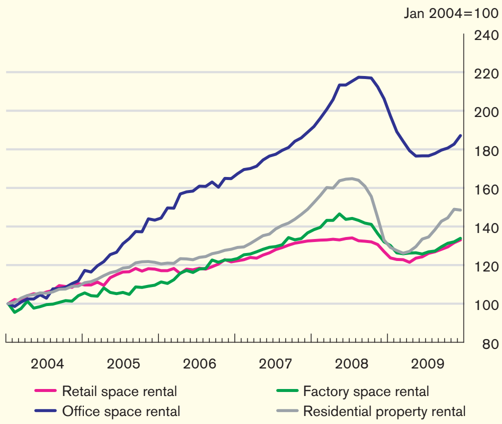
Chart 4.26
Actual completion and construction of private residential property units



Note: Breakdown data for actual completion in 2009 are not available yet.

Sources: R&VD, Buildings Department, and Transport and Housing Bureau.

Chart 4.27
Rental indices by property type



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

Supply in the primary market tightened further in 2009 as actual completion of new private residential units fell by 18.2% to 7,200.[16] In fact, actual completion has fallen for seven years, from a high of 31,100 units in 2002 to 10,500 in 2007 and below that in both 2008 and 2009. The decline has been more significant in the supply of small and medium-sized flats than for larger flats. Commencement of construction of private residential units remained low at 8,200[17] in 2009 despite a notable pick-up in the fourth quarter (Chart 4.26). The land sales market remained inactive in 2009 with just a handful of transactions recorded. The only major ones were two sites in Pak Shek Kok which were successfully triggered for auction through the Application List system. Thus, the supply of private residential units is likely to remain stretched in the near-to-medium term.

Commercial and industrial property markets

The sale price and rentals for commercial and industrial properties bounced back in the second half of 2009 with the gradual recovery in business activities. The overall sale price for office space rose by 12.2% between June and December while rentals rose moderately by 4.8%. Likewise, retail space showed faster increases in sale prices than in rentals, posting gains of 17.3% and 8.8% respectively during the period. Similar gains were achieved in sale prices and rentals for flatted factory space (Chart 4.27). As increases in rentals broadly trailed prices, rental yields for commercial and industrial properties decreased over the course of 2009.

16 This figure refers to the private housing units with occupation permits issued by the Buildings Department.

17 This figure is based on the number of Notifications of Commencement of Work filed with the Buildings Department by contractors.

Box 5
Exchange-rate regimes and the management of asset-price bubbles

In the face of emerging risks of asset-price bubbles in Hong Kong and other regional economies, there has been increasing discussion on the potential role of monetary policy in controlling asset-price inflation. As Hong Kong operates a linked exchange rate system, it is natural to ask whether it would benefit from greater exchange-rate flexibility and a more independent monetary policy to better manage asset-price inflation. This box analyses the challenges faced by small open emerging market economies in their use of monetary policy, and the role of the exchange rate, in the management of asset-price inflation.

Conditions for bubble formation

Bubbles refer to asset prices rising significantly beyond a level justifiable by their fundamentals. The forming of bubbles is possible when there are general expectations that prices will continue to rise. In the study literature, findings are mixed as to the association of monetary policy conditions with the formation of asset-price bubbles. On the other hand, higher-than-normal credit growth seems to be a recurrent finding.[18]

History does not point to any conclusive observation whether regimes with discretionary interest-rate policies will outperform those without in tackling asset-price bubbles. This partly reflects that the build-up of leverage depends on the overall "terms and conditions" of borrowed money, or lending standards, rather than the "price" of credit alone. For instance, the UK experienced booms and busts across different exchange-rate regimes, such as the South Sea bubble of 1720, when it was on a de facto gold standard, and the recent credit-market bubble when its exchange rate was flexible. While a housing-market bubble developed in Hong Kong in the

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[18] See IMF (2009), *World Economic Outlook*: Sustaining the recovery (Washington, October) and Detken and Smets (2004), "Asset price booms and monetary policy", *European Central Bank Working Paper Series No. 364*.

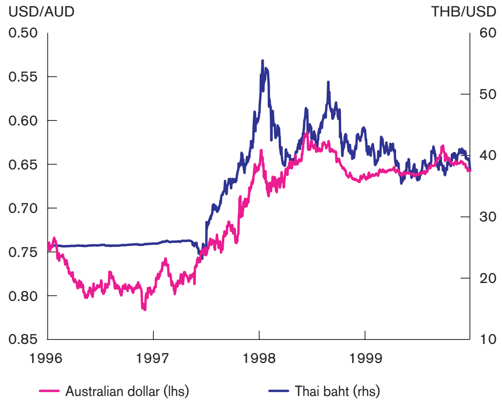
1990s under a currency board regime, the one in the United States which ended in the sub-prime mortgage crisis developed under a freely floating exchange-rate regime.

Challenges in the management of asset-price inflation in small open emerging market economies

Small open emerging market economies face particular challenges in the use of monetary policy to manage asset-price inflation. Capital inflows often present the greatest challenge, and often reflect a structural disequilibrium encountered by emerging market economies, as their intrinsically better profit opportunities give rise to a higher average equilibrium interest rate than those in mature countries. This in turn encourages capital inflows and puts additional upward pressure on asset prices.[19] At the same time, capital flows in emerging market economies may fluctuate sharply, creating conditions for volatile asset prices. A comparison between Australia and Thailand's experience during the Asian financial crisis may shed light on this point. While both the Australian dollar and the Thai baht fell substantially, the huge reversal in capital flows experienced in Thailand was not seen in Australia (Charts B5.1 and B5.2). The Bank of Thailand had to raise interest rates to curb capital outflows, which in turn acted to impede the economic recovery and weighed on already-falling asset prices.

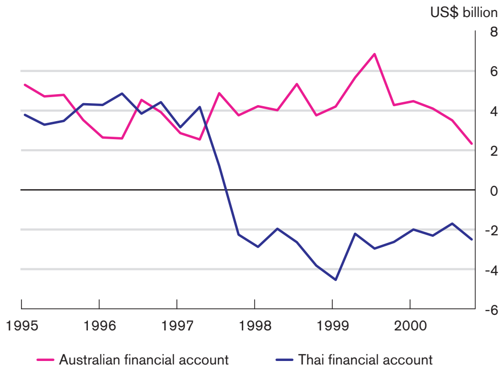
The procyclicality of capital flows also complicates the use of monetary policy to manage asset-price inflation in small open economies, especially when these inflows are large relative to the size of the domestic markets. Raising interest rates when asset prices are rising may encourage further inflows to fuel the asset-price boom. For instance, some Asian economies in 2005 and 2006 saw capital inflows, policy-rate increases, and asset-price rises go hand in hand.

Chart B5.1
Exchange rate against the US dollar: Australian dollar and Thai baht



Source: Bloomberg.

Chart B5.2
Capital flows: Australia and Thailand



Source: CEIC.

[19] See Grenville (2007), "Central banks and capital flows", *Hong Kong Institute for Monetary Research Occasional Paper No. 4.*

In many cases, policy rate hikes might not be a sufficient instrument to curb the rise in asset prices. If interest rates alone were used to tackle asset-price bubbles, aggressive rate hikes might be needed, as the dynamics formed and optimistic expectations are such that small increments in policy rates may not be sufficient to deflate a bubble. In other words, small increases in interest rates alone may not lead to a sufficient tightening of lending standards. Underwriting standards of credit are typically influenced by more than the "price" of credit alone.

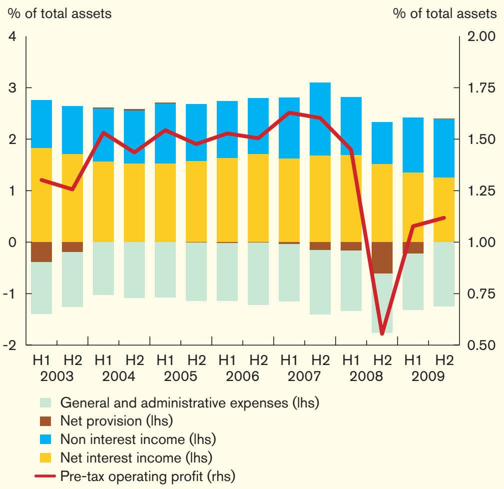
The role of macro-prudential regulations

Macro-prudential policy can help limit the need for aggressive monetary policy reactions, and increase the resilience of the economy against asset-price booms and busts and their fallout in the economy. Prudential measures that generate counter-cyclical effects, such as those that fine-tune the overall lending standards, should help limit the build-up of excessive leverage and may dampen boom-bust cycles of asset prices and help maintain macroeconomic and financial stability.

5. Banking sector performance

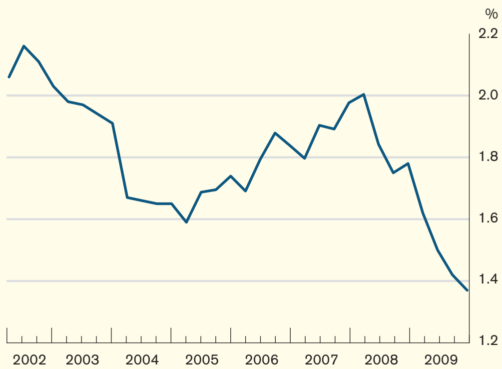
Improved economic fundamentals in Hong Kong helped strengthen the profitability and asset quality of retail banks in the second half of 2009. With capitalisation and liquidity continuing to grow, the expiry of the full deposit guarantee at the end of 2010 should have little impact on the banks' funding conditions. However, banks in Hong Kong should remain vigilant as the primary risk facing them in 2010 depends critically on the external environment, particularly the prospects for the US economy, which could expose them to significant interest rate risk, or pose challenges for the industry on the increased credit risk of loan portfolio in the event of a double-dip recession in the US.

Chart 5.1
Profitability of retail banks



Note: Semi-annually annualised figures.
Source: HKMA.

Chart 5.2
Net interest margin of retail banks



Note: Quarterly annualised figures.
Source: HKMA.

