KPMG

# 2017 Q1 China's banking sector: Performance of listed banks and hot topics

June 2017

# INTRODUCTION

*China's banking sector: Performance of listed banks and hot topics* is a quarterly publication from KPMG China that examines the important topics and key performance indicators of China's banking industry. It provides an in-depth analysis of the topical issues to help readers understand their potential impact and the future direction of the industry. The report also reviews the financial performances of China's listed banks.

This issue focuses on the rapidly evolving Anti Money Laundering (AML) regulatory landscape, implementation of the new standards for financial instruments, and the potential impact the Ministry of Finance and the State Administration of Taxation's Circular 140 could have on the banking industry.

We hope our discussion on these hot topics, as well as research on the financial position of China's listed banks for the first quarter of 2017, will help readers gain a better understanding of the banking industry.

For more information, please contact any of the KPMG China professionals listed in the 'Contact us' section.

# Content

# 1 Analysis of 2017 Q1 financial data of listed banks

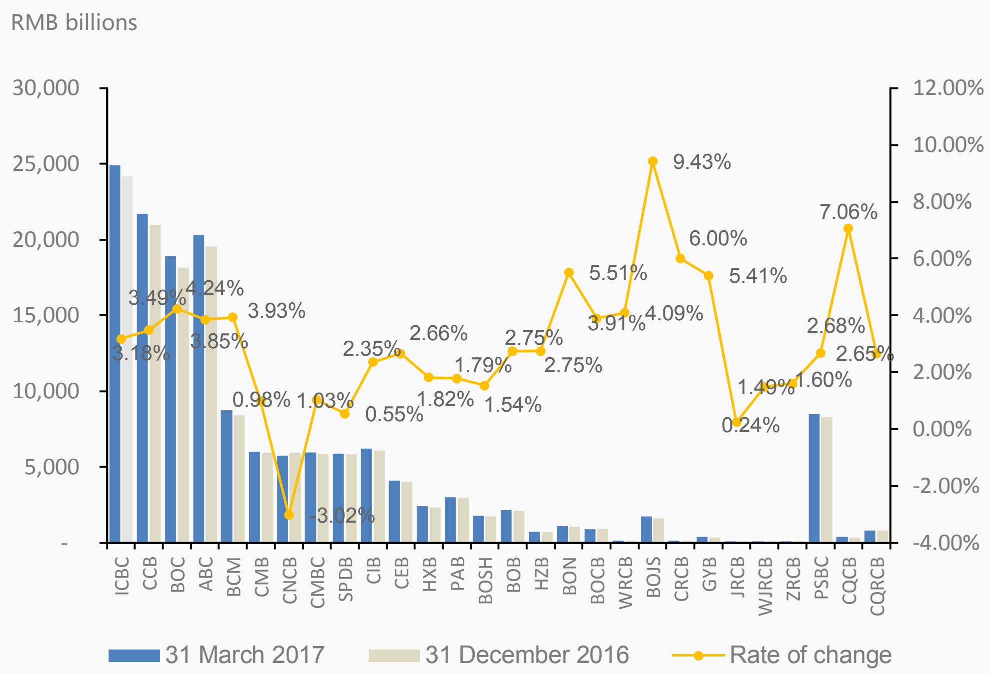
# Banking sector overview

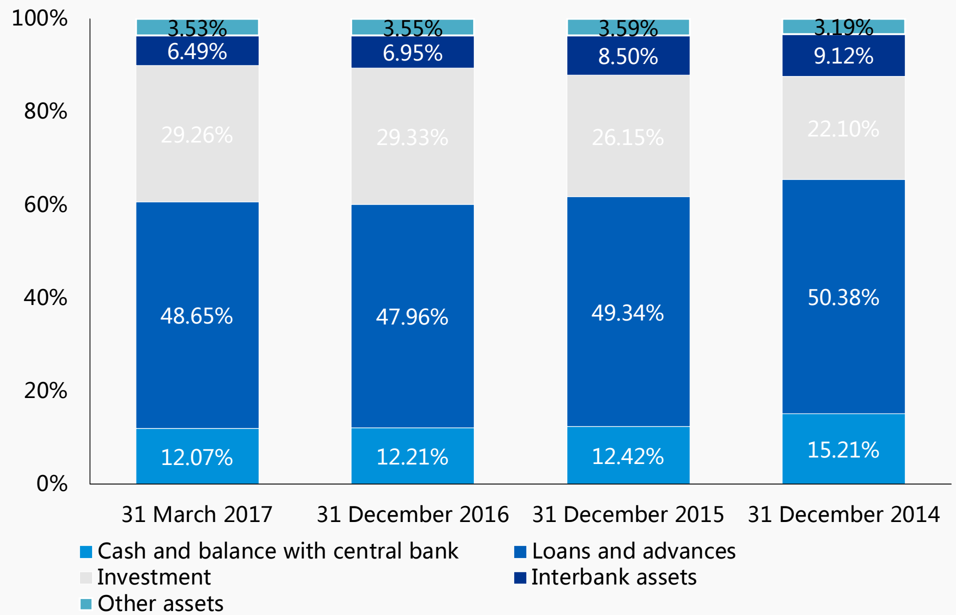
The first quarter of 2017 was more or less a continuation of the second half of 2016 in terms of growth for the Chinese economy, maintaining a positive trajectory albeit at a slower pace. In 2017 Q1, the amount of interest-bearing assets of the 'Big Five' state-owned banks (Agricultural Bank of China, Bank of China, Bank of Communications, China Construction Bank, and Industrial and Commercial Bank of China) rose steadily, while joint-stock banks and city commercial banks experienced a significant slowdown. The focus of listed banks were on asset allocation and risk control optimisation as they are increasingly looking for a balance between capital, risk and income, which increases the importance of non-credit assets. Driven by the authorities' efforts to deleverage the financial sector, increased supervision of non standard products, and a correction in the domestic bond market, the amount of interbank assets held by listed banks declined in 2017 Q1 although the size of their total investment increased. (This observation was based on the financial data of 28 listed banks.)

The People's Bank of China (PBOC) maintained its prudent monetary policies in 2017 Q1 as it seeks to support the restructuring of the Chinese economy. The aggregate financing to the real economy increased by 4.39 percent in 2017 Q1. In respect of credit risk control, the asset quality and capital adequacy ratios of listed banks improved, while non-performing loan (NPL) ratios declined slightly compared to the previous quarter.

The domestic banking industry is developing rapidly across a variety of sectors. Banks are focusing on developing their asset liability management business, while bonds and interbank deposits issuance as well as the securitisation business are also continuing to grow.

