# 5. Banking sector performance

*The profitability of retail banks continued to improve in the second half of 2018 compared with the same period in 2017 mainly due to higher net interest income. Capital and liquidity conditions remained sound and robust. Reflecting upward pressure on Hong Kong dollar interbank interest rates and retail deposit rates amid US interest rate normalisation, the overall Hong Kong funding costs for retail banks increased notably, albeit remaining relatively low. Against the uncertain external environment, bank credit contracted moderately in the second half. Nevertheless, there were signs of stabilisation in loan growth since November and asset quality remained healthy by historical standards. Looking ahead, the Hong Kong banking sector will face multiple headwinds arising from the lingering uncertainty over US-China trade relations, global economic slowdown, uncertainty over the pace of US tightening cycle, and geopolitical risks. With the rising corporate leverage, banks should remain alert to the credit risk of their corporate exposure to any further deterioration in the external environment.*

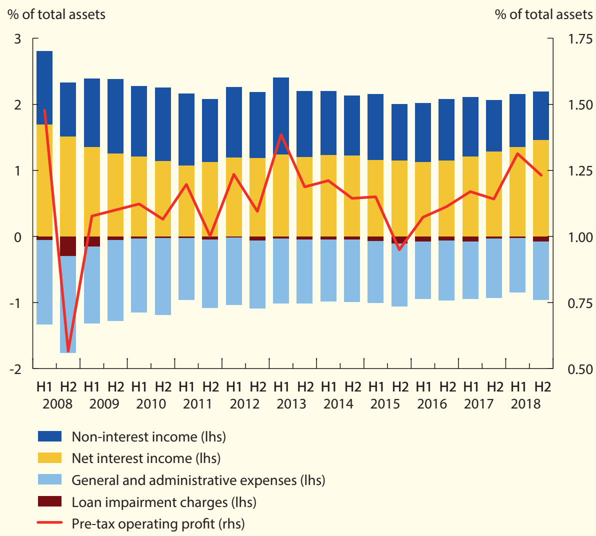
## 5.1 Profitability and capitalisation

### *Profitability*

The aggregate pre-tax operating profit of retail banks[39] rose by 14.3% in the second half of 2018 compared with the same period in 2017, while the return on assets also rose to 1.23% from 1.14% (Chart 5.1). The strong performance was mainly due to a significant growth in net interest income, which more than offset increases in impairment charges and operating expenses.

For 2018 as a whole, the aggregate pre-tax operating profit of retail banks increased by 19.4%, with the return on assets rising to 1.27% from 1.16% in 2017.

**Chart 5.1**
**Profitability of retail banks**

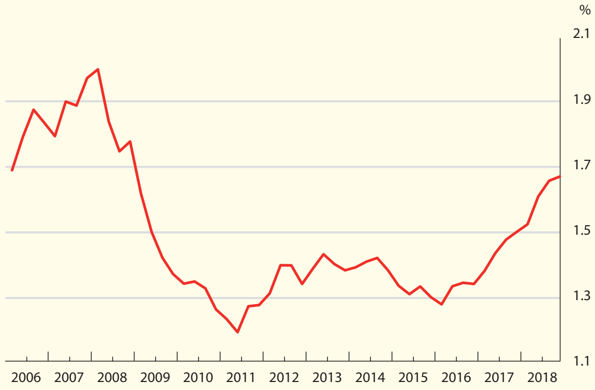



Note: Semi-annually annualised figures.
Source: HKMA.

The net interest margin (NIM) of retail banks widened further to 1.67% in the fourth quarter compared with 1.5% for the same period last year (Chart 5.2).

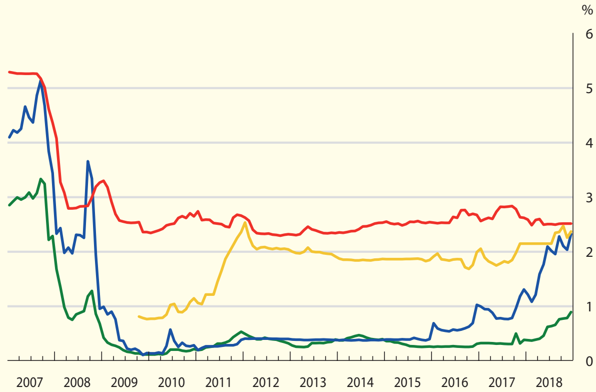
[39] Throughout this chapter, figures for the banking sector relate to Hong Kong offices only unless otherwise stated.

**Chart 5.2**
**NIM of retail banks**




Note: Quarterly annualised figures.
Source: HKMA.

**Chart 5.3**
**Interest rates**



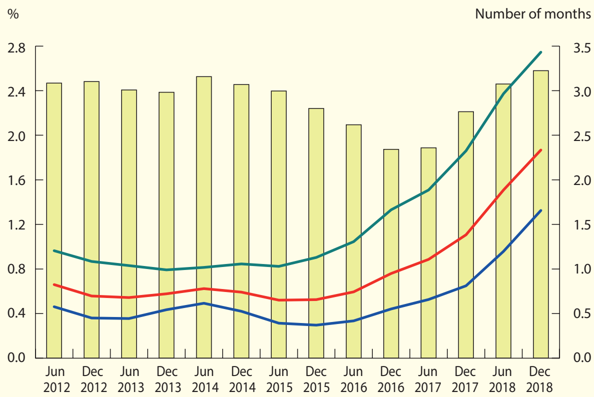

Notes:
(a) End of period figures.
(b) Period-average figures for newly approved loans.
Sources: HKMA and staff estimates.

Largely reflecting further US interest rate rises and declines in Hong Kong dollar interbank liquidity following the triggering of the weak-side Convertibility Undertaking (CU) in August 2018,[40] interbank funding costs in Hong Kong continued to experience upward pressure in the second half of 2018. In particular, the three-month Hong Kong Interbank Offered Rate (HIBOR) rose by 23 basis points in the second half (Chart 5.3).

Hong Kong dollar retail deposit rates also increased in the review period, as banks have generally lifted their time-deposit rates to compete for long-term stable funding.[41] In addition, banks have raised their savings deposit rates in line with the corresponding rise in their best-lending rates (BLR) following the US interest rate hike in late-September. Reflecting both higher wholesale and retail funding costs, the composite interest rate (a measure of the average cost of Hong Kong dollar funds for retail banks), increased to 0.89% in December 2018 from 0.62% in June, albeit remaining relatively low by historical standards.

More broadly, the aggregate Hong Kong dollar and US dollar funding cost for licensed banks in Hong Kong continued to trend upwards. The banks' average overall Hong Kong dollar and US dollar funding cost increased by 36 basis points in the second half of 2018, compared with a 40-basis-point increase in the first half (the red line in Chart 5.4).

**Chart 5.4**
**Hong Kong dollar and US dollar funding cost and maturity of licensed banks**




Source: HKMA.

[40] The weak-side CU was triggered in mid- and late-August, with total accumulative capital outflows of HK$33.1 billion.

[41] However, anecdotal evidence suggests that some banks have adjusted the time-deposit rates downward since mid-January in view of weaker credit growth and lower demand for long-term deposits.

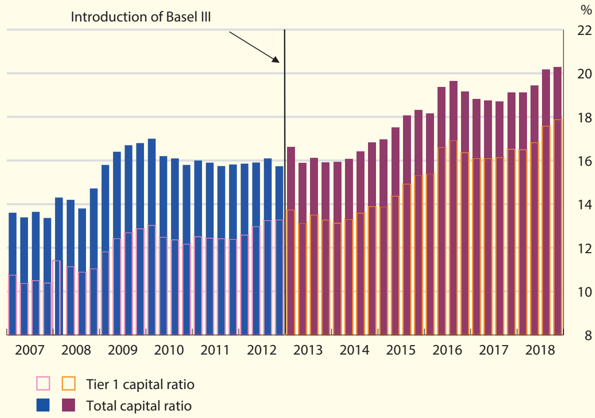
With HIBORs seeing a larger cumulative rise than the overall funding cost of banks in Hong Kong, this may represent a positive development for retail banks' HIBOR-based mortgage lending, which has been actively promoted in the past few years. However, the improvement in NIM may become more limited, as a larger portion of HIBOR-based mortgage loans have reached their BLR-based cap rates. As the timing of a future rise in BLR remains uncertain, the continued upward trend in banks' funding costs amid US interest rate normalisation could potentially weigh on the overall NIM.

The outlook for banks' profitability may be clouded by heightened uncertainties in the external environment. The lingering uncertainty over US-China trade relations coupled with slowing global economic growth could dampen business confidence and reduce demand for bank credit. Should this lead to a notable decline in lending and worsening asset quality, it could significantly weigh on banks' profitability.

### *Capitalisation*

Capitalisation of the Hong Kong banking sector continued to be strong and well above the minimum international standards. The consolidated total capital ratio of locally incorporated authorized institutions (AIs) rose further to 20.3% at the end of 2018 (Chart 5.5). The Tier 1 capital ratio also increased to 17.9%, with 16.0% being contributed by Common Equity Tier 1 (CET1) capital.