5.1 Profitability and capitalisation

Profitability

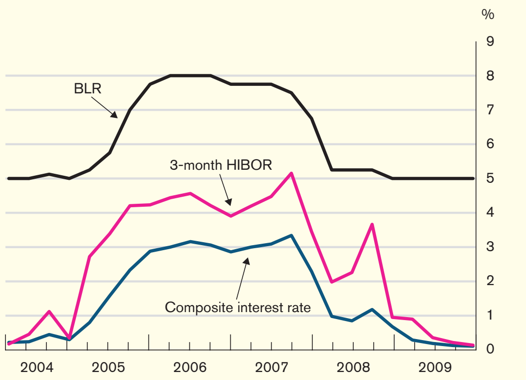
The profitability of retail banks improved in the assessment period[20] because of higher non-interest income[21] and a modest net write-back of provisions (Chart 5.1). However, net interest margins (NIMs) continued to narrow and reached a record low in 2009 Q4, putting downward pressure on the banks' net-interest income (Chart 5.2).

The narrowing in the NIMs was due to various factors. First, amid the low interest rate environment, the interest margin of HIBOR-based lending narrowed further. The three-month HIBOR decreased by 23 basis points from the end of June 2009 to the end of January 2010, while the composite interest rate, which reflects the average

20 Unless otherwise stated, the assessment period in this chapter refers to the six-month period from the end of June 2009 to the end of December 2009.

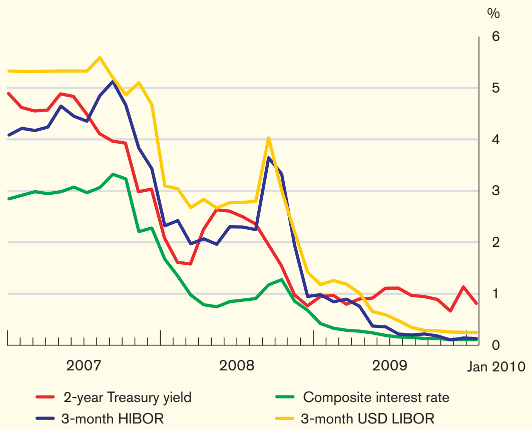
21 Partly attributable to gains from investment holdings, and trading in foreign-exchange operations and derivatives.

Chart 5.3
Composite interest rate



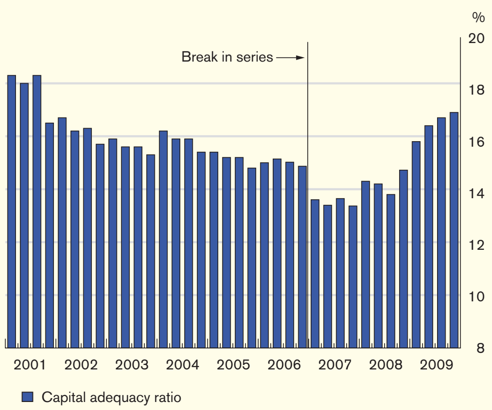
Note: End of period figures.
Source: HKMA.

Chart 5.4
Interest margin of US Treasury securities



Sources: Bloomberg and HKMA.

Chart 5.5
Capitalisation of locally incorporated AIs



Source: HKMA.

cost of funds of retail banks, fell by 8 basis points (Chart 5.3), narrowing the interest margin by 15 basis points.[22]

Secondly, increased competition in mortgage lending has the effect of reducing the effective interest margin of best lending rate (BLR)-priced lending.

Finally, banks continued to redeploy their surplus funding to safer and more liquid assets, such as debt securities issued by governments, which generally offer low yields (Chart 5.4). In view of the thinner NIM, the buffer for interest rate risk should be monitored closely (see Section 5.3).

The banking sector showed a recovery in the second half of 2009. In particular, a modest net write-back of provisions was registered in the second half of 2009.[23] This was contrary to the significant increase in net charges for provisions in 2008 during the sub-prime crisis. Such procyclical patterns in provisioning practices could exacerbate business cycle fluctuations, as a high level of provisions could undermine banks' lending capacity in downturns. Box 6 examines the degree of procyclicality in banks' provisions in Hong Kong. The result suggests that in line with other overseas banking sectors, banks' provisioning behaviour here is procyclical.

Capitalisation

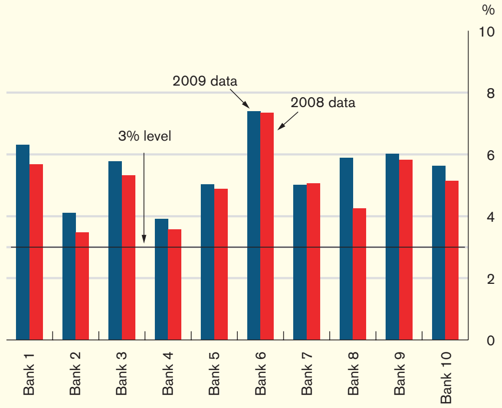
Capitalisation levels within the banking sector continued to increase, supported by higher profits, lower provisions, and the fund raising activities of some AIs. The aggregate consolidated capital adequacy ratio of locally incorporated AIs increased to 16.9% at the end of December 2009 from 16.4% at the end of June (Chart 5.5).[24]

[22] As more mortgages were underwritten using HIBOR-based pricing in the assessment period, banks' NIMs became more sensitive to the movement of HIBORs. According to the HKMA Residential Mortgage Survey for January 2010, the proportion of new mortgage loans priced with reference to rates (mostly HIBORs) other than the best lending rate was 62.6%.

[23] The write-back in provisions was related to holdings of debt securities as the financial market improved. However, net charge for debt provisions in the second half of 2009 was still positive, although at a lower level compared to the first half of 2009.

[24] 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.

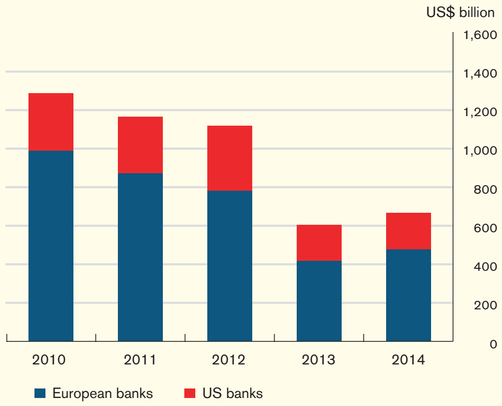
Chart 5.6
The ratio of tier-one capital to total adjusted assets of banks in Hong Kong



Notes:
1. Consolidated positions.
2. A higher value indicates a lower leverage.
3. The ratio of tier-one capital to total adjusted assets (also known as the leverage ratio) is not comparable to the tier-one capital adequacy ratio which is defined as the ratio of tier-one capital to total risk-weighted assets. In general, the leverage ratio is significantly lower than the tier-one capital adequacy ratio.

Sources: Banks' annual reports of 2008 and interim/annual reports of 2009, and staff calculations.

Chart 5.7
The maturity profile of bonds issued by banks in US and Europe



Note: Excludes convertible bonds and banks in the public sector.
Source: Dealogic.

Another important indicator, the ratio of the tier-one capital to total adjusted assets[25] also recorded increases for most listed banks in Hong Kong in 2009, with the average ratio of the banks being well above 3% (Chart 5.6).[26] The increases mainly reflected stronger growth in capital than in assets, suggesting that banks in Hong Kong may not have faced serious constraints in accessing fresh capital after the crisis.[27]

In the medium term, however, the ability of banks in Hong Kong to raise capital might be affected by two major developments in the global banking market. First, the Basel Committee on Banking Supervision's current proposal for the strengthening banks' capital bases implies that banks may need to raise additional capital to meet the new regulatory capital rules. Secondly, a major portion of the debt securities issued by US and European banks will mature from 2010 to 2012 (Chart 5.7). The huge demand for capital could put considerable pressure on the global capital market and potentially hamper the fund raising activities of banks.

Banks in Hong Kong are usually in a better position to raise capital, because of their generally healthier financial position than their US and European counterparts. Despite this, a reversal of market sentiment either due to a failure of rollover of debt by overseas banks or investors' reluctance to participate in banks' equity offerings may have significant implications for fund raising activities of internationally active banks in Hong Kong.

[25] Defined as total assets minus goodwill, intangible assets and deferred tax assets. This definition is similar to that adopted by the Federal Deposit Insurance Corporation in the US in calculating the regulatory leverage ratio. For details, see Appendix D to Part 225 of the Bank Holding Company Act (http://www.fdic.gov/regulations/laws/rules/6000-2200.html).

[26] The US regulatory minimum ratio of the tier-one capital to total adjusted assets is 3%.

[27] In parallel, the aggregate consolidated tier-one capital adequacy ratio (i.e. the ratio of the tier-one capital to total risk-weighted assets) of the locally-incorporated AIs has increased for five consecutive quarters since September 2008. At the end of December 2009, the tier-one capital adequacy ratio was 12.9%.

Box 6
Cyclical patterns of loan-loss provisions of banks in Hong Kong

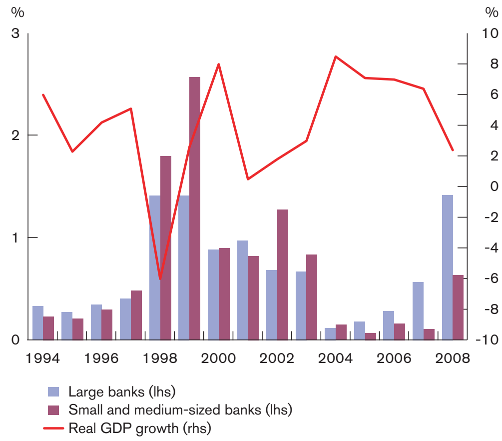
The 2008 - 09 global financial crisis has demonstrated that the interactions between the financial and real sectors can amplify financial instability and business cycle fluctuations (i.e. procyclicality). As a result, mitigating this effect in the financial system is set to top the policy agenda of central banks.[28]

Among other factors, banks' loan-loss provisions[29] (LLPs) are a major contributor to procyclicality. In general, banks' LLPs tend to be higher during recessions and lower during expansions. When an economic downturn occurs, a sharp increase in LLPs against loan losses could become a major burden on banks' profitability and even on their capital, leading to reductions in lending capacity. Such credit reductions undermine investment and consumption activities and exacerbate the economic downturn.

From a macro-prudential perspective, it is important to know to what extent LLPs are procyclical within the banking system. Against this background, this box examines some stylised facts relating to bank provisioning behaviour in Hong Kong. The analysis is based on financial data of 12 listed banks in Hong Kong, covering the period 1994 - 2008. All banks selected have substantial operations in Hong Kong. To examine whether bank size affects provisioning behaviour, the sample is divided into two groups, large banks and small and medium-sized banks.