# Banking assets – Size and composition



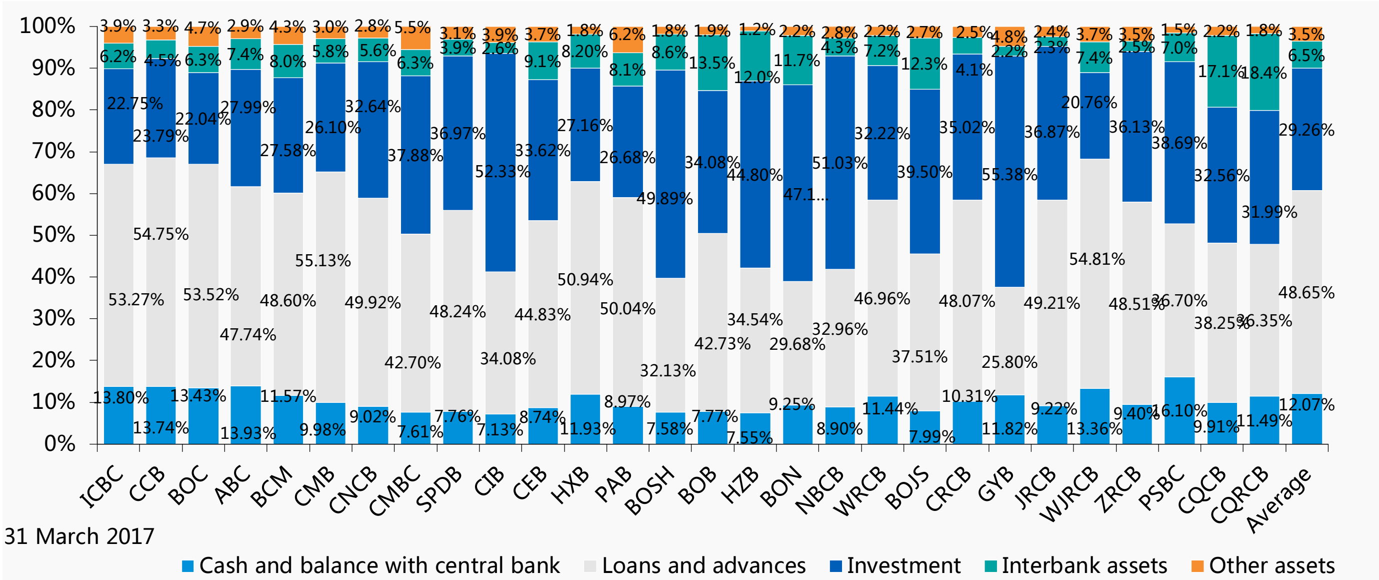

In 2017 Q1, bank assets continued to grow steadily although it was noticeably slower compared to the same period of time last year. Fluctuations in interbank assets was the main reason for the change. CNCB, for example, recorded a 3.02 percent drop in total assets over the previous quarter as a result of a 40.79 percent decline in interbank assets.

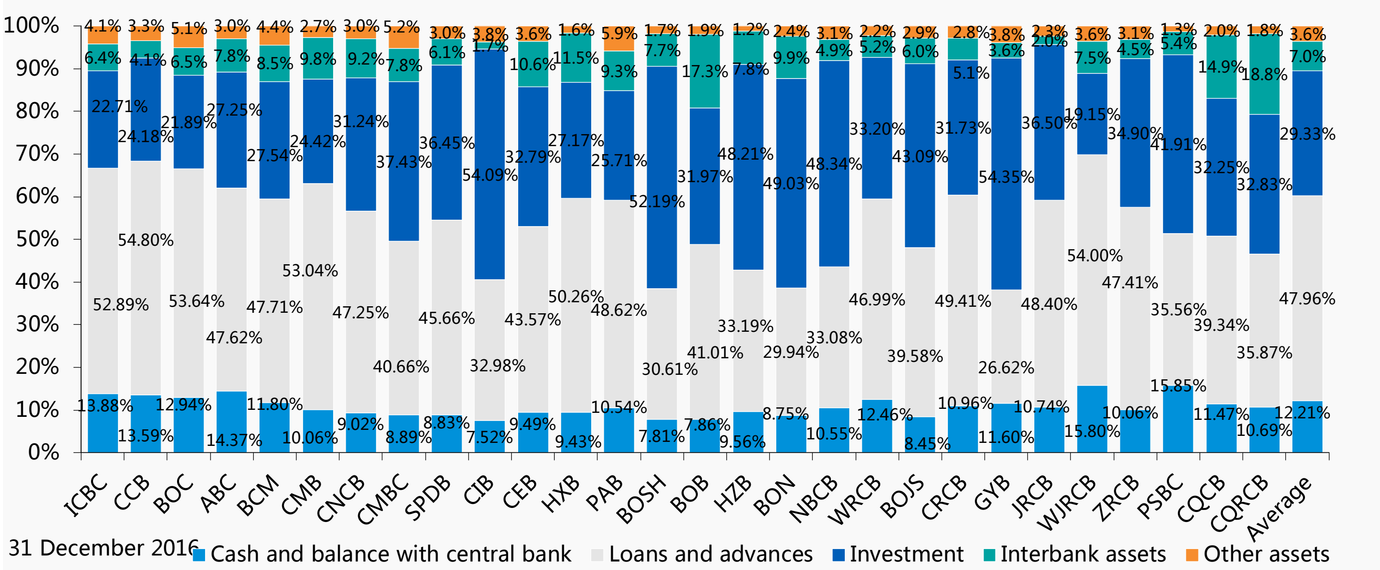
BOJS experienced the largest increase in total assets among the listed banks with a 9.43 percent surge as a result of a jump in its interbank assets. Other big movers include CQCB, CRCB and BON with their total assets increasing by 7.06 percent, 6 percent and 5.51 percent respectively.

The asset composition of listed banks experienced a slight change compared to the previous quarter. The proportion of loans and advances increased by 69 bps, while  the proportion of interbank assets decreased by 46 bps.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Banking assets – Breakdown of listed banks




Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

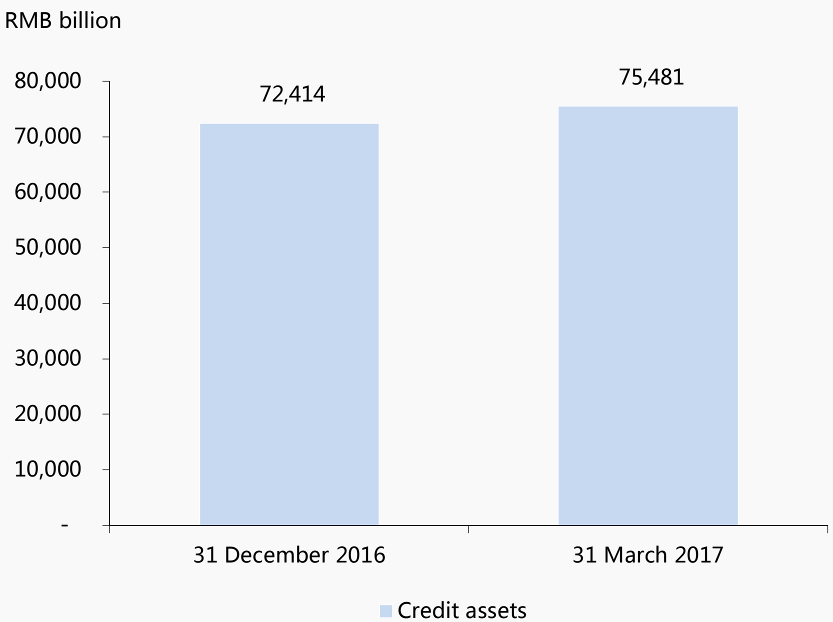
Compared to the previous quarter, the average proportion of loans and advances increased for 19 listed banks. CNCB recorded the highest growth (267 bps), whereas BOJS experienced the largest decline (207 bps).

The average proportion of investment for 18 listed banks also went up in 2017 Q1. CRCB recorded the biggest jump (329 bps), while BOJS was at the other end of the spectrum with a 359 bps decline.