**Chart 5.5**
**Capitalisation of locally incorporated AIs**



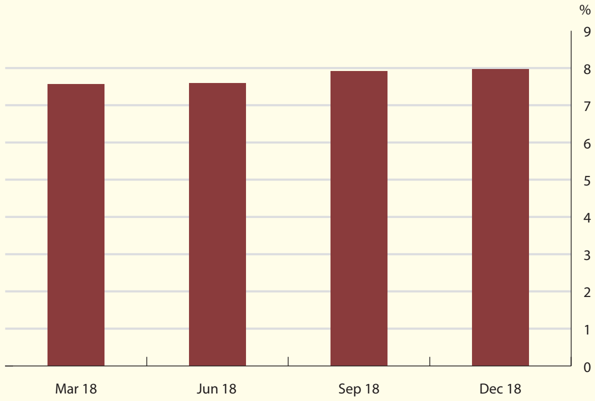

Notes:
1. Consolidated basis.
2. With effect from 1 January 2013, a revised capital adequacy framework (under Basel III) was introduced for locally incorporated AIs. The capital ratios from March 2013 onwards are therefore not directly comparable with those up to December 2012.

Source: HKMA.

Alongside the risk-based capital adequacy ratio, Basel III introduced a non-risk-based Leverage Ratio (LR) requirement as a "back-stop" to restrict the build-up of excessive leverage in the banking sector.[42] The minimum LR requirement took effect from 2018 in Hong Kong and the LR of locally incorporated AIs stayed at a healthy level of 8.0% at the end of 2018, exceeding the 3% statutory minimum (Chart 5.6).

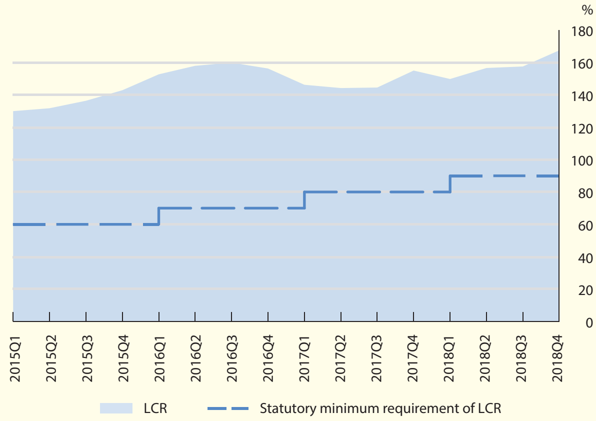
42 LR is calculated as the ratio of Tier 1 capital to an exposure measure, where the exposure measure includes both on-balance sheet and off-balance sheet exposures. Under the Basel III implementation timeline, the minimum LR requirement took effect from 2018, following a transitional period of 2013 to 2017 when banks were required to report their LR to supervisors for regulatory monitoring. For details, see "Frequently asked questions on the Basel III leverage ratio framework" published by the Basel Committee on Banking Supervision (https://www.bis.org/bcbs/publ/d364.pdf).

**Chart 5.6**
**Leverage Ratio of locally incorporated AIs**




Note: Consolidated basis.
Source: HKMA.

**Chart 5.7**
**Liquidity Coverage Ratio**




Notes:
1. Consolidated basis.
2. Quarterly average figures.
Source: HKMA.

## 5.2 Liquidity and interest rate risks

### *Liquidity and funding*

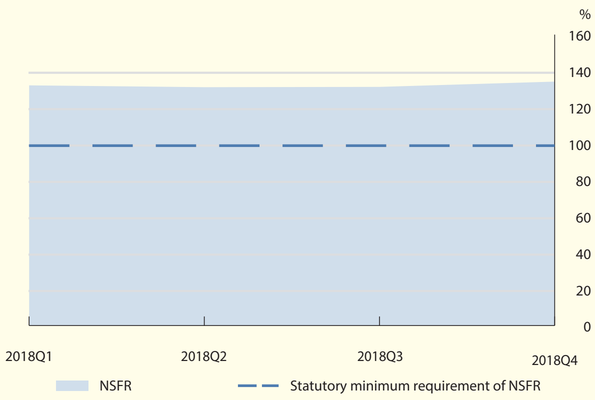
The liquidity positions of the banking sector, as measured by the Basel III Liquidity Coverage Ratio (LCR), remained sound during the review period. The average LCR of category 1 institutions rose to 167.6% in the fourth quarter of 2018, from 156.6% in the second quarter (Chart 5.7), well above the statutory minimum requirement of 90% applicable in 2018. The average Liquidity Maintenance Ratio (LMR) of category 2 institutions also saw an improvement to 54.3% in the fourth quarter from 51.3% in the second quarter, also well above the statutory minimum requirement of 25%.[43]

The Net Stable Funding Ratio (NSFR)[44], as a part of the Basel III liquidity requirements, indicates a stable funding position of AIs. The average NSFR of category 1 institutions remained at a high level of 135.6% in the fourth quarter of 2018 (Chart 5.8), well above the statutory minimum requirement of 100%. The average Core Funding Ratio (CFR) of category 2A institutions stood at a high level of 134.3%, which also exceeded the statutory minimum requirement of 50% applicable in 2018. The strong liquidity and stable funding positions of AIs suggest the Hong Kong banking sector is well positioned to withstand a variety of liquidity shocks.

[43] The Basel III LCR requirement, phased-in from 1 January 2015, is designed to ensure that banks have sufficient high quality liquid assets to survive a significant stress scenario lasting 30 calendar days. In Hong Kong, AIs designated as category 1 institutions adopt the LCR; while category 2 institutions adopt the LMR. For details, see the HKMA's Supervisory Policy Manual (SPM) LM-1, "Regulatory Framework for Supervision of Liquidity Risk".

[44] In Hong Kong, category 1 institutions are required to comply with the NSFR; while category 2 institutions designated as category 2A institutions must comply with the requirements relating to the local CFR. According to the Banking (Liquidity) Rules, a category 1 institution must at all times maintain an NSFR of not less than 100%. A category 2A institution must maintain a CFR of not less than 50% on average in each calendar month in 2018. The minimum CFR has risen to 75% since 1 January 2019. For details, see Banking (Liquidity) Rules (Cap. 155Q).

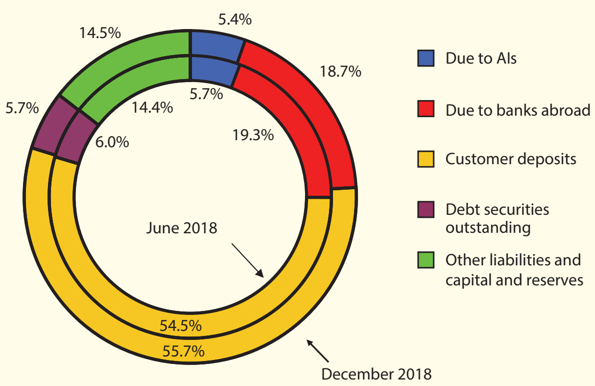
**Chart 5.8**
**Net Stable Funding Ratio**




Note: Consolidated basis.
Source: HKMA.

Customer deposits continued to be the primary funding source for AIs, underpinning a stable funding structure in the banking system. At the end of 2018, the share of customer deposits to all AIs' total liabilities increased slightly to 55.7% from 54.5% six months ago (Chart 5.9).

**Chart 5.9**
**The liability structure of all AIs**

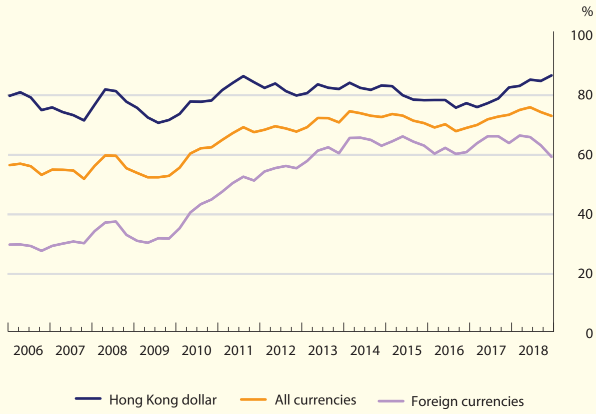



Notes:
1. Figures may not add up to total due to rounding.
2. Figures refer to the percentage of total liabilities (including capital and reserves).
3. Debt securities comprise negotiable certificates of deposit and all other negotiable debt instruments.

Source: HKMA.

As total loans and advances declined in the second half of 2018 while total deposits increased, the all-currency loan-to-deposit (LTD) ratio of all AIs dropped to 72.6% at the end of 2018 from 75.7% at the end of June (Chart 5.10). Similarly, the foreign currency LTD ratio of all AIs dropped to 58.3% from 65.2% during the same period. By contrast, the Hong Kong dollar LTD ratio increased slightly to 86.9% at the end of 2018 from 85.4% at the end of June, due to a much slower growth in Hong Kong dollar deposits than loans.

**Chart 5.10**
**Average LTD ratios of all AIs**



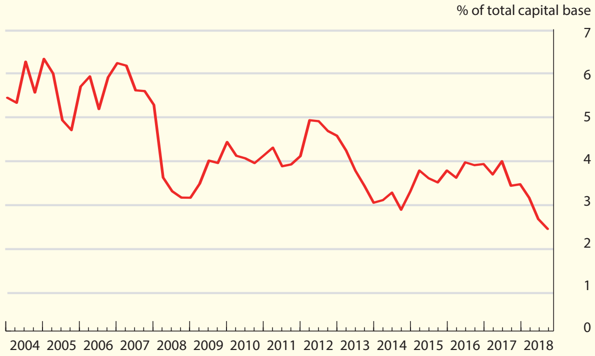

Note: Quarter-end figures.
Source: HKMA.

