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## 2. Global setting and outlook

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*Global financial markets have recently seen volatility falling to multiyear lows and appear to have underpriced the growing economic and policy uncertainties. In the US, the unemployment rate and inflation have been moving toward the Fed's projections and long-run policy targets faster than expected. In other major advanced economies, the sustainability of growth remains in doubt amid growing disinflation pressure in the euro area and uncertainty in the strength of economic recovery in Japan.*

*In East Asia, growth momentum has moderated but financial markets in the region have been buoyed by the unusually calm global market. Leverage in the region could increase further before the Fed eventually exits. This would increase the risk of a boom-bust cycle that leads to an abrupt unwinding of the currently compressed risk premia and fund flow reversal.*

*In Mainland China, growth momentum improved in the second quarter, partly underpinned by the mini-stimulus on infrastructure spending. The housing market appeared to have entered a down cycle, and asset quality of the banking sector has been under pressure. Despite the property market downturn, near-term growth momentum is expected to be largely stable along with the gradually improving external demand and fine-tuning of economic policies.*

### **2.1 External environment**

Financial market volatility has recently fallen to multiyear lows across the globe, driven by market expectations of a goldilocks scenario, under which the US Federal Reserve would successfully manage an orderly monetary normalisation, the European Central Bank and the Bank of Japan

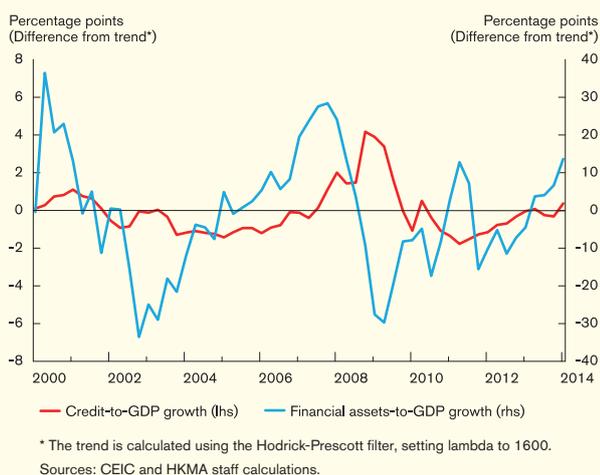
would continue to provide effective policy support in the form of further unconventional monetary easing, and major economies would continue to see recoveries steadily taking hold. Despite the optimism, global economic and policy tail risks remain, amid growing signs of financial excesses, the uncertain timing and pace of the unprecedented monetary normalisation in the US, risk of a sharper slowdown in the Mainland China economy and recent heightening of geopolitical tensions.<sup>1</sup>

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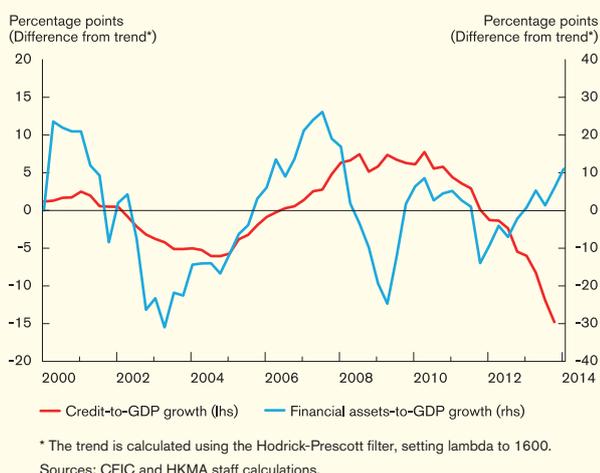
<sup>1</sup> A number of hot spots include, most notably, those in the Middle East and Eastern Europe.

The current period of low market volatility is characterised by a divergence between strong asset price inflation and sluggish credit growth in major advanced economies (Charts 2.1 and 2.2). The sluggish credit growth reflects the breakdown of the credit intermediation process due to deleveraging, which in turn impedes the recovery of the real economy. With the credit flow clogged, ample global liquidity eventually found its way in asset markets. Such development has fuelled a divergence between financial asset prices and economic fundamentals, indicating a build-up of financial market risks that warrants central banks' close attention.

**Chart 2.1**  
**US: Financial assets and credit-to-GDP growth**

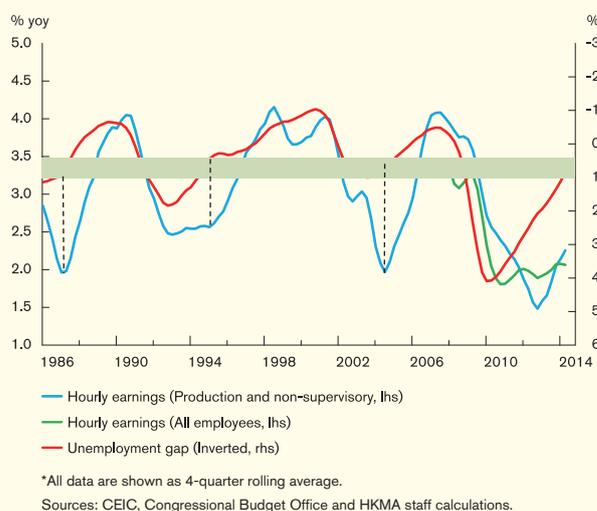


**Chart 2.2**  
**Euro area: Financial assets and credit-to-GDP growth**

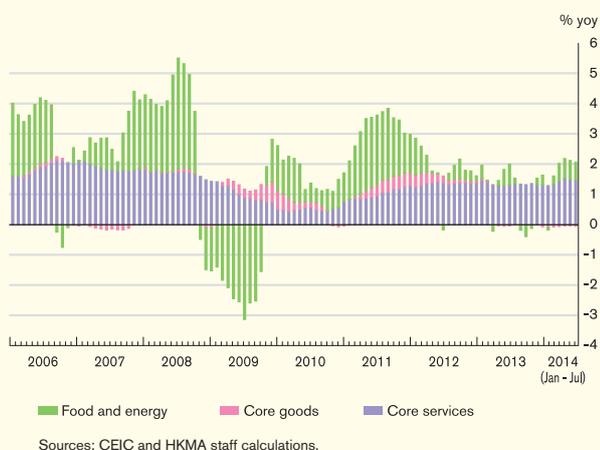


The current high degree of market optimism also stands in stark contrast with the growing macroeconomic and financial uncertainties in major economies. In the US, the recent run of robust employment growth has already driven the unemployment rate down to 6.1% in August, close to the Fed's previous end-of-2014 projections. Experience in the US suggests that wage growth tends to pick up abruptly once the unemployment rate falls to almost close the unemployment gap (i.e. actual minus the natural unemployment rate) (Chart 2.3). Meanwhile, detailed breakdown reveals a rather broad-based increase in inflation across different sub-components, particularly in the services sector (Chart 2.4), with rising costs in rental and medical care. In the event that wages and inflation pick up faster than expected, the Fed may be forced to tighten abruptly.

