2. Global setting and outlook

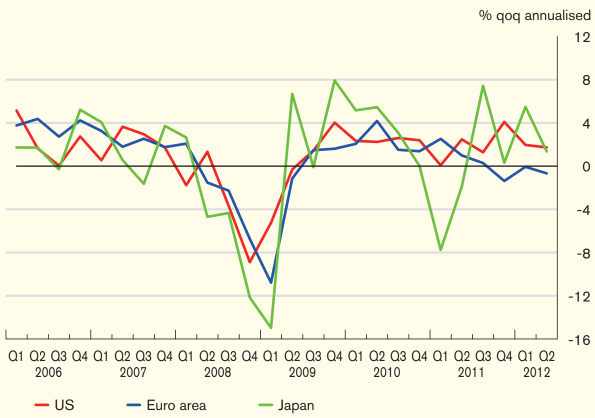
External environment

Growth in major advanced economies weakened in the first half of 2012. The European sovereign debt problem continues with heightened concerns over the build-up of a vicious circle between recession and banking and sovereign crises in some economies. East Asian economies saw slower growth momentum in the second quarter amid sluggish external demand, and the European sovereign debt crisis remains a major challenge to the region's near-term outlook.

2.1 Real activities

Growth in advanced economies weakened during the first half. Latest real GDP figures show the economies of the US and Japan grew by 1.7% and 1.4% respectively, while the euro area economy contracted by 0.7% in 2012 Q2 (Chart 2.1).[1]

Chart 2.1
US, euro area and Japan: real GDP



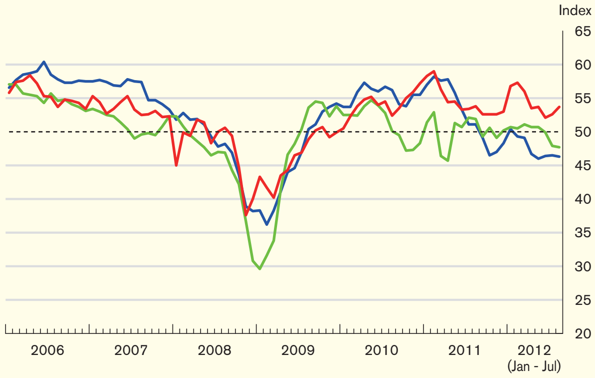
Sources: Bureau of Economic Analysis, Eurostat and Cabinet Office of Japan.

The economic downturn in Europe has heightened concerns over the build-up of vicious circles between recession and sovereign and banking crises in Italy and Spain. The borrowing costs for both countries were once pushed above levels that were widely regarded as unsustainable. In response, euro area finance ministers approved a €100 billion bailout for recapitalising Spanish banks, but the policy failed to calm markets. The situation was stabilised only after the President of the European Central Bank (ECB), Mario Draghi, pledged to do "whatever it takes" to defend the euro, and announced a new bond buying programme. Across the Atlantic, growth momentum of the US economy also slowed, particularly in the second quarter, although recovery in the housing market remained broadly on track. In Japan, growth slowed in Q2 following a strong rebound in Q1, supported by government reconstruction projects and the subsidies for eco-friendly cars, which boosted private consumption. The recent subdued readings in the Purchasing Managers' Indices

[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.

(PMI) indicate that growth will likely continue at a moderate pace in Japan and the US, while the euro area could see further contraction (Chart 2.2).

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

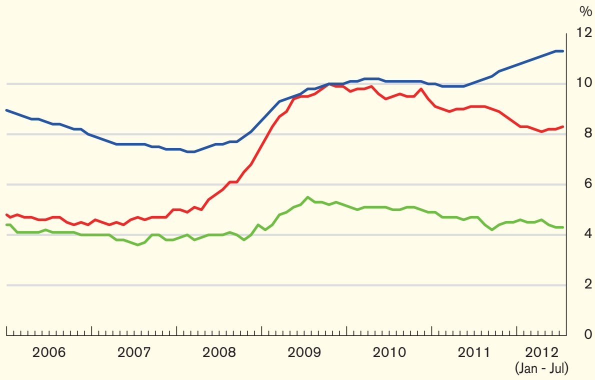


Euro area PMI composite
Japan PMI manufacturing
US non-manufacturing Institute for Supply Management PMI

Source: Bloomberg.

As a result of the subdued economic growth, the pace of job creation continued to remain slow. The unemployment rate stayed at stubbornly high levels of around 8.1% in the US, above 11% in the euro area, and 4.3% in Japan (Chart 2.3). The high degree of economic slackness, together with the earlier fall in food and energy prices, have eased headline CPI inflation in the advanced economies, with core inflation likely to fall gradually over the latter half of 2012 (Chart 2.4).

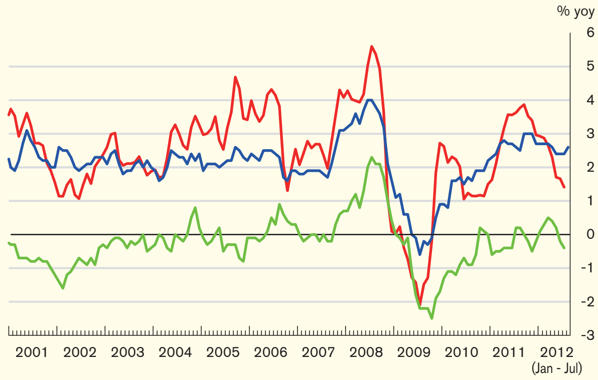
Chart 2.3
US, euro area and Japan: unemployment rate



US Euro area Japan

Source: Bloomberg.

Chart 2.4
US, euro area and Japan: headline inflation



US Euro area Japan

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

The economic outlook is subject to policy risks on both sides of the Atlantic. In Europe, deepening recessions in many crisis countries have increased the risk of failure to meet deficit reduction targets and fuelled public dissent on austerity. The ECB's new bond purchase programme, Outright Monetary Transactions (OMTs), has raised hopes that the potentially "unlimited" purchase of crisis economies' bonds with maturities up to three years may finally provide an effective backstop for the euro. While the programme may help prevent a full-blown crisis and buy time for governments to put in place structural reforms, it carries significant implementation risks. The chances of crisis economies failing to meet austerity and reform targets also remain high amid deep recession and the need to undertake sizable economic adjustments in these economics. Meanwhile, fiscal and political risks in the US also look set to heighten in the face of the "fiscal cliff" and in the run-up to November's presidential election. Although there is a reasonable chance that a deal between the two main political parties will eventually be struck, more political wrangling could increase policy uncertainties and market volatilities, leading to a loss in consumer and business confidence. In response to the slowing growth, high unemployment and limited fiscal space, the Federal Reserve has announced further quantitative easing measure to purchase $40 billion of mortgage-backed securities per month until the labour market improves "substantially". The Fed has also pushed back its anticipation that the federal funds rate would remain low at least through mid-2015. It remains highly uncertain whether the new round of quantitative easing would be effective in promoting growth and employment given that structural adjustments are yet to be completed.