### *Interest rate risk*

The interest rate risk exposure of locally incorporated licensed banks reduced slightly in the second half of 2018. It is estimated that under a hypothetical shock of an across-the-board 200-basis-point increase in interest rates, the economic value of locally incorporated licensed banks' interest rate positions could be subject to a decline equivalent to 2.44% of their total capital base at the end of 2018 (Chart 5.11).[45] Nevertheless, given the uncertainty surrounding the pace of further US interest rate rises, banks should pay close attention to their interest rate risk management.

[45] This estimation does not take into account the effects of any mitigating action by banks in response to the shock. The impact will be smaller if mitigating action is taken.

**Chart 5.11**
**Impact of an interest rate shock on locally incorporated licensed banks**




Notes:
1. Interest rate shock refers to a standardised 200-basis-point parallel rate shock to institutions' interest rate risk exposure.
2. The impact of the interest rate shock refers to its impact on the economic value of the banking and trading book[46], expressed as a percentage of the total capital base of banks.

Source: HKMA.

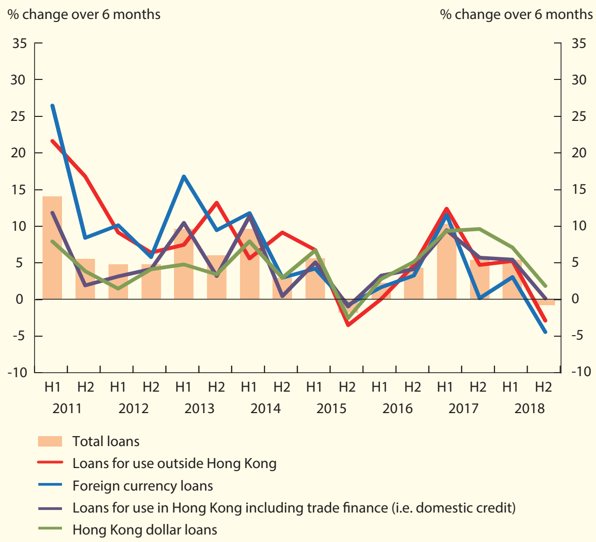
## 5.3 Credit risk

### *Overview*

Against the backdrop of the lingering US-China trade tensions, tighter global financial conditions and weaker global economic growth, credit growth slowed notably in the second half of 2018. Nevertheless, there were signs of stabilisation in loan growth since November 2018.

On a half-yearly basis, total loans and advances of all AIs declined by 0.9% in the second half of 2018, after increasing by 5.3% in the first half (Chart 5.12). Such decline was driven by a slowdown in domestic loan growth (comprising loans for use in Hong Kong and trade financing) and a decline in loans for use outside Hong Kong. Growth in domestic loans decelerated to 0.1% while loans for use outside Hong Kong contracted by 3.0% in the second half, compared with 5.3% and 5.2% growth, respectively in the preceding six months. For 2018 as a whole, total loan growth slowed notably to 4.4% from 16.1% in 2017.

**Chart 5.12**
**Loan growth**




Source: HKMA.

The demand for credit is likely to remain weak in the near term. Results of the HKMA Opinion Survey on Credit Condition Outlook in December 2018 showed that 82% of the surveyed AIs expected loan demand to remain the same in the next three months, while the share of AIs expecting somewhat lower demand rose to 18% (Table 5.A).

**Table 5.A**
**Expectation of loan demand in the next three months**

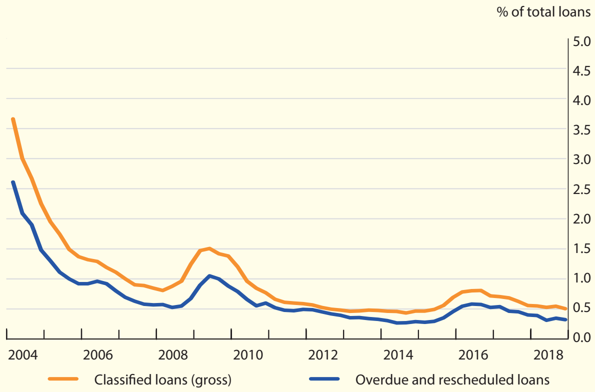
| % of total respondents | Mar-18 | Jun-18 | Sep-18 | Dec-18 |
|---|---|---|---|---|
| Considerably higher | 0 | 0 | 0 | 0 |
| Somewhat higher | 18 | 18 | 9 | 0 |
| Same | 82 | 82 | 77 | 82 |
| Somewhat lower | 0 | 0 | 14 | 18 |
| Considerably lower | 0 | 0 | 0 | 0 |
| Total | 100 | 100 | 100 | 100 |

Note: Figures may not add up to total due to rounding.
Source: HKMA.

46 Locally incorporated AIs subject to the market risk capital adequacy regime are required to report positions in the banking book only. Other locally incorporated AIs exempted from the market risk capital adequacy regime are required to report aggregate positions in the banking book and trading book.

Despite a mild decline in total loans in the second half of 2018, the asset quality of banks' loan portfolios remained healthy. The gross classified loan ratio and the ratio of overdue and rescheduled loans of all AIs edged down to 0.55% and 0.36% at the end of December, respectively, compared with 0.61% and 0.40% at the end of June 2018. For retail banks, the gross classified loan ratio edged down to 0.50% while the ratio of overdue and rescheduled loans edged up to 0.32% (Chart 5.13). Both ratios remained at low levels by historical standards.

**Chart 5.13**
**Asset quality of retail banks**




Notes:
1. Classified loans are those loans graded as "sub-standard", "doubtful" or "loss".
2. Figures prior to December 2015 are related to retail banks' Hong Kong offices and overseas branches. Starting from December 2015, the coverage was expanded to include the banks' major overseas subsidiaries as well.

Source: HKMA.

## *Household exposure*[47]

Half yearly growth in household debt decelerated to 3.9% in the second half of 2018 from 5.3% in the first half. This was mainly driven by a slower growth in personal loans (which comprise credit card advances and loans for other private purposes), more than offsetting the faster growth in residential mortgage loans (Table 5.B).

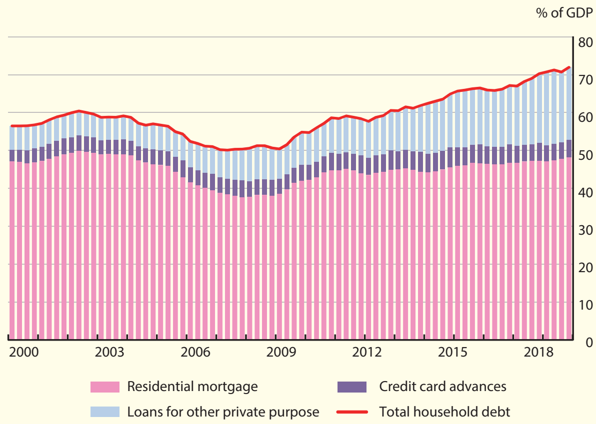
**Table 5.B**
**Half-yearly growth of loans to households of all AIs**

| (%) | 2015 H1 | 2015 H2 | 2016 H1 | 2016 H2 | 2017 H1 | 2017 H2 | 2018 H1 | 2018 H2 |
|---|---|---|---|---|---|---|---|---|
| Residential mortgages | 4.5 | 4.0 | 1.0 | 3.1 | 4.1 | 3.8 | 4.2 | 4.5 |
| Personal loans | 6.2 | 2.5 | −0.5 | 7.2 | 7.2 | 12.4 | 7.5 | 2.6 |
| of which: | | | | | | | | |
| Credit card advances | −5.5 | 7.1 | −5.7 | 8.7 | −7.8 | 11.0 | −5.0 | 10.6 |
| Loans for other private purposes | 10.5 | 1.1 | 1.2 | 6.8 | 11.9 | 12.7 | 10.7 | 0.9 |
| Total loans to households | 5.0 | 3.6 | 0.5 | 4.3 | 5.0 | 6.5 | 5.3 | 3.9 |

Source: HKMA.

With the nominal gross domestic product (GDP) in Hong Kong growing slower than household debt, the household debt-to-GDP ratio edged up to 71.9% in the fourth quarter of 2018 from 71.2% in the second quarter (Chart 5.14).

**Chart 5.14**
**Household debt-to-GDP and its components**



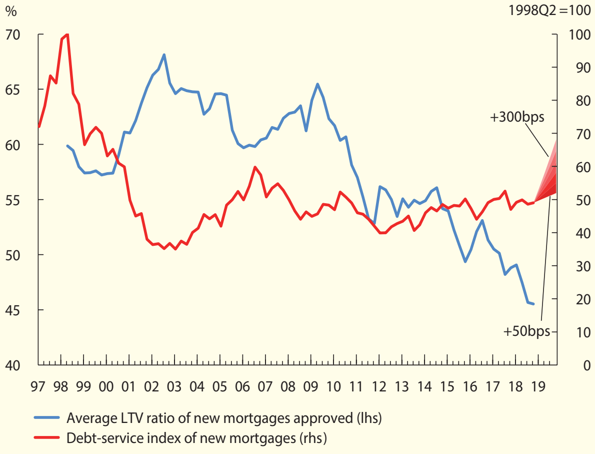

Notes:
1. Only borrowings from AIs are covered.
2. GDP refers to the annualised GDP, which is the sum of the quarterly GDP in the trailing four quarters.

Source: HKMA.

The credit risk of household loans stayed low during the review period. In particular, despite the recent decline in property prices, banks' mortgage portfolios remained healthy, with the delinquency ratio hovering at a low level of 0.02% at the end of 2018. The average loan-to-value (LTV) ratio of new mortgage loans approved declined further to 45.5% in the fourth quarter of 2018 from 47.5% six months earlier (Chart 5.15). This was well below the ratio of 64% in September 2009, just before the implementation of the first round of the HKMA's countercyclical macro-prudential measures.