**Chart 2.3**  
**US: Unemployment gap and average hourly earnings\***



**Chart 2.4**  
US: Headline CPI inflation by contribution



**Chart 2.5**  
Euro area: Euro against the US dollar



Across the Atlantic, the deleveraging process continues to exert strong downward pressure on inflation in the euro area. As a result, disinflationary risk has now become a big threat to the euro area economy. To combat the mounting disinflationary pressure, the ECB introduced monetary easing measures at the June and September Governing Council meetings, including cuts in policy interest rates, the introduction of Targeted Longer-Term Refinancing Operations (TLTRO) and purchases of asset-backed securities and covered bonds. However, these policies appear to have only limited effects on the money markets so far as money market rates dropped just under the zero lower bound. In contrast, the impact on the exchange rate has been more visible, with the euro trending downward in recent weeks (Chart 2.5). Meanwhile, ongoing bank and corporate deleveraging could further dampen demand for credit and hamper the TLTRO programme's efficacy in boosting bank lending in the real economy.

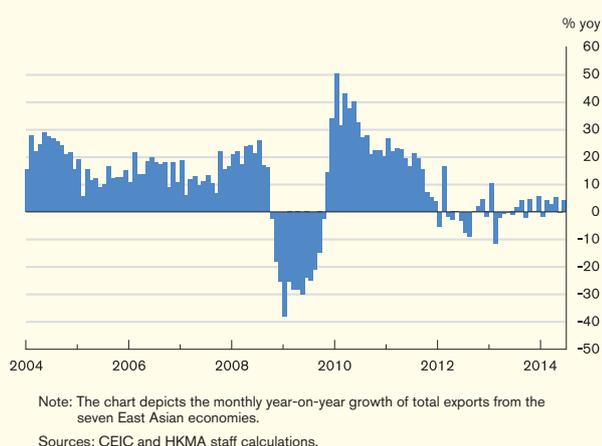
In Japan, while the first and second arrows of Abenomics, namely fiscal stimulus and monetary easing, have generated some decent economic momentum, it remains uncertain how well the recovery can sustain after the latest consumption tax hike in April. The fall in real wages has recently accelerated as a result of the tax hike which drove up inflation (Chart 2.6). The third arrow, namely structural reforms, now plays a critical role for sustainable economic recovery. There has been some progress made on this front such as the elimination of the rice production quota and corporate tax cut. However, the most critical and controversial areas such as more fundamental reforms in the labour market and the agricultural sector are still left largely untouched in the face of strong political resistance. There is a risk that Abenomics could fail to reignite long-term growth of the Japanese economy if policymakers fail to follow through on the promised structural reforms.

**Chart 2.6**  
Japan: Real and nominal wage growth



In East Asia<sup>2</sup>, growth momentum abated in the first half of 2014 amid softened domestic demand and weak performance of the external sector. So far, recovery in the US appeared to have only limited effects on the region's external performance. In particular, the region's exports continued to hover around low single-digit growth in recent months, compared with their double-digit growth on average before the global financial crisis (Chart 2.7).

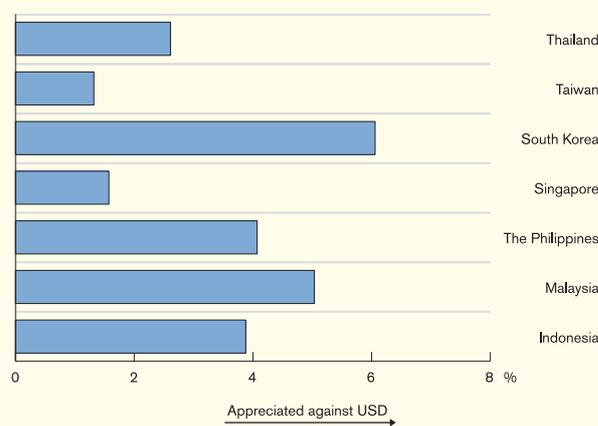
**Chart 2.7**  
Asia: Export growth



Looking forward, although external demand would likely pick up along with the gradually improving demand from the US, domestic demand may continue to ease along with the expectation of tighter financial conditions ahead.

Despite the soft patch in growth, the unusually calm investor sentiment in global financial markets appeared to have induced investor complacency about risk, boosting asset prices in the region. While equity prices in many regional economies have risen along with those in advanced economies, property prices remain high in some regional economies and the concerns about possibility of a housing market bubble loom large. Meanwhile, exchange rate of most East Asian currencies has remained resilient since early February (Chart 2.8). This also coincided with the increase in capital inflows to the equity and bond markets in the region. Cheap funding costs also continued to support bond issuance in the first half of 2014.

**Chart 2.8**  
Asia: Exchange rate change



<sup>2</sup> East Asian economies refer to Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand.

As incentives for borrowing remain strong and major central banks reinforce “low for long” expectations, bank credit growth is likely to remain robust and leverage in the region may increase further before its eventual unwinding once the Fed accelerates its pace of interest rate normalisation. This increases the risk of a boom-bust cycle in both the asset markets and the real economy in the region. As discussed in Box 1, the impact of US monetary normalisation on sovereign bond yields in Asia could potentially be very disruptive if it turns out to be much more disorderly than expected.

Moreover, a sharper-than-expected slowdown in the Mainland China economy and a heightening in geopolitical tensions would also add to risk of capital flow reversal in the region. In a not necessarily inconceivable scenario of a combination of these risks materialising at the same time, financial markets could see an abrupt unwinding of the currently compressed risk premia and fund flow reversal.

## Box 1

### How would sovereign bond yields in Asia Pacific react to US monetary normalisation in turbulent market conditions?

Former Fed Chairman Ben Bernanke surprised global financial markets when he signalled the Fed's intention to taper its quantitative easing (QE) programme in his Congressional testimony on 22 May 2013. The US Treasury bond market was sold off, which coincided with a sharp rise in sovereign bond yields in the Asia Pacific and abrupt capital outflows from the region. While financial markets have been a lot calmer since the Fed commenced its QE tapering, it is important to be vigilant about a repeat of the potential turbulence over the course of monetary normalisation. This box seeks to shed some light on the potential impact of the Fed's QE exit by examining the relationship between the US Treasury yields and sovereign bond yields in Asia Pacific, especially when the markets come under severe stress. We use the technique of quantile regression to measure the tail risks.