Following a general strengthening in 2012 Q1, growth momentum in most East Asian economies moderated in Q2, due mainly to sluggish external demand (Table 2.A).[2] Inflationary pressures have broadly softened, with average CPI inflation declining from 3.7% year on year in December 2011 to 2.8% in July 2012. Against this backdrop, some central banks in the region have loosened their monetary policy between March and August (Table 2.B). In line with major stock markets, regional equity prices fell sharply in May amid a worsening in the euro area debt crisis, but recovered somewhat recently. Regional currencies weakened against the US dollar in May, and experienced some two-way movements in the past two months.

Table 2.A
Asia: real GDP growth

(% qoq, annualised)	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2
NIE-3:[1]	**8.6**	**2.3**	**1.6**	**-0.2**	**3.5**	**1.7**
Korea	5.3	3.4	3.4	1.3	3.5	1.1
Singapore	19.7	-3.0	2.0	-2.5	9.5	-0.7
Taiwan	10.4	2.1	-1.9	-2.1	1.5	3.5
ASEAN-4:[1]	**5.1**	**2.9**	**4.9**	**-2.4**	**17.2**	**7.3**
Indonesia[2]	4.6	6.3	5.5	9.6	4.1	6.4
Malaysia[2]	7.6	3.4	3.2	6.6	6.2	5.5
Philippines	6.2	1.9	2.5	7.3	12.6	0.9
Thailand	3.4	-2.8	6.7	-35.7	50.8	13.9
East Asia:[1]	**6.9**	**2.6**	**3.2**	**-1.3**	**10.1**	**4.4**

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

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

2 The sharp rise in Thailand's GDP in 2012 Q1 after the fall in the previous quarter was mainly due to the recovery of manufacturing production and exports after a temporary disruption as a result of severe flooding.

Table 2.B
Asia: policy interest rates

	Policy interest rate[1]			
	31 Jul 2012 (% p.a.)	Recent peak in 2011 (% p.a.)	Cumulative rate cut from recent peak (Percentage points)	Rate cut since Mar 2012 (Percentage points)
Indonesia	5.750	6.750	1.000	–
Korea	3.000	3.250	0.250	0.250
Malaysia	3.000	3.000	–	–
Philippines	3.750	4.500	0.750	0.500
Taiwan	1.875	1.875	–	–
Thailand	3.000	3.500	0.500	–

Note:
1. Indonesia: BI rate; Korea: base rate; Malaysia: overnight policy rate; The Philippines: overnight reverse repo rate; Taiwan: discount rate; and Thailand: policy rate.

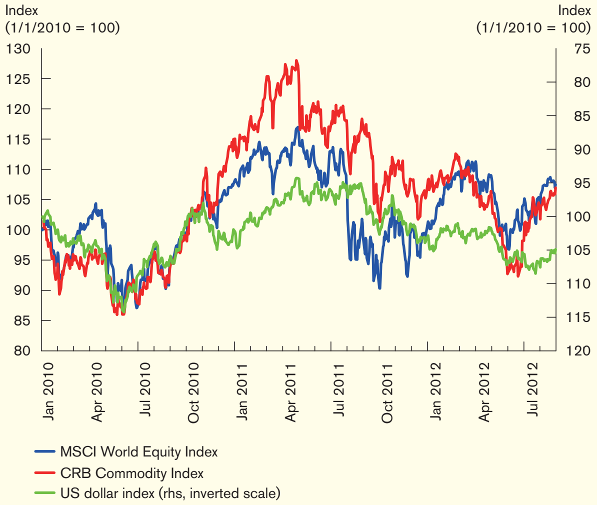
Sources: Bloomberg and HKMA staff estimates.

The European sovereign debt crisis remains a major challenge to the economic outlook for the region. Exports are facing strong headwinds, while growing pressures for de-leveraging in European banks could reduce credit availability in East Asia and push up funding costs accordingly. Overall inflationary pressures in the region should continue to ease, leaving the policymakers sufficient room to support economic growth in the period ahead. The latest consensus forecasts project the region's GDP to grow by 3.9% for 2012 as a whole, compared with 4.1% in 2011; and inflation to decline to 3.0% from 3.9% last year.

2.2 *Global financial conditions*

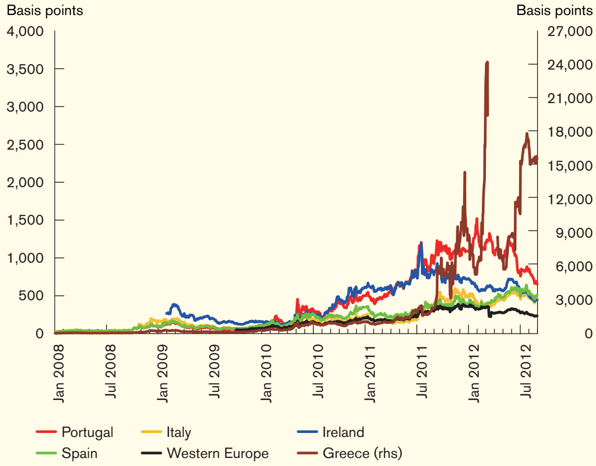
Global financial market conditions have remained fragile over the past six months, amid a deepening of the European crisis and rising concerns about the global economy. This has triggered strong capital inflows into safe-haven assets, boosting the US dollar and Japanese yen, while keeping yields of US Treasuries and German Bunds at record low levels. In contrast, global equity markets and growth-sensitive commodities have been hit hard by deteriorating macro conditions and reduced investors' risk appetite throughout Q2, although there have been some significant recoveries lately (Chart 2.5).

Chart 2.5
MSCI World Equity Index, CRB Commodity Index and US Dollar Index



Source: Bloomberg.