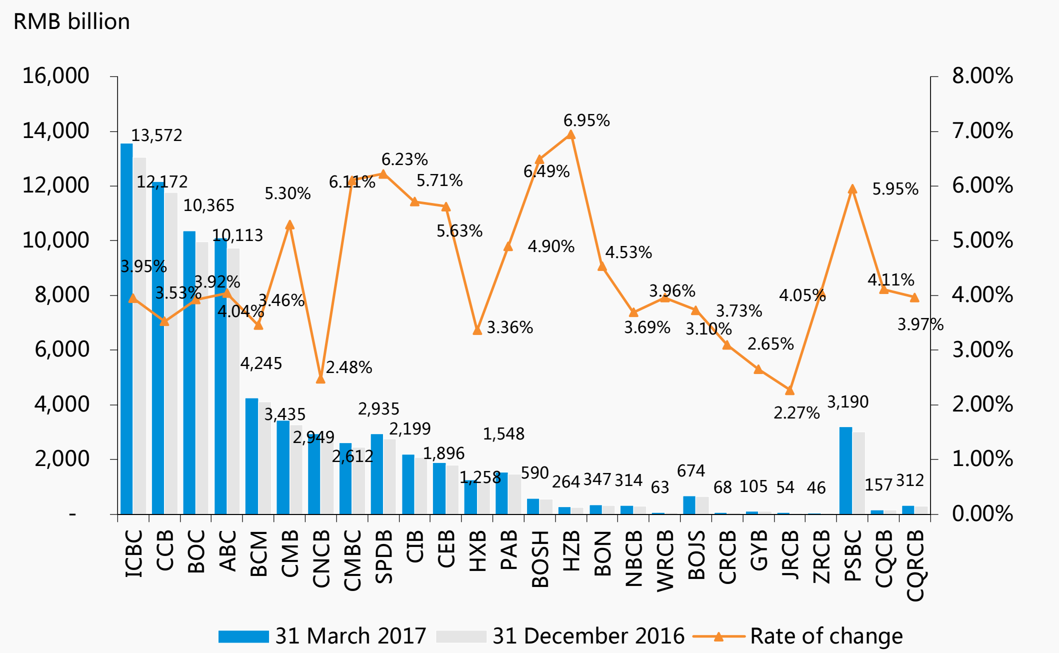
On the other hand, the average proportion of interbank assets for 18 listed banks declined with the sharpest drop recorded by CMB at 395 bps. The same indicator grew for 10 banks with the highest increase coming from BOJS (626 bps).

# Banking assets - Credit assets

## Size of credit assets of listed banks




## Size of credit assets of listed banks




Only 26 listed banks disclosed the size of their credit assets for 2017 Q1. The credit assets of those 26 banks stood at a combined RMB 75.48 trillion, which was a 4.24 percent increase over the previous quarter.

The 2017 Q1 Financial Statistics Report from the PBOC indicated that corporate demand for medium and long term loans are picking up in conjunction with the financing needs of the real economy. The report added that the credit structure of banks are starting to become more balanced.

On the back of this, listed banks are enlarging the scale of their loan business, while at the same time, optimising their asset structure and enhancing risk controls.

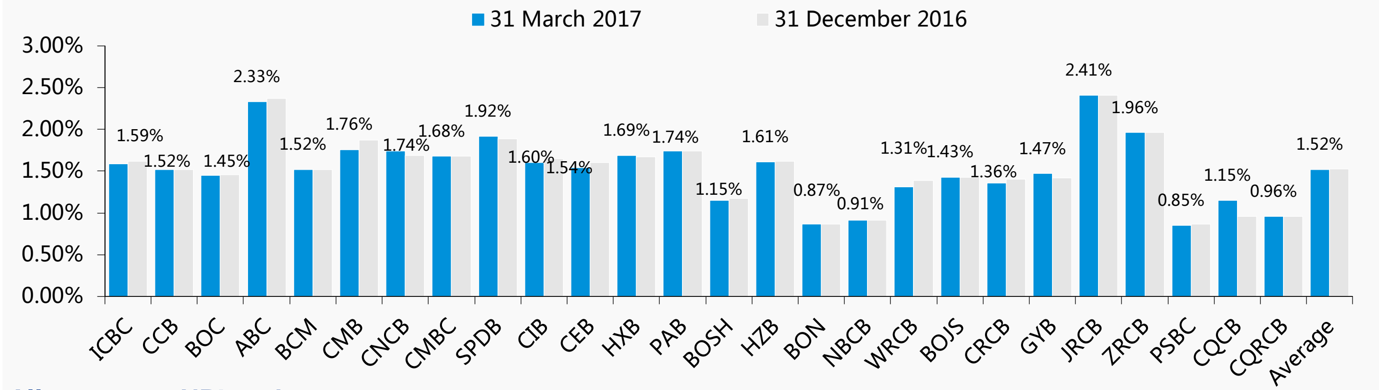
Joint-stock banks and city commercial banks, on average, recorded higher levels of credit asset growth. Credit asset growth was especially apparent for HZB, BOSH, SPDB and CMBC.

Note：BOB and WJRCB did not disclose the scale of asset before deducting the loan impairment.

Sources: The banks’ 2016 annual reports and 2017 Q1 reports; 2017 Q1 Financial Statistics Report from the People’s Bank of China; KPMG China research

# Banking assets – Credit asset quality

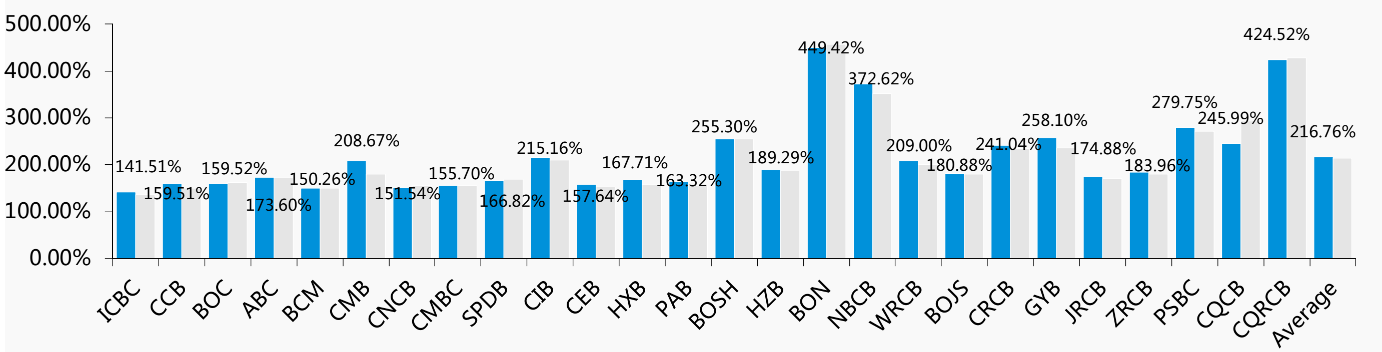
**NPL ratio**




At the end of 2017 Q1, the average NPL ratio of the 26 listed banks was 1.52 percent, which was roughly the same as the previous quarter.

