2. Global setting and outlook

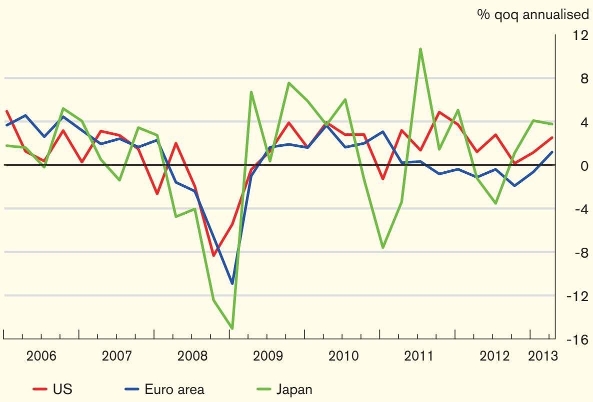
External environment

Economic conditions in major advanced economies have generally improved over the past six months although growth continued to remain moderate. The normalisation of monetary policy in the US has heightened volatility in global financial markets. East Asian economies generally registered moderate growth, with a slowdown in some emerging economies. Uncertainties surrounding the tightening monetary conditions amid capital outflows point to the prospect of softening growth ahead.

2.1 Real activities

Economic conditions in major advanced economies have generally improved over the past six months. Nevertheless, growth continued to remain moderate. Latest GDP figures show the US and Japanese economies expanded by 2.5% and 3.8% respectively in the second quarter of 2013 (Chart 2.1)[1] while the euro area expanded by 1.2%.

Chart 2.1
US, euro area and Japan: real GDP



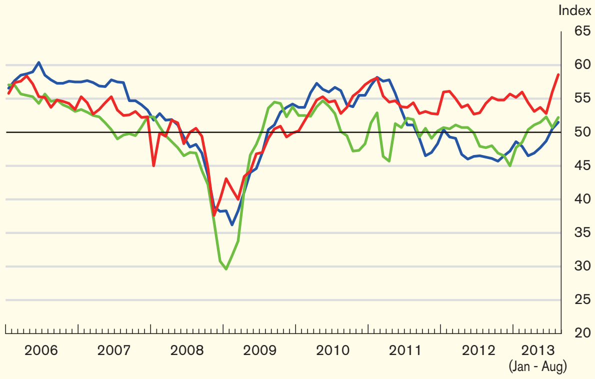
Sources: Bureau of Economic Analysis, Eurostat and Cabinet Office of Japan.

In the euro area, growth resumed following six consecutive quarters of contraction. Fiscal policy has recently become less restrictive with the European Commission softening its fiscal targets for several member countries while the ECB also relaxed its collateral eligibility requirement and provided forward guidance on monetary policy. Nevertheless, economic fundamentals in the region remained weak with widespread balance sheet adjustment continuing to weigh on domestic demand and bank lending. As such, the region remains some way off from a sustainable recovery. Across the Atlantic, the US labour market recovery has continued. This, together with surging forward-looking survey indicators, suggests the US economy can continue to overcome the drag from fiscal consolidation and expand at a steady pace. In Japan, there are early signs of a stronger recovery driven by consumption and net exports following the launch of Abenomics. The latest Purchasing

[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.

Managers' Indices point to moderate growth in Japan and the US while that in the euro area has also returned to expansionary territory. (Chart 2.2).

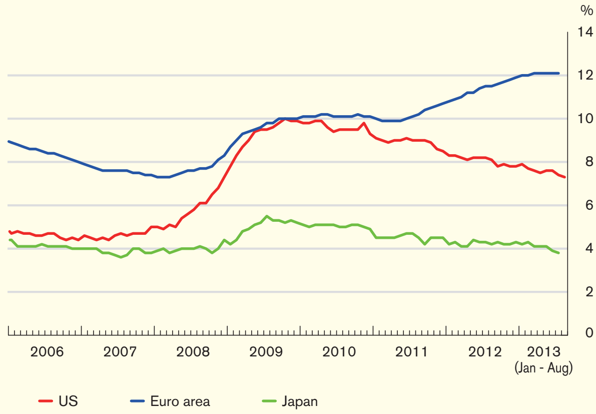
Chart 2.2
US, euro area and Japan: Purchasing Managers' Indices



Source: Bloomberg.

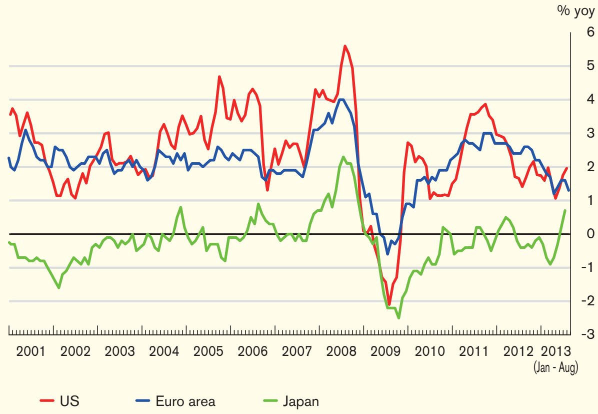
As a result of the prolonged recession, job creation remained slow in Europe with the overall and youth unemployment rate hitting record highs of 12.1% and 24%, respectively, in July. In contrast, employment has been growing at a solid pace in the US with the unemployment rate falling slowly but steadily to 7.3% in August while that in Japan dropped to a five-year low of 3.8% in July (Chart 2.3). The high degree of economic slack, together with the recent fall in commodity prices, has kept headline CPI inflation down in the advanced economies with core inflation likely to remain subdued in 2013 (Chart 2.4).

Chart 2.3
US, euro area and Japan: unemployment rate



Source: Bloomberg.

Chart 2.4
US, euro area and Japan: headline inflation



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

The normalisation of monetary policy in the US has heightened volatility in global financial markets. While an earlier-than-expected and disorderly normalisation of monetary conditions in the US will almost certainly lead to extreme volatility in the global financial markets, it is likely that an orderly but de-synchronised monetary exit by the Fed would still push up longer term interest rates and have negative spillover effects on Japan and countries in Europe where economic recoveries are not yet firmly established. The problem is, at a time when many of these economies are saddled with excessive private and public sector debts, rising borrowing costs could derail their nascent recoveries and even ignite or reignite a sovereign debt crisis. Indeed, in Europe, structural reforms and policy efforts toward closer fiscal, political and banking integration are still on-going and will take time to bear fruit. Meanwhile, the ECB's Outright Monetary Transactions programme remains largely untested for its effectiveness of holding down sovereign bond yields. Similarly in Japan, it remains highly uncertain if Abenomics could drive a sustained and higher growth and overcome deflation before Japanese Government Bond yields climb further along with higher inflation expectations. As such, rising borrowing costs could become an important economic and policy challenge for Japan and peripheral countries in Europe.