#### *Theory and modelling*

In theory, the borrowing cost in an economy, which has its own currency and runs its own monetary policy, should not be affected by that in another economy. Instead, it depends on the

chances of the lender getting repaid or, in other words, the risk of default. However, the surge in sovereign bond yields in Asia Pacific during the period from May to September 2013 suggested that there are indeed other factors at play, such as the US Treasury bond yield.<sup>3</sup>

Hence, in this study we postulate that the sovereign bond yield of an economy is determined by a world risk-free interest rate, the economy's own funding cost, the credit and the exchange rate risks of the economy, and global risk appetite.<sup>4</sup> The reason for including a world risk-free interest rate is that global financial markets have become highly interconnected. Depending on infrastructural and regulatory constraints, individual capital markets are closely linked together. International investors would thus take advantage of arbitrage opportunities, having regard to the credit and exchange rate risks involved and their risk tolerance.

Based on monthly data covering the period from October 2004 to February 2014, a principal component vector autoregressive (PC-VAR) model is estimated for the eleven EMEAP member economies.<sup>5</sup> This model examines the contemporaneous relationship among four endogenous variables of an economy, including (1) the 10-year local sovereign bond yield; (2) the domestic 3-month interbank interest rate which is used to control for the local funding cost; (3) the 5-year domestic sovereign CDS spread which is used as a measure for the credit risk of the economy; (4) the risk reversal of the local currency against the US dollar which is used as a proxy for the exchange rate risk. It also consists of three exogenous variables, including (1) the 10-year US Treasury yield; and (2) the Merrill Option Volatility Expectations Index which are used as a proxy for the level and the volatility of

<sup>3</sup> An empirical study found significant evidence that sovereign bond yields in emerging economies have moved much more closely with the US Treasury bond yield after 2005. For details, see Turner, P. (2013), "Benign neglect of the long-term interest rate", BIS Working Papers No. 403.

<sup>4</sup> Such modelling of emerging market sovereign bond yields is not new. See similar model proposed by Edwards, S. (1986), "The pricing of bonds and bank loans in international markets: An empirical analysis of developing countries' foreign borrowing", *European Economic Review*, 30, 3, 565 - 589.

<sup>5</sup> Specifically, the PC-VAR model fits an autoregression of a vector of principal components derived from the endogenous variables. The lead-lag and contemporaneous relationships among the endogenous variables are therefore captured by the coefficient matrices and the loading matrix of principal components respectively. More discussion of this model family can be seen in Matteson and Tsay (2011) "Dynamic orthogonal components for multivariate time series", *Journal of the American Statistical Association*, 106, 496, 1450-1463.

the world risk-free interest rate respectively; (3) an estimated global fear index which is used as a measure of risk appetite in global financial markets.<sup>6,7</sup>

Apart from estimating the mean relationship using the ordinary least squares (OLS) method, the model can be easily extended to estimating the functional relationship at high quantiles using the quantile regression method.<sup>8</sup> This enables us to assess how drastic the sovereign bond yields in the region could possibly respond to changes in US Treasury bond yields under extreme market conditions or, in other words, the tail risks.

### Scenario analysis and conclusion

The model estimated at the mean and various quantiles are used to compute short-run changes in the sovereign bond yield of each of the economies based on the scenario seen between May and September 2013 during which the increase in the US Treasury yield is 94 basis points. The different quantiles can be considered as representing different levels of market distress: the higher the quantile, the greater the distress.

<sup>6</sup> The Merrill Option Volatility Expectations Indices are developed by Merrill Lynch to reflect a market estimate of future Treasury bond yield volatility. The index used in this study, which is constructed based on 3-month options on Treasury securities in a wide range of tenors, measures the uncertainty about long-term yields over a 3-month horizon.

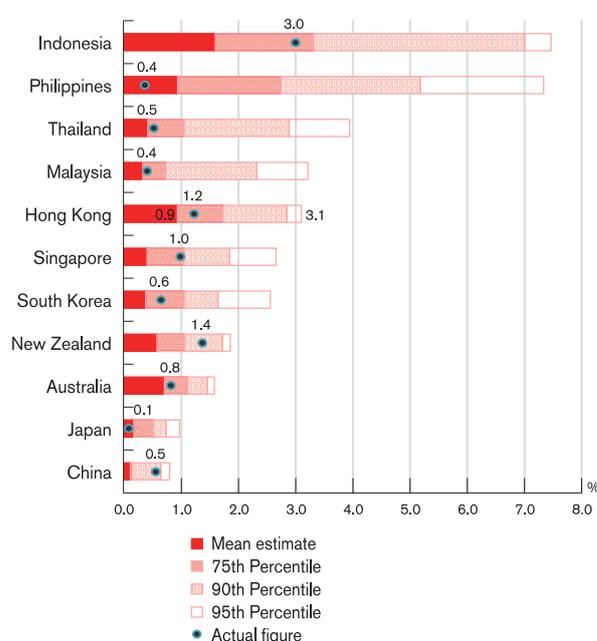
<sup>7</sup> The estimated global fear index is proxied by the first principal component constructed by nine major stock market volatility indices including the S&P 500, Dow Jones Industrial Average, NASDAQ, Euro Stoxx 50, DAX, CAC 40, FTSE 100, NIKKEI 225, and Hang Seng Index. The index, which explains 85.6% of the total variation of the nine indices, has a nearly equal weight on each stock volatility index, so it arguably reflects a risk appetite of global financial markets in general.

<sup>8</sup> Given that the four principal components are uncorrelated with each other, the vector autoregressive model can be viewed as four separate univariate autoregressive models which can be individually estimated by the quantile regression method.

<sup>9</sup> The Philippines is a notable exception with a much smaller increase attributable to the fact that the sovereign rating of the country was upgraded by a notch to investment grade by Standard & Poor's in May 2013. Japan, which introduced its own QE programme, also saw a slightly smaller increase in this episode.

Chart B1.1 shows the short-run response in the sovereign bond yields in Asia Pacific estimated at the mean and various quantiles along with their corresponding actual increases, with the economies ranked according to the size of their response at the 95th percentile. Take Hong Kong as an example, the actual increase in the sovereign bond yield is 1.2%, while the estimated increase at the mean and 95th percentile are 0.9% and 3.1% respectively.

**Chart B1.1**  
Estimated short-run changes in local government bond yields based on the scenario seen between May 2013 and September 2013



Note: During the period, the 10-year US Treasury bond yield rose by 94 bps.  
Source: HKMA staff estimates.

First of all, it is apparent that the actual increases registered in the episode are mostly greater than the mean estimates except for the Philippines and Japan.<sup>9</sup> This may reflect a knee-jerk reaction of international investors to run for the exit in response to the news, given that these economies had received significant capital inflows after several rounds of QE of the Fed.