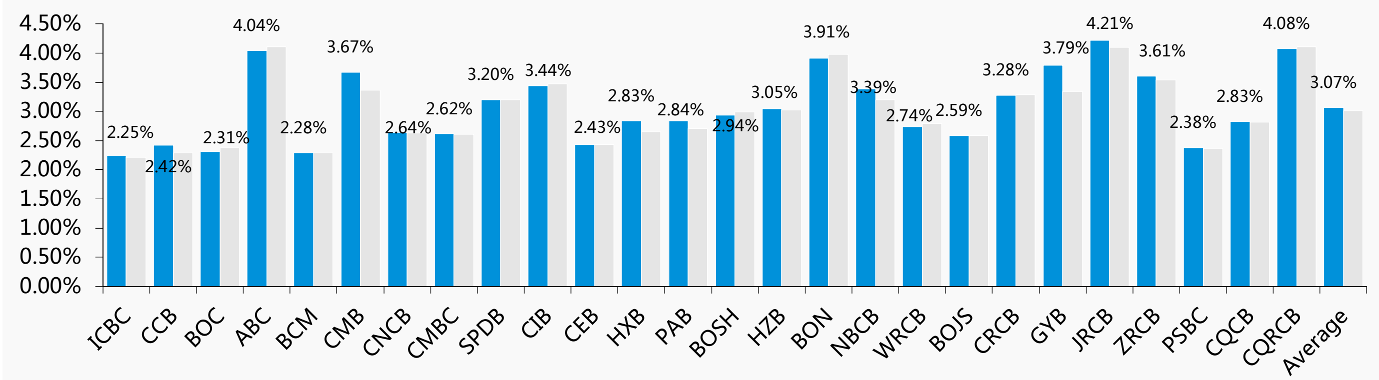
Among them, 15 banks had NPL ratios in excess of 1.5 percent with JRCB the highest in the list at 2.41 percent. PSBC recorded the lowest NPL ratio among its peers, coming in at 0.85 percent.

**Allowance to NPL ratio**




The average allowance to NPL ratio of the 26 listed banks ended 2017 Q1 at 216.76 percent, a quarter-on-quarter rise of 304 bps. The allowance to NPL ratios for 18 listed banks increased. BON had the highest allowance to NPL ratio at 449.42 percent, while ICBC was the lowest at 141.51 percent.

**Allowance to total loan ratio**

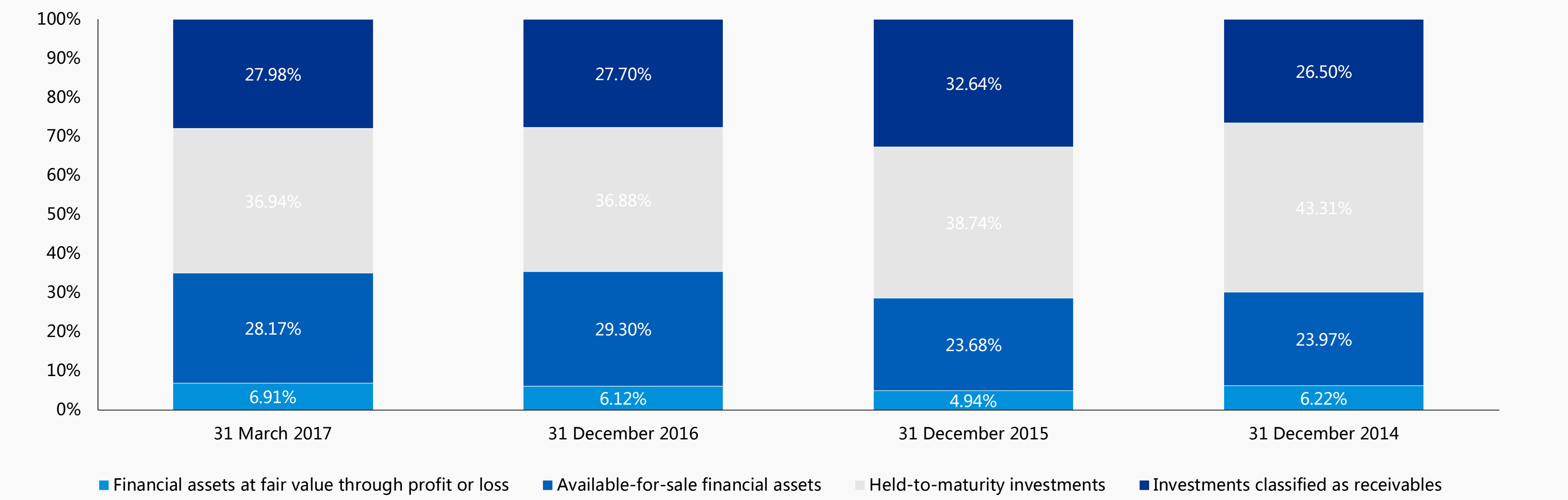



On the other hand, the allowance to total loan ratios of the 26 listed banks were between 2.25 percent and 4.21 percent at the end of 2017 Q1. Their average of 3.07 percent was 5 bps higher than the previous quarter. JRCB had the highest allowance to total loan ratio among the banks at 4.21 percent, while ICBC was the lowest at 2.25 percent.

Note：BOB and WJRCB did not disclose the relevant data.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Banking assets – Investment breakdown

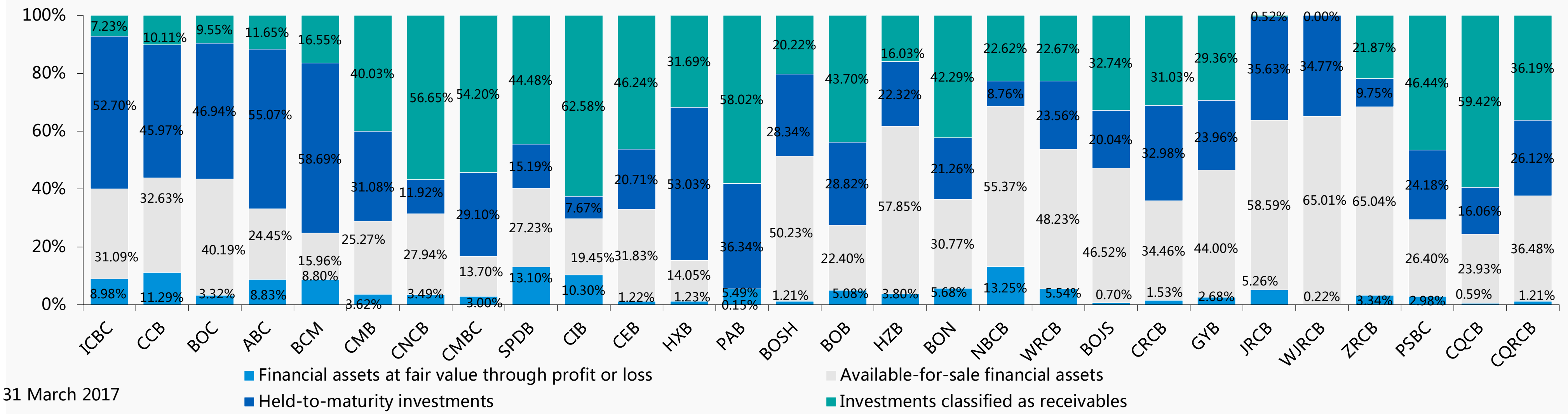



As previously mentioned, the weighting of investment in the overall asset composition of listed banks declined slightly in 2017 Q1 to 29.26 percent, down 7 bps from the previous quarter.