East Asian economies in general grew moderately in the first half of 2013 with mixed performances (Table 2.A). Domestic demand, which remained the key driver of the growth, softened in some regional economies. External demand saw some stabilisation, but remained far from a meaningful recovery in absence of a solid boost from advanced economies. Inflationary pressure was contained with the average CPI inflation rate for the region as a whole edging up to 2.6% in July from the preceding 2.3%, driven mainly by a surge in Indonesia's inflation due to a reduction in fuel subsidy. Despite the rise, the inflation still remained well below an average of 3% in 2012 and 4% in 2011. Meanwhile, central banks in the region in general maintained a benign monetary policy environment with an exception of Bank Indonesia.[2]

Table 2.A
Asia: real GDP growth

(% qoq, annualised)	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2
NIE-3:[1]	**4.6**	**0.7**	**0.5**	**3.3**	**1.3**	**5.1**
Korea	3.3	1.2	0.2	1.1	3.4	4.5
Singapore	7.8	0.1	-4.6	3.3	1.7	15.5
Taiwan	5.7	0.0	3.0	7.1	-2.5	2.4
ASEAN-4:[1]	**17.7**	**6.9**	**6.2**	**8.5**	**1.8**	**4.0**
Indonesia[2]	5.6	6.5	5.4	6.8	5.4	5.5
Malaysia[2]	7.0	5.0	4.9	9.1	-2.5	6.0
Philippines	9.7	5.4	7.0	7.8	9.6	5.7
Thailand	53.7	10.1	7.9	11.4	-6.5	-1.4
East Asia:[1]	**10.9**	**3.7**	**3.2**	**5.8**	**1.6**	**4.6**

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 Bank Indonesia has raised its benchmark rate by a cumulative 150 basis points to 7.25% since June, in response to the rising inflation and the recent market sell-offs amid capital outflows.

Expectation of the Fed tapering its asset purchases has fuelled some pressures on capital outflows in the region. So far the market appeared to be differentiating among the regional economies. While currencies in those economies with weak fundamentals have been volatile and notably weakened against the US dollar, currencies in the newly industrialised economies held relatively stable (Table 2.B). Sell-offs in both equity and bond market were pronounced in a few economies in late May and late August. Long-term sovereign bond yields in general drifted higher with yields in some economies even rising at a faster pace over their US counterparts and resulting in widening yield spreads. The rapid accumulation of foreign reserves stalled in most regional economies in recent months, with sizable drop in some economies (e.g. Indonesia and Thailand). Looking ahead, capital outflow pressure may remain with rising anticipation of the Fed moderating its pace of asset purchases and the region's weakening economic prospect.

Table 2.B
Asia: changes in major financial market indicators and foreign reserves[1]

Between 22 May 2013 and 9 Sep 2013	Exchange rates against USD (%)	FX reserves[2] (USD bn)	Equities (%)	Change in yield spreads (bps)[3]
NIE-3:				
Korea	2.5	2.3	-1.0	-18.9
Singapore	-0.2	0.2	-10.6	17.9
Taiwan	0.2	4.2	-2.5	-45.9
ASEAN-4:				
Indonesia	-14.2	-14.3	-19.5	228.0
Malaysia	-8.2	-5.5	-2.1	-19.2
Philippines	-6.8	0.0	-18.8	-24.1
Thailand	-6.9	-9.6	-15.1	7.6

Notes:
1. The Fed Chairman Ben Bernanke hinted at tapering the quantitative easing programme in testimony before the Joint Economic Committee on 22 May 2013.
2. Calculated using monthly data from the end of April to the end of August 2013.
3. Changes in yield spreads between 10-year sovereign bonds and the US Treasury.

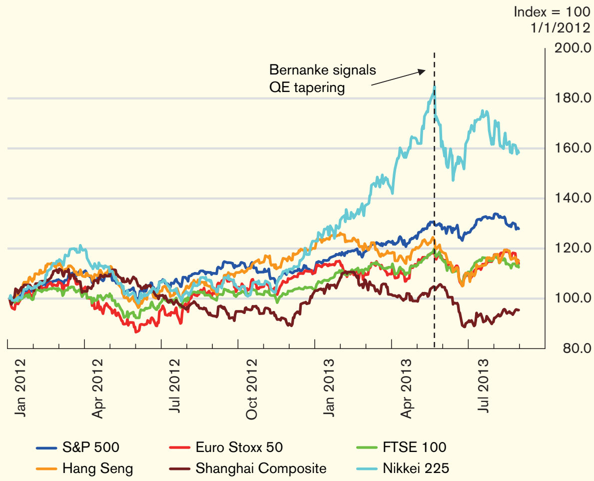
Sources: CEIC, Bloomberg and HKMA staff calculations.

The near-term economic outlook for the region has been softening. Although exports may benefit from weakening currency and marginally improved domestic demand in the US, a slowdown in major emerging market economies, in particular Mainland China, could pose downside risks. Government spending will continue to lend support to the economies with infrastructure projects and fiscal stimulus plans, but the growth of private consumption and investment could be, to some extent, restrained by uncertainties associated with late-cycle risks and tightening monetary conditions amid steepening yield curve in the US and continued capital outflows. Inflationary pressure is expected to stay low in most regional economies on the back of moderating domestic demand and benign commodity price outlook. The latest consensus forecasts project the region's GDP to grow by 3.9% as a whole in 2013, lower than 4.0% in 2012, while inflation rate would edge down to 2.9% compared with the preceding 3.0%.

2.2 Global financial conditions

Global financial conditions have again turned turbulent following a period of relative stability. Global equity markets staged a strong rally initially, but some of the gains have been pared back on concerns about the Fed exiting its quantitative easing policy (Chart 2.5). Debt markets took the biggest brunt of the impact, with yields rebounding sharply. Uncertainties about the Fed's policy outlook and rising economic risks in major emerging markets will likely keep financial markets volatile in the coming months.

Chart 2.5
Global equity market performance

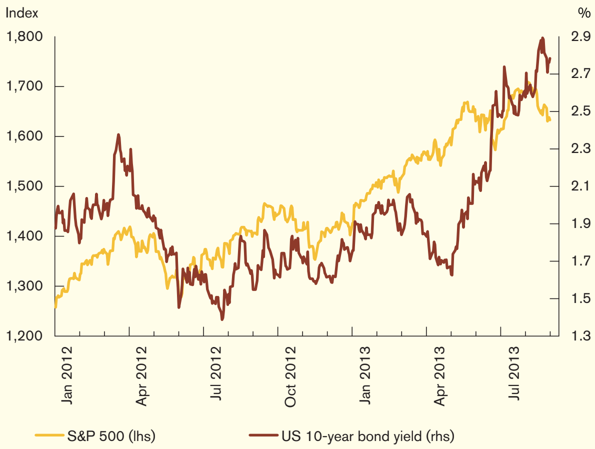


Source: Bloomberg.