Second, by comparing the actual increases and the estimates at the various quantiles, it highlights the importance of assessing the potential tail risk. The estimates at the 90th and

95th percentiles are many times larger than the actual increases or mean estimates. This means that the volatility and turbulence of financial markets could have been far more disruptive than imagined in times of extreme adversity.

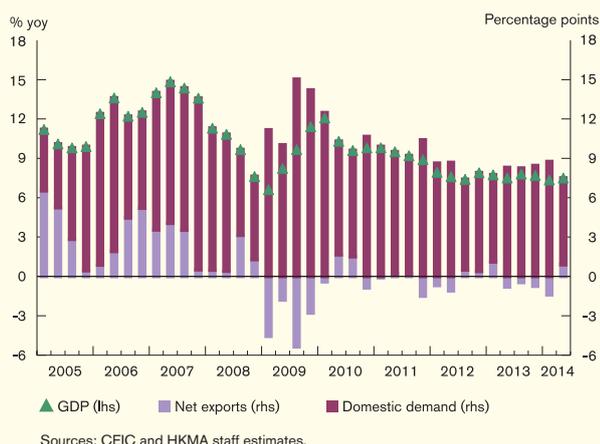
Finally, the ranking of the economies suggests that under stressful market conditions, an increase in the US Treasury yield has a much smaller potential impact on the sovereign bond yield in economies that are perceived to have stronger fundamentals.

In sum, empirical evidence supports that the US Treasury bond yield can have a significant influence on the sovereign bond yields in Asia Pacific. This is one of many channels in which the QE tapering of the Fed can affect the economies in the region. Increase in sovereign bond yields will not only compromise the ability of the sovereigns to service their debt but also translate into higher cost of borrowing for the entire economy. The results also show the potentially outsized impact if the US monetary normalisation somehow turns out to be much more disorderly than expected.

## 2.2 Mainland China

Real GDP growth in Mainland China edged up to 7.5% year on year in the second quarter from 7.4% in the previous quarter (Chart 2.9), underpinned by a recovery in exports and the mini-stimulus on infrastructure spending.<sup>10</sup> Domestic consumption growth was largely stable, but real estate and manufacturing investment growth slowed. Inflationary pressures were mild. Headline CPI inflation rate eased to 2.2% year on year on average in the second quarter, but PPI inflation rate stayed in negative territory at -1.5%.

**Chart 2.9**  
Mainland China: contributions by domestic demand and net exports to GDP growth

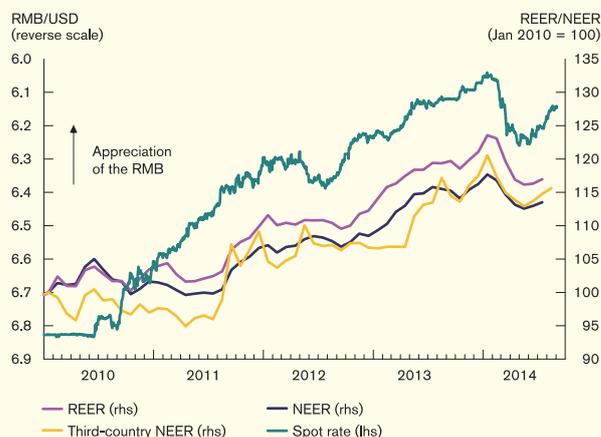


Growth momentum is expected to be moderate in the near term. The progress in absorbing the overcapacity in a few heavy industries appeared to have been slow, while the weakening housing market would add uncertainty to the near-term growth momentum. However, the gradually improving external demand and fine tuning of

economic policies point to low risk of a sharp deterioration in the outlook. Consensus forecasts in August project the Mainland economy to grow by 7.4% for 2014 as a whole, and CPI inflation rate could be 2.4%.

Capital inflow pressures receded in the second quarter amid an increase in the two-way movements of the RMB/USD exchange rates, and concerns over the growth prospect. Capital flow pressures have become more balanced in recent months, with the RMB/USD exchange rate appreciating by around 1.7% during June-August, following a continued softening in earlier months (Chart 2.10). Consensus forecasts in August suggest that the renminbi may continue to strengthen mildly against the US dollar in the next few months, but for 2014 as a whole, it may depreciate slightly. Volatility in the RMB/USD exchange rate increased after the widening of the daily trading band in March but subsided in recent months (Chart 2.11).

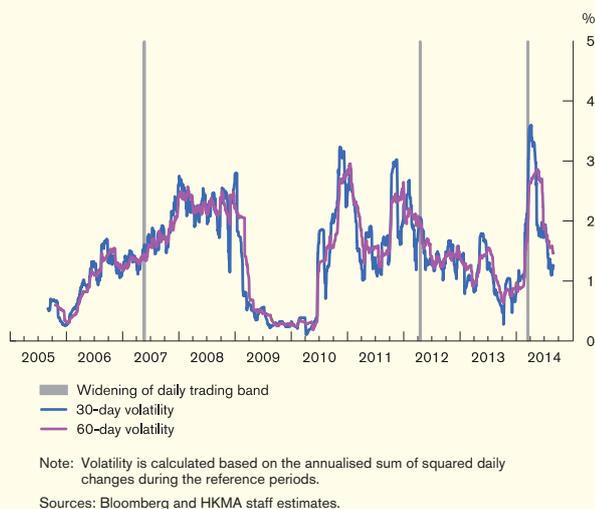
**Chart 2.10**  
Mainland China: renminbi exchange rates



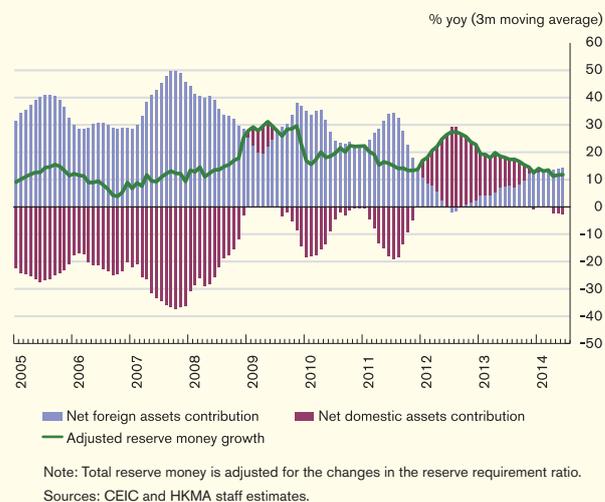
Note: A higher effective exchange rate index indicates a stronger renminbi. The 3rd-country NEER takes into account the competition that China faces in foreign markets from other economies exporting similar products.

<sup>10</sup> On a seasonally adjusted quarter-on-quarter basis, real GDP growth also quickened to 2.0% from 1.5% in the previous quarter. Year-on-year GDP growth was 7.4% for the first half of the year.