Within that, held-to-maturity investments accounted for the largest portion with a share of 36.94 percent, while available-for-sale financial assets was second at 28.17 percent. Investments classified as receivables was a close third at 27.98 percent, while financial assets at fair value through profit and loss was the smallest at 6.91 percent.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Banking assets – Investment breakdown (continued)

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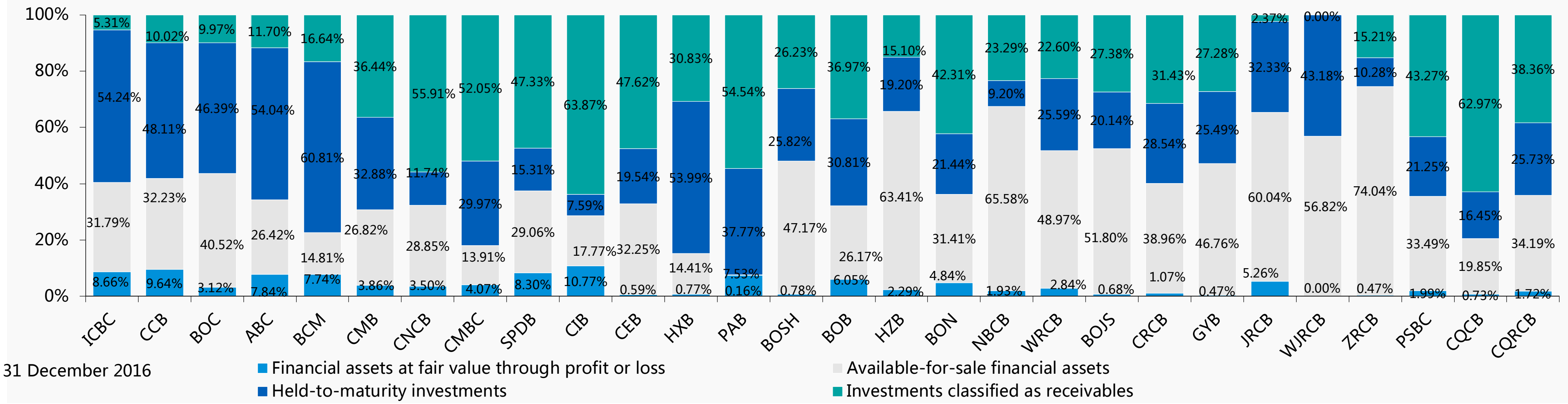
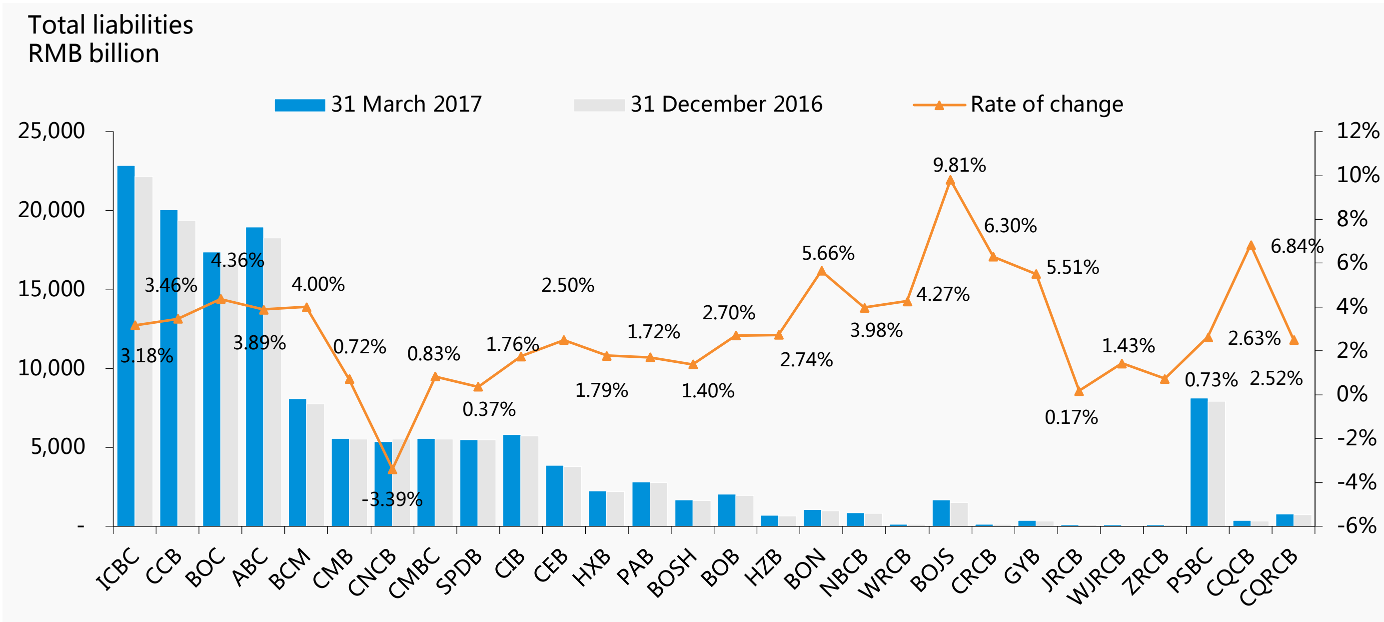



31 December 2016

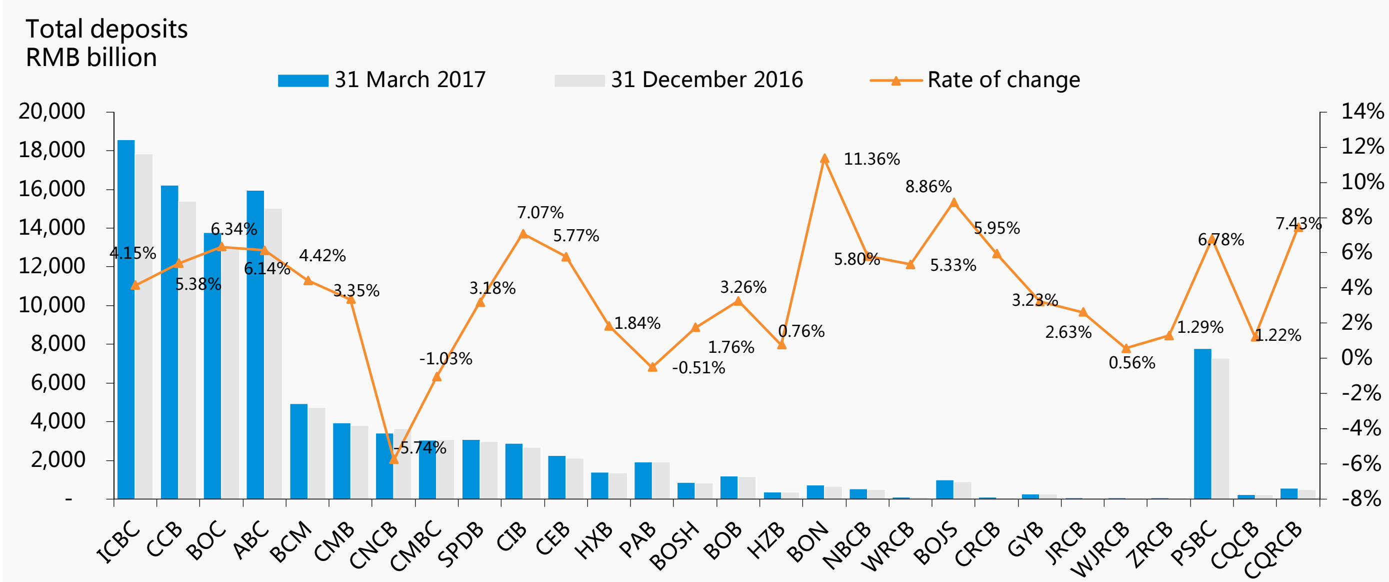
At the end of 2017 Q1, the 'Big Five' state-owned banks held a higher percentage of held-to-maturity investments, while commercial banks held a higher percentage of available-for-sale financial assets and investments classified as receivables.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Total liabilities




Total liabilities of listed banks increased by 2.85 percent in 2017 Q1 from RMB 142.22 trillion at 2016 year end, similar to the growth of total assets. Growth in liabilities was mainly driven by an increase in total deposits and bonds payable.