Chart 2.6
Five-year sovereign CDS spreads of peripheral European countries

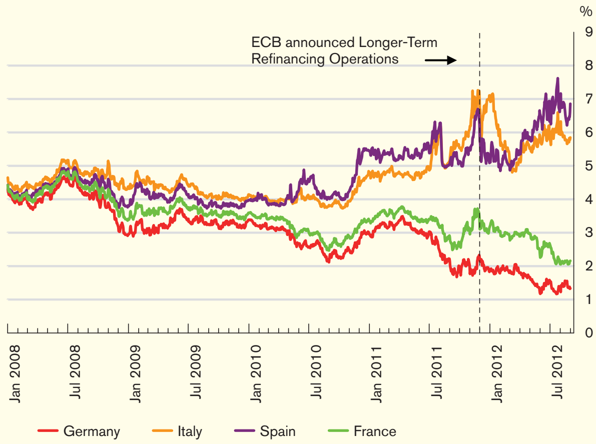


Source: Bloomberg.

Developments in the euro area continued to be the main source of market turbulence during this period. At the epicentre of the crisis, the Greek situation became very vulnerable at one stage. In Q2, escalating political disagreement within the country threatened to drive it out of the euro area. While the risk of a disrupting exit was reduced after the second election, the Greek sovereign credit risk remains elevated (Chart 2.6), with financial markets pricing in significant risks of another debt default and the country eventually leaving the European monetary union.

As the crisis spread, some larger European countries, such as Spain and Italy, saw their borrowing costs rise significantly. The health of Spanish banks was called into question as banks' capital was eroded by the collapse of the Spanish housing market, and deposit outflows widened banks' funding gaps. The announcement of a Spanish bank recapitalisation programme by the European Union did little to calm the market, as investors questioned the effectiveness of the bailout, and feared that the government's balance sheet would be undermined by the bank rescue. Despite some sizable declines recently following speculation of additional ECB stimulus, long-term bond yields in Spain and Italy have remained at elevated levels (Chart 2.7).

Chart 2.7
Ten-year bond yields of selective European countries

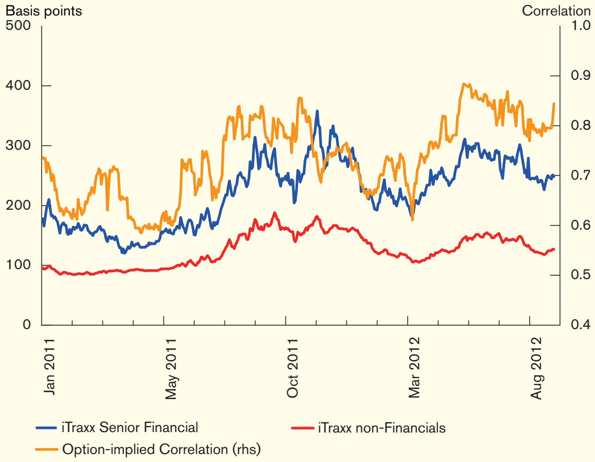


Source: Bloomberg.

In addition to the peripherals, core European countries were also not immune from the escalating crisis. Moody's recently lowered the outlook for some triple A-rated euro area countries to negative from stable, on concerns about the rising bailout costs of the existing programmed countries and the colossal contingent liabilities they would face should Spain and Italy also require full sovereign rescues. While these downgrades, if they were to occur, would increase the difficulty of supporting the peripherals, it is hoped they could also accelerate progress towards greater euro area integration, and spur much needed reforms that tackle the fundamental problems of the region.

As well as the negative contagion among the sovereigns, the crisis has also spread rapidly across economic sectors. Weakened sovereign bond markets have hurt banks' balance sheets, while deteriorating financial sector conditions have, in turn, led to rising default risks of non-financial corporates (Chart 2.8).

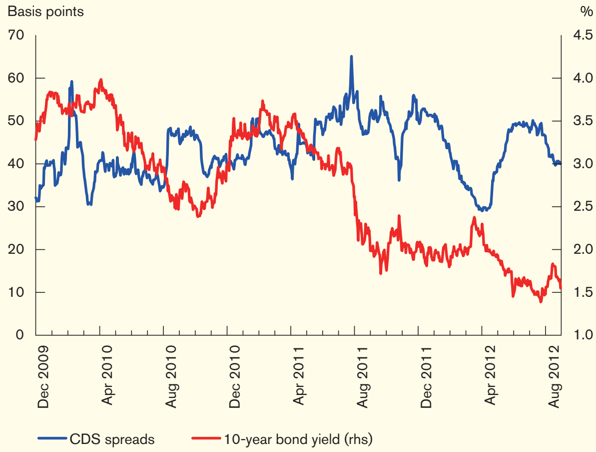
Chart 2.8
CDS spreads of European financials and non-financials and their implied correlation



Sources: Bloomberg and HKMA staff estimates.

Outside Europe, concerns about the global economy dampened market sentiment. In the US, the rapid slowdown in economic growth and sluggish labour market recovery led the Federal Reserve to extend its Operation Twist programme to the end of this year, and spurred increasing talk of further quantitative easing in financial markets. On the fiscal side, the significant uncertainty stemming from the upcoming presidential election, the debt ceiling, and more importantly, the scheduled fiscal tightening, or the "fiscal cliff", have kept investors on edge and hindered risk appetite. These concerns have put some upward pressure on the US sovereign credit default swap (CDS) spreads, but the Treasury markets appear to be unfazed, with long-term bond yields remaining at near record lows (Chart 2.9). However, it is likely the fiscal debate will gain increasing momentum in the remainder of the year as the economy moves closer to the "cliff".

Chart 2.9
Ten-year US Treasury bond yields and five-year US sovereign CDS spreads

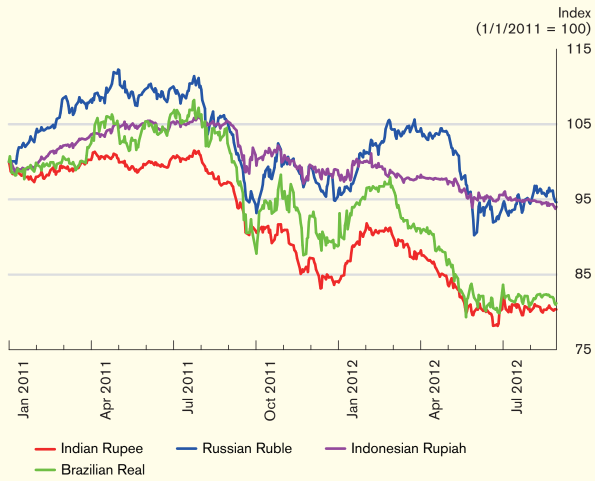


Source: Bloomberg.