[47] Loans to households constitute lending to professional and private individuals, excluding lending for other business purposes. Mortgage lending accounts for a major proportion of household loans, while the remainder comprises mainly unsecured lending through credit card lending and other personal loans for private purposes. At the end of 2018, the share of household lending in domestic lending was 29.8%.

**Chart 5.15**
**Average LTV ratio and household debt-servicing burden for new mortgage loans**




Note: The calculation of the index is based on the average interest rate for BLR-based mortgages.
Sources: HKMA and staff estimates.

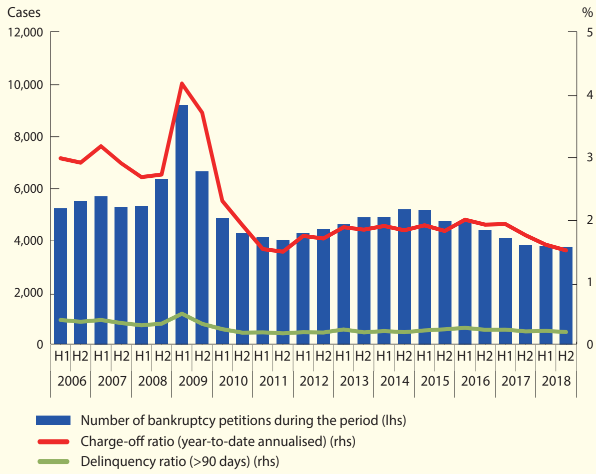
The debt-service index of new mortgages[48] hovered at a similar level of 49.0 in the fourth quarter of 2018 compared with 49.9 in the second quarter (the red line in Chart 5.15), suggesting the household repayment ability remained stable.

Given the uncertainty over the pace of US rate hikes, the outlook for domestic interest rates in the near term might become less clear. Nevertheless, if US interest rates rise faster than expected, domestic mortgage rates could increase sharply, and the debt-servicing burden of households could be under significant pressure. In particular, a sensitivity test suggests that the index could rise significantly to 68.2 in a four-quarter period if interest rates were to increase by 300 basis points[49], other things being constant.

Therefore, banks should remain alert to the risks associated with a rising level of household debt-servicing burden.

The credit risk of unsecured household exposure remained contained. The annualised credit card charge-off ratio edged down to 1.51% in the second half of 2018 and the delinquency ratio was largely unchanged at 0.21% at the end of 2018 (Chart 5.16). In addition, the number of bankruptcy petitions remained stable at a relatively low level.

**Chart 5.16**
**Charge-off ratio and delinquency ratio for credit card lending and bankruptcy petitions**




Sources: Official Receiver's Office and HKMA.

### *Corporate exposure*[50]

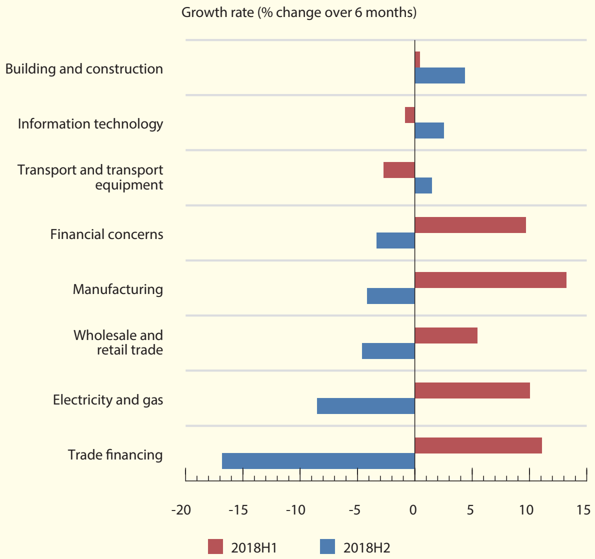
Domestic corporate loans (including trade finance) declined by 1.5% (on a half-yearly basis) at the end of 2018, in part due to the weaker credit demand amid the highly uncertain global environment. Analysed by economic sectors, there were almost broad-based declines in lending for major economic sectors, with trade financing being hardest hit, given the uncertainty arising from the US-China trade conflict (Chart 5.17).

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

49 The assumption of a 300-basis-point rise in interest rates is consistent with the prudential measure that requires AIs to have a three-percentage-point mortgage rate upward adjustment for stress testing property mortgage loan applicants' debt servicing ability.

50 Excluding interbank exposure. At the end of 2018, the share of corporate loans in domestic lending was 70.1%.

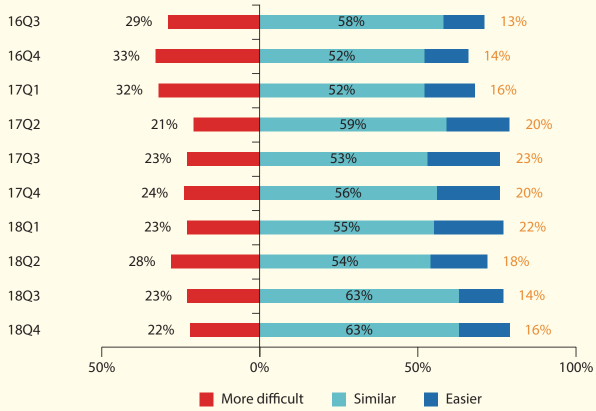
### Chart 5.17
### Growth in domestic corporate loans by selected sectors




Source: HKMA.

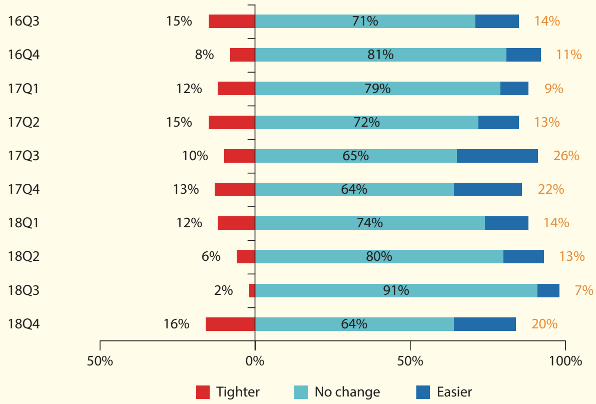
The decline in domestic corporate loans may raise concerns about the funding conditions for small and medium-sized enterprises (SMEs) in Hong Kong. In light of their importance to Hong Kong's economy and concerns about potential funding difficulties facing SMEs over the past few years, the HKMA has appointed the Hong Kong Productivity Council to conduct a survey of SMEs, starting from the third quarter of 2016. According to the survey on SMEs' Credit Conditions, the overall perception of banks' credit approval stance remained largely stable (Chart 5.18), although respondents with existing credit lines reported a tighter stance by banks in the fourth quarter of 2018 (Chart 5.19).[51] While this could partly reflect the impact of trade tensions on SMEs' business conditions, it might also reflect a modest increase in lending rates in the fourth quarter and a tightening of terms and conditions. At the same time, 95 SMEs (or 4% of respondents) reported they had applied for new credit in the fourth quarter. Excluding the "in progress" credit applications, only 6% of applicants reported they were unsuccessful, the same as the response in the third quarter (Chart 5.20).[52]

### Chart 5.18
### SMEs' perception of banks' credit approval stance relative to 6 months ago




Source: HKMA.

### Chart 5.19
### SMEs' reported change in banks' stance on existing credit lines

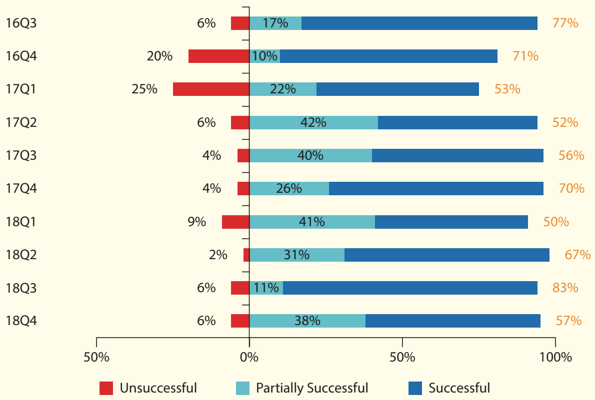



Note: Only covers respondents with existing credit lines.
Source: HKMA.

[51] This Survey is conducted quarterly, covering some 2,500 SMEs from different economic sectors.

[52] It should be noted that owing to a small sample size, the results of new credit applications from SMEs could be prone to large fluctuations, and the results should be interpreted cautiously.

**Chart 5.20**
**Results of SMEs' new bank credit applications**

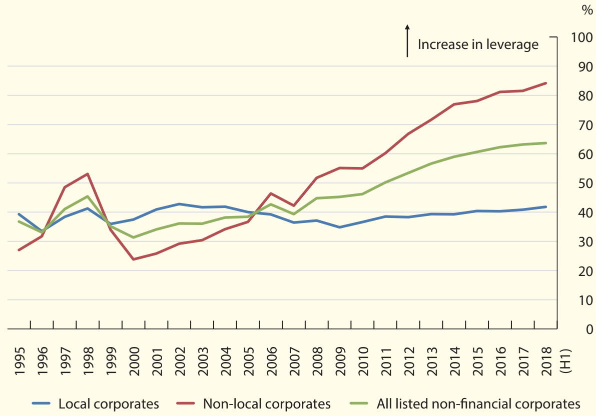



Note: Only covers respondents who applied for new credit during the quarter, excluding the "in progress" credit applications.
Source: HKMA.