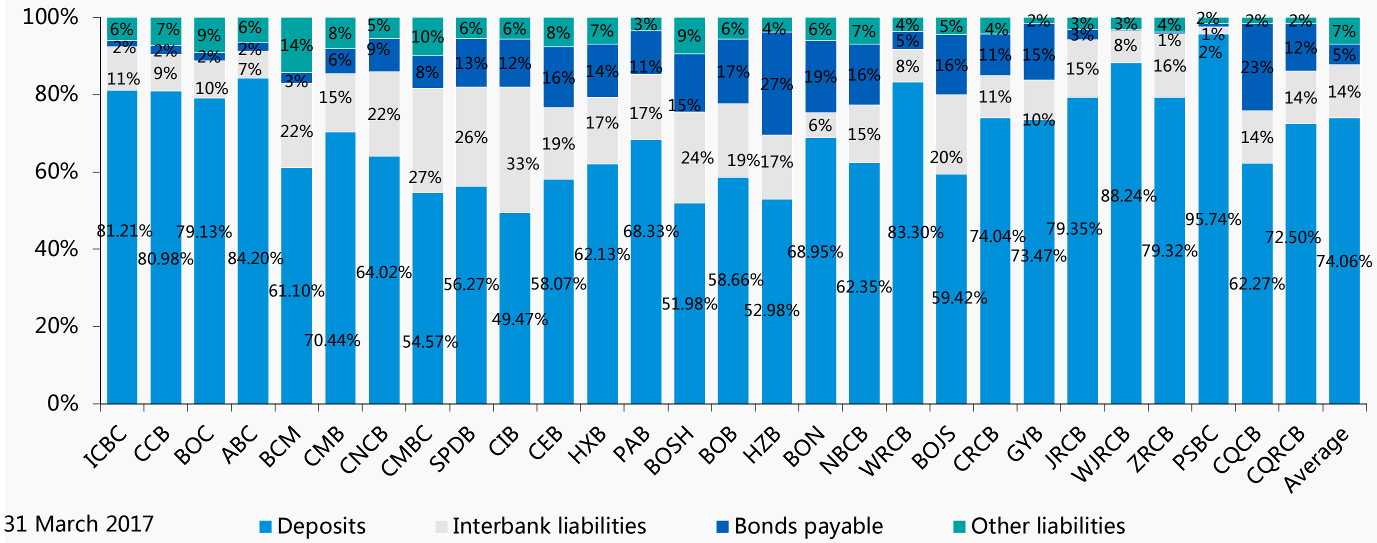


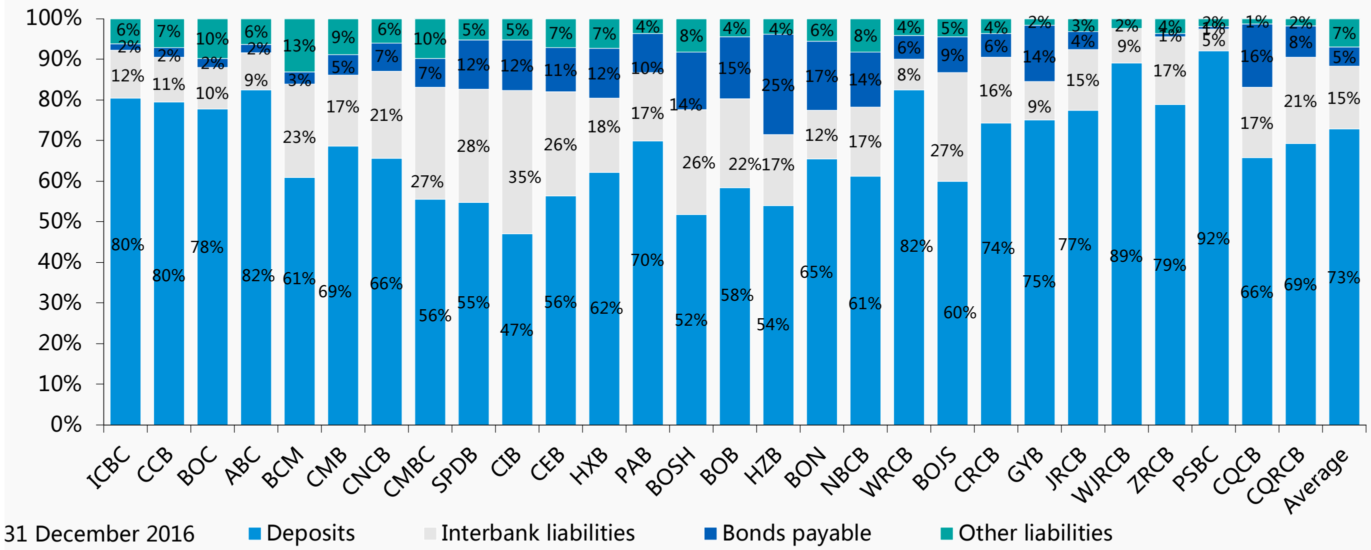

As mentioned, the total deposits of listed banks grew in 2017 Q1 to RMB 105.32 trillion, up 4.60 percent from 2016 Q4. The total deposits of 25 banks increased, while just three banks recorded a drop. BON recorded the highest surge in deposits (11.36 percent), followed by BOJS at 8.86 percent. At the other end of the spectrum, CNCB saw its total deposits went down by 5.74 percent, while CMBC and PAB also recorded declines of 1.03 percent and 0.51 percent, respectively.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Liabilities – Breakdown of listed banks

**Liability structure**




In 2017 Q1, deposits formed the largest component of the liabilities of listed banks. Deposits took up more than 50 percent of all listed banks' liabilities with the exception of CIB.

Deposits in the 'Big Four' state-owned banks, together with PSBC, made up a higher proportion of their liabilities compared to the rest of the industry with an average of 82.74 percent. Joint-stock banks and city commercial banks recorded averages of 59.68 percent and 61.52 percent, respectively. This discrepancy reflects the advantages state-owned banks possess in attracting customers.

Joint-stock banks and city commercial banks held a higher proportion of interbank liabilities than state-owned banks. CIB had the highest proportion of interbank liabilities among its listed peers at 32.53 percent.

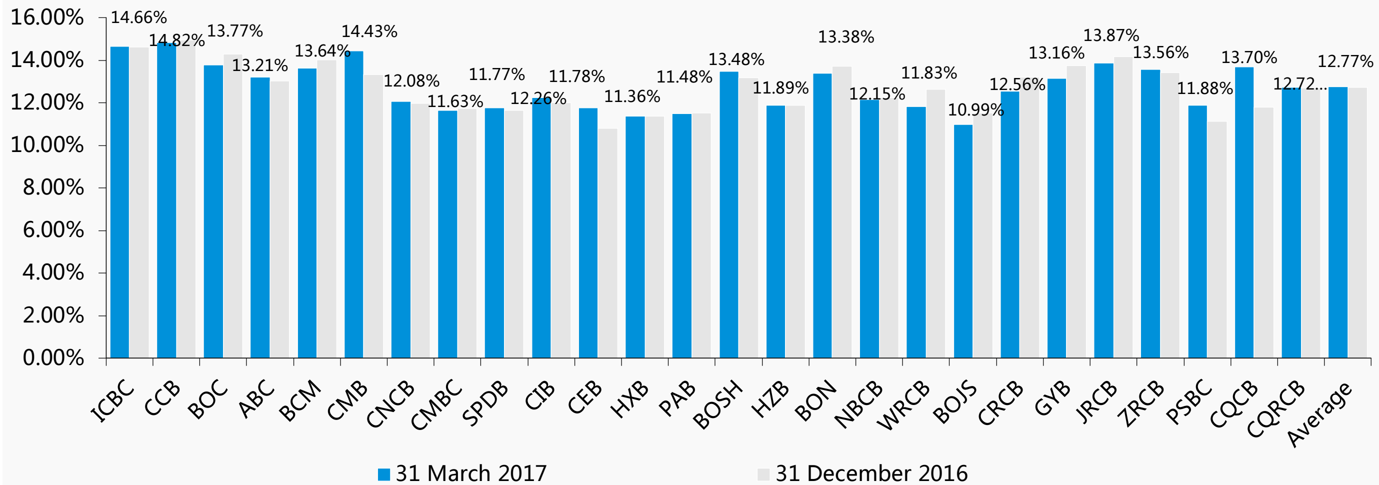
There were generally no big changes in the liability structures of listed banks in 2017 Q1 compared to 2016 Q4. There was, however, an intense competition for funding on the back of interest rate liberalisation and the emergence of various Fintech startups.