In addition to the problems in the developed world, recent developments have also been disconcerting in emerging market (EM) countries. The significant slowdown in the economies, along with growing imbalances in some countries, caused significant falls in EM currencies and equity prices, with ratings agencies threatening critical downgrades

(Chart 2.10). There are fears some EM countries that have been subject to very strong capital inflows and credit growth in recent years may join their developed counterparts in undergoing a period of de-leveraging.

Chart 2.10
Selective emerging market country currencies against the US dollar



Source: Bloomberg.

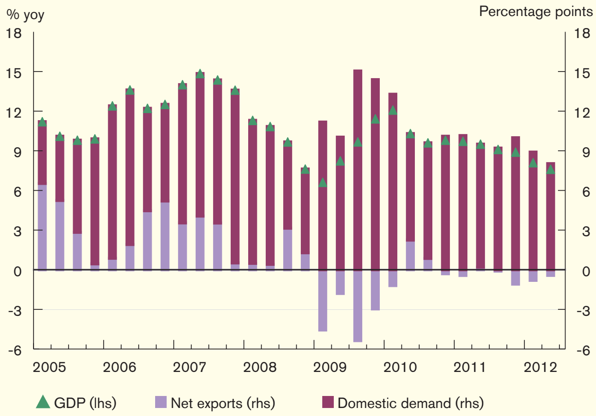
Mainland China

Economic growth moderated further amid a slowdown in both domestic and external demand, while inflationary pressures continued to ease. With a rise in real interest rates, monetary conditions appear to have tightened, but remain supportive of growth. Property markets showed signs of stabilisation, and banks were starting to face pressure on profitability and asset quality. Growth momentum is expected to improve in the next couple of quarters along with a shift in policy focus towards supporting economic growth.

2.3 Output growth and inflation

Growth of the Mainland economy moderated further in the first half of 2012 amid a softening in both domestic and external demand (Chart 2.11). Slower growth in domestic demand appeared to have been driven mainly by weaker growth in investment spending. Growth in real estate investment continued to decline amid tight property market policies, whereas infrastructure investment recovered somewhat recently. The trade surplus as a share of GDP continued to trend downwards and will likely stay modest in the next couple of years amid sluggish global demand.[3]

Chart 2.11
Mainland China: contributions by domestic demand and net exports to GDP growth



Sources: CEIC and HKMA staff estimates.

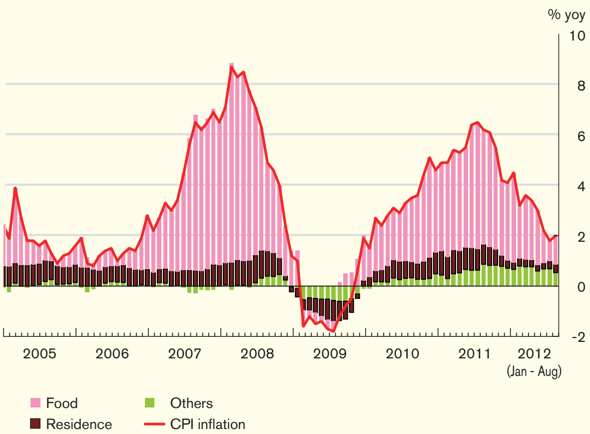
Growth momentum should improve somewhat in the next couple of quarters. The European sovereign debt crisis will continue to dampen China's exports and manufacturing investment. Real estate investment growth will also stay moderate amid continued administrative controls on the property markets. However, spending on infrastructure projects is expected to grow at a faster pace, while the recently announced fiscal incentives to encourage households' purchases, tax reforms, and continued fine-tuning in monetary policy will help foster domestic demand and support growth. A number of local governments have also announced a range of measures to support industrial growth in the past few months. The latest consensus forecasts project the Mainland economy to grow by 7.7% for 2012 as a whole.

Inflationary pressures eased further along with the moderating growth momentum and will remain contained in the near term. The CPI inflation rate fell from 4.5% year on year in January to 2% in August, driven by the softening

[3] The trade surplus was 2.1% of GDP in the first half of 2012, compared with 2.9% and 2.2% in the same periods of 2010 and 2011 respectively.

food price inflation and residence costs (Chart 2.12), while the PPI inflation rate has stayed negative year on year for six consecutive months, due mainly to a weakening in raw material prices. The recent drought and the implementation of another round of quantitative easing in the US posed some upside risks to global commodity prices and China's import prices, but the weak global conditions would have some dampening effect, while subdued demand pressures at home will weigh on domestic costs. On the other hand, risks for deflation are remote given the economy is growing at a rate that is probably not far from the trend. The latest consensus forecasts project the headline CPI inflation to be 2.8% for 2012 as a whole.

Chart 2.12
Mainland China: contributions to CPI inflation

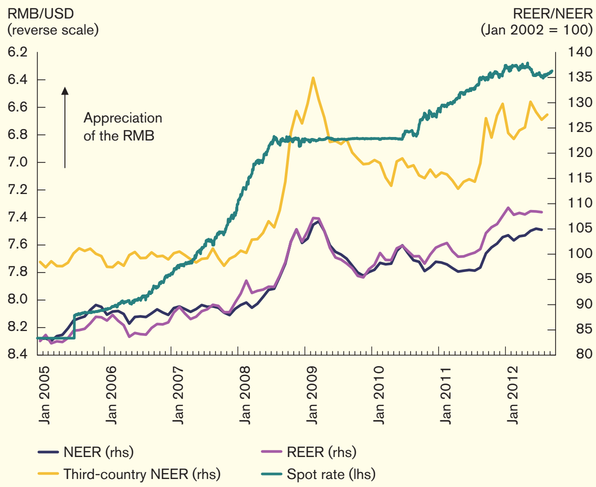


Sources: CEIC and HKMA staff estimates.