**Chart 2.11**  
Mainland China: volatility of the RMB/USD exchange rate



**Chart 2.12**  
Mainland China: contributions to reserve money growth



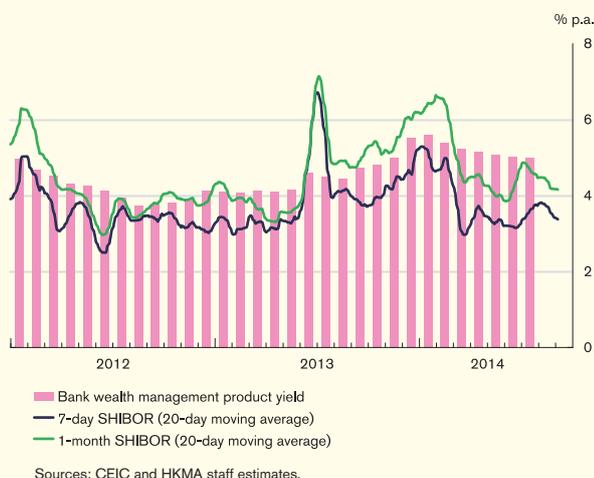
The People's Bank of China (PBoC) appeared to have tilted towards an easing bias in monetary policy recently. It cut the required reserve ratios for targeted financial institutions, and reserve money growth showed signs of stabilisation in recent months (Chart 2.12). Growth in broad money (M2) increased year on year in the second quarter following a softening in previous months, while bank loans expanded at a steady pace over the same period. Credit expansion, via both bank and non-bank channels, slowed notably in July, reflecting weaker demand for credit and seasonal factors. For instance, new entrusted lending (a financing activity between companies with banks as middlemen, a major component of shadow banking) dropped from around RMB262 billion in June to around RMB122 billion in July. Box 2 sheds light on entrusted lending, a subject that is little understood.

Banks' effective lending rate fell by about 0.2 percentage points in the second quarter, but funding costs for some small and private enterprises reportedly have remained elevated amid continued difficulties in raising funds via formal channels. For instance, the private lending composite rate in Wenzhou, a city in Zhejiang province where private lending is prevalent, stayed at around 20% per year during the review period.

Liquidity conditions in the interbank market have been largely stable over the review period, partly reflecting the proactive liquidity management by the PBoC. Regulatory bodies' initiatives to curb the fast-growing interbank business associated with "non-standard" products may have also dampened the demand for funds in the interbank market.<sup>11</sup> Accordingly, money market rates have been trendless over the review period, while yields of bank wealth management products have edged down (Chart 2.13).

<sup>11</sup> "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.

**Chart 2.13**  
Mainland China: money market rates and bank wealth management product yields



Equity markets remained weak in earlier months but have shown stronger momentum in recent weeks. The Shanghai Composite Index has risen by more than 10% since mid-July, while the average daily transaction volume of the Shanghai Stock Exchange has increased to more than RMB130 billion from RMB78 billion in the first half of 2014. This partly reflected an improvement in market sentiment amid the introduction of mini-stimulus measures to support economic growth. The prospective launch of the Shanghai-Hong Kong Stock Connect,<sup>12</sup> which would broaden the base of international and institutional investors for the Mainland stock markets, appeared to have strengthened market confidence as well.

The housing market appeared to have started a down cycle over the review period. Among the 70 big and medium-sized cities monitored by the National Bureau of Statistics (NBS), over 60 cities saw property prices drop month on month in July, compared with less than 15 cities in March.

<sup>12</sup> Shanghai-Hong Kong Stock Connect is a pilot programme that links the stock markets in Shanghai and Hong Kong. This pilot programme will allow Mainland investors who satisfy the eligibility criteria to trade eligible stocks listed on the Stock Exchange of Hong Kong (SEHK) via the Shanghai Stock Exchange (SSE) directly. At the same time, it will also allow Hong Kong and overseas investors to trade for the eligible stocks listed on the SSE through the SEHK directly.

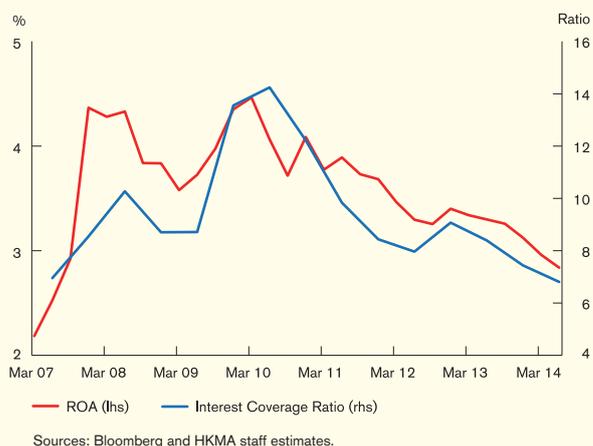
Top-tier cities, which had seen a surge in property prices in previous quarters, experienced faster softening in property prices than smaller cities in recent months (Chart 2.14). Property market transactions have weakened, with the overall floor space sold having fallen by 7.6% year on year in the first seven months of the year.

**Chart 2.14**  
Mainland China: house prices



Property developers' financial conditions have weakened accordingly. Listed developers' profitability and debt servicing capacity continued to soften over the review period (Chart 2.15), and smaller developers have reportedly been in an even more difficult situation.

**Chart 2.15**  
Mainland China: listed developers' financial conditions



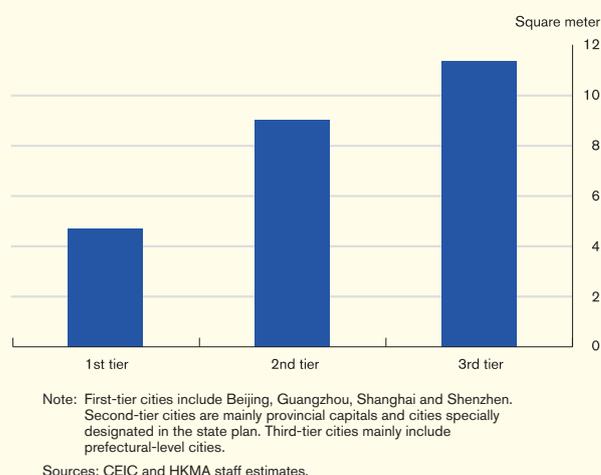
While tighter mortgage lending might have contributed to the weakening in the property market, a fast increase in house supply in recent years has likely played a bigger role. For instance, average annual floor space started during 2011-2013 has been nearly 50% more than that of the previous three years of 2008-2010.