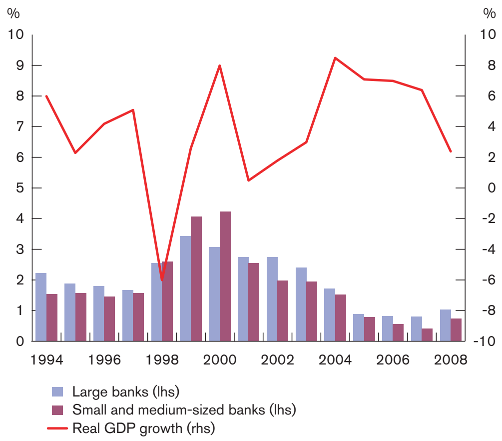
Consistent with banking systems in other economies, the LLPs of banks in Hong Kong are procyclical, meaning that LLPs tend to decrease in expansionary phases and increase in contractionary phases. In particular, the ratio of LLPs to total loans increased sharply in 1998 and 2008 when the real GDP growth rate declined during the Asian financial crisis and the global financial crisis respectively (Charts B6.1 and B6.2).

Chart B6.1
The ratio of loan-loss provisions to total loans and real GDP growth



Source: bloomberg.

Chart B6.2
The ratio of loan-loss reserves to total loans and real GDP growth



Source: Bloomberg.

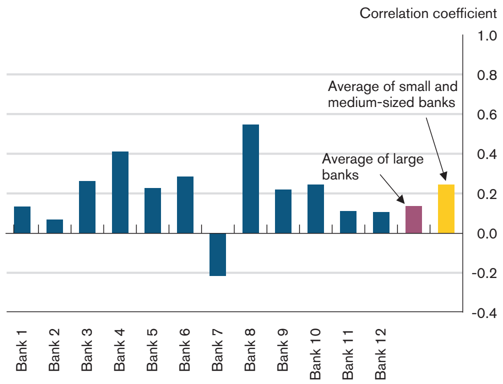
[28] See Financial Stability Board (2009), "Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System".

[29] Loan-loss provisions refer to expenses for bad debt in the income statement.

The procyclical pattern of LLPs suggests there may be some interaction between the banking sector and the macroeconomy that could amplify the business cycle. The empirical evidence is largely in line with international evidence. A more important question is: does any forward-looking or counter-cyclical element appear in the practice of LLPs?

In theory, banks have adequate incentives to avoid excessive fluctuations in LLPs over the business cycle. Specifically, the income-smoothing hypothesis states that, in order to reduce the volatility of earnings over the business cycle, banks may deliberately increase LLPs during economic upturns (when earnings in general are higher) and decrease LLPs during downturns (when earnings in general are lower). It appears that the data illustrated in Chart B6.3 support this hypothesis: a positive relationship between LLPs and profit is observed in 11 out of the 12 banks covered in the analysis.

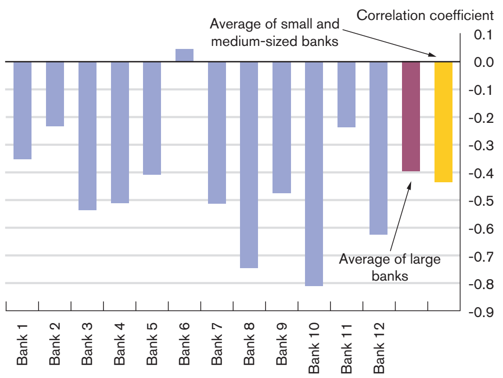
Chart B6.3
Correlations between the ratio of loan-loss provisions to total loan and profit before tax and provisions



Sources: Bloomberg and staff estimates.

The relationship between LLPs and loan growth could also reveal whether LLPs are forward-looking. Empirical studies generally suggest that a sharp deterioration in the asset quality of banks is usually preceded by strong loan growth. So, high loan growth accompanying high LLPs (i.e. a positive correlation) may be an evidence that banks are forward-looking in setting LLPs. However, this hypothesis is not supported by data illustrated in Chart B6.4 – LLPs in general are negatively correlated with loan growth.

Chart B6.4
Correlations between the ratio of loan-loss provisions to total loan and loan growth



Sources: Bloomberg and staff estimates.

The above findings suggest that LLPs in Hong Kong's banks are procyclical. Although forward-looking considerations seem to exist in banks' provisioning behaviour, they are rather limited. This may be due to constraints imposed by accounting standards or insufficient through-the-cycle considerations in risk management.

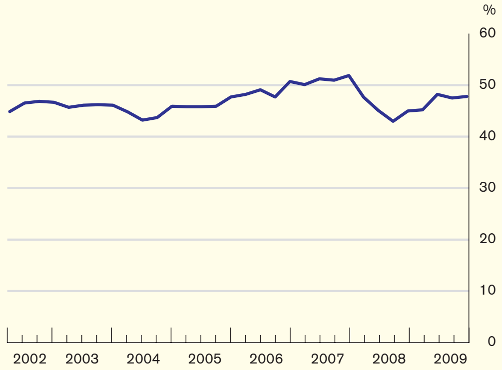
5.2 *Liquidity and funding*

The liquidity and funding conditions of the banking system remained robust. The average liquidity ratio of retail banks was still substantially higher than the regulatory minimum of 25% and stood at 47.8% in 2009 Q4, after decreasing to 47.5% in Q3 from 48.2% in Q2 (Chart 5.8).

Inflows of funds continued to provide ample liquidity to the interbank market. As a result, the availability of short-term interbank liquidity improved further and reverted to pre-crisis levels. Reflecting this, the spread between the three-month HIBOR and its corresponding overnight index swap rate[30], which measures the availability of funds in the interbank market, fell to around one basis point at the end of February 2010 (Chart 5.9). Stress in banking liquidity over the medium term also eased gradually, with the two-year Hong Kong-dollar swap spread narrowing to a moderate level of 30 basis points.[31 & 32]

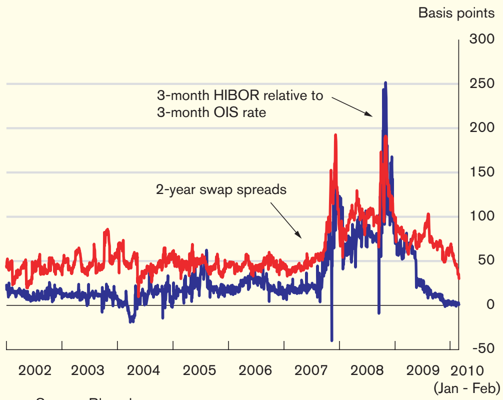
The funding structure of banks' liabilities remained stable in the assessment period. Customer deposits were still the major funding source of retail banks. At the end of December 2009, the share of customer deposits in total liabilities increased to 78.6% from 77.9% from June (Chart 5.10).

Chart 5.8
Liquidity ratio of retail banks



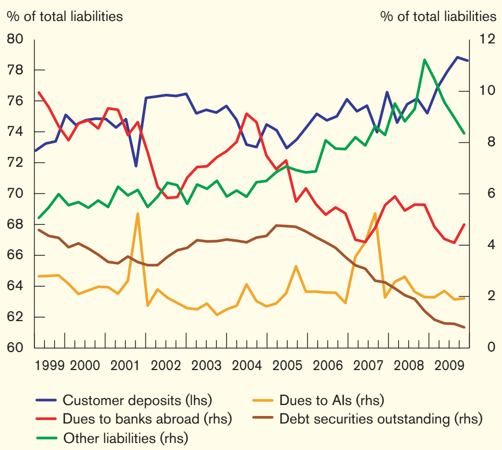
Source: HKMA.

Chart 5.9
Spreads of the 3-month HIBOR relative to 3-month overnight index swap rate and 2-year Hong Kong-dollar swaps



Source: Bloomberg.

Chart 5.10
Liabilities structure of retail banks



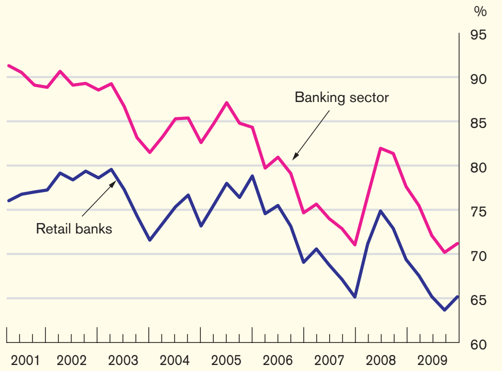
Note: Debt securities comprise negotiable certificates of deposits and all other negotiable debt instruments.
Source: HKMA.

[30] 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 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 lending generally bears 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 three-month HIBOR relative to three-month overnight index swap rate generally reflects the credit and liquidity risks of the interbank market.

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

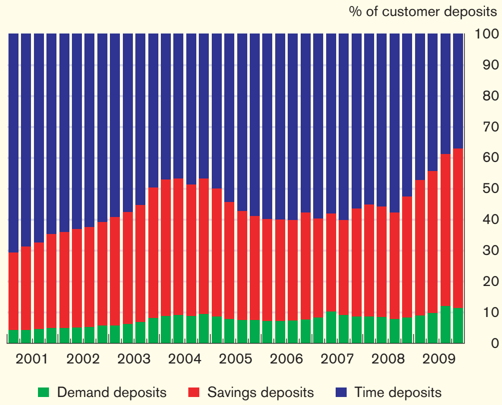
[32] The determinants of variations in the Hong Kong-dollar swap spreads are investigated in Hui and Lam (2008), "What drives Hong Kong dollar swap spreads: Credit or liquidity?", *HKMA Working Paper 10/2008*.

Chart 5.11
Hong Kong-dollar loan-to-deposit ratios



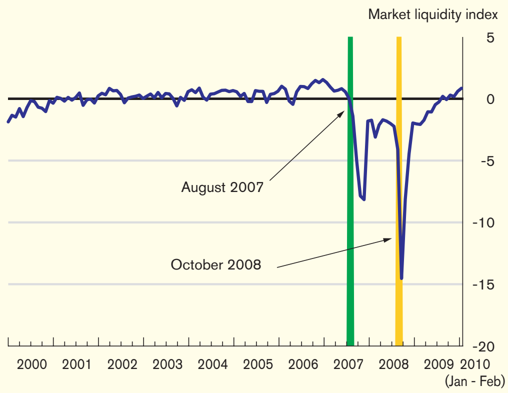
Source: HKMA.