2.4 Monetary conditions, asset markets and banking risks

The softening growth momentum, together with the rising risk aversion due to renewed tensions in the European sovereign debt crisis, continued to dampen capital flows into China and exerted some downward pressures on the RMB/USD exchange rates. Foreign direct investment continued to register inflows in net terms, but portfolio investment saw net outflows in Q2, while financial institutions' foreign exchange purchases remained volatile. The renminbi appreciated slightly in effective terms in the past few months (Chart 2.13), but experienced more noticeable two-way movements against the US dollar after the daily trading band was widened by a half percentage point around the central parity in April, and weakened modestly on a cumulative basis since then.

Chart 2.13
Mainland China: the renminbi exchange rates

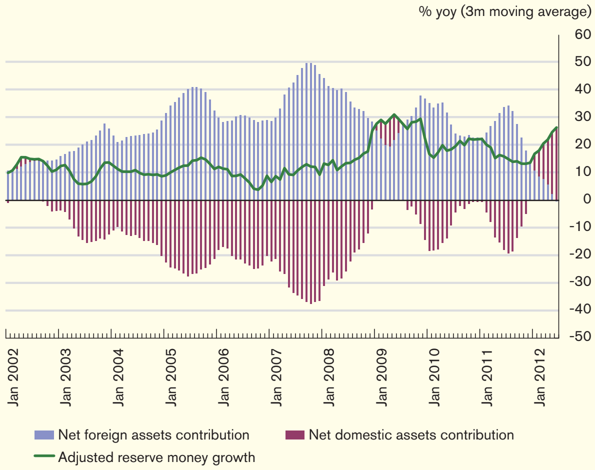


Note: A higher effective exchange rate index indicates a stronger renminbi. The third-country nominal effective exchange rate (NEER) takes into account the competition that China faces in foreign markets from other economies which export similar products. The methodology of constructing the third-country effective exchange rate is presented in Box 2 of the December 2006 issue of this Report.

Sources: Bank for International Settlements (BIS), Bloomberg, CEIC and HKMA staff estimates.

The authorities have shifted the policy focus towards supporting growth in view of the slowdown in economic activity and reduction in inflationary and capital inflow pressures. The People's Bank of China (PBoC) cut the reserve requirement ratio twice by a total of 100 basis points in February and May and has also actively used reverse repos to manage short-term fluctuations in interbank liquidity. As the contribution from net domestic assets more than offset the effect of a drop in net foreign assets, the reserve money growth has risen distinctly in recent months (Chart 2.14). In addition, the PBoC cut the benchmark interest rates twice in June and July and made an important step towards interest rate liberalisation by granting commercial banks more flexibility in setting both lending and borrowing interest rates. While there is still enough room for monetary easing, policymakers need to strike the right balance between supporting economic growth and avoiding a resurgence of overheating risks in the property markets.

Chart 2.14
Mainland China: contributions to reserve money growth

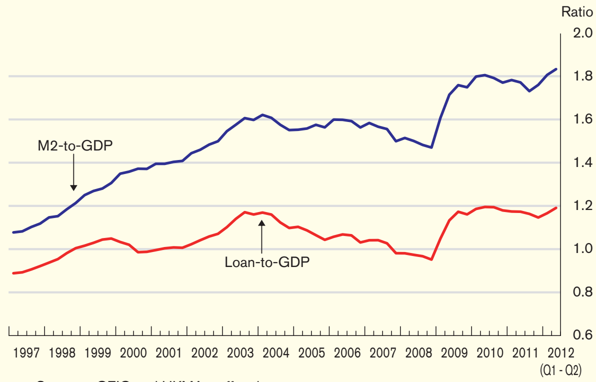


Note: Total reserve money is adjusted for the changes in the reserve requirement ratio.
Sources: CEIC and HKMA staff estimates.

Broad money continued to grow at a moderate pace in recent months after touching an historical low, year on year, in January 2012. This was due in large part to a drop in corporate deposits amid a weakening in corporate profitability and re-allocation of assets from deposits to wealth management products. New short-term loans grew at a firm pace, but medium and long-term credit continued to drop year on year before recovering somewhat recently, partly reflecting the impact of controls on lending to local government financing vehicles (LGFVs) and property developers. However, the recent weak reading on money and loan growth may overstate the tightness of monetary conditions in the Mainland economy, given the strong expansion of money and credit during 2009 - 2010, as well as the rapid development of the shadow banking system in recent years.

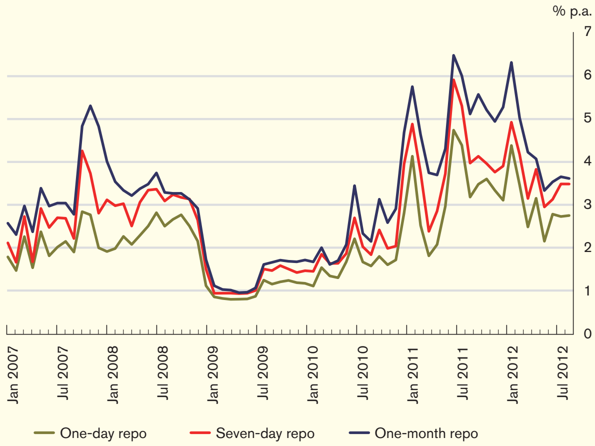
Overall, monetary conditions have tightened somewhat amid a rise in real interest rates, but should still be supportive of growth. The ratios of broad money and credit to GDP registered historical highs in Q2 (Chart 2.15), while the size of financing other than bank loans in the first half of the year, which covers part of the funding through the shadow banking system, was comparable to that of the same periods in recent years. In addition, corporate bond yields and money market rates have trended downwards to around the medium-term levels (Chart 2.16). Nevertheless, private enterprises, particularly the small and micro-sized ones, still face difficult funding conditions. For instance, private lending rates in Wenzhou stayed above 20% a year.

Chart 2.15
Mainland China: ratios of broad money and loans to GDP



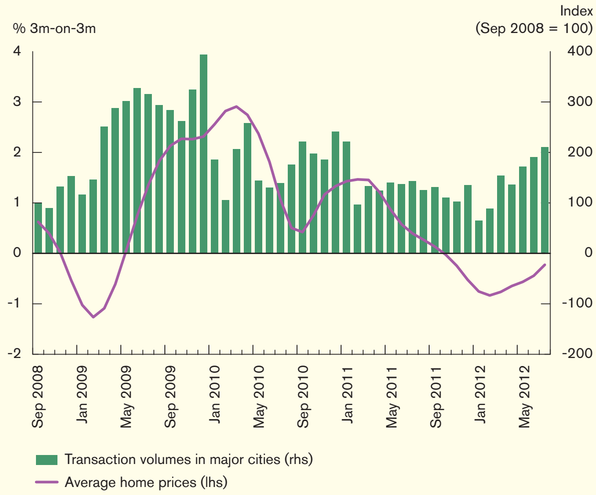
Sources: CEIC and HKMA staff estimates.