The US has been a bright spot in the global financial markets in the past six months. Reduced concerns about the "fiscal cliff" and continued monetary stimulus have supported a continued recovery in the economy and asset prices. The S&P 500 index has now recouped all the losses since the onset of the global financial crisis in 2008, while housing prices – measured by the Case-Shiller Index – have recently posted their largest annual increase in seven years. Improved economic fundamentals and rising investor confidence have also driven up the US dollar and long-term Treasury bond yields.

The upward movements in the dollar and interest rates were exacerbated recently by changing market expectations about the Fed's policy outlook. The central bank signalled for the first time in May on the timing of ending its quantitative easing policy, causing heightened volatility. In particular, investors were surprised by Fed Chairman Ben Bernanke's comments that the Fed "*may start moderating the pace of asset purchases later this year*", prompting significant declines in equity and bond prices. However, these comments were later expanded to emphasise the Fed's policy path was "*data dependent*" and not on a "*preset course*". Equity markets took comfort in the reassurance and quickly reversed early losses, but bond markets remained highly cautious in view of an earlier-than-anticipated Fed policy exit (Chart 2.6).

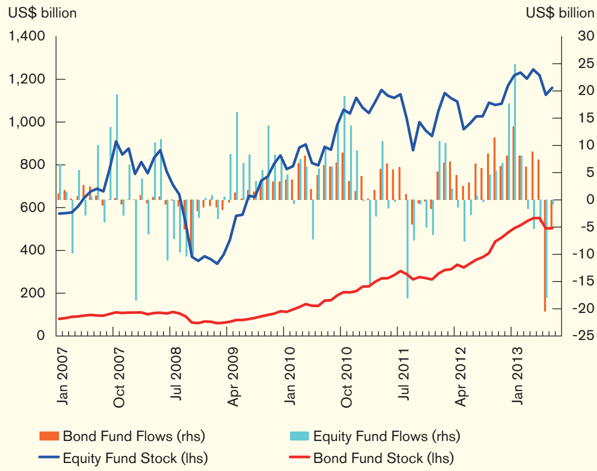
Chart 2.6
S&P 500 index and US 10-year Treasury bond yields



Source: Bloomberg.

The policy exit by the Fed will likely have important implications for other countries, particularly those in emerging markets. As the Fed's quantitative easing has propelled significant capital inflows into emerging markets over the past few years, a reversal of these policies could make them vulnerable to sudden capital exits. The observed fund outflows from emerging market equity and bond markets since late May serve as a clear warning that emerging markets need to be prepared (Chart 2.7).

Chart 2.7
Capital flows in/out of emerging markets

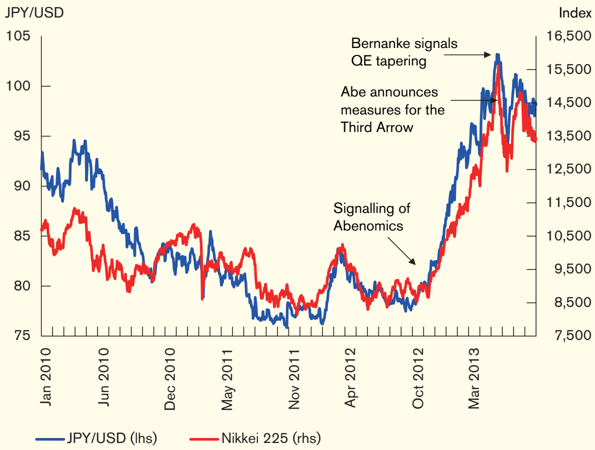


Source: EPFR Global.

Besides the Fed, the Bank of Japan (BoJ) has also been a major focus in financial markets. The announcement of an open-ended asset purchase programme in April gave legitimacy to the sharp equity rally and yen weakness since last November.[3] However, these moves were interrupted recently by a combination of concerns about the Fed's quantitative easing exit and scepticism over the efficacy of Japan's own economic polices (Chart 2.8). The Nikkei 225 plunged by more than 20% and the JPY/USD rose by 9% in June, as investors expressed disappointment about the "Third Arrow" of Abenomics. While markets have since recovered most of the losses, significant uncertainty remains as to whether Abenomics can truly deliver the economic outcomes that justify the elevated market expectations.

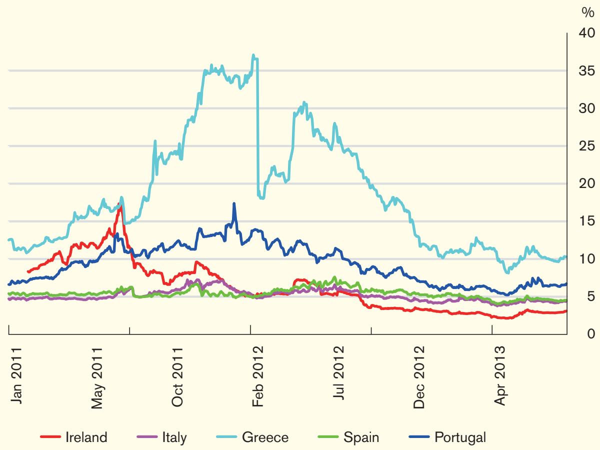
[3] While foreign investors have been major buyers of Japanese equities since last November, they have actively hedged out their currency exposures by shorting the yen. A weaker yen, driven by BoJ's reflationary policy, has in turn supported the equity rally by driving up yen-denominated earnings of corporate profits earned overseas. This helps to explain the negative co-movement between the currency and equity markets.

Chart 2.8
Japanese yen and Nikkei 225



Source: Bloomberg.

Chart 2.9
Ten-year bond yields of peripheral European countries



Source: Bloomberg.

With market focus shifting to the US and emerging markets, Europe has enjoyed a period of relative calmness in recent months. Equity markets have risen in tandem with others, while peripheral bond yields have stabilised at levels that are significantly lower than they were a year ago (Chart 2.9). Financial conditions have eased for high-quality corporations including banks, with corporate bond issuance picking up strongly since the start of the year. However, weaker banks in the peripheral countries are still relying on support from the ECB, and their lending capacity is constrained by still-elevated balance sheet leverage. Markets expect further deleveraging to take place by weak European banks in the coming year.

Overall, global financial conditions have become more uncertain and future developments critically depend on how major central banks, especially the Fed, steer their monetary policy in the period ahead. This is particularly true when the outlook for the global economy remains weak and fragile. This rather cautious macro picture stands in sharp contrast with the buoyancy embedded in asset prices, prompting additional concerns over the sustainability of the recent market rally.