There were tentative signs of a weakening in financial conditions for the corporate sector during the review period. Based on accounting data for non-financial corporates listed in Hong Kong, the weighted average debt-to-equity ratio, as a measure of corporate leverage, edged up to 64% in the first half of 2018 from 63% in 2017 (the green line in Chart 5.21). The rise in corporate leverage was largely driven by non-local corporates (the red line), while the leverage for local corporates remained broadly stable at low levels.

In terms of debt-servicing ability, as measured by the interest coverage ratio (ICR) (Chart 5.22), non-local corporates also saw a deterioration in the ratio, which was due to lower earnings and higher interest expense. By contrast, the ICR of local corporates improved slightly during the same period.

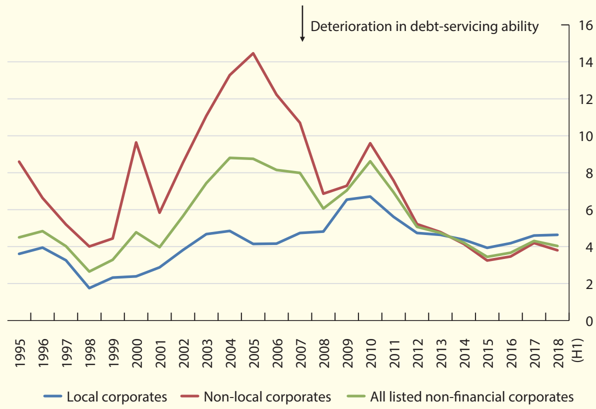
**Chart 5.21**
**Leverage ratio of listed non-financial corporates in Hong Kong**




Notes:
1. Weighted average figures.
2. The leverage ratio is defined as the ratio of debt to equity. A higher value indicates higher leverage.
3. All non-financial corporates listed on the Hong Kong Stock Exchange are selected. Local and non-local corporates refer to listed firms that are domiciled in and outside Hong Kong respectively.
4. Figures are calculated based on information up to end-Feb 2019.

Source: HKMA staff estimates based on data from Bloomberg.

**Chart 5.22**
**Interest coverage ratio of listed non-financial corporates in Hong Kong**




Notes:
1. Weighted average figures.
2. The ICR is calculated by the earnings before interest and tax divided by the total interest expenses. A lower value indicates deterioration of debt-servicing ability.
3. All non-financial corporates listed on the Hong Kong Stock Exchange are selected. Local and non-local corporates refer to listed firms that are domiciled in and outside Hong Kong respectively.
4. Figures are calculated based on information up to end-Feb 2019.

Source: HKMA staff estimates based on data from Bloomberg.

It should be noted that due to the time lag for the availability of accounting data, the negative impacts of the lingering uncertainty over US-China trade relations, tightening global financial conditions and slower global economic growth may not have been fully reflected in the corporates' fundamentals and thus default risk. Banks should therefore stay alert to the credit risk of their corporate exposure.

Looking ahead, if the global economic environment deteriorates further, non-local corporates' earnings could be adversely affected, putting their debt-servicing ability to the test. The credit risk of local corporates may also be affected by the unfavourable environment. Therefore, banks should assess the potential impact on the asset quality of their corporate exposure in the event of a possible deterioration in the external economic environment.

### *Mainland-related lending and non-bank exposures*

Largely reflecting weaker corporate credit demand amid slowing global economic growth, the banking sector's total Mainland-related lending began to decline. At the end of December 2018, total Mainland-related lending decreased by 3.8% to HK$4,249 billion (16.1% of total assets), from HK$4,414 billion (16.9% of total assets) at the end of June (Table 5.C). Trade finance loans, which were more affected by the trade dispute, had declined by 24.7% at the end of December 2018 compared with six months earlier. Other non-bank exposures increased by 4.73% to HK$1,396 billion (Table 5.D).

**Table 5.C**
**Mainland-related lending**

| HK$bn | Mar 2018 | Jun 2018 | Sep 2018 | Dec 2018 |
|---|---|---|---|---|
| Mainland-related loans | 4,409 | 4,414 | 4,321 | 4,249 |
| Mainland-related loans excluding trade finance | 4,068 | 4,064 | 4,010 | 3,985 |
| Trade finance | 341 | 351 | 311 | 264 |
| By type of AIs: | | | | |
| Overseas incorporated AIs | 1,943 | 1,937 | 1,860 | 1,799 |
| Locally incorporated AIs* | 1,768 | 1,819 | 1,832 | 1,827 |
| Mainland banking subsidiaries of locally incorporated AIs | 699 | 658 | 629 | 622 |
| By type of borrowers: | | | | |
| Mainland state-owned entities | 1,799 | 1,818 | 1,734 | 1,689 |
| Mainland private entities | 1,123 | 1,141 | 1,211 | 1,203 |
| Non-Mainland entities | 1,486 | 1,456 | 1,376 | 1,356 |

Notes:
1. * Including loans booked in Mainland branches of locally incorporated AIs.
2. Figures may not add up to total due to rounding.
Source: HKMA.

**Table 5.D**
**Other non-bank exposures**

| HK$bn | Mar 2018 | Jun 2018 | Sep 2018 | Dec 2018 |
|---|---|---|---|---|
| Negotiable debt instruments and other on-balance sheet exposures | 950 | 916 | 956 | 977 |
| Off-balance sheet exposures | 415 | 417 | 430 | 420 |
| **Total** | **1,365** | **1,333** | **1,386** | **1,396** |

Note: Figures may not add up to total due to rounding.
Source: HKMA.

The gross classified loan ratio of Mainland-related lending of all AIs[53] decreased to 0.54% at the end of December 2018 from 0.62% at the end of June. The ratio remained low compared with the recent high of 0.89% in March 2016, indicating the sound asset quality of banks' Mainland-related lending.

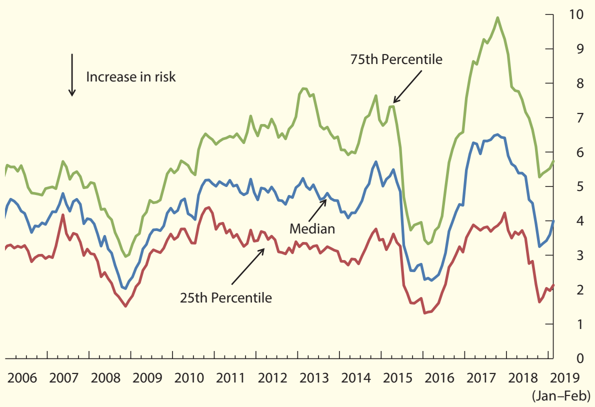
However, the volatile Mainland stock markets may signal a higher credit risk of Mainland corporates during the review period. The distance-to-default (DTD) index[54], a market-based default risk indicator, points to a broad-based increase in the credit risk of the Mainland corporate sector since April 2018 (Chart 5.23). The increase in default risk for the Mainland corporate sector, however, was largely driven by heightened financial market volatility, rather than an abrupt deterioration in the financial health of the corporate sector. In fact, the DTD index showed signs of improvement in late-2018 and early 2019 amid liquidity loosening measures by Mainland authorities.[55]

[53] Figures cover AIs' Hong Kong offices and Mainland branches and subsidiaries.

[54] The distance-to-default is a market-based default risk indicator based on the framework by R. Merton (1974), "On the pricing of corporate debt: the risk structure of interest rates", *Journal of Finance*, Vol. 29, pages 449–470, in which equity prices, equity volatility, and companies' financial liabilities are the determinants of default risk. In essence, it measures the difference between the asset value of a firm and a default threshold in terms of the firm's asset volatility.

[55] These measures include several rounds of targeted required reserve ratio cuts in the second half of 2018 and January 2019. For details, refer to section 2.2 of the Report.

**Chart 5.23**
**Distance-to-default index for the Mainland corporate sector**




Note: DTD index is calculated based on the non-financial constituent companies (i.e. excluding investment companies and those engaged in banking, insurance and finance) of the Shanghai Stock Exchange 180 A-share index.
Source: HKMA staff estimates based on data from Bloomberg.

To broaden our understanding of the credit risk of Mainland-related lending by banks in Hong Kong, Box 4 (see page 73) provides a macro assessment of the credit risk for Mainland corporates, based on Hong Kong-listed non-financial Mainland corporates that have borrowed syndicated loans from banks in Hong Kong. By assessing a broader set of key financial characteristics of these corporates, the findings suggest that the Hong Kong banking sector, at least for the syndicated loan portfolio, is less exposed to riskier Mainland corporates.

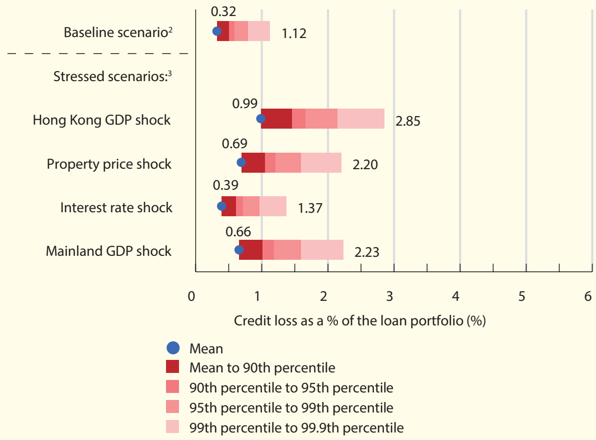
Nevertheless, in view of concerns over a possible further slowdown in the Mainland economy, banks should be attentive to the credit risk management of their Mainland-related exposure.