Chart 2.16
Mainland China: money market rates



Sources: CEIC and HKMA staff estimates.

Chart 2.17
Mainland China: house prices and sales



Notes:
1. The transaction volume index is constructed based on the number of units sold in each month in Beijing, Shanghai, Hangzhou, Guangzhou, Shenzhen, Tianjin, Nanjing, Fuzhou, Xiamen and Ningbo.
2. Average home prices are the simple average of the price indices for 70 cities.

Sources: CEIC, WIND and HKMA staff estimates.

Equity markets remained sluggish amid the softening growth momentum and increased risk aversion. Having risen briefly to about 15 in February, the price-earnings ratio of Shanghai A shares trended downwards to below 12 in August, compared with the past 10-year average of about 30. Box 1 discusses the relationship between economic growth and long-run performance of stock markets in Mainland China.

The housing markets have recovered somewhat in the past few months. Overall, property prices dropped at a decelerated pace, while many large cities, including Beijing and Shanghai, saw a recovery in prices on a sequential basis more recently. Property transaction volumes have also risen steadily (Chart 2.17), reflecting mainly the release in underlying demand, driven by the declines in house prices as well as the fine-tuning of property-related policies to support economic growth. For instance, some cities have loosened mortgage lending conditions and down-payment requirements for first-home buyers.

Looking ahead, prospects for the housing markets appear to be unclear. Local governments may continue to fine-tune policies to support housing markets and expectations among investors for more pro-growth policy measures would underpin market sentiment, but continued administrative controls will weigh on the property markets in the near term. While growth in new housing starts and completions has weakened, inventories remained high by historical standards. Further escalation in the European sovereign debt crisis would not have a major direct impact on Mainland asset markets, but the indirect impact through, say, a weakening in market sentiment should not be underestimated. As potential demand for properties, driven by urbanisation as well as home upgrading and investment incentives, remains robust, the government should be able to fine-tune the administrative controls to balance the risks if needed.

The banking sector continued to see strong profits in the first half of 2012. While the aggregate non-performing loan (NPL) ratio of the banking sector remained stable at below 1%, anecdotal evidence suggests that some regions experienced a visible rise in the NPL ratio in the past few months amid slowing economic activities. Against this backdrop, shares in Mainland banks, especially for smaller banks, recently came under stronger selling pressure.

The Mainland banking sector may continue to face pressures on profitability and asset quality amid uncertainties over the property markets and slower trend growth. Some banks may need to be recapitalised in order to meet the new requirements[4], although for commercial banks as a whole, the capital adequacy ratio averaged 12.9% at the end of June 2012, visibly higher than the official requirement. However, overall risks to the banking industry should be manageable. The strong profits in the past should provide banks much room to absorb possible increases in credit losses. The authorities have also actively managed banking-related risks including lending to LGFVs, while commercial banks' loan loss reserves were increased to about 2.9 times that of bad loans on average at the end of June 2012, compared with less than 1.2 times at the end of 2008. A recent stress test by the PBoC suggests that Mainland banks are generally resilient to a sharp slowdown in economic growth and a noticeable rise in the NPL ratio.[5]

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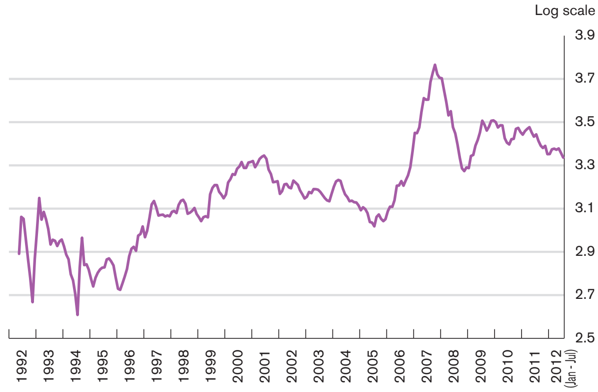
4 In line with Basel III provisions, the China Banking Regulatory Commission has set the minimum capital adequacy ratio at 10.5% for commercial banks and at 11.5% for systemically important banks.

5 See PBoC's Financial Stability Report 2012.

Box 1
Economic growth and the long-term performance of the stock markets in Mainland China

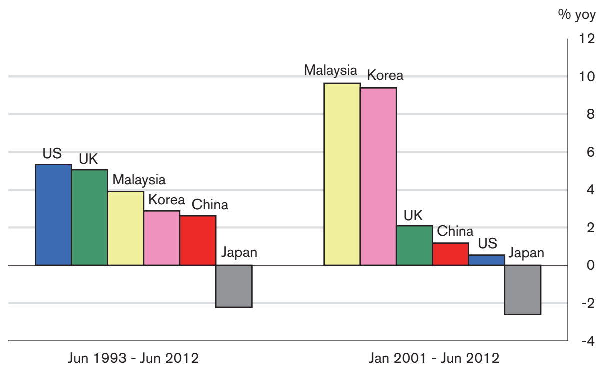
It is generally believed that economic growth supports the performance of stock markets. While Mainland China has seen an average annual GDP growth rate of about 10% in the past decade, its stock price indices have experienced dramatic ups and downs and dropped recently to a level close to that of early 2001 (Chart B1.1). Further analysis suggests that, on the whole, the Mainland stock markets have had a poorer performance than other major markets in the past decade, with the annual stock return being only 1.2% a year in real terms, higher than that of the US, but much lower than those of most emerging Asian economies including Malaysia and Korea (Chart B1.2). The picture does not change much for a longer sample period (left panel of Chart B1.2). Against this backdrop, the analysis below attempts to shed some light on the apparent "puzzle" from both theoretical and empirical perspectives.

Chart B1.1
Shanghai A share index



Sources: CEIC, WIND and HKMA staff estimates.