In response, listed banks have continued to optimise their liability structures, increase efforts to boost deposits and expand their fundraising channels in order to develop their liability management businesses.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Risk management —Capital adequacy ratio and tier 1 capital adequacy ratio

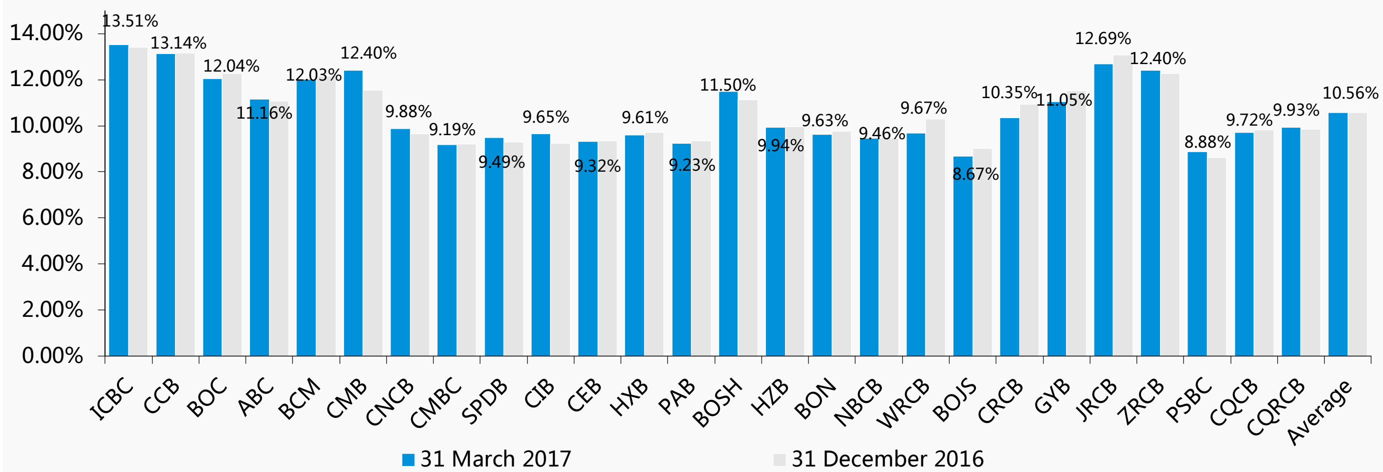
### Capital adequacy ratio




In 2017 Q1, the average capital adequacy ratio of the 26 listed banks that disclosed the data was 12.77 percent, a 5 bps increase over the previous quarter.

Among the 26 banks, 12 witnessed a decrease in their capital adequacy ratios. WRCB recorded the largest drop in capital adequacy ratio with a 82 bps decline as a result of its business expansion plans, which led to an increase in risk assets.

### Tier 1 capital adequacy ratio




The average tier 1 capital adequacy ratio of the 26 listed banks was 10.56 percent, a marginal 2 bps decline compared with 2016 Q4.

Note：BOB and WJRCB did not disclose relevant data.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Profitability –Analysis

All but one of the 28 listed banks (JRCB) recorded an increase in their net profit attributable to equity holders of the parent company with growth rates ranging from 0.06 percent to 19.53 percent. The 13 regional urban commercial banks and PSBC enjoyed the highest growth rate with a weighted average of 9.75 percent, while the 8 joint stock commercial banks were second with a weighted average of 4.68 percent. The 'Big Five' state-owned banks grew at 1.67 percent.

The operating income of listed banks in Q1 2017 grew marginally once the effects of the VAT reforms had been taken into account. This was down to the continued increase in interest-bearing assets, which led to an improvement in interest income. The development of intermediary services also helped spur the growth of non-interest income.

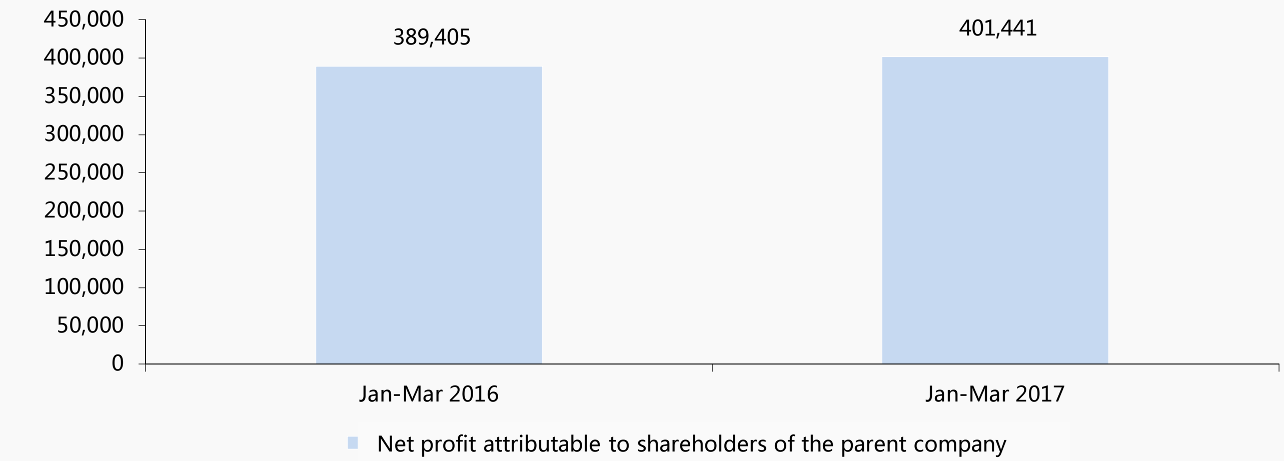
A stark increase in interbank funding costs since the second half of 2016 meant there was a noticeable decrease in net interest margin in Q1 2017. On the other hand, volatility in the domestic bond and FX markets also led to a drop in investment income in 2017 Q1 over the same period last year.

The loss impairment of listed banks rose rapidly in 2017 Q1 due to the expansion of loans and the increase in provision rates. However, this was partly offset by a decline in operating costs as a result of the VAT reforms.