### *Macro stress testing of credit risk*[56]

Results of the latest macro stress testing on retail banks' credit exposure suggest the Hong Kong banking sector remains resilient and should be able to withstand rather severe macroeconomic shocks similar to those experienced during the Asian financial crisis. Chart 5.24 presents the simulated future credit loss rate of retail banks in the fourth quarter of 2020 under four specific macroeconomic shocks[57] using information up to the fourth quarter of 2018.

Taking account of tail risk, banks' credit losses (at the confidence level of 99.9%) under the stress scenarios range from 1.37% (Interest rate shock) to 2.85% (Hong Kong GDP shock), which are significant, but smaller than the loan loss of 4.39% following the Asian financial crisis.

**Chart 5.24**
**The mean and value-at-risk statistics of simulated credit loss distributions[1]**




Notes:
1. The assessments assume the economic conditions in 2018 Q4 as the current environment. The Monte Carlo simulation method is adopted to generate the credit loss distribution for each scenario.
2. Baseline scenario: no shock throughout the two-year period.
3. Stressed scenarios:
   **Hong Kong GDP shock**: reductions in Hong Kong's real GDP by 2.3%, 2.8%, 1.6%, and 1.5% respectively in each of the four consecutive quarters starting from 2019 Q1 to 2019 Q4.
   **Property price shock:** Reductions in Hong Kong's real property prices by 4.4%, 14.5%, 10.8%, and 16.9% respectively in each of the four consecutive quarters starting from 2019 Q1 to 2019 Q4.
   **Interest rate shock:** A rise in real interest rates (HIBORs) by 300 basis points in the first quarter (i.e. 2019 Q1), followed by no change in the second and third quarters and another rise of 300 basis points in the fourth quarter (i.e. 2019 Q4).
   **Mainland GDP shock**: Slowdown in the year-on-year annual real GDP growth rate to 4% in one year.

Source: HKMA staff estimates.

56 Macro stress testing refers to a range of techniques used to assess the vulnerability of a financial system to "exceptional but plausible" macroeconomic shocks. The credit loss estimates presented in this report are obtained based on a revised framework from J. Wong et al. (2006), "A framework for stress testing banks' credit risk", *Journal of Risk Model Validation*, Vol. 2(1), pages 3–23. All estimates in the current report are not strictly comparable to those estimates from previous reports.

57 These shocks are calibrated to be similar to those that occurred during the Asian financial crisis, except the Mainland GDP shock.

## 5.4 Systemic risk

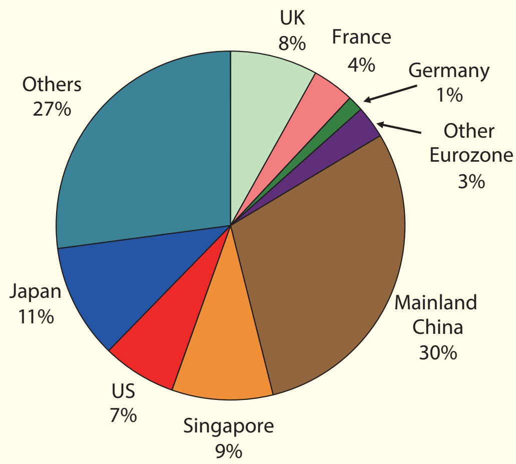
The global economic outlook continued to be clouded by the lingering uncertainty over the US-China trade relations, the uncertainty over the pace of US tightening cycle, and geopolitical risks. Should these uncertainties intensify and persist into the medium to long term, they could pose challenges for banks in Hong Kong on various fronts.

First, despite the continuing negotiations between the US and Mainland China on trade issues, the outcome remains highly uncertain. If the conflict continues unresolved or intensifies, it would adversely affect business confidence and corporate fundamentals, particularly those with significant exposure in the two economies. This, coupled with the slowing global economic environment, could put pressure on banks' credit risk management in view of the rising leverage of corporates.

Secondly, the pace of the US interest rate rise continues to be a key factor affecting the systemic risk to the Hong Kong banking sector. Given the increased emphasis on data dependency by the Federal Reserve in its future rate hike decisions, the pace and timing of future rises will likely be less predictable because of the highly uncertain global economic environment. As such, any sudden change in the trajectory of the pace of US interest rate rise could result in an abrupt repricing of interest rate expectations which, in turn, could heighten the volatility of domestic interest rates.

Thirdly, across the Atlantic, geopolitical risks related to Brexit also merit close monitoring. Although the government of the United Kingdom (UK) may request an extension to Article 50, the outcome remains highly uncertain. If a "hard" Brexit occurs and leads to abrupt shifts in cross-border banking flows from the UK, the subsequent spillover risks to the Hong Kong banking sector could be large, given the unmatched role of the UK banking system in distributing international banking flows and the material direct exposure of the Hong Kong banking sector to banks in the UK and the broader euro area (Chart 5.25).

**Chart 5.25**
**External claims of the Hong Kong banking sector on banks in selected economies at the end of 2018**




Note: Figures may not add up to 100% due to rounding.
Source: HKMA.

Nevertheless, there was no major deterioration in interbank funding conditions during the review period. The spread between the three-month US dollar London Interbank Offered Rate (LIBOR) and its corresponding overnight index swap (OIS) rate[58], a common indicator of systemic liquidity risks in the short-term dollar funding market, widened to around 40 basis points at the end of 2018, but narrowed to around 22 basis points at the end of February 2019, which was low by historical standards (Chart 5.26).

[58] An OIS is an interest rate swap in which the floating leg is linked to an index of daily overnight rates. The two parties agree to exchange at maturity, on an agreed notional amount, the difference between interest accrued at the agreed fixed rate and interest accrued at the floating index rate over the life of the swap. The fixed rate is a proxy for expected future overnight interest rates. As overnight lending generally bears lower credit and liquidity risks, the credit risk and liquidity risk premiums contained in the OIS rates should be small. Therefore, the LIBOR-OIS spread generally reflects the credit and liquidity risks in the interbank market.

**Chart 5.26**
**Three-month US dollar LIBOR-OIS spreads**


Source: Bloomberg.

## *The countercyclical capital buffer (CCyB) for Hong Kong*

The CCyB is part of the internationally agreed Basel III standards and is designed to enhance the resilience of the banking sector against system-wide risks associated with excessive aggregate credit growth. Hong Kong has been implementing the CCyB in line with the Basel III implementation schedule through the phased-in arrangements, which were completed on 1 January 2019.[59]

In setting the CCyB rate, the Monetary Authority considered a series of indicators (Table 5.E), including an "indicative buffer guide" (which is a metric providing a guide for CCyB rates based on credit-to-GDP and property price-to-rent gaps[60]). Based on the information up to the latest decision date, the credit-to-GDP gap and the property price-to-rent gap narrowed to 9.8% and 10.0%, respectively. Despite a recent narrowing of the two gaps, they remained at elevated levels.

A simple mapping of the two indicators from the indicative buffer guide signals a CCyB rate of 2.5%, which is the current CCyB ratio. The signal from the indicative buffer guide was, in the view of the Monetary Authority, consistent with the information drawn from other reference indicators.[61]

**Table 5.E**
**Information related to the Hong Kong jurisdictional CCyB rate**

| | 10-Jan-18 | Q2-2018 | Q4-2018 |
|---|---|---|---|
| Announced CCyB rate | 2.5% | | |
| Date effective | 01/01/2019 | | |
| Indicative buffer guide | 2.4% | 2.5% | 2.5% |
| Basel Common Reference Guide | 2.5% | 2.5% | 2.5% |
| Property Buffer Guide | 2.0% | 2.5% | 2.5% |
| Composite CCyB Guide | 2.4% | 2.5% | 2.5% |
| Indicative CCyB Ceiling | None | None | None |
| *Primary gap indicators* | | | |
| Credit/GDP gap | 19.3% | 15.8% | 9.8% |
| Property price/rent gap | 8.3% | 12.0% | 10.0% |
| *Primary stress indicators* | | | |
| 3-month HIBOR spread* (percentage points) | 0.06% | 0.60% | 0.42% |
| Quarterly change in classified loan ratio (percentage points) | −0.06% | 0.01% | 0.01% |

Notes:
1. The values of all CCyB guides, the Indicative CCyB Ceiling and their respective input variables are based on public data available prior to the corresponding review/announcement date, and may not be the most recent available as of each quarter end (refer to SPM CA-B-1 for explanations of the variables). If there is a CCyB announcement, the date of the announcement is shown at the top of the respective column. If there is no CCyB announcement, the quarter in which a CCyB review takes place (normally close to quarter end) is shown at the top of the column.
2. * Following a review of the appropriate risk-free rate benchmark (previously identified as the 3-month OIS rate), the HKMA has decided to amend the definition of the interbank market spread to the difference between the 3-month HIBOR and 3-month Exchange Fund Bill yield, effective from April 2017.

Source: HKMA.

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

59 Under the Basel III phase-in arrangements, the maximum CCyB rate was capped at 0.625% on 1 January 2016, with the cap rising by 0.625 percentage points each subsequent year until it reaches 2.5% on 1 January 2019.

60 The credit-to-GDP gap is the gap between the ratio of credit to GDP and its long-term trend, while the property price-to-rent gap is the gap between the ratio of residential property prices to rentals and its long-term trend.

61 These included measures of bank, corporate and household leverage; debt servicing capacity; profitability and funding conditions within the banking sector and macroeconomic imbalances.