Chart B1.2
Real stock returns across markets (year on year)



Note: Stock returns in this chart are calculated from the HP-filtered trends of total return indices to reduce the sensitivity of the results to data cut-off dates. CPI inflation rates are used to deflate stock returns. The US: S&P500; the UK: FTSE; Japan: TOPIX; Korea: KOSPI; Malaysia: KLCI; and China: Shanghai A share.

Sources: Bloomberg, CEIC and HKMA staff estimates.

GDP growth and stock market performance: what does economic theory say?

Economic theory does not necessarily support the view that faster economic growth implies stronger equity market performance. According to basic asset pricing theories, stock prices are the discounted value of the sum of future dividends, and under certain crucial assumptions (for instance, perfect information, market efficiency and a system of complete markets), stock returns should equal return to capital in equilibrium.[6] This suggests only the type of economic growth that is driven mainly by an improvement in total factor productivity with a rise in returns to capital would imply a rise in stock returns. In contrast, if economic growth is solely driven by expansion in capital investment, stock returns could decline as a result of diminishing returns to capital.

On the other hand, if the assumptions underlying these theoretical arguments are not met, stock returns may not have a tight link with return to capital in the corporate sector. In this case, economic growth, even if driven by improvement in total factor productivity with higher returns to capital, does not necessarily

[6] See "Production-based asset pricing and the link between stock returns and economic fluctuations" by J. H. Cochrane, *The Journal of Finance*, Vol. 46, No. 1, pages 209 - 237, 1991.

point to an improvement in stock market performance. A number of factors could invalidate the assumptions of conventional asset pricing theories in reality. Specifically, market frictions have been common in practice. For instance, in a stock market that has a large degree of information asymmetry and where corporate governance is weak, investors may prefer alternative assets with valuations and risk factors that could be better understood, thus undermining stock market performance regardless of return to capital and economic growth.

Market structure may have a bearing on the link between stock returns and economic growth, especially for emerging economies where stock markets are mainly represented by large or state-owned companies, while private companies, an important driving force of economic growth, are often left non-listed.[7]

In addition, the openness of an economy may also affect the link between GDP growth and stock prices. Specifically, since Mainland China manages its capital account rather tightly, international investors cannot fully invest in the Mainland stock market up to their desired or optional allocations. Such restrictions may weaken the link between Mainland China's growth and its stock market performance. On the other hand, while capital account liberalisation could enhance market competition and efficiency, company earnings and stock returns might become less sensitive to domestic economic growth due to increasing influence from their foreign businesses as they become more international. Therefore, the net impact of capital account liberalisation on the link between economic growth and stock market performance is theoretically not clear.

Indeed, empirical evidence shows mixed results on the correlation between GDP growth and stock market performance, depending on the economies studied, sample periods covered and methodologies used. For instance, a study by Ritter (2005) for 16 major developed economies finds that the cross-country correlation of real stock returns and per capita GDP growth over 1900 - 2002 had been negative[8], and a research by the National Bureau of Economic Research (NBER) finds similar results for 19 emerging economies from the 1970s to early 2000s.[9] However, O'Neill et al. (2011) find that the cross-country correlation between the two variables for 34 economies (including members of the OECD and some emerging economies) was 0.4 for the sample period of 2000 - 2010 and exceeded 0.6 for 2005 - 2010.[10] Using a multi-factor model, Mauro (2000) also shows that there had been a strong relationship between economic growth and stock returns in both advanced and emerging market economies during 1971 - 1998, and the correlation had been stronger in economies with a high market capitalisation, a large number of listed domestic firms and English origin of regulations governing the market.[11]

Economic growth and equity market performance in Mainland China: how weak is the link, and why?

Based on the aforementioned asset pricing theories, some commentators argue that economic growth in emerging economies may not drive equity markets, since GDP growth in these economies has been in large part driven by rapid accumulation of capital with a falling rate of return rather than improvement in total factor productivity.

7 See T. Ito's comment on "Growth and Returns in Emerging Markets" by P.B. Henry and P. Kannan in NBER-EASE Volume 17, 2008.

8 See "Economic growth and equity returns", by J.R. Ritter, *Pacific-Basin Finance Journal* No. 13, 2005, pages 489 - 503.

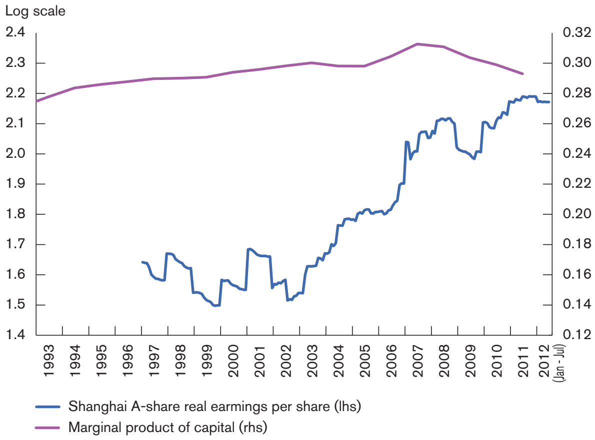
9 See "Growth and returns in emerging markets", by P.B. Henry and P. Kannan, in *International Financial Issues in the Pacific Rim: Global Imbalances, Financial Liberalisation, and Exchange Rate Policy*, NBER-EASE Volume 17, 2008.

10 See "Linking GDP growth and equity returns", by J. O'Neill, A. Stupnytska and J. Wrisdale, *Goldman Sachs Monthly Insights*, May 2011.

11 See "Stock returns and output growth in emerging and advanced economies", by P. Mauro, *IMF Working Paper*, WP/00/89.

However, rigorous academic research has shown that GDP growth in Mainland China has been in large part driven by productivity growth, with solid return to capital in the past two decades.[12] An HKMA staff analysis shows that, despite rapid growth in investment, the marginal product of capital has been rising since the early 1990s before weakening slightly in recent years (Chart B1.3). Earnings of listed companies, the source of dividends, have also been trending upwards in the past decade.

Chart B1.3
Marginal product of capital and earnings per share

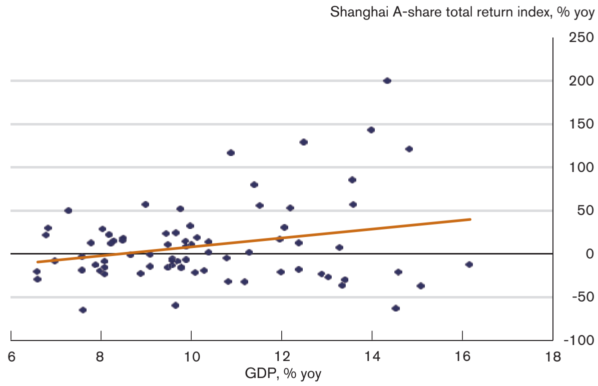


Note: Marginal product of capital is estimated with the Constant-Elasticity-of-Substitution production function. Earnings per share are deflated with CPI inflation.