Chart 5.12
Structure of customer deposits of retail banks



Source: HKMA.

Chart 5.13
Market liquidity index



Note: A higher value of the index indicates higher market liquidity.
Source: Staff estimates based on data from Bloomberg.

The all-currency loan-to-deposit ratio for retail banks reversed its downward trend and increased to 46.3% in December 2009 from 45.5% in September, and that of the banking sector as a whole edged up slightly to 51.5% from 51.0%. This reflected a slight drop in customer deposits in 2009 Q4 amid a slower pace of capital inflows. Similarly, the Hong Kong-dollar loan-to-deposit ratio for retail banks increased from 63.7% to 65.2%, while that for the banking sector increased from 70.2% to 71.2% (Chart 5.11). Nevertheless, the loan-to-deposit ratios remained at low levels by historical standards, suggesting that liquidity risk may be less of a concern for the banking system.

The expiry of the temporary 100% guarantee of customer deposits at the end of 2010 is expected to have little impact on the funding structure of banks' liabilities, given the favourable liquidity condition in the banking system. In particular, the potential funding risk arising from shifting customer deposits across AIs or from AIs to banks overseas should be low. In addition, the proposal to improve the Deposit Protection Scheme by raising the coverage limit to HK$500,000 from the present HK$100,000, and the establishment of the tripartite working group between the HKMA, Bank Negara Malaysia and the Monetary Authority of Singapore to co-ordinate the exit from the full deposit guarantees are likely to mitigate the potential risk.

However, the result of a continued shift from time deposits to demand and savings deposits may increase the maturity mismatch between assets and liabilities for some banks. Time deposits fell by 10.2% in 2009 Q3 and a further 5.3% in Q4. As a result, the share of time deposits in total deposits shrank to 37.1% in December 2009 from 44.3% in June (Chart 5.12). In parallel, the share of savings deposits rose to 51.4% from 45.9% and that of demand deposits increased to 11.5% from 9.8%.

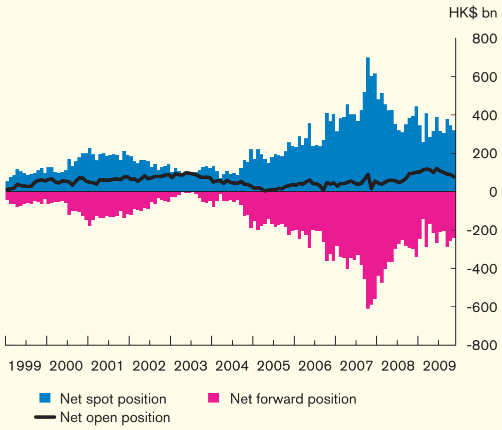
In this Report, an indicator is introduced to assess market liquidity risk of banks (Chart 5.13), the risk that a bank cannot easily liquidate financial assets without seriously affecting market prices due to inadequate market depth or disrupted market conditions. Low market liquidity (i.e. high market liquidity risk) undermines the ability of banks to sell their financial assets to meet their funding needs. Monitoring market liquidity risk is, therefore, important for banking stability, particularly in times of stress.

The market liquidity indicator, a composite index of four selected measures[33], shows market liquidity deteriorated after the onset of the financial crisis in August 2007 and fell sharply after the Lehman default in September 2008. Nevertheless, the index bounced back quickly to the long-run average, indicating that market liquidity improved towards the pre-crisis level.

Foreign-currency position

The aggregate foreign currency position reflects the ability of a banking system to meet its foreign currency liabilities when they become due. The overall foreign-currency position, including both the spot and forward positions, for all AIs stood at HK$77 billion at the end of November 2009 (Chart 5.14) and was less than 1% of total assets. This suggests that foreign currency risk may not be a major concern. In the assessment period, the movement of the foreign-currency position remained stable, with the net long spot position reflecting mainly long positions in the Japanese yen and euro. Since the long spot positions were roughly offset by net short forward positions in the respective currencies, the aggregate foreign currency exposure of the banking sector was small.

Chart 5.14
The foreign-currency position



Notes:
1. The net spot position is the spot assets minus spot liabilities of foreign currencies. The net forward position is the forward purchases minus forward sales of foreign currencies.
2. Net open position is defined as the net spot position plus the net forward position.
3. Structural assets and liabilities, such as investment in fixed assets and premises, overseas branch capital, investments in overseas subsidiaries and related companies and loan capital, are excluded from the calculations.

Source: HKMA.

[33] The indicator is composed of the following four measures: (1) the spread between the three-month HIBOR and the three-month Exchange Fund Bill yield; (2) the spread between the average yield of Hong Kong corporate bonds and the average yield of government bonds; (3) the average bid-ask spread of selected Hong Kong stocks; and (4) the average return-to-volume ratio of selected Hong Kong stocks. For each measure, the average value for the period from January 2000 to December 2004 is standardised to zero. For reference, see Kyle (1985), "Continuous auctions and insider trading", *Econometrica*, Vol. 53, pp. 1315-1335.

5.3 Interest rate risk

Ample liquidity with limited investment and lending opportunities intensified competition in mortgage pricing. Some mortgage loans in recent months were offered with a mortgage interest rate as low as the BLR minus 3.25% for the entire term of the mortgage, translating into effective mortgage rates of around 2.00%. Such thin interest margins raise concerns about the adequacy of the interest rate risk buffer associated with the pricing and the sustainability of the business model.[34]

In particular, a sharp reversal of the spread between BLRs and HIBORs could lead to significant basis risk for banks and quickly erode their interest margins. In an extreme case, their mortgage loans could become loss-making assets. Table 5.A presents simulation results of the impact of interest rate increases on the NIM of residential mortgage loans over the next 12 months. The simulation incorporates the transmission effect of an increase of 300 basis points in HIBORs on BLRs. The magnitude of the shock implicitly assumed that HIBORs increased back to pre-crisis levels. The results show that, if a rise in HIBORs by 300 basis points occurred during the next 12 months, the NIM of HIBOR-financed residential mortgage loans would be negative (i.e. 64 basis points). Banks that rely on interbank markets to fund their mortgage portfolios should closely monitor the basis risk.

To mitigate the basis risk, a number of banks promoted some HIBOR-linked mortgage plans to their customers. However, their effectiveness in managing the basis risk may be limited, as the mortgage rates under such plans are usually capped at BLRs minus mark-ups (for example, BLRs minus 2.75%). The banks therefore effectively bear similar basis risk as if the mortgages were priced based on BLRs when HIBORs rise faster than BLRs.

Table 5.A
Simulated impact on the interest margin of mortgage loans [1 & 2]

	Basis points
Mortgage pricing	200
HIBOR-financed loans	
Current funding cost [3]	35
Current net mortgage margin [4]	125
Estimated reduction of mortgage margin after shock	189
Simulated net mortgage margin after shock	**-64**
Time deposit rate-financed loans	
Current funding cost [3]	25
Current net mortgage margin [4]	135
Estimated reduction of mortgage margin after shock	79
Simulated net mortgage margin after shock	**56**
Effective deposit rate-financed loans	
Current funding cost [3]	7
Current net mortgage margin [4]	153
Estimated reduction of mortgage margin after shock	51
Simulated net mortgage margin after impact	**102**

Notes:

1. For a detailed description of the model, see “Interest rate risk in the pricing of banks’ mortgage lending”, *HKMA Research Memorandum 05/2005*. The simulation is for the twelve months ending December 2010. It is based on the market situation up to the end of January 2010, with the use of monthly average data up to the end of December 2009.
2. Under the scenario of an increase of 300 basis points in HIBORs, at 25 basis points per month.
3. Proxied by the simple average of the composite interest rate of selected retail banks based on their sources of funds.
4. Current net mortgage margin is derived by subtracting the funding cost, and the operating and credit costs from the average mortgage pricing. The operating and credit costs are estimated to be 30 basis points and 10 basis points respectively.

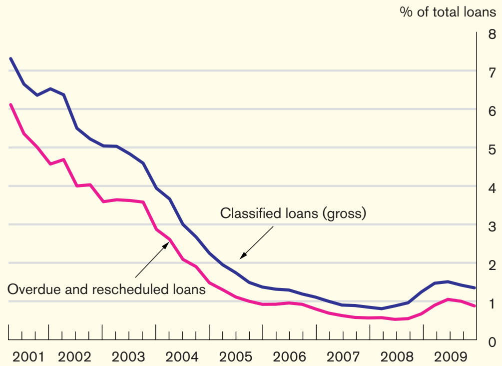
34 As a precautionary measure, the HKMA issued circulars to AIs on 17 September 2009 and 30 October 2009 to draw their attention to the reputation, interest rate and liquidity risks which might arise due to aggressive pricing in the residential mortgage market, and to remind them of best lending practices for residential mortgage loans.

Table 5.B
Numerical results of the option premium of BLR-linked cap

Time to maturity (year)	Forward 3-month HIBOR + 0.7%	Implied BLR Cap	Annualised option premium in basis points (ρ = 0.90)	(ρ = 0.45)	Amortised principal of $1,000,000
0.25	0.89	2.50	0.0	0.0	985,290
1	1.60	3.03	0.0	0.0	918,334
3	3.80	4.69	7.0	19.5	733,558
5	4.93	5.53	30.2	56.3	539,356
7	5.27	5.78	46.0	79.6	335,249
9	5.19	5.72	52.9	90.5	120,731
9.75	4.98	5.57	51.4	88.9	37,495
Amortisation-adjusted premium (annualised)			16.45	31.34	

Notes:
1. Implied BLR Cap = BLR - 2.75%
2. HIBOR-linked rate = 3-month HIBOR + 0.7%
3. ρ refers to the correlation between BLR and the 3-month HIBOR.

Chart 5.15
Asset quality of retail banks



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

Source: HKMA.

Table 5.C
Expectation of domestic loan demand in the next six months

	Dec 2008	Mar 2009	Jun 2009	Sep 2009	Dec 2009
	(% of total respondents)				
Increased considerably	0	0	0	0	0
Increased somewhat	10	14	24	38	52
Remain stable	24	43	57	48	43
Decreased somewhat	62	43	19	14	5
Decreased considerably	5	0	0	0	0

Source: HKMA Survey on Credit Condition Outlook.