Looking ahead, risks to the housing market appear to be on the downside, particularly in smaller cities. Property inventory has increased, with the space of unsold properties in the primary markets of mega cities (including Beijing and Shanghai) building up in the past few months, and that of a few second-tier cities has grown even faster (Chart 2.16). Official data also indicate per capita floor space under construction was generally larger in smaller cities than in bigger ones in 2013 (Chart 2.17). Some local governments have taken measures to support the housing market (for instance, removing property purchase restrictions). As such, the likelihood for a nationwide disorderly adjustment in the housing market should still be low.

**Chart 2.16**  
Mainland China: space of unsold properties in primary markets

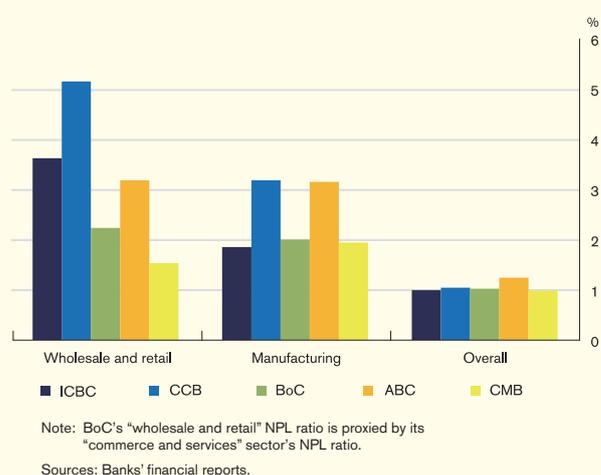


**Chart 2.17**  
Mainland China: per capita floor space under construction in 2013



The banking sector's asset quality remained largely stable in aggregate, but the picture does not appear to be uniform across industries. While the overall non-performing loan (NPL) ratio has only risen slightly from 1.0% at end 2013 to 1.08% at end-June 2014, the NPL ratios for sectors with overcapacity problems and related industries have reportedly risen at a faster pace. In fact, data for a few big banks indicate the NPL ratios of the manufacturing industries with substantial overcapacity (steel, for instance) and the wholesale industry were noticeably higher than the average at end-June 2014 (Chart 2.18).

**Chart 2.18**  
Mainland China: NPL ratios for selected industries as of end-June 2014

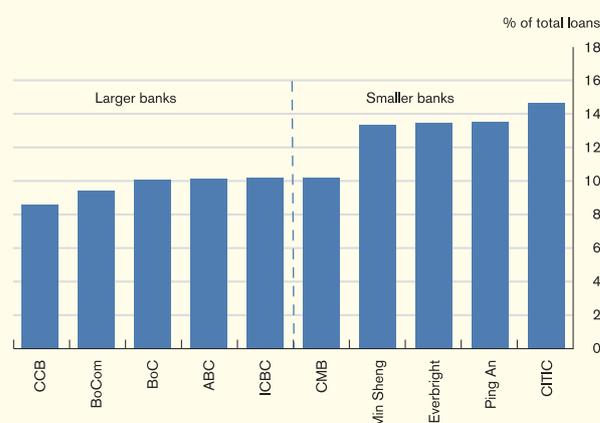


Going forward, overcapacity problems would continue to weigh on banks' asset quality, particularly given a continued rise in their leverage over the review period. In fact, some overcapacity industries' debt-to-asset ratios have exceeded 70% as of end-June 2014, while around 30% of enterprises in some of these industries suffered losses in the first half of the year.

The property market downturn would add uncertainty to the banking sector's asset quality. The direct impact might not be large, particularly for big banks with smaller exposure to real estate and construction sectors (Chart 2.19), but the indirect impact could be larger. For instance, debt servicing capacity of local governments would weaken along with the property market adjustment given their heavy dependence on land sales revenue as funding source in recent years (Chart 2.20). Indeed, official data show that overall land sales revenue growth declined from 40.3% year on year in the first quarter to 14.5% in the second quarter. Given that downside risks to the property market are generally lower in large cities, the impact on their land sales revenue should be smaller accordingly.

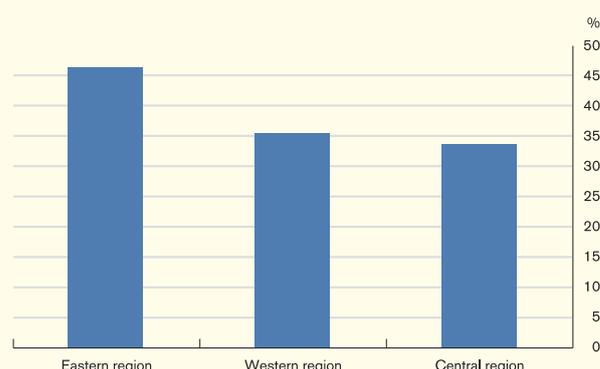
Market sentiment about the banking industry generally deteriorated accordingly, with the price-to-book ratio of banks' shares declining from around unity at end 2013 to around 0.84 at end-August.

**Chart 2.19**  
Mainland China: banks' exposure to developers and construction in 2013



Sources: Banks' annual reports and HKMA staff estimates.

**Chart 2.20**  
Mainland China: local governments' direct debt with land sales revenue as funding source in 2012



Note: Regional figures are simple average of available provincial level numbers.  
Sources: WIND and HKMA staff estimates.

New forms of unconventional financing or shadow banking activities, such as bank-securities cooperation and internet finance, have accelerated in recent periods. Specifically, net assets of money market funds doubled in the first half of the year to nearly RMB1,600 billion. However, overall, banks' off-balance sheet and non-bank intermediaries' financing activities have expanded at a slower pace amid a strengthening in the regulations by the authorities.<sup>13</sup> For instance, the share of entrusted and trust loans in total social financing dropped from 25% on average in 2013 to around 17% in the first half of 2014 on a flow basis.

<sup>13</sup> In addition to measures introduced in earlier periods, the China Banking Regulatory Commission (CBRC) strengthened the risk management of trust business in April. Shareholders of trust companies were required to provide liquidity support or inject capital to shore up the trust company in case of liquidity strain or credit losses. To contain the risk of using repurchase agreement to finance less formal financing activities, underlying assets of repo transactions should be of good liquidity such as bank acceptances, bonds and central bank bills.