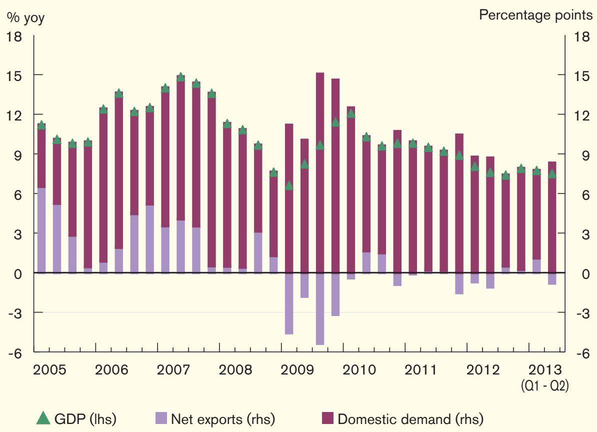
Mainland China

Growth momentum of the Mainland economy slowed visibly, led by a deceleration of investment in the manufacturing sector. Weak external demand was compounded by rising corporate leverage. Asset quality of the banking sector has come under some pressure as overcapacity in the manufacturing sector worsened. Looking ahead, growth momentum is expected to recover moderately along with the authorities' focus on more sustainable longer-term growth supported by structural reforms.

2.3 Output growth and inflation

The Mainland economy expanded at a slower-than-expected pace, with real GDP increasing by 7.5% year on year in the second quarter, down from 7.7% in the previous quarter (Chart 2.10). Infrastructure and real estate investment continued to grow at a firm pace, but manufacturing investment activities weakened amid tepid export growth and lingering overcapacity in major sectors.

Chart 2.10
Mainland China: contributions by domestic demand and net exports to GDP growth

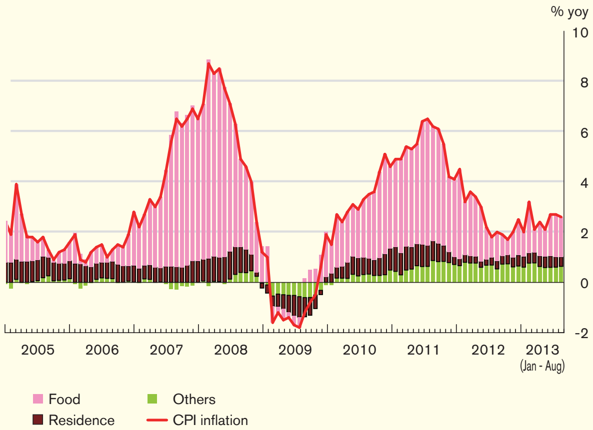


Sources: CEIC and HKMA staff estimates.

Growth momentum is expected to recover moderately going forward. Export growth will likely remain soft, and domestic demand would continue to grow at a mild pace amid the lukewarm market sentiment and deleveraging pressures on major sectors. On the other hand, the risk of a sharp deterioration in the outlook remains low. The authorities have adopted new measures to boost growth recently (for instance, tax cuts for small businesses), while structural reforms expected to be launched in the period ahead would help enhance investor confidence and steer the economy towards a more sustainable growth path. The consensus forecasts in September project GDP to grow by 7.5% for 2013 as a whole.

Inflationary pressures were contained and would stay mild in the near term. Headline CPI inflation rate was 2.5% year on year on average in the first eight months of the year (Chart 2.11), while the PPI continued to decline, albeit at a slower pace in recent months. Recent reforms in energy prices may add upward pressures to domestic costs, but relatively weak demand and the lingering overcapacity problem would continue to dampen overall inflationary pressures. Meanwhile, sluggish global growth, appreciation of the US dollar and possible tapering of the quantitative easing by the Fed would help contain global commodity prices and Mainland import prices. The consensus forecasts in September project the CPI inflation rate to be 2.6% for 2013 as a whole.

Chart 2.11
Mainland China: contributions to CPI inflation



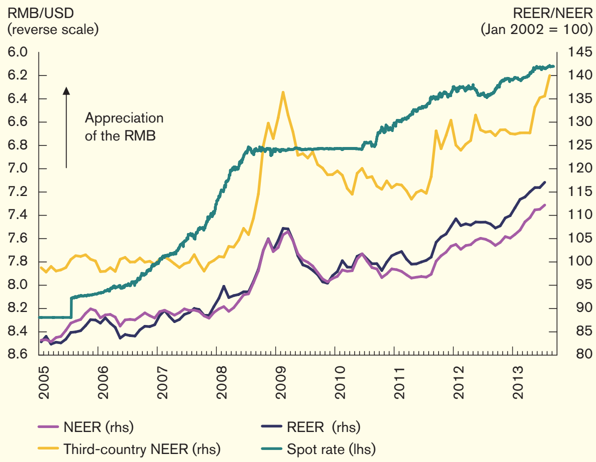
Sources: CEIC and HKMA staff estimates.

2.4 Monetary conditions, asset markets and banking risks

The Mainland saw significant capital inflows in the first quarter, but outflow pressure has emerged in recent months along with a moderation in growth momentum. The authorities' efforts to curb capital inflows through informal channels and the implementation of a new rule on banks' net foreign exchange open position, which reduced banks' incentives to extend foreign currency loans, might have dampened capital inflows as well. Changes in official reserves netting out the trade balance, foreign direct investment and valuation effect registered a two-year high in the first quarter but turned negative in the second quarter, while net foreign exchange purchases by financial institutions continued to drop in recent months.

The renminbi maintained the largely strengthening momentum (Chart 2.12). The RMB/USD exchange rate had appreciated by about 1.6% in the first five months before experiencing two-way movements recently, and the real effective exchange rate (REER) of the renminbi has strengthened by around 6.3% year to date. The third-country nominal effective exchange rate (NEER), which takes into account the competition that China faces in foreign markets from other economies exporting similar products, had been largely stable for more than a year but strengthened sharply recently, as currencies of China's competitors generally weakened against the US dollar on expectation of the Fed tapering its quantitative easing programme.

Chart 2.12
Mainland China: the renminbi exchange rates

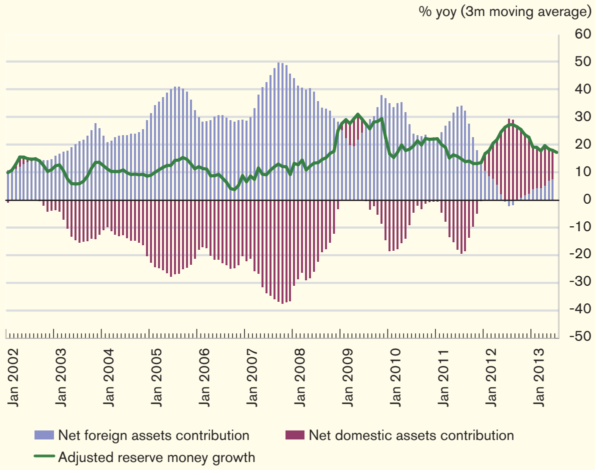


Note: A higher effective exchange rate index indicates a stronger renminbi. The methodology of constructing the third-country effective exchange rate is presented in Box 2 of the December 2006 issue of this Report.