In addition, as banks offering such plans essentially sell an interest rate cap to their customers in combination with the mortgages[35], these mortgage plans could be underpriced if the "option premium" associated with the interest rate cap is not fully priced into the mortgage rates. The estimates shown in Table 5.B suggest that the "option premium" would be material, ranging from 16 to 31 basis points under different scenarios.[36] It is, therefore, advisable that in their management of basis risk, banks should take into account the potential cost implied by the option, in addition to their funding structure when the HIBOR-linked mortgage loans are priced.

5.4 Credit risk

The asset quality of retail banks improved slightly in the six months to December 2009. The classified loan ratio declined to 1.35% in December 2009 from 1.51% in June 2009, while the ratio of overdue and rescheduled loans edged down to 0.88% from 1.05% (Chart 5.15).

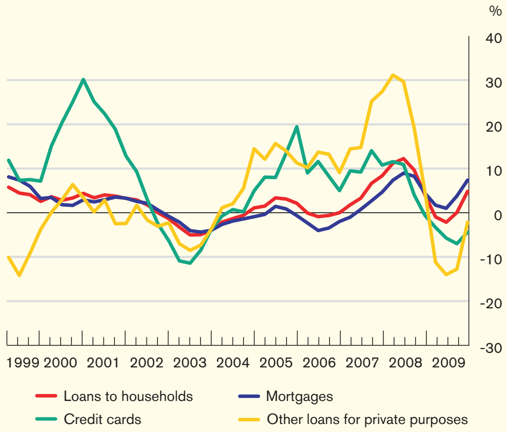
Mainly reflecting decreases in stock-market related lending, domestic lending[37] by AIs edged down by 0.7% in 2009 Q4, after rising by 1.6% in 2009 Q3. However, prospects for loan growth in the near term may be more optimistic than at the time of the last *Report*, as the HKMA Survey on Credit Outlook in December 2009 revealed that the number of surveyed AIs expecting domestic loan demand to grow in the next six months outnumbered those with an opposite view (Table 5.C).

[35] The BLR-linked cap embedded in such a mortgage plan can be thought of as an interest rate cap which pays the difference between the HIBOR-linked mortgage rate and the capped rate at the reset dates. See Box 8, "Option values of BLR-linked interest caps for HIBOR-linked mortgage plans", in the *2006 December Report*.

[36] The amortisation-adjusted premium is the average of the option premiums weighted by the 10-year amortised principals. The correlation between the HIBORs and BLRs is derived from historical data.

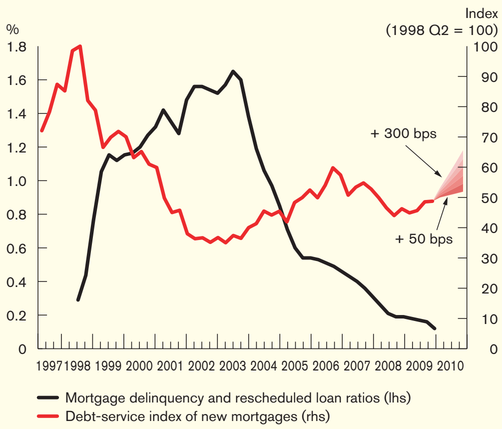
[37] Defined as loans for use in Hong Kong plus trade-financing loans.

Chart 5.16
Annual growth of lending to households by AIs



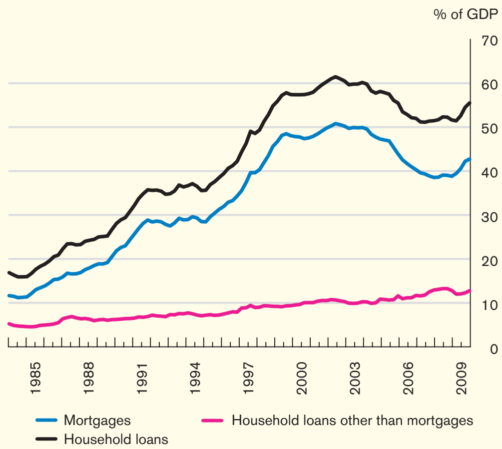
Source: HKMA.

Chart 5.17
Debt-service index of new mortgages



Source: Staff estimates.

Chart 5.18
Household debt leverage



Source: Staff estimates.

Household exposures

Household loans[38] grew, and on a year-on-year basis, they rose by 4.8% in 2009 Q4 (Chart 5.16) accounting for 33.9% of domestic lending. Mortgage lending growth was stronger at 7.4% year on year in 2009 Q4, while credit card lending and other personal loans for private purposes fell by 4.4% and 2.1% respectively.

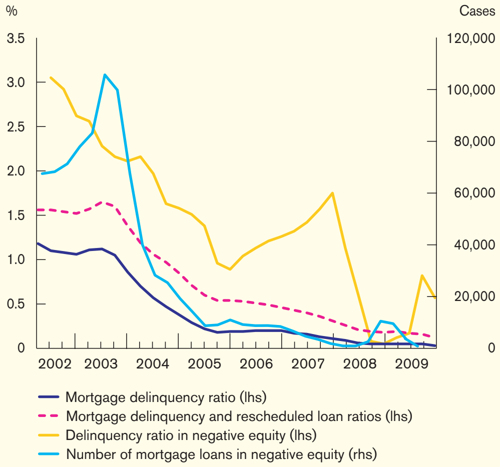
Although various indicators suggest that the balance sheets of households are healthy and the asset quality of housing loans remains sound, a sensitivity test indicates that an increase in mortgage rates could have a considerable effect on the household debt-service burden (Chart 5.17). The debt-service index of new mortgages[39], which serves as an indicator of the debt-service burden of mortgagors, increased further to 48.8 in 2009 Q4, after rising to 48.6 in Q3 from 45.7 in Q2 (Chart 5.17). The increase in the debt-service index mainly reflected an increase in the size of the average mortgage loan and lower household income. To a certain extent, the low interest rate environment has been helping to keep the current debt-service burden at an affordable level. However, as shown in the chart, if interest rates were to increase to their long-run averages (for example, 300 basis points increase in the BLR), and other things being equal, the debt-service index of new mortgages could increase significantly to a level similar to that registered in 2000. Historically, sharp rises in the index have been followed by increases in mortgage defaults. Given this, the impact of the movements in interest rates on the debt-service burden of households should bear watching closely.

In addition, the ratio of household debt to GDP indicates that household debt leverage has risen. The ratio increased to 55.5% at the end of December 2009 from 52.6% at the end of June (Chart 5.18), reflecting mainly increases in mortgage lending and a slowdown in economic activities.

[38] 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 through credit cards and other personal loans for private purposes.

[39] A higher value of the debt-service index 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 in the index suggest that a sharp rise in the index may lead to deterioration in the asset quality of household debt.

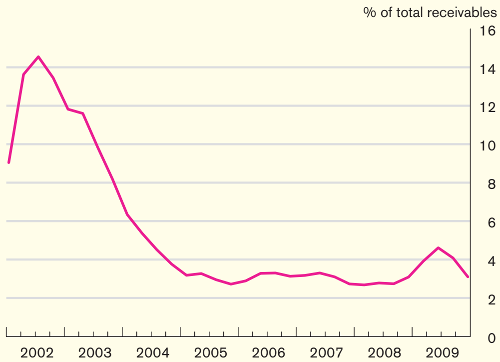
Chart 5.19
Negative-equity and mortgage-delinquency ratios of surveyed AIs



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 mortgage loans.
3. The number of mortgage loans in negative equity was at its peak of about 106,000 cases at the end of June 2003.

Source: HKMA.

Chart 5.20
Charge-off ratio for credit-card receivables of surveyed AIs

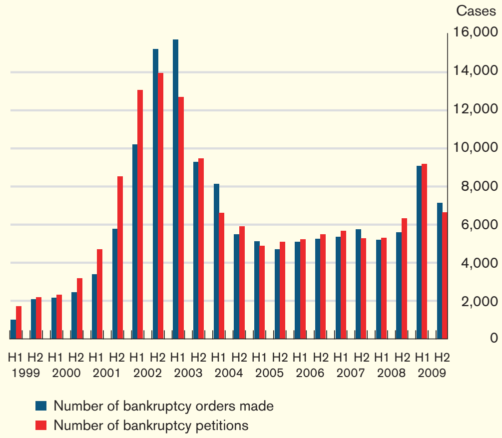


Note: Quarterly annualised figures.
Source: HKMA.

Despite the higher debt-service burden and leverage of households, the asset quality of banks' overall mortgage portfolios remained sound by historical standards. The delinquency and rescheduled-loan ratios of banks' overall mortgage portfolios continued to stay at low levels of 0.03% and 0.09% at the end of December 2009 respectively (Chart 5.19). The rise in property prices resulted in a decline in the number of negative equity cases from around 3,800 at the end June 2009 to 466 at the end of December, representing a share of 0.1% in banks' overall mortgage portfolios. The delinquency ratio of mortgage loans in negative equity decreased to 0.57% in December 2009, after increasing to 0.82% in September from 0.17% in June. The increase in the ratio in September mainly reflected a larger decline in the total amount of mortgages in negative equity compared with the decline in the delinquent amount.

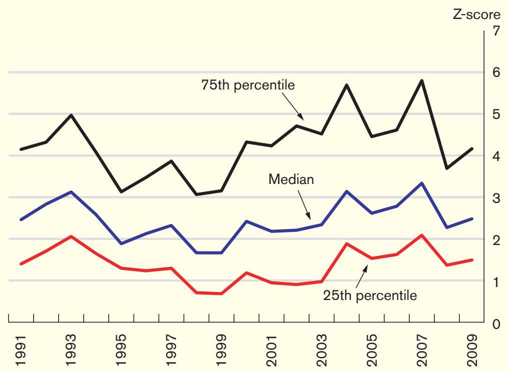
The asset quality of unsecured household lending improved, with the annualised credit card charge-off ratio declining further to 3.10% in 2009 Q4, after decreasing to 4.08% in 2009 Q3 from 4.61% in 2009 Q2 (Chart 5.20). Likewise, the number of bankruptcy orders made and petitions presented decreased in the second

Chart 5.21
Number of bankruptcies



Source: Official Receiver's Office.