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

| | Dec 2017 | Sep 2018 | Dec 2018 |
|---|---|---|---|
| **Interest rates** | | | |
| 1-month HIBOR fixing[2] (quarterly average) | 0.84 | 1.68 | 1.63 |
| 3-month HIBOR fixing (quarterly average) | 1.04 | 2.00 | 2.16 |
| BLR[3] and 1-month HIBOR fixing spread (quarterly average) | 4.16 | 3.32 | 3.50 |
| BLR and 3-month HIBOR fixing spread (quarterly average) | 3.96 | 3.00 | 2.97 |
| Composite interest rate[4] | 0.38 | 0.76 | 0.89 |
| | | **All AIs** | |
| **Balance sheet developments[5]** | | | |
| Total deposits | 2.0 | 1.1 | 2.1 |
| Hong Kong dollar | –0.1 | 0.7 | –0.7 |
| Foreign currency | 4.3 | 1.6 | 5.2 |
| Total loans | 2.9 | –1.1 | 0.3 |
| Domestic lending[6] | 2.8 | –1.2 | 1.3 |
| Loans for use outside Hong Kong[7] | 3.2 | –0.9 | –2.1 |
| Negotiable instruments | | | |
| Negotiable certificates of deposit (NCDs) issued | 3.3 | –1.1 | –6.2 |
| Negotiable debt instruments held (excluding NCDs) | 3.0 | –1.5 | 4.2 |
| **Asset quality** | | | |
| As a percentage of total loans[8] | | | |
| Pass loans | 98.00 | 98.09 | 98.16 |
| Special mention loans | 1.33 | 1.31 | 1.29 |
| Classified loans[9] (gross) | 0.68 | 0.60 | 0.55 |
| Classified loans (net)[10] | 0.36 | 0.32 | 0.25 |
| Overdue > 3 months and rescheduled loans | 0.52 | 0.38 | 0.36 |
| Classified loan ratio (gross) of Mainland related lending[11] | 0.67 | 0.64 | 0.54 |
| **Liquidity ratios (consolidated)** | | | |
| Liquidity Coverage Ratio — applicable to category 1 institutions (quarterly average) | 155.0 | 157.6 | 167.6 |
| Liquidity Maintenance Ratio — applicable to category 2 institutions (quarterly average) | 49.4 | 52.0 | 54.3 |
| Net Stable Funding Ratio — applicable to category 1 institutions | n.a. | 132.6 | 135.6 |
| Core Funding Ratio — applicable to category 2A institutions | n.a. | 130.4 | 134.3 |
| | | **Retail banks** | |
| **Profitability** | | | |
| Loan impairment charges as a percentage of average total assets (year-to-date annualised) | 0.06 | 0.03 | 0.05 |
| Net interest margin (year-to-date annualised) | 1.45 | 1.60 | 1.62 |
| Cost-to-income ratio (year-to-date) | 41.9 | 37.9 | 38.7 |
| | | **Surveyed institutions** | |
| **Asset quality** | | | |
| Delinquency ratio of residential mortgage loans | 0.03 | 0.02 | 0.02 |
| Credit card lending | | | |
| Delinquency ratio | 0.22 | 0.21 | 0.21 |
| Charge-off ratio — quarterly annualised | 1.64 | 1.64 | 1.53 |
| — year-to-date annualised | 1.75 | 1.59 | 1.51 |
| | | **All locally incorporated AIs** | |
| **Capital adequacy (consolidated)** | | | |
| Common Equity Tier 1 capital ratio | 15.3 | 15.8 | 16.0 |
| Tier 1 capital ratio | 16.5 | 17.6 | 17.9 |
| Total capital ratio | 19.1 | 20.2 | 20.3 |
| Leverage ratio | n.a. | 7.9 | 8.0 |

Notes:

1. Figures are related to Hong Kong offices only except where otherwise stated.
2. The Hong Kong Interbank Offered Rates are released by the Hong Kong Association of Banks.
3. With reference to the rate quoted by The Hongkong and Shanghai Banking Corporation Limited.
4. The composite interest rate is a weighted average interest rate of all Hong Kong-dollar interest-bearing liabilities, which include deposits from customers, amounts due to banks, negotiable certificates of deposit and other debt instruments, and Hong Kong-dollar non-interest-bearing demand deposits on the books of banks. Further details can be found on the HKMA website.
5. Quarterly change.
6. Loans for use in Hong Kong plus trade finance.
7. Including "others" (i.e. unallocated).
8. Figures are related to all AIs' Hong Kong offices, as well as locally incorporated AIs' overseas branches and major overseas subsidiaries.
9. Classified loans are those loans graded as "substandard", "doubtful" or "loss".
10. Net of specific provisions/individual impairment allowances.
11. Figures are related to all AIs' Hong Kong offices, as well as locally incorporated AIs' Mainland branches and subsidiaries.

## Box 4
## Assessing the credit risk of Mainland corporates: Evidence from Hong Kong banks' syndicated loans

*Introduction*

In recent years, the Hong Kong banking sector has become increasingly active in Mainland-related lending. As a result, assessing the credit risk of Mainland corporate borrowers has become an important part of financial stability analysis for Hong Kong. This box provides a macro assessment of the credit risk for Mainland corporates, based on 164 non-financial Mainland corporates listed in Hong Kong. We focus on this group because they are syndicated loan borrowers of banks in Hong Kong, as revealed by publicly available information.[62] Examining their financial characteristics will broaden our understanding of the credit risk of Mainland-related lending by banks in Hong Kong.

From the outset, it is important to state that the assessments are subject to two limitations. The most obvious is the identification of Mainland borrowers of banks in Hong Kong which is far from perfect, as the samples of "syndicated loan borrowers" are only part of the complete list. Secondly, the assessment can only provide macro-level implications, but less indicative at the individual bank level since the Mainland-related loan portfolio of each individual bank could be significantly different from the samples used in this analysis.

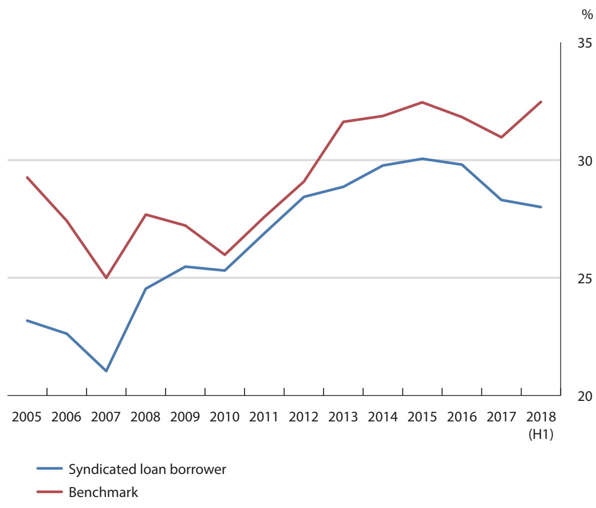
We start the analysis by assessing some common credit risk indicators for the syndicated loan borrowers. The assessment result will be compared with the corresponding market averages derived based on financial information of other Mainland non-financial corporates listed in Hong Kong (henceforth referred to as the benchmark). By doing so, we can have a broad sense of whether the Hong Kong banking sector is less or more exposed to riskier Mainland corporates in the syndicated loan market, compared with the benchmark.

*Analysis of key financial ratios*

*a. Leverage*

Chart B4.1 presents the average leverage ratio (defined as average debt-to-asset ratios of corporates weighted by asset size) for the two groups of Mainland corporates. While both groups exhibited a rising trend in leverage after the global financial crisis, the syndicated loan borrowers, on average, recorded a much lower level of leverage than the benchmark and showed clear signs of deleveraging since 2016.

**Chart B4.1: Average debt-to-asset ratio**



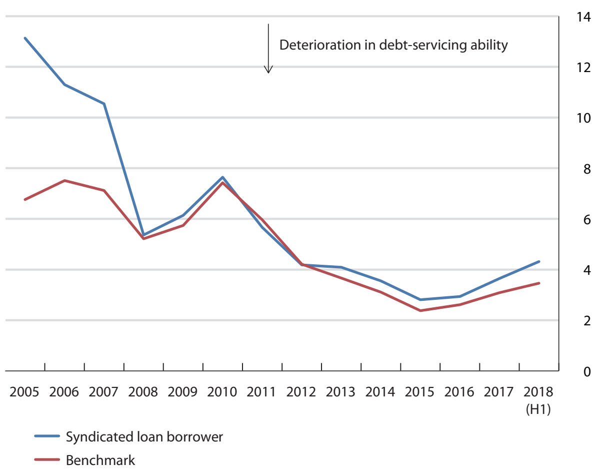

Source: Bloomberg.

[62] The procedure for sample selection is as follows: (1) we first identify a set of Mainland non-financial corporates (by country of risk or domicile) that have borrowed from banks in Hong Kong at least once in the syndicated loan market. (2) For those borrowers that are not publicly listed in Hong Kong, we use their parent companies that are listed in Hong Kong in our analysis. (3) If neither the immediate borrowers nor their parent companies are listed in Hong Kong, we drop them from the analysis.

*b. Debt-servicing ability*

Chart B4.2 presents the average interest coverage ratio (ICR, defined as earnings before interest and taxes divided by interest expense), a common indicator of debt-servicing ability. Consistent with the increasing trend in leverage after the global financial crisis, there was a general deterioration in the ICR for Mainland corporates. Nevertheless, the ICR bottomed out in 2015, with more notable improvement for the syndicated loan borrowers.