Sources: Bank for International Settlements, Bloomberg and HKMA staff estimates.

The People's Bank of China (PBoC) has maintained a stable monetary policy stance. Reserve money growth declined from a three-year high in the latter part of 2012 but has been largely stable over the review period (Chart 2.13), while benchmark interest rates and reserve requirement ratios were unchanged.

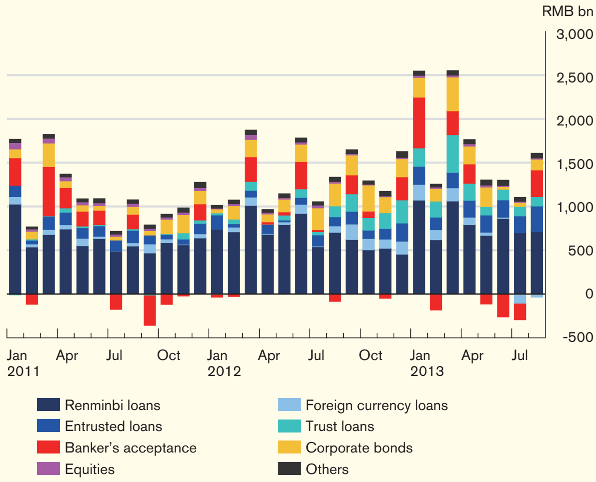
Chart 2.13
Mainland China: contributions to reserve money growth



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

Broad money (M2) continued to expand at a robust pace, and bank loan growth has been broadly stable year on year. Total social financing had grown rapidly before slowing down more recently amid the authorities' efforts to clean up interbank bond market trading and to contain the risks related to shadow banking activities (Chart 2.14). However, as discussed in Box 1, it seems that an increasing proportion of credit has been extended to the less productive sectors, and monetary conditions might have been tighter than suggested by quantity indicators due to a lengthening in the credit intermediation chain. Meanwhile, price indicators such as interest rates may have become more informative of Mainland monetary conditions along with continued financial liberalisation.

Chart 2.14
Mainland China: total social financing

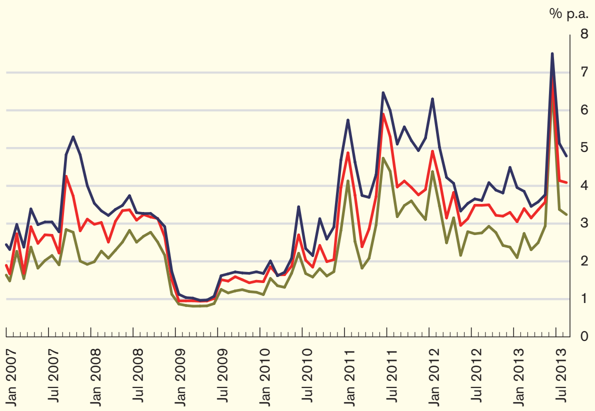


Source: CEIC.

Indeed, our analysis shows that overall monetary conditions have turned less accommodative than a few months ago amid continued appreciation in the renminbi real exchange rate as well as an increase in real interest rates. However, borrowing costs appear to differ significantly in real terms across sectors. Real interest rates have been much higher in sectors such as manufacturing that still face downward price pressures than those that see upside risks to inflation. The real estate sector is a case in point. Lending rates for private and smaller enterprises also remained elevated. For instance, the private lending composite rate in Wenzhou, though having trended downwards in recent months, is still around 20% a year.

Liquidity conditions had remained accommodative early in the year but tightened towards the end of the second quarter, as evidenced by the sharp increase in the Repo rates in June (Chart 2.15). The liquidity squeeze reflected the result of multiple factors such as a drop in capital inflows and a seasonal rise in demand for money by enterprises to pay taxes. It was reported that some interbank market participants had engaged in excessive arbitrage activities and were lax in liquidity risk management. In late June, the PBoC announced that it would proactively smooth abnormal short-term interbank liquidity fluctuations, and interbank liquidity conditions have eased recently.

Chart 2.15
Mainland China: money market rates



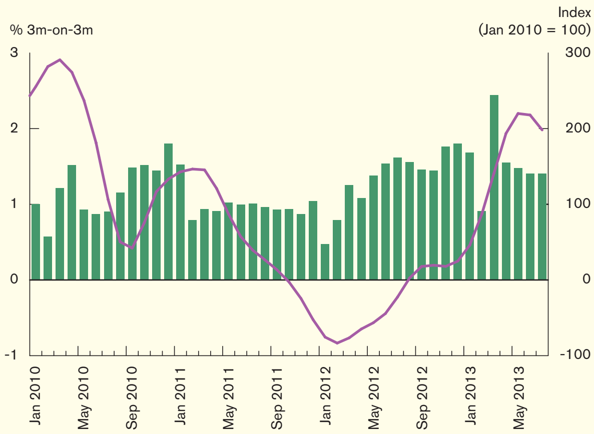
Sources: CEIC and WIND.

The PBoC took an important step in interest rate liberalisation by removing the floor for banks' lending rate effective from 20 July.[4] This policy move is not expected to have much immediate impact on banks' net interest margin as the previously imposed lending rate floor had been barely binding in practice.

Equity markets were subdued and have under-performed major markets amid continued weakening of corporate profitability, increased downside risks to the growth prospect as well as concerns over the liquidity squeeze in June. The price-to-earnings ratio of Shanghai A shares dropped from a recent high of 13 in early February to an historical low of 10 in late June before improving somewhat in recent weeks.

Housing market activities have regained some momentum in the past few months. The authorities launched another round of measures to dampen speculative demand in late March. As these measures turned out to be less stringent than expected by markets, and underlying demand remained strong, property prices have continued to rise, albeit at a slower pace more recently (Chart 2.16). Property transaction volumes held steady in recent months after a surge in March when some market participants rushed for deals amid specification of impending implementation of a new round of policy measures.

Chart 2.16
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 36 big cities, including Beijing, Shanghai, the provincial capital cities and major prefecture-level cities for which data are available.
2. Average home prices are the simple averages of the price indices for the 70 major cities published by the National Bureau of Statistics.

Sources: CEIC, WIND and HKMA staff estimates.

[4] The ceiling for banks' lending rate was removed in 2004.