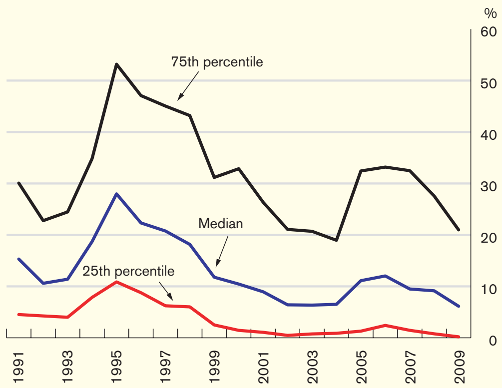
Chart 5.22
Bankruptcy risk indicators of listed non-financial companies: Altman's Z-score



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

Sources: Staff estimates based on data from Thomson Financial and Bloomberg.

Chart 5.23
Income-gearing ratio of listed non-financial companies



Notes:

1. The income-gearing ratio is defined as the ratio of interest expenses to earnings before interest and tax.
2. A higher value indicates a higher debt-service burden.

Source: Bloomberg.

half of 2009 by 21.5% and 27.8% respectively, when compared with the first six months (Chart 5.21).

Corporate exposures[40]

After growing for two consecutive quarters since 2009 Q2, loans to corporations dropped by 2.2% in the fourth quarter mainly due to decreases in lending to stock brokers and financial concerns. At the end of December 2009, corporate loans accounted for 65.7% of domestic lending.[41]

The accounting and market-based indicators showed improvements in the financial health of the corporate sector. However, bankruptcy statistics indicated further deterioration in the credit risk. As the accounting and market-based indicators mainly show the financial health of listed companies (i.e. large companies), the divergence between the indicators and bankruptcy statistics may suggest that the financial health of small and medium-sized enterprises remained weak.

The Altman's Z-score[42], which is a typical credit risk measure based on accounting data, indicates a broad-based recovery in the financial health of the non-financial corporate sector[43] in 2009 (Chart 5.22). The recovery may be attributable to relatively low levels of debt-service burden and leverage of the corporate sector (Charts 5.23 and 5.24).

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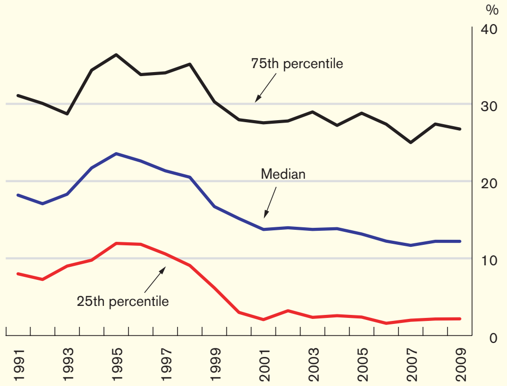
40 Excluding interbank exposures.

41 Loans to corporations comprise domestic lending except lending to professional and private individuals.

42 See Altman (2000), "Predicting Financial Distress of Companies: Revisiting the Z-scores and ZETA models", *Working Paper, New York University*. The Z-score is a typical credit risk measure to assess the health of the corporate sector based on an array of financial ratios reported in companies' financial statements. 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.

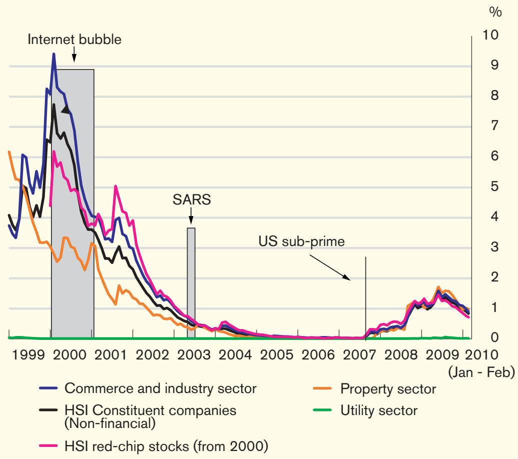
43 Non-financial corporations refer to companies listed in the Hong Kong Main Board and the Growth Enterprise Market, excluding H-share companies, investment companies, and those engaged in banking, insurance and finance. The 2009 figures are preliminary and cover only a limited number of companies that have announced their 2009 results at the time of writing. They are subject to revision and should be used with caution.

Chart 5.24
Leverage ratios of listed non-financial companies



Notes:
1. The leverage ratio is defined as the ratio of short-term plus long-term debts to total assets.
2. A higher value indicates a higher leverage of companies.
Source: Bloomberg.

Chart 5.25
Aggregate default probabilities of HSI non-financial constituent companies



Source: Staff estimates.

Market-based default risk indicators of Hong Kong's corporate sector also improved. The estimated aggregate default probability of the HSI non-financial constituent companies declined gradually to 0.8% in February 2010 from 1.3% in June 2009 (Chart 5.25). The estimates for the three HSI constituent sectors and the red-chip constituent stocks also showed a similar development.

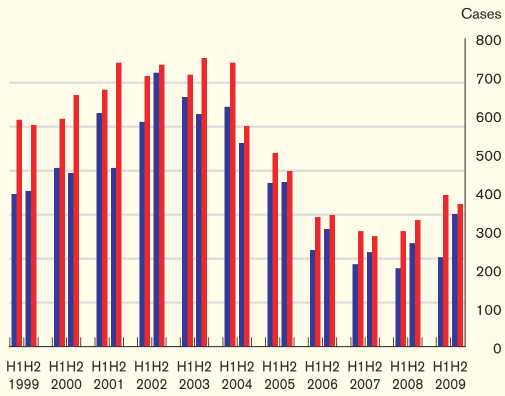
The number of compulsory winding-up orders of companies rose sharply by 49.1% in the second half of 2009 over the first half, despite a slight decline of 5.9% in the number of petitions presented (Chart 5.26).

China exposures

Retail banks' aggregate exposures to non-bank Chinese entities[44] rose to HK$762 billion (9.8% of total assets) at the end of December 2009 from HK$635 billion (8.3% of total assets) at the end of June. For the banking sector as a whole, the total amount of non-bank China exposures also increased to HK$1,004 billion (8.3% of total assets) from HK$852 billion (7.2% of total assets) in the same period. The banking sector's aggregate exposures to companies and individuals for purchasing properties in Mainland China increased to HK$15.6 billion at the end of December 2009 from HK$13.9 billion in June.

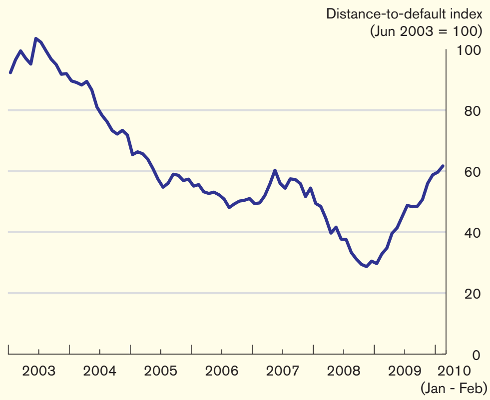
[44] Including exposures booked in the retail banks' banking subsidiaries in Mainland China.

Chart 5.26
Winding-up orders and petitions



Source: Official Receiver's Office.

Chart 5.27
Distance-to-default index



Note: A higher value of the index indicates a lower level of default risk.
Source: Staff estimates.

Following the unprecedented monetary easing and stimulus package pursued by the Mainland Government, the default risk of Mainland corporates continued to improve. The aggregate distance-to-default[45] index for the non-financial constituent companies of the Shanghai Stock Exchange (SSE) 180 A-share Index[46] bounced back from the lowest level reached at the end of 2008 (Chart 5.27).

Macro stress testing of credit risk [47]

To assess the vulnerability of banks in Hong Kong to macroeconomic shocks, stress testing is performed on banks' credit exposure within a macro stress testing framework.[48] The assessments assume the economic conditions in 2009 Q4 as the current environment, and examine the effect of four individual shocks (including reductions in Hong Kong's real GDP, falls in the Mainland real GDP, rises in real interest rates, and reductions in real property prices) on the credit losses of the banking sector for a two-year period (up to the end of 2011 Q4). These shocks are assumed to be similar to those occurring during the Asian financial crisis.[49] The Monte Carlo simulation method is adopted to generate the credit loss distribution for each scenario. A baseline scenario, which assumes no shock throughout the two-year period, is also simulated for comparison.

45 The distance-to-default is a market-based default risk indicator based on the framework by Merton (1974), "On the pricing of corporate debt: the risk structure of interest rates", *Journal of Finance*, Vol. 29, pp. 449-470, in which equity prices, equity volatility, and companies' financial liabilities are the determinants of default risk. In essence, it measures the difference between the asset value of a firm and a default threshold in terms of the firm's asset volatility. For reference, see Bharath and Shumway (2008), "Forecasting Default with the Merton Distance to Default Model", *Review of Financial Studies*, Vol. 21, No. 3, pp. 1339-1369.

46 Non-financial corporations refer to all non-financial constituent companies (i.e. excluding investment companies and those engaged in banking, insurance and finance) of the SSE 180 A-share Index.

47 Macro stress testing refers to a range of techniques used to assess the vulnerability of a financial system to "exceptional but plausible" macroeconomic shocks.

48 Details of the model specification can be found in Wong et al. (2006), "A framework for stress testing banks' credit risk," *Journal of Risk Model Validation*, Vol. 2 (1), pp. 1-21. An updated framework is used for the current estimations.

49 See notes in Table 5.D for details of the shocks.

Table 5.D
The mean and VaR statistics of simulated credit loss distributions

Credit loss (%) [1]	Baseline scenario	Stressed scenarios: GDP shock[2]	Property price shock[3]	Interest rate shock[4]	Mainland China GDP shock[5]
Mean	0.32	1.40	1.16	0.66	0.51
VaR at 90% CL[6]	0.66	2.44	2.05	1.28	1.04
VaR at 95% CL	0.88	2.95	2.52	1.63	1.36
VaR at 99% CL	1.46	4.15	3.66	2.56	2.20
VaR at 99.9% CL	2.56	6.07	5.62	4.12	3.72

Notes:
1. Measured as a percentage of the loan portfolios.
2. Reductions in Hong Kong's real GDP by 2.3%, 2.8%, 1.6% and 1.5% respectively in each of the four consecutive quarters starting from 2010 Q1 to 2010 Q4.
3. Reductions in Hong Kong's real property prices by 4.4%, 14.5%, 10.8% and 16.9% respectively in each of the four consecutive quarters starting from 2010 Q1 to 2010 Q4.
4. A rise of real interest rates (HIBORs) by 300 basis points in the first quarter, followed by no change in the second and third quarters and another rise of 300 basis points in the fourth quarter.
5. A fall in Mainland China's real GDP by 3.0% in only the first quarter (i.e. 2010 Q1).
6. CL denotes the confidence level.