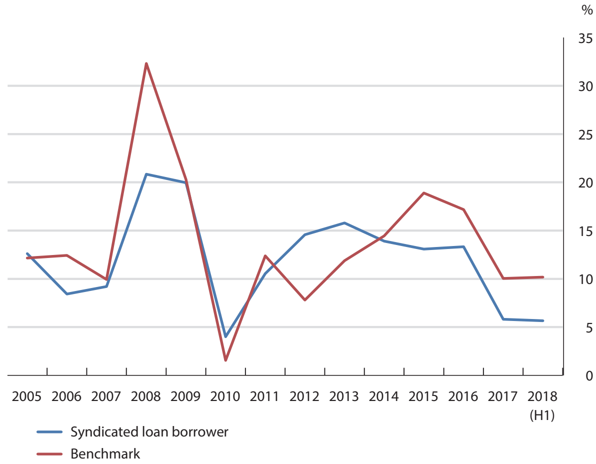
**Chart B4.2: Average interest coverage ratio**




Source: Bloomberg.

The debt-at-risk (DaR) ratio, which essentially measures the share of debt of those corporates with insufficient earnings to cover interest expenses (i.e. corporates with ICR lower than 1) to total debt of corporates, also improved significantly in recent years for Mainland corporates. While the benchmark ratio dropped almost by half from the recent peak of 19% in 2015 to 10% in the first half of 2018 (Chart B4.3), the ratio for syndicated loan borrowers dropped to an even lower level to 6% from 13%.

**Chart B4.3: Debt-at-risk ratio**

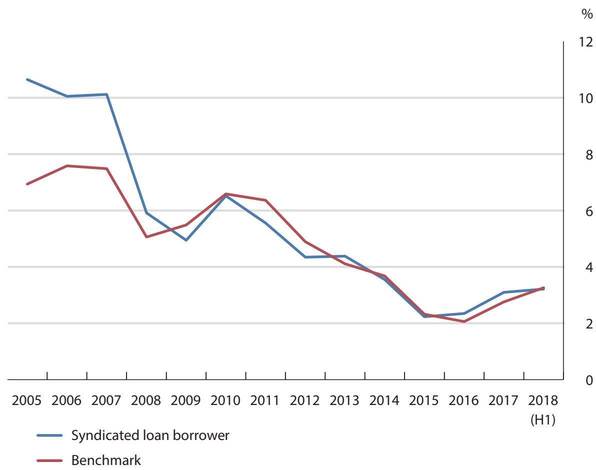



Source: Bloomberg.

*c. Profitability*

Mainland corporates also saw a recovery in profitability in recent years. In particular, their returns on average assets (ROA) continued to improve since 2016 (Chart B4.4). Although their ROAs remained below the long-term average, the improved profitability can strengthen their buffers against shocks.

**Chart B4.4: Return on average assets**

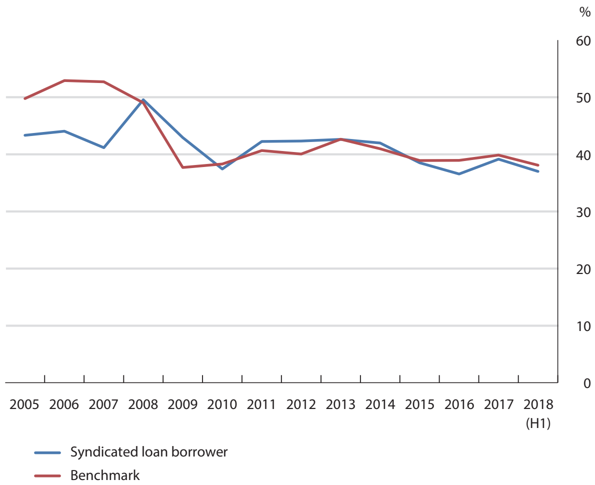



Source: Bloomberg.

*d. Short-term financing risk*

It is argued that many Mainland corporates may have relied excessively on short-term debt, making them more susceptible to refinancing risks as the liquidity conditions tighten. However, the average share of short-term borrowings to total borrowings (Chart B4.5), shows that the reliance on short-term debt is not particularly alarming. Indeed, the ratio has declined slightly in recent years for both groups of Mainland corporates.

**Chart B4.5: Share of short-term borrowing to total borrowing**




Source: Bloomberg.

## *Empirical assessment of Mainland corporates' credit risk*

The assessment so far shows that Mainland corporates listed in Hong Kong experienced a broad-based improvement in credit risk indicators in recent years, although the improvement for some indicators was relatively mild. In addition, by comparing the credit risk indicators between the two groups of Mainland corporates, a key observation is that the average credit risk of the syndicated loan borrowers may be lower than the market average.

To understand how far the better financial characteristics of the syndicated loan borrowers contribute to lower credit risk, we consider a firm-year panel regression model to explain the one-year probability of default (PD)[63] of Mainland corporates. Based on the estimation result, we decompose the effects of different factors.

Factors considered in the model include the credit risk indicators discussed in the previous section.[64] The model also includes industry and time dummy variables to control for the effect of industry-specific and macroeconomic factors respectively. In addition, a dummy variable for state-owned enterprises (SOE)[65] is included to control for any potential structural difference in PD from the SOE status. Finally, a dummy variable for syndicated loan borrowers (i.e. Dummy $^{HKBK\_LOAN}$) is added in the model.[66] The coefficient estimate of this dummy variable can tell after controlling for all aforementioned factors, whether syndicated loan borrowers will have lower or higher credit risk compared to other Mainland corporates. In theory, the coefficient estimate can capture the effect of non-financial factors considered by banks when underwriting the syndicated loans (e.g. banks' assessments on the quality of management and corporate governance of Mainland corporates). The estimation result is presented in Table B4.A.

63 The one-year PD is obtained from Bloomberg's DRSK module. According to Bloomberg, the PD is derived from first estimating the distance-to-default (DTD) based on the standard Merton model. The estimated DTD is then transformed into one-year PD by applying a non-linear mapping with the actual default rates, which addresses the potential issue of underestimation of default likelihood from the standard Merton model.

64 To proxy DaR for individual corporates, a dummy variable (Dummy $^{ICR<1}$) that takes a value of one if a firm's ICR is below one, and zero otherwise is included in the model.

65 The SOE dummy takes a value of one if the listed corporate is an SOE, and zero otherwise.

66 The dummy takes a value of one if Mainland firm is identified as a syndicated loan borrower, and zero otherwise.

**Table B4.A:**
**Estimation result**

| Dependent variable | one-year PD |
|---|---|
| Dummy $^{HKBK\_LOAN}$ | −0.345*** |
| Debt-to-asset | 0.028*** |
| Return on assets | −0.022*** |
| ICR | −0.001* |
| Dummy $^{ICR<1}$ | 0.813*** |
| Short-term debt to total borrowing | 0.008*** |
| Industry dummy | Included |
| SOE dummy | Included |
| Time dummy | Included |
| Adjusted $R^2$ | 0.216 |
| Observation | 4,412 |

Note: ***, **, * denote the estimated coefficients are significant at 1%, 5% and 10% levels respectively. Standard errors are clustered at firm level.

Two empirical findings are worth highlighting. First, all explanatory variables are found to be statistically significant with the expected signs. This suggests that all credit risk indicators discussed in the previous section have an adequate explanatory power for the one-year PD of Mainland corporates. A back-of-envelope calculation finds that the healthier financial characteristics of syndicated loan borrowers relative to the benchmark, as shown in Charts B4.1 to B4.5, together translate into a lower average PD for the syndicated loan borrowers than the benchmark by 20 basis points, with the debt-to-asset ratio effect being the main contributor.[67] The estimate is economically significant, given the average PD for the syndicated loan borrowers was around 0.83% at the end of June 2018.

Secondly, the coefficient estimate of the dummy variable for syndicated loan borrowers is found to be negative and statistically significant. One plausible interpretation is that non-financial factors, such as corporate governance of the borrowers, considered by banks when underwriting syndicated loans for Mainland corporates, may contribute to a reduction in the default probability by, at most, 35 basis points.[68]

### *Conclusion*

By assessing a broader set of key financial characteristics of Mainland corporates listed in Hong Kong, this study finds that those which had borrowed syndicated loans from banks in Hong Kong tend to have a lower credit risk than their counterparts. We also find that the lower credit risk of these loan borrowers is partly due to factors other than financial characteristics. This probably reflects, in part, the effects of non-financial factors which are considered by banks when underwriting the loans (e.g. management quality and corporate governance). Overall, the findings suggest that the Hong Kong banking sector, at least for the syndicated loan portfolio, is less exposed to riskier Mainland corporates. A key implication of these results is that while leverage ratio is often taken as a headline, or even the single indicator when assessing corporate sector risks, a comprehensive assessment should require a much broader set of indicators, including those for non-financial factors.

[67] Specifically, we multiply the coefficients in Table B4.A with the difference of the average ratios between syndicated borrowers and the benchmark at the end of June 2018. On the whole, the Debt-to-asset, Dummy $^{ICR<1}$, Short-term debt to total borrowing and ICR contribute to a lower average PD for the syndicated loan borrowers by 12.5bps, 7 bps, 1 bps and 0.1 bps respectively. By contrast, due to the slightly lower average ROA for syndicated loan borrowers than the benchmark, the ROA contributes to a higher PD by 0.1 bps.

[68] Another possible reason is that less risky Mainland corporates tend to have more access to different sources of external financing and hence are more likely to borrow from banks in Hong Kong. Nonetheless, the result still indicates that the banking sector is relatively less exposed to risky Mainland corporates in the syndicated loan market.