The outlook for housing markets appears to have become more diverse across different geographical locations. Buoyancy in big cities is expected to continue as the overall underlying demand would stay robust amid the on-going urbanisation process and strong home improvement needs. Incentives for developers to cut prices would also largely remain weak given that solid growth in sale revenues would help reduce their financing pressures. However, small cities, particularly those in inland areas, may see more downside pressures amid a continued increase in property supply. Indeed, according to some market analysis, property inventories in some low-tier cities have increased significantly in recent years. [5]

The banking sector has generally performed well. Commercial banks continued to achieve double-digit profit growth in the first half. [6] The weighted capital adequacy ratio remained at around 12% as of the end of June, and commercial banks' loan loss reserves stayed at around 2.9 times of bad loans on average. The aggregate non-performing loan ratio remained low at 0.96% in June.

Nevertheless, the banking sector appears to be facing some pressures on asset quality. Specifically, market concerns over credit risks for those sectors with overcapacity problems and heavy dependence on exports have risen. Indeed, bad loans have been increasing in such sectors as steel and photovoltaic industries, as well as in the Yangtze Delta area where small- and medium-sized enterprises are more concentrated. Special-mentioned loans and overdue loans also rose at a fast pace in 2012, pointing to a further pick-up in bad loans going forward. [7]

Concerns over shadow banking activities in the Mainland financial system have grown. In contrast to shadow banking activities in major advanced economies, banks have been actively involved in a majority of shadow banking activities in Mainland China and these activities have been under regulatory oversight. Bank-originated off-balance sheet lending generally has higher underwriting standard and thus should face lower credit risks, but its funding risks could be more of a concern. Specifically, products financed by short-term deposit-like instruments such as banks' wealth management products (WMPs) appear to have maturity mismatch between their assets and liabilities. [8]

Reflecting these concerns, the authorities have stepped up prudential supervision of shadow banking activities. Specifically, in late March the China Banking Regulatory Commission issued a basket of new rules on banks' WMPs. Banks were required to link the source and usage of each WMP, and to manage, book and settle each product separately. For those WMPs that had been invested in the "non-standard" products but had not met these requirements by the announcement date of the new regulations, banks should make loss provisions accordingly by the end of 2013. [9] An upper limit was also set on the proceeds from the sales of WMPs that can be invested in non-standard products. [10] As long as these regulations are well enforced, risks relating to shadow banking activities would unlikely become systemic.

5 For instance, see "The outlook for China's property market in the second half of 2013" by China Index Academy.

6 The China Banking Regulatory Commission reports that commercial banks' net profit growth was 13.8% year on year in the first half of 2013, compared with 14.3% in the second half of 2012 based on our calculation using data from the Commission.

7 See "2013 China Financial Stability Report" by the PBoC. Special-mentioned loans and overdue loans rose by 8% and 46% respectively in 2012.

8 Official data show that the maturity of banks' WMPs has been shorter than three months in most cases, while the maturity of the products purchased through the WMP proceeds (for instance, trust products) could be relatively longer. The maturity of trust products is about two years on average.

9 "Non-standard" products refer to debt-based products that are not traded in interbank markets or security exchanges, such as trust loans, entrusted loans and acceptance bills.

10 Banks are prohibited from investing more than 35% of the total proceeds from the sales of WMPs, or more than 4% of their total assets recorded at the end of the previous year, whichever is the lower, in the non-standard products.

Box 1
Credit allocation and corporate leverage in Mainland China

Credit on the Mainland has continued to expand at a fast pace in the past few quarters, but real GDP growth declined further in the first half of the year. Accordingly, market analysts have raised the question, where has the money gone? Why has the "bang for the buck" been declining? This box attempts to shed some light on credit allocation across different sectors in Mainland China, and discusses the implications for economic growth. We start with credit distribution between financial and non-financial sectors, and then illustrate credit allocation across different industries within the non-financial sector.

Credit allocation between financial and non-financial sectors

One explanation for the divergence between credit and output growth is that the financial intermediation chain on the Mainland has become longer, with an increasing proportion of credit being channelled into the financial sector. This could reflect a structural change in the relationship between financial services and real economic activities. Allocation of credit between financial and non-financial sectors appears to be closely related to the development of an economy's financial markets. For instance, credit used for financial transactions in Japan increased from about 20% of total credit in the early 1980s to nearly 40% by the end of that decade along with the acceleration in financial liberalisation. [11] Credit circulating in the financial sector also increased sharply in the US during the period prior to the 2008 financial crisis amid rapid development of the shadow banking sector. [12] Other factors, such as strong expectations of financial asset price increases and an increase in the number of arbitrage opportunities in financial markets, could also pull more credit into the financial sector.

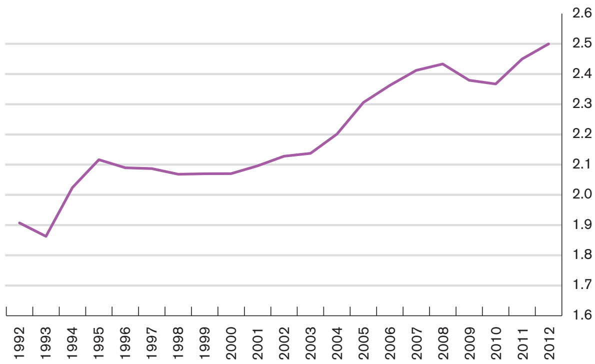
Fast development of financial markets in Mainland China suggests the financial sector may have absorbed an increasing proportion of credit. The credit intermediation chain index (CICI), which is constructed as the ratio of liabilities of all sectors (financial and non-financial sectors) to the liabilities of non-financial sectors (end users), could help illustrate the relative importance of the financial sector as destination for credit. This index can be interpreted as the average number of steps for funds to pass from ultimate lenders to ultimate borrowers. An increase in the CICI suggests credit would stay longer in the financial sector and thus relatively more credit would be used for financial transactions.

11 See "Towards a new monetary paradigm: a quantity theorem of disaggregated credit, with evidence for Japan" by R. A. Werner, *Kredit und Kapital*, Vol. 30, No. 2, July 1997.

12 See "Financial intermediation and the post-crisis financial system" by H. S. Shin, BIS Working Papers No. 304.

Indeed, the CICI estimated with flow-of-funds data has been trending upwards since the early 1990s, particularly in the past decade when financial markets developed at a fast pace (Chart B1.1).[13] It declined slightly during the global financial crisis but renewed its upward trend afterwards. In addition to financial deepening, cyclical factors might also have contributed to the continued increase in the Mainland CICI. For instance, it was reported that some market participants have used credit for excessive arbitrage activities in financial markets in recent quarters.

Chart B1.1
The Mainland credit intermediation chain index



Sources: CEIC and HKMA staff estimates.

This analysis also has important implications for judging monetary conditions in Mainland China. The increase in the CICI suggests that quantity indicators may have become less informative of monetary conditions than before. In contrast, price indicators could have become more useful amid continued interest rate deregulation and rising importance of market-driven prices of financial instruments.