## Box 2 Entrusted lending in Mainland China

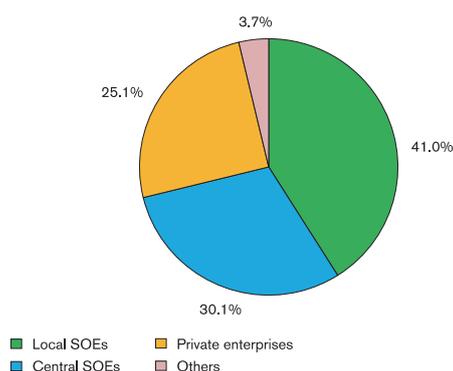
Entrusted lending, a financing activity between companies with banks acting as middlemen, has developed at a fast pace in recent years. On a flow basis, it accounted for 12.8% of total social financing in the first half of 2014. The outstanding balance of entrusted lending amounted to RMB8.3 trillion at the end of 2013, accounting for about a third of estimated total shadow banking on the Mainland. Despite its rising importance, entrusted lending does not appear to be well understood. This article attempts to lift the veil. Based on the entrusted loans announced by listed firms in 2013, we explore what types of firms have engaged in entrusted lending and what the interest rate has been. As it was reported that some entrusted lending has relied on bank loans or bond issuance as funding source, we also shed some light on potential non-bank corporate credit intermediation activities in Mainland China with data of both listed firms and bond issuers.

### *Who has engaged in entrusted lending and what has been the level of the interest rate?*

Entrusted lending in Mainland China has been incentivised by structural issues as well as cyclical factors. In particular, it has been difficult for small and private enterprises to raise funds via formal financing channels, while bank lending has reportedly been skewed towards SOE either out of policy priority or implicit government guarantee. In recent periods, it has also become more difficult for property developers and the firms in the industries with substantial overcapacity to borrow along with the authorities' efforts to reduce their leverage. Consequently, it is common for firms with better financial conditions or stronger financing capacity to lend to those firms short of funds.

Our analysis based on entrusted lending announced by listed firms in 2013 indicates that over 70% of the lending was conducted by SOEs (41% by local SOEs and 30% by central SOEs), with only 25% of entrusted lending being initiated by private enterprises (Chart B2.1).<sup>14</sup> Other firms, including foreign enterprises, accounted for less than 4% of total entrusted lending of listed firms in 2013. By maturity, around 80% of the entrusted lending had duration of no more than three years.

**Chart B2.1**  
Lenders of entrusted loans by ownership in 2013

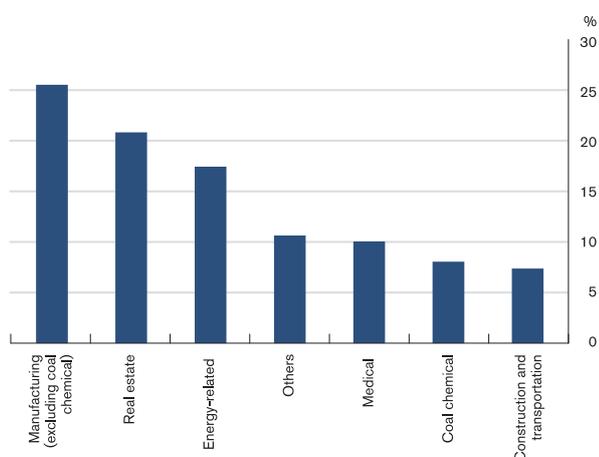


Sources: Shanghai and Shenzhen Exchanges and HKMA staff estimates.

Firms in the industries facing tighter credit controls appeared to have relied on their parent companies or other firms as an important source to raise funds. In recent periods the authorities tightened bank lending to the industries with substantial overcapacity and a fast increase in leverage (for instance, steel, coal, and developers), and borrowers of entrusted loans are indeed mainly from these sectors. Specifically, manufacturing, energy-related and real estate industries together accounted for more than 70% of total entrusted loans by listed firms in 2013, compared with 10% and 7% for medical and construction & transportation industries respectively (Chart B2.2).

<sup>14</sup> If an enterprise's state ownership is more than 50%, we define it as SOE in our analysis.

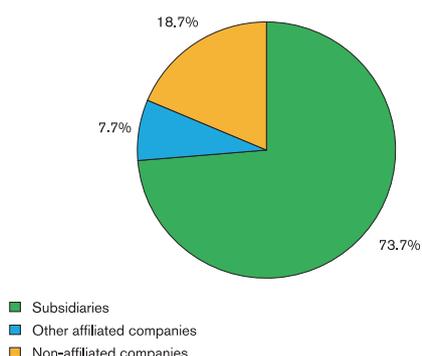
**Chart B2.2**  
Distribution of borrowers by industry in 2013



Sources: Shanghai and Shenzhen Exchanges and HKMA staff estimates.

Most of the loans were extended by big firms to their subsidiaries or affiliated enterprises, with less than 20% of the lending being conducted between non-affiliated firms (Chart B2.3). This possibly suggests entrusted lending has been an important channel to allocate funds within conglomerates.

**Chart B2.3**  
Relationship between lenders and borrowers in 2013

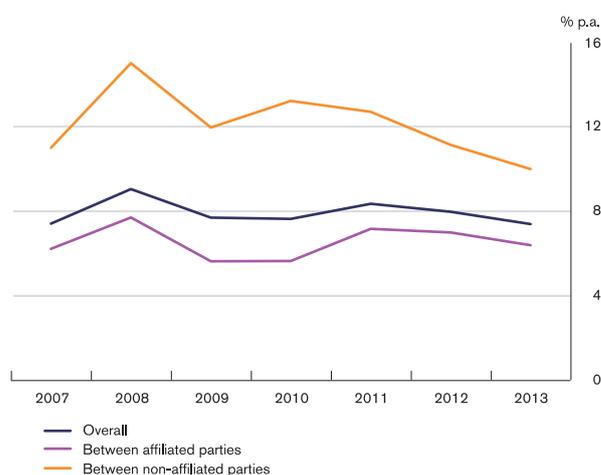


Sources: Shanghai and Shenzhen Exchanges and HKMA staff estimates.

Interest rates of entrusted lending varied a lot across industries and firms. Lending rates for financing between non-affiliated firms have generally been much higher than those for

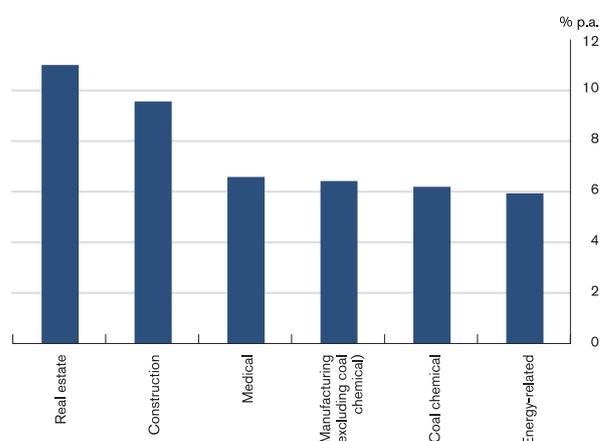
financing between affiliated firms. The lowest rate was actually 0% in 2013 (from a big firm to its subsidiary), while the highest was 24% per year (between non-affiliated firms). Average lending rate between non-affiliated firms has been 2.5-5.5 percentage points higher than that for lending between affiliated firms in recent years (Chart B2.4). Property developers and construction industry paid the highest lending rates of 9.5-11% per year on average in 2013, while other industries paid around 6% per year on average or even lower (Chart B2.5).