Source: Staff estimates.

Salient results are presented in Table 5.D. In the baseline scenario, the expected credit-loss rate in 2011 Q4 is 0.32% of the total loan portfolios. In the stress scenarios, the expected credit-loss rates are substantially larger, ranging from 0.51% (Mainland China GDP shock) to 1.40% (Hong Kong GDP shock). Such GDP shocks could potentially be transmitted from a possible double-dip recession in the US.[50] The stress-testing result suggests that the impact on the credit loss rate in the Hong Kong banking sector would be moderate.

Focusing on the tails of the credit loss distributions, Table 5.D shows that under the extreme case for the VaR at the confidence level of 99.9%, banks' maximum credit loss with shocks from different shock origins would fall in the range of between 3.72% (Mainland China GDP shock) and 6.07% (Hong Kong GDP shock) of the portfolios, similar to that experienced just after the Asian financial crisis.[51]

Nevertheless, the probability of such extreme scenarios actually occurring is very small.

5.5 Systemic risk of the banking system

The systemic risk of the Hong Kong banking system remained contained in the assessment period in line with stabilisation in macroeconomic conditions. Reflecting this, the estimated banking distress probability based on the composite early warning system[52] continued to stay within the range of the lowest fragility category.[53]

[50] Although economic growth in the US rebounded in 2009 Q3 and Q4 after contracting over four quarters from 2008 Q3, the sustainability of the rebound remains doubtful in view of scaling down the stimulus packages and worsening unemployment in the US.

[51] The credit loss of banks is estimated to have risen from 1.4% before the Asian financial crisis to 6.0% 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 1999 Q3.

[52] The composite early warning system is capable of estimating banking distress probability based on 10 leading indicators. These include macroeconomic fundamentals, currency crisis vulnerability, default risk of banks and non-financial companies, asset-price misalignments, credit growth, and the occurrence of banking distress in other Asia-Pacific economics. For details, see Wong et al. (2010), "Predicting banking distress in the EMEAP economies", *Journal of Financial Stability*, forthcoming (doi:10.1016/j.jfs.2010.01.001).

[53] The composite early warning system is a four-level risk rating system. Demirgüc-Kunt and Detragiache (2000), "Monitoring Banking Sector Fragility: A Multivariate Logit Approach", *World Bank Economic Review*, Vol. 14, No. 2, pp. 287-307, have been followed in the selection of 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% respectively.

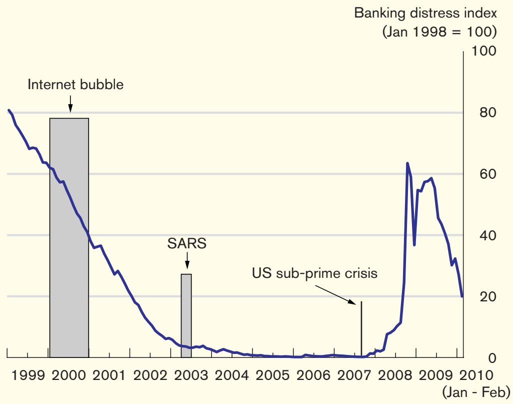
Increases in property prices raised concerns about the appearance of asset bubbles and the potential effects from the perspective of systemic risk. Using the composite early warning system, the impact of property prices on systemic risk was found to be moderate. This result is consistent with the fact that the recent property price rises have not been fuelled by excessive credit growth in the banking sector.[54] However, continued vigilance is warranted, as banks have considerable exposure to the property market through their property-related lending, which accounted for around 50% of total domestic lending at the end of December 2009.[55]

As financial market sentiment improved, various market-based indicators have shown a lower level of systemic risk. The banking distress index[56] (January 1998 = 100) of banks in Hong Kong, which is a market-based systemic risk indicator, improved further to 20 at the end of February 2010 from 55 at the end of June 2009 (Chart 5.28).

Similar positive views were also reflected in the credit default swap (CDS) market. During the assessment period, CDS spreads of banks decreased generally across markets (Chart 5.29), indicating a broad-based improvement in the default risk of banks. More importantly, the risk level in some markets (for example, Hong Kong) decreased to levels similar to those prevailing before the Lehman Brothers' failure.

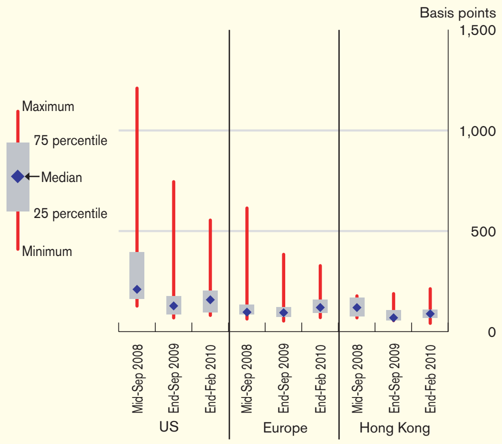
Although the across-the-board decrease in CDS spreads of banks signalled a drop in systemic risk, CDS spreads of some individual banks in the US and European markets were still at a high level. This continued to threaten the global banking system, as a slight deterioration in the

Chart 5.28
The banking distress index



Source: Staff estimates.

Chart 5.29
Credit default swap spreads of banks in the US, Europe and Hong Kong



Note: Calculated from actively traded CDS spreads of banks.
Source: Bloomberg.

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54 In addition, the recent rises in property prices were more substantial in the luxury property market than in the mass residential market.

55 As a precautionary measure, the HKMA issued a circular to AIs on 23 October 2009 requiring them to lower from 70% to 60% the loan-to-value ratio for residential mortgages on properties valued at $20 million or more. For details, see the HKMA press release on "Prudential measures for residential mortgage loans (RML)" issued on the same date.

56 The banking distress index was stated as the multiple default risk index of the banking system in Hong Kong in previous Reports. For details, see Yu et al. (2006), "Assessing the risk of multiple defaults in the banking system", *HKMA Research Memorandum 06/2006*.

default risk of these banks could quickly spill over to other banks. Box 7 describes a surveillance tool developed for assessing systemic linkages between banks in Hong Kong under extreme conditions. The results show that, systemic linkages are present in the Hong Kong banking system. Nevertheless, given the assessment inferred from the CDS market, banks in Hong Kong have fared significantly better than their US and European counterparts, and the spillover risk arising from the local banking sector should be small.

In this issue, a composite financial stress index[57] is introduced to gauge the development of stress experienced by the Hong Kong financial sector. The index declined steadily from its recent peak of 34 around November 2008 and reached the value of 6.6 in February 2010 (Chart 5.30), close to the value of August 2007. The steady decline indicates that the financial stress experienced by Hong Kong immediately after the Lehman failure has been largely released and is now well contained. This was mainly due to declines in the stress in the banking system and the equity market, which are the two main components of the index.

Chart 5.30
The composite financial stress index

Source: Staff estimates.

Key performance indicators of the banking sector are provided in Table 5.E.

[57] The composite financial stress index is an average of a set of financial variables covering the major segments of Hong Kong's financial sector, including the TED spread, inverted term spread, distress index of banking sector, implied volatility of exchange rate, volatility of equity market and sovereign bond spread. For details, see Yiu et al. (2010), "A measure of financial stress in Hong Kong financial market – the financial stress index", *HKMA Research Note 02/2010*.

Table 5.E
Key performance indicators of the banking sector[1] (%)

	Dec 2008	Sep 2009	Dec 2009
Interest rate			
1-month HIBOR[2] (quarterly average)	1.89	0.10	0.08
3-month HIBOR (quarterly average)	2.50	0.23	0.15
BLR[3] and 1-month HIBOR spread (quarterly average)	3.22	4.90	4.92
BLR and 3-month HIBOR spread (quarterly average)	2.61	4.77	4.85
Composite interest rate[4]	0.68	0.13	0.11
		Retail banks	
Balance sheet developments[5]			
Total deposits	2.7	2.6	-1.0
Hong Kong dollar	2.8	3.8	-1.4
Foreign currency	2.6	0.9	-0.4
Total loans	-3.1[r]	2.4	0.6
Domestic lending[6]	-3.3	2.1	0.0
Loans for use outside Hong Kong[7]	0.2	4.9	7.5
Negotiable instruments			
Negotiable certificates of deposit (NCD) issued	-17.9	1.9	0.8
Negotiable debt instruments held (excluding NCD)	43.3	9.7	5.7
Asset quality[8]			
As percentage of total loans			
Pass loans	96.55[r]	96.47	96.74
Special mention loans	2.20	2.12	1.91
Classified loans[9] (gross)	1.24	1.42	1.35
Classified loans (net)[10]	0.84	0.94[r]	0.90
Overdue > 3 months and rescheduled loans	0.67	1.00	0.88
Profitability			
Bad debt charge as percentage of average total assets[11]	0.18	0.12	0.10
Net interest margin[11]	1.84	1.51[r]	1.48
Cost-to-income ratio[12]	45.3	49.0[r]	49.3
Liquidity ratio (quarterly average)	45.0	47.5	47.8
		Surveyed institutions	
Asset quality			
Delinquency ratio of residential mortgage loans	0.05	0.05	0.03
Credit card receivables			
Delinquency ratio	0.34	0.46	0.34
Charge-off ratio — quarterly annualised	3.09	4.08	3.10
— year-to-date annualised	2.72	4.08	3.71
		All locally incorporated AIs	
Capital adequacy ratio (consolidated)	14.7	16.7[r]	16.9

Notes:

1. Figures related to Hong Kong office(s) only except where otherwise stated.
2. With reference to the Hong Kong-dollar Interest Settlement Rates released by the Hong Kong Association of Banks.
3. With reference to the rate quoted by The Hongkong and Shanghai Banking Corporation Limited.
4. 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. Further details can be found in the HKMA website.
5. Quarterly change.
6. Loans for use in Hong Kong plus trade finance.
7. Includes "others" (i.e. unallocated).
8. Figures related to retail banks' Hong Kong office(s) and overseas branches.
9. Classified loans are those loans graded as "substandard", "doubtful" or "loss".
10. Net of specific provisions/individual impairment allowances.
11. Year-to-date annualised.
12. Year-to-date figures.

r Revised figure.