Credit allocation across industries within the non-financial sector

Allocation of credit across industries within the non-financial sector also matters much for economic growth, as fund-use efficiency could differ significantly among industries. Because of market imperfections and structural impediments, credit might not have been allocated to those firms that have the capacity to generate higher investment and output. Indeed, anecdotal evidence shows that excess leverage seems to be concentrated among large firms in sectors that already have excess capacity. Asset price bubbles may also affect credit allocation. For example, banks have shown great interest in accommodating the demand for funds in the real estate sector amid strong expectation of property price increases. To have a clearer picture of credit allocation in different sectors, we analyse the build-up of leverage by using firm-level data.[14]

Partly reflecting the robust expansion of credit in recent years, leverage for the corporate sector in Mainland China has increased. The ratio of debt to total assets for listed non-financial firms renewed its upward trend in recent years to around 0.6 in the first quarter of 2013, following a drop in 2007 when monetary policy tightened (Chart B1.2). While the current level of leverage for the corporate sector as a whole is still far from being alarming,[15] leverages for a few major industries have increased much more significantly. Specifically, the real estate and major industries that already had overcapacity problems before the global financial crisis, such

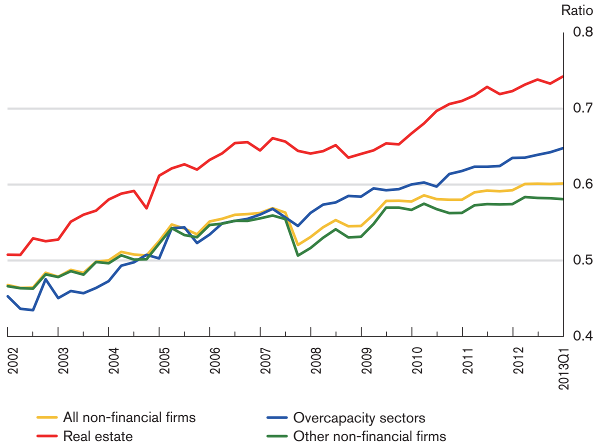
13 As flow-of-funds data are only available up to 2010, data on government debt, corporate bonds, and bank loans for businesses and households are used to estimate non-financial liabilities for 2011-2012. For financial sector, balance sheet data of financial sector from the People's Bank of China are used for estimation of 2011-2012.

14 The analysis below is based on data of all non-financial firms listed in Shanghai Stock Exchange and Shenzhen Stock Exchange.

15 In fact, some industries such as health care, consumer staples, and information technology industries, have deleveraged in recent years.

as steel, coal chemical, aluminium, cement and photovoltaic, have continued to increase their leverages at a rapid pace (Chart B1.2).

Chart B1.2
Debt-to-assets ratio for listed non-financial firms

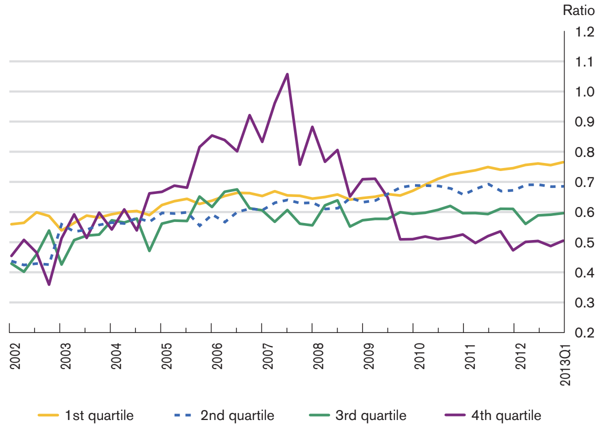


Note: Overcapacity industries include glass, cement, steel, photovoltaic, aluminium, shipbuilding and coal chemical.

Sources: Bloomberg and HKMA staff estimates.

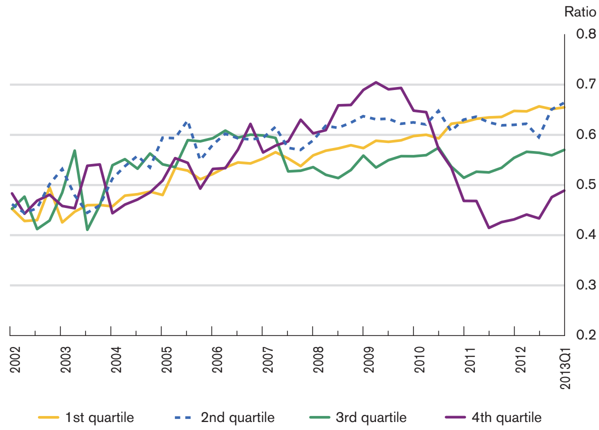
Leverage of bigger firms in the real estate and overcapacity industries has risen even faster than that of smaller ones as it is easier for large firms to borrow. For instance, the average leverage ratio for the top quartile of real estate developers in terms of asset size was close to 0.8 in the first quarter of 2013, while that for the lowest quartile stayed largely stable at around 0.5 in recent years (Chart B1.3). Similarly, the leverage ratio for top quartile of firms in overcapacity industries was around 0.65 in recent quarters, compared with around 0.5 for the lowest quartile of firms (Chart B1.4). Specifically, the leverage ratios of large coal chemical firms reached 0.8 in the first quarter of 2013, while those of big ship building and aluminium firms were around 0.7 recently (Chart B1.5).

Chart B1.3
Debt-to-assets ratio for listed real estate developers by asset size



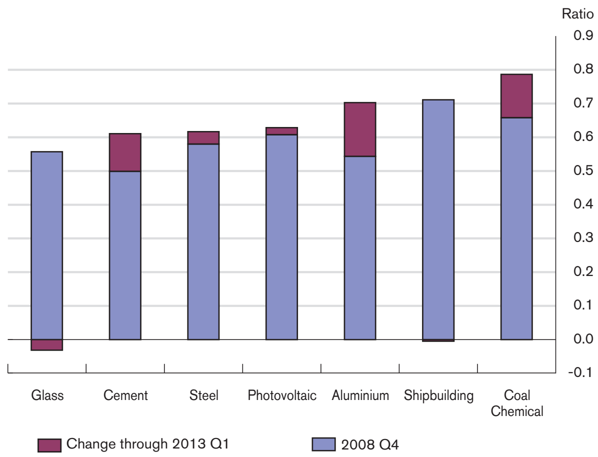
Sources: Bloomberg and HKMA staff estimates.

Chart B1.4
Debt-to-assets ratio for listed firms in industries with overcapacity problems



Sources: Bloomberg and HKMA staff estimates.