**Chart B2.4**  
Entrusted lending rate by relationship



Sources: Qian and Li (2013)<sup>15</sup>, Shanghai and Shenzhen Exchanges and HKMA staff estimates.

**Chart B2.5**  
Average interest rate of entrusted lending by industry in 2013



Sources: Shanghai and Shenzhen Exchanges and HKMA staff estimates.

<sup>15</sup> "Operation mechanism and guarding financial risk of entrusted loans: stemming from the public data of listed companies in China from 2004 to 2013" by X. Qian and X. Li, *Enterprise Development*, 2013.

### *Has entrusted lending relied on formal financing as funding source?*

It has been reported that entrusted lending might have relied on financing through formal channels as funding source. While some companies, in light of their easier access to formal financing channels, may have borrowed and then lent to their subsidiaries that have difficulty in raising funds through formal channels, others may have just engaged in financial intermediation in an attempt to profit from the interest rate gap between formal financing and entrusted lending. Shin et al. (2013) also point out that some Chinese firms have borrowed overseas in foreign currency and lent to domestic firms directly or indirectly in anticipation of the renminbi appreciation.<sup>16</sup>

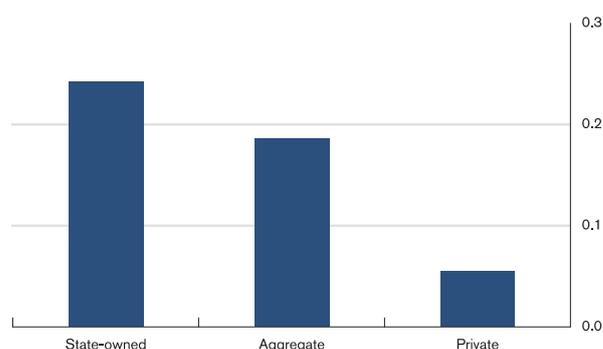
Whether an enterprise has engaged in credit intermediation can be judged from the relationship between its financial asset and financial liabilities. Non-financial enterprises' financial asset and liability changes tend to move in opposite directions as the purpose for them to borrow is to finance investment. In contrast, credit intermediaries' financial asset and liability changes have the same sign as they borrow in order to lend. Following Shin et al. (2013), we study the elasticity of financial asset to financial liabilities with firm-level data across ownership, firm size, and industries.<sup>17</sup> If a firm's elasticity of financial asset to financial liabilities is significantly positive, we would conclude that it has likely engaged in credit intermediation.

Regression results suggest that some enterprises have indeed engaged in financial intermediation. The elasticity of financial asset to financial liabilities is around 0.2 on average, suggesting a

one percent increase in these firms' financial liabilities would mean a 0.2 percent rise in their financial asset. This is in sharp contrast to the case of non-financial enterprises in major advanced economies. For instance, estimations by Shin et al. (2013) indicate that the elasticity of financial asset to financial liabilities for non-financial enterprises in the US has been -0.04 to 0.02 in the past few decades.

Moreover, it seems that SOEs have been more active in financial intermediation than private enterprises. Specifically, SOEs' elasticity of financial asset to financial liabilities has been around 0.24 on average, compared with only 0.06 for private enterprises (Chart B2.6). This may help explain why entrusted lending has been mainly conducted by SOEs. In other words, in view of their easier access to formal financing channels such as bank lending and bond issuance, some SOEs may have borrowed through these formal channels on one hand and then lent to other firms on the other.

**Chart B2.6**  
Elasticity of financial asset to financial liabilities



Sources: WIND and HKMA staff estimates.

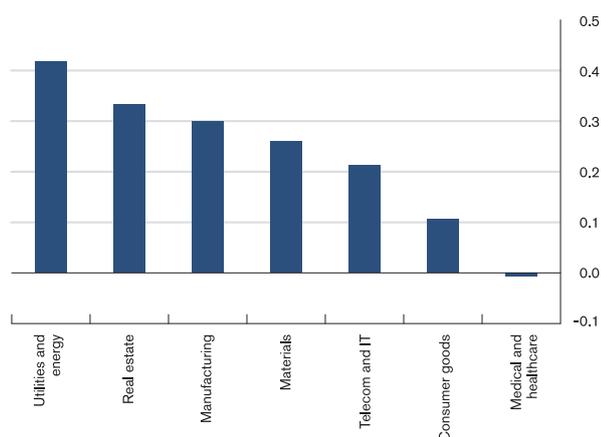
There does not seem to be much difference across the size of firms in our sample, with the elasticity of financial asset to financial liabilities being around 0.20 for most quartiles of firms in terms of sales. This is possibly because listed firms and bond issuers are all large firms, and it has been easier for them to borrow and hence conduct financial intermediation than smaller firms.

<sup>16</sup> See "Firms as surrogate intermediaries: evidence from emerging economies", by H. S. Shin and L. Y. Zhao (2013), manuscript, Princeton University.

<sup>17</sup> The sample includes 3,200 listed firms and bond issuers during 2009-2013.

By industry, utilities and energy (gas and water supply, coal, etc.), property developers, and manufacturing firms display much stronger surrogate intermediation behaviour than others. As shown in Chart B2.7, the elasticity of financial asset to financial liabilities for telecom and utilities and energy industries ranges from 0.2 to around 0.4, and it is less than 0.1 for consumer goods and slightly negative for medical and healthcare firms. We further find that the elasticity of financial asset to financial liabilities has been higher for firms in the industries with substantial overcapacity problems (0.38), possibly suggesting large firms in these industries have likely used their privileged access to borrowing and help other firms meet the demand for funds.

**Chart B2.7**  
Elasticity of financial asset to financial liabilities by industry



Sources: WIND and HKMA staff estimates.

### Concluding remarks

The main messages of this box are summarised as follows:

- Entrusted lending has been mainly conducted by SOEs. Most of the loans have been extended by big firms to their subsidiaries or affiliated enterprises in 2013. Firms in the industries facing tighter credit controls in recent periods, such as those with overcapacity problems, and property developers, appeared to have used entrusted lending as an important channel to raise funds.
- Interest rates of entrusted lending varied a lot across industries and firms. Lending rates for financing activities between non-affiliated firms have generally been much higher than those for financing conducted between affiliated firms. Specifically, property developers and construction industry paid the highest lending rates on average.
- Our analysis based on data for listed firms and bond issuers suggests that those firms which have made loans through entrusted lending might have financed their lending through formal channels. Specifically, some SOEs might have engaged in such credit intermediation activities in view of their easier access to formal financing channels such as bank credit and bond issuance.