Box 7
Measuring the risk interdependence of banks in Hong Kong[58]

The sequential defaults of financial institutions in the US after the failure of Lehman Brothers demonstrated that the default risk of banks is highly interdependent and contagious. Such interdependence is also reflected in the co-movement of bank stock prices. Most conventional risk measures, including the value-at-risk (VaR)[59], however, do not explicitly take this important characteristic into account. This deficiency undermines their usefulness in monitoring systemic risk. Only recently new measures[60], such as the CoVaR, have been developed to capture the risk interdependence. Similar to the VaR, the CoVaR measures loss in extreme conditions and can be defined as the expected maximum loss of a bank, given that another bank is enduring heavy loss. If substantial interdependence of bank losses exists, an excess of the CoVaR over the VaR should be observed. In practical terms, the excess is a useful indicator of the extent of risk interdependence among banks and identifying systemically important banks, which is material in assessing systemic risk.

Using equity price data of selected listed banks in Hong Kong, we estimate the expected maximum loss of a bank's equity value in a time horizon of 10 trading days with the 99% confidence interval given another bank's equity value being stressed. Since decreases in equity values generally imply higher default risk of entities, the estimation result could provide information on the interdependence of default risk of the banks.[61]

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58 More details relating to the subject matter of this box can be found in Fong, Fung, Lam, and Yu (2009) "Measuring the interdependence of banks in Hong Kong", *HKMA Working Paper 19/2009*.

59 The VaR is defined as the expected maximum loss over a specific time horizon within a given confidence interval.

60 For details, see IMF (2009), *Global Financial Stability Report, April*.

61 Ideally, credit default swap (CDS) data of banks should be used as they reveal the default risk of banks directly. However, CDS data are only available for a small number of banks in Hong Kong. By contrast, equity price data are more available and, therefore, employed in this study to estimate the CoVaR. It should be noted that inferring default risk from equity price data is common in financial literature. See, for example, Merton (1974), "On the pricing of corporate debt: the risk structure of interest rates", *Journal of Finance*, Vol. 29, pp. 449-470, in which equity prices, equity volatility, and companies' financial liabilities are the determinants of default risk.

The CoVaR method

To obtain the CoVaR, we first estimate the following equation for each pair of banks using the quantile regression method:

$$R_i = \beta_0 + \beta_1 R_j + \beta_2 R^{SPF} + \beta_3 IVOL + \beta_4 TED + \varepsilon$$

where R_i and R_j are the 10-day equity returns of banks i and j respectively. Three control variables are included in the estimations to control for differences in stock market and economic conditions. They are (1) the 10-day return of the S&P 500 Financials Index (R^{SPF}); (2) the 10-day options-implied volatility of the Hang Seng Index ($IVOL$); and (3) the 10-day spread between the 1-month HIBOR and the 1-month Exchange Fund Bill yield (TED).[62] Control variables (1) and (2) are adopted to reflect the US and Hong Kong stock market conditions respectively, and (3) is a proxy for the short-term liquidity condition in Hong Kong.

The coefficient estimates[63] obtained from the quantile regression are then put into the following equation

$$CoVaR_{i,j} = \hat{\beta}_0 + \hat{\beta}_1 VaR_j + \hat{\beta}_2 R_j^{SPF} + \hat{\beta}_3 IVOL_j + \hat{\beta}_4 TED_j$$

$CoVaR_{i,j}$, which is defined as the expected maximum loss in equity value of bank i conditional on bank j suffering from an extreme loss equivalent to bank j's VaR (i.e. VaR_j), can be obtained by substituting the VaR_j and the associated values of the three control values (R_j^{SPF}, $IVOL_j$ and TED_j) into the above equation.

Empirical evidence

The estimation sample includes 12 banks listed in the Hong Kong Stock Exchange. They all have substantial operations in Hong Kong. Daily equity price data covering the period 4 January 2006 to 22 May 2009 are used for the estimation.[64] The banks are divided into three groups, (i) international banks, (ii) local banks, and

[62] Control variables (2) and (3) are in the first-difference form in the estimations.

[63] The coefficients are estimated by minimising the sum of residuals, $\sum_t (0.99 - I_{\varepsilon \le 0})\varepsilon$, where $I_{\varepsilon \le 0}$ is an indicator function which equals one if $\varepsilon \le 0$ and zero otherwise. For details, see Koenker and Bassett (1978) "Regression Quantiles", *Econometrica*, 46(1), 33-50.

[64] Data are obtained from Bloomberg.

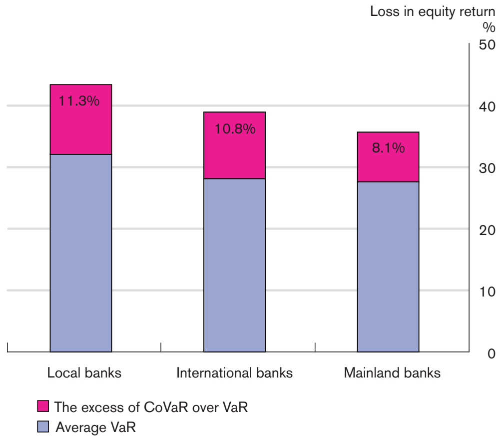
(iii) Mainland banks based on their characteristics. The main research findings for the three bank groups are summarised as follows:

(1) Empirical results suggest that banks' expected maximum losses in equity value are interdependent. Chart B7.1 shows the average CoVaR and VaR for each bank group. It is clear that their CoVaR estimates are much larger than the corresponding VaR estimates, suggesting that, given a bank experiences an extreme loss in equity value, the expected maximum loss in equity value of other banks will be larger.

(2) The extent of risk interdependence of banks is found to be the highest for local banks, followed by international banks and Mainland banks. This can be reflected by the excess values of the CoVaR over the VaR of the three bank groups in Chart B7.1. Specifically, given a bank suffers an extreme equity loss, the expected maximum decreases in equity value in a 10-day horizon of local banks, on average, would increase by 11.3% to 43.3%, and that of international banks would increase by 10.8% to 38.9%. For Mainland banks, the expected maximum loss would increase by 8.1% to 35.7%.

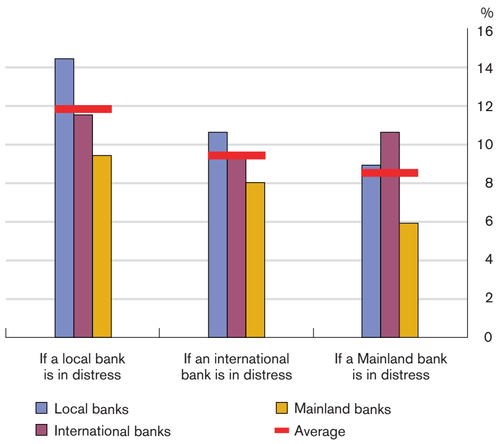
(3) Different groups of banks in distress affect the extent of risk interdependence in varying ways (Chart B7.2). In particular, a local bank in distress, on average, would increase other banks' expected maximum losses by 11.8%. The effects due to a distressed international bank and a distressed Mainland bank are estimated to be 9.4% and 8.5% respectively.

Chart B7.1
CoVaR and VaR estimates of the three bank groups



Source: Staff estimates.

Chart B7.2
Estimated increases in the expected maximum loss in equity value of other banks given a bank is in distress



Source: Staff estimates.

Conclusion

Empirical evidence suggests that, similar to other banking systems, there is considerable risk interdependence among banks in the Hong Kong banking sector. More importantly, although local banks are generally smaller in size, their systemic importance measured by the CoVaR, is found to be similar to their international and Mainland counterparts, which may be due to a higher degree of commonality in the risk profile of local banks. The finding suggests that although bank size is a key driver of systemic risk, the degree of commonality in the risk profile of banks should be considered in the assessment of systemic risk.

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 and deposit-taking companies.

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.

Composite Consumer Price Index (CCPI)

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.

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.

Exchange Fund Bills and Notes (EFBN)

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 exchange rate (REER) is obtained by adjusting the NEER for relative movements in the seasonally adjusted consumer price indices of those selected trading partners.

Abbreviations

3m moving avg.	Three-month moving average
3m-on-3m	Three-month-on-three-month
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
AIs	Authorized Institutions
bn	Billion
BLR	Best lending rate
BoP	Balance of Payments
CCPI	Composite Consumer Price Index
CDS	Credit default swap
CIP	Covered interest parity
C&SD	Census and Statistics Department
CPI	Consumer Price Index
CU	Convertibility Undertaking
DAX	Deutscher Aktien Index
EFBN	Exchange Fund Bills and Notes
EU	European Union
FAI	Fixed-asset investment
FDI	Foreign direct investment
FFTR	Federal Funds Target Rate
FX	Foreign exchange
GDP	Gross Domestic Product
HIBOR	Hong Kong Interbank Offered Rate
HKD	Hong Kong dollar
HKMA	Hong Kong Monetary Authority
HKSAR	Hong Kong Special Administrative Region
HSI	Hang Seng Index
IMF	International Monetary Fund
IPO	Initial public offering
LIBOR	London Interbank Offered Rate
lhs	Left-hand scale
LLPs	Loan-loss provisions
MCI	Monetary conditions index
mn	Million
NCD	Negotiable Certificates of Deposit

NDF	Non-deliverable forward
NEER	Nominal effective exchange rate
NIEs	Newly industrialised economies
NIMs	Net interest margins
OIS	Overnight index swap
p.a.	Per annum
PCE	Private consumption expenditure
PMI	Purchasing Managers' Indices
PPI	Producer Price Index
qoq	Quarter-on-quarter
R&VD	Rating and Valuation Department
RAI	Risk Appetite Index
REER	Real effective exchange rate
repo	Repurchase agreement
rhs	Right-hand scale
RMB	Renminbi
RMLs	Residential Mortgage Loans
RRR	Reserve requirement ratio
SARS	Severe Acute Respiratory Syndrome
SMEs	Small and medium-sized enterprises
S&P 500	Standard and Poor's 500 Index
SSE	Shanghai Stock Exchange
TOPIX	Tokyo Stock Price Index
US	United States
USD	US dollar
VaR	Value-at-risk
yoy	Year-on-year

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