Chart B1.5
Debt-to-assets ratio for top quartile of firms in overcapacity industries

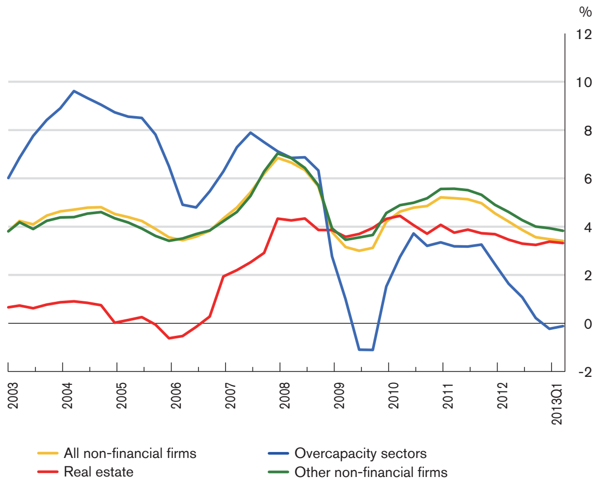


Sources: Bloomberg and HKMA staff estimates.

Significant increases in the leverages of these industries suggest their borrowing has likely grown at a faster pace than other industries. Continued property price increases and strong expectation of house price growth might have been a driving force for robust credit growth in the real estate industry, while government support for the "priority" industries, which are crucial for GDP growth and employment, might also have been a factor, especially in the wake of the global financial crisis. Some of these firms might have borrowed further in recent quarters just to maintain operation instead of expanding investment. Accordingly, fund-use efficiency in the manufacturing industries may have worsened, while lingering uncertainties over property prices, particularly in low-tier cities where concerns about oversupply have emerged, point to a decline in capital productivity in the real estate industry as well.

Indeed, the profitability of the listed firms in the real estate and overcapacity industries has been declining in recent years. Return on assets (ROA) of property developers has been lower than the average ROA of non-financial firms, and weakened in the past three years (Chart B1.6).[16] The ROA for overcapacity industries has trended downwards in the past decade, dropped at a fast pace in the past two years following a temporary recovery in 2010, and even became negative recently.

Chart B1.6
Return on assets for listed non-financial firms

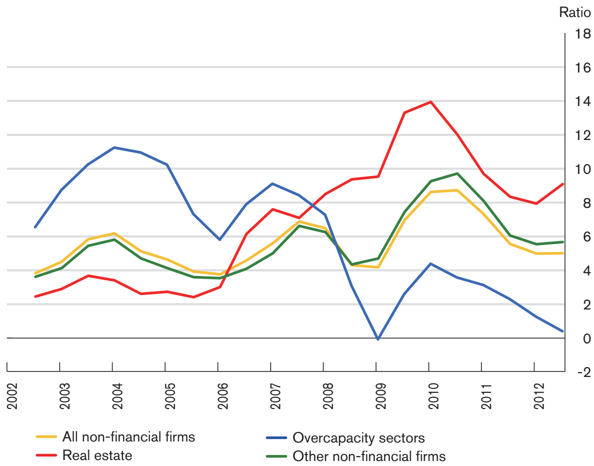


Sources: Bloomberg and HKMA staff estimates.

[16] Data up to 2011 suggest that profitability for non-listed developers had been much lower than for listed ones.

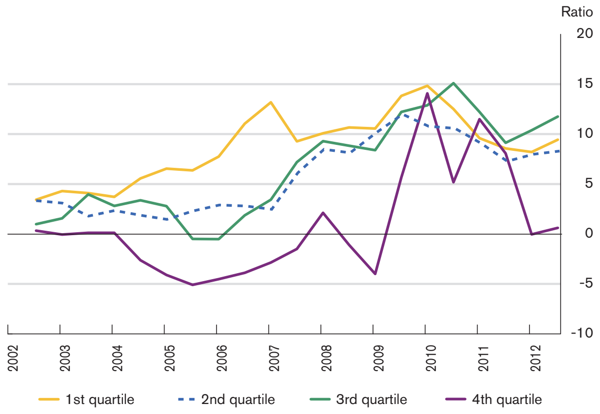
Accordingly, these industries' debt repayment ability has posed a concern. The interest coverage ratio for real estate developers as a whole reversed the upward trend in 2009, but is still higher than the average ratio of non-financial firms (Chart B1.7). However, the interest coverage ratio for overcapacity industries has been trending downwards over the past decade and even touched zero in the second half of 2012. The situation is even more of a concern by looking at the interest coverage ratio for firms across asset sizes. Specifically, the interest coverage ratio for smaller listed developers has been much lower than that for larger ones recently (Chart B1.8). The interest coverage ratios for firms in the industries with overcapacity generally dropped regardless of asset sizes (Chart B1.9), and larger firms, which feature higher leverages, have seen lower interest coverage ratios than smaller ones.

Chart B1.7
Interest coverage ratio for listed non-financial firms



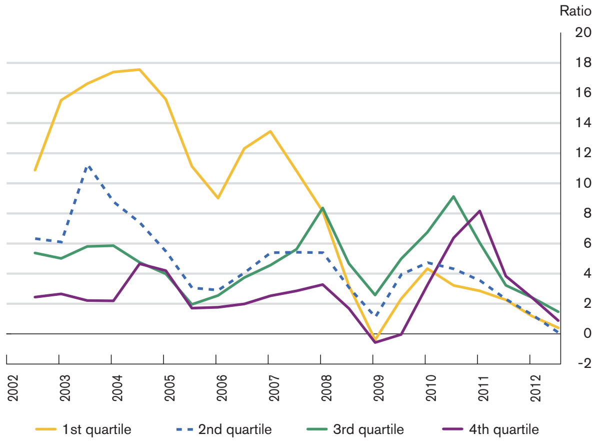
Sources: Bloomberg and HKMA staff estimates.

Chart B1.8
Interest coverage ratio for developers by asset size



Sources: Bloomberg and HKMA staff estimates.

Chart B1.9
Interest coverage ratio for listed firms in overcapacity industries



Sources: Bloomberg and HKMA staff estimates.

Concluding remarks

The main messages of this analysis are summarised as follows:

- The credit intermediation chain has continued to lengthen in recent quarters, with an increasing proportion of credit being channelled into the financial sector. This could reflect on-going changes in the structure of financial services and financial markets.

- Level of leverage for the corporate sector as a whole is less worrying, but leverages for real estate and the industries with overcapacity problems have increased more significantly (particularly for larger firms). This suggests credit to the less productive industries has likely grown at a faster pace than other industries.

- Accordingly, fund-use efficiency has generally weakened, partly explaining the recent widened divergence between credit expansion and economic growth. Looking ahead, corporate deleveraging and rationalisation of the overcapacity industries should help improve the efficiency of credit allocation.