Sources: Bloomberg, CEIC and updated results of "How efficient has been China's investment? Empirical evidence from national and provincial data" by D. He, W. Zhang and J. Shek, *Pacific Economic Review*, Vol. 12, No. 5, 2007, pages 597-617.

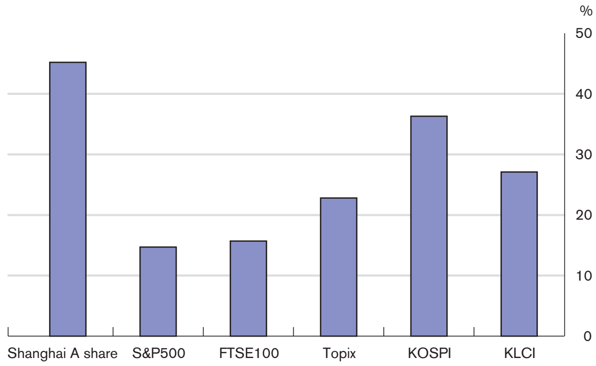
That said, the correlation between economic growth and stock returns on the Mainland appears to be weaker than other major economies. There has been a positive relationship between stock returns and economic growth in the past two decades (Chart B1.4), but a simple regression of the stock returns on GDP growth shows that the standard error of regression has been much larger than those from similar regressions for other major economies (Chart B1.5). This suggests GDP growth has had a weaker explanatory power for stock returns in Mainland China than in other economies. Note, however, that the relationship between economic growth and stock returns in Mainland China appears to have become closer since the mid-2000s, with the trends of the two being more consistent with each other.

Chart B1.4
GDP growth and Shanghai A-share stock returns (1993 Q2 – 2012 Q2)



Sources: Bloomberg, CEIC and HKMA staff estimates.

Chart B1.5
Standard errors from regression of stock returns on GDP growth



Note: Sample periods are as follows: Shanghai: 1993 Q2 – 2012 Q2; S&P500: 1989 Q1 – 2012 Q2; FTSE100: 1989 Q1 – 2012 Q1; TOPIX: 1990 Q1 – 2012 Q2; KOSPI: 1981 Q1 – 2012 Q2; and KLCI: 1992 Q1 – 2012 Q1. A higher standard error implies a weaker link between stock returns and GDP growth.

Sources: Bloomberg, CEIC and HKMA staff estimates.

[12] See "Accounting for China's growth" by L. Brandt and X. Zhu, *University of Toronto Working Paper* No. 394, 2010, and "The return to capital in China" by C. Bai, C. Hsieh and Y. Qian, *Brookings Papers on Economic Activity*, No. 2, 2006, pages 61 - 101.

The weak link between equity market performance and GDP growth in Mainland China appears to be due to structural and institutional issues that violate the assumptions of conventional asset pricing theories[13]:

- Uncertainties regarding the conversion of non-tradable shares into tradable shares. As an historical legacy, the majority of shares of large listed companies was owned by the government and legal persons and had not been tradable before the share-split reforms were basically completed in 2006. Accordingly, the long-lasting concerns among investors over a sharp increase in the supply of stocks resulting from potential conversion of non-tradable to tradable shares had, to some extent, distorted asset pricing in the secondary markets.

- Regulatory and supervisory issues. For instance, there were concerns among investors over inadequate initial public offering (IPO) information disclosure, transparency of company financials and related party transactions, especially between the controlling shareholders and management.

- The under-development of institutional investors with a long-term investment horizons. The turnover rate (frequency of trading), a commonly used measure for the degree of speculation, has been much higher in China than in both developed markets as well as other major emerging markets. Dominance of retail investors who are less informed and hence less rational than institutional investors, together with inadequate disclosure of company financial information, appears to be a major reason for excessive speculation in Mainland stock markets.

The Mainland authorities have introduced rounds of reforms to solve the structural issues in the equity markets since the early 1990s. These policy actions, including the share-split reforms and efforts to increase the participation of institutional investors in the stock markets, have helped reduce irregularities in the Mainland markets. For instance, speculation appears to have weakened somewhat in recent years, with the turnover rate in the Shanghai A share markets declining from over 600% in 2007 to about 250% in 2011.

The China Securities Regulatory Commission (CSRC) has launched another round of major reforms since late 2011 to enhance information disclosure, strengthen corporate governance and investor protection, and improve the efficiency of the IPO and delisting processes. For instance, the new policies introduced major adjustments to IPO rules that will enhance market monitoring and regulatory supervision, and improve the pricing of IPO stocks to better reflect their fundamental values. Delisting rules have been made more transparent and will be enforced consistently. Listed companies will be required to set up dividend policies and ensure consistent implementation of such policies. Enforcement action against insider trading will also be strengthened. In addition, investor education will be stepped up so that the presence of investors with long-term investment horizons will be increased overtime.

These reforms, if implemented consistently, are expected to improve equity market efficiency and functionality, and to strengthen the allocative efficiency of China's financial system in general. However, they will only be necessary conditions for a tighter correlation between stock market performance and economic growth in the long run.

13 The deviations of stock price movements from economic growth in earlier years could be partly due to the fact that the stock markets were much less representative of the Mainland economy, because in those years only a small basket of firms was listed.

Conclusion

The main messages of this box are summarised as follows:

- Economic theory indicates that faster economic growth is not necessarily accompanied by stronger equity market performance. Whether a rise in economic growth supports equity markets depends on the sources of growth, as well as other factors including market structure and efficiency. Empirical evidence also shows mixed results on the link between economic growth and stock market performance.

- The link between GDP growth and stock returns has been weaker in Mainland China than in other major markets, very likely reflecting the consequences of special structural and institutional deficiencies, which are being addressed by the authorities.

- The recent policy reforms by the CSRC are expected to improve Mainland equity market efficiency and functionality. As long as economic growth of the Mainland economy continues to be driven by higher total factor productivity, then the correlation between economic growth and stock market returns in the long run can also be expected to become tighter.