# Profitability - Net profit attributable to shareholders of the parent company

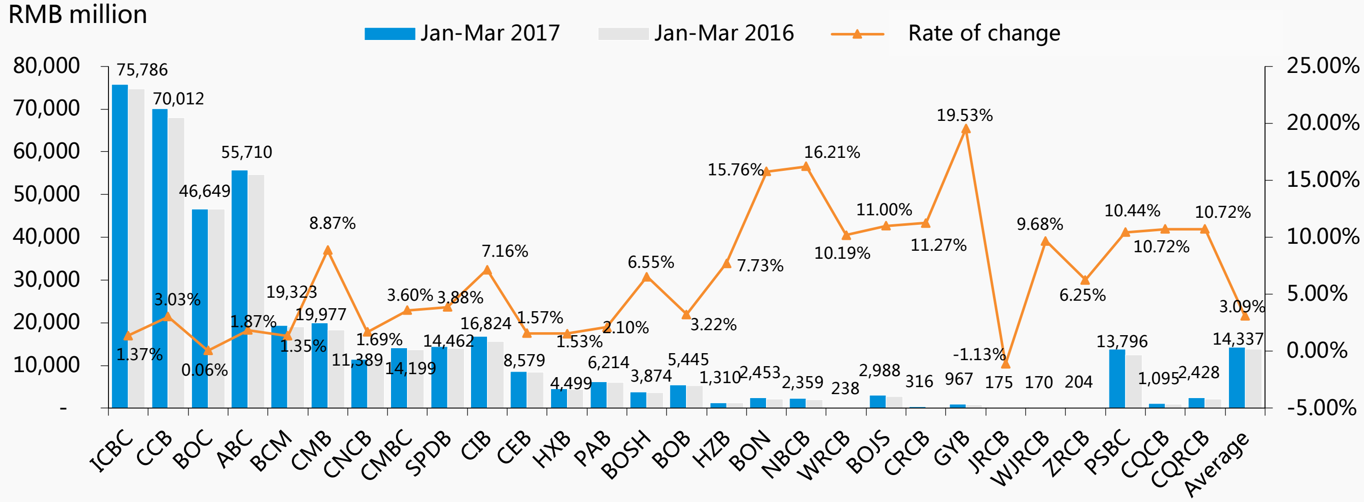
**Net profit attributable to shareholders of the parent company of listed banks**

RMB million




**Net profit attributable to shareholders of the parent company by listed banks**

RMB million




Net profit attributable to parent company shareholders increased in 2017 Q1 by 3.09 percent. Some 9 listed banks have achieved double-digit growth in net profit attributable to parent company shareholders.

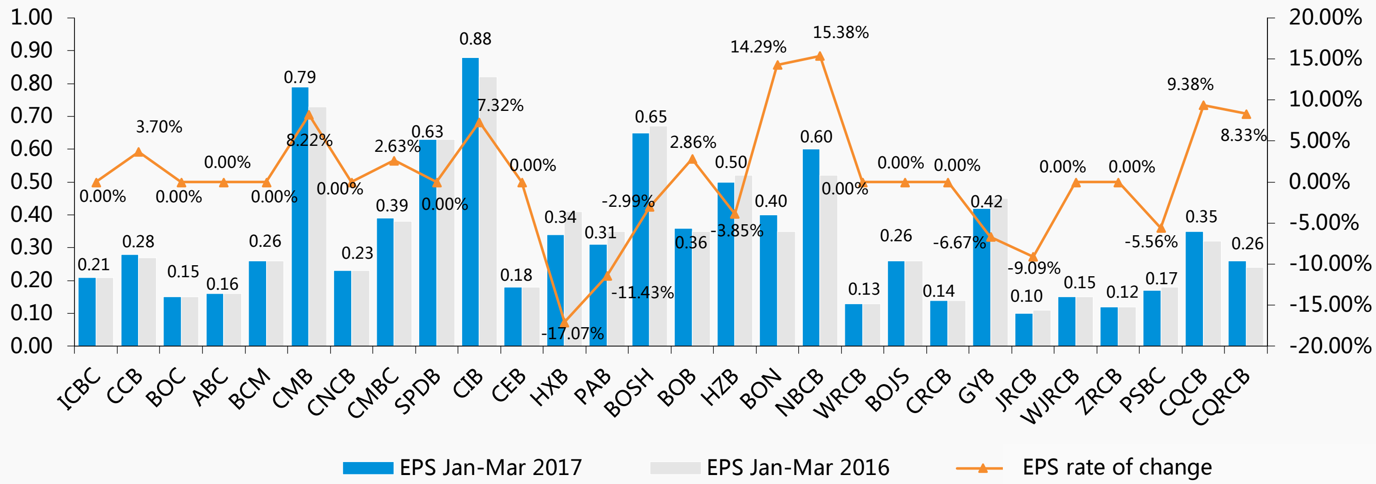
GYB enjoyed a 19.53 percent jump in attributable net profit, while NBCB experienced a 16.21 percent increase. The stellar performances by GYB, NBCB and other joint-stock commercial banks were mainly driven by an increase in net interest income.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Profitability – Key performance indicators

## Earnings per share (EPS)

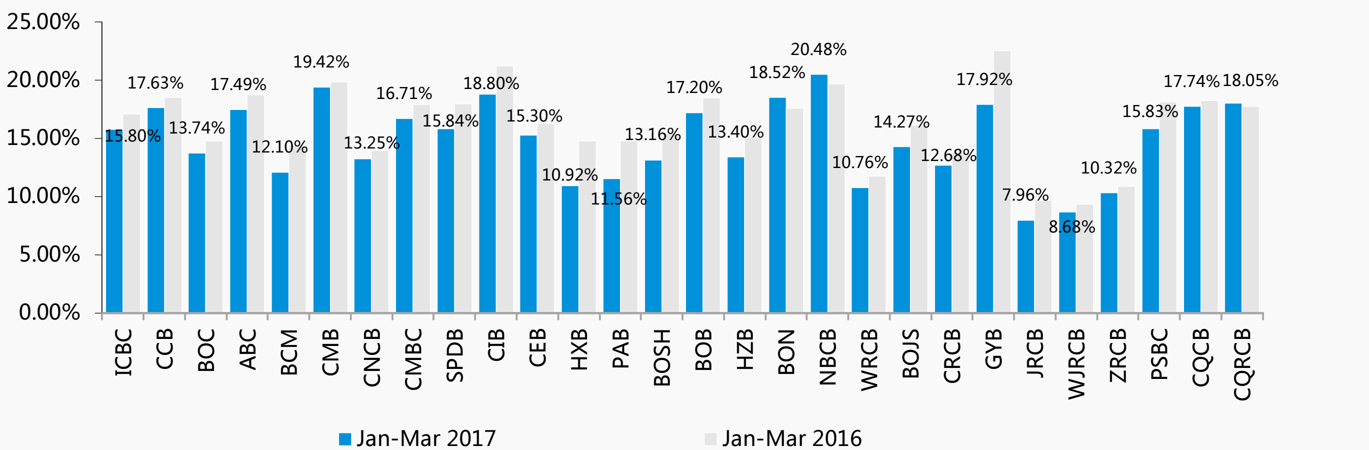
RMB Yuan




In the first quarter of 2017, the earnings per share (EPS) of 9 listed banks increased year on year. The EPS of 12 listed banks were flat, while 7 listed banks recorded a drop. NBCB was the best performer in 2017 Q1 with a year on year EPS increase of RMB 0.08, which translates to a 15.38 percent jump.

Meanwhile, HXB recorded the biggest decline in EPS. Its EPS drop by RMB 0.07, which translates to a 17.07 percent decline.

## Return on weighted average equity (ROE)




When it comes to return on equity (ROE), the annualised weighted average ROE of listed bank experienced a year on year drop of 141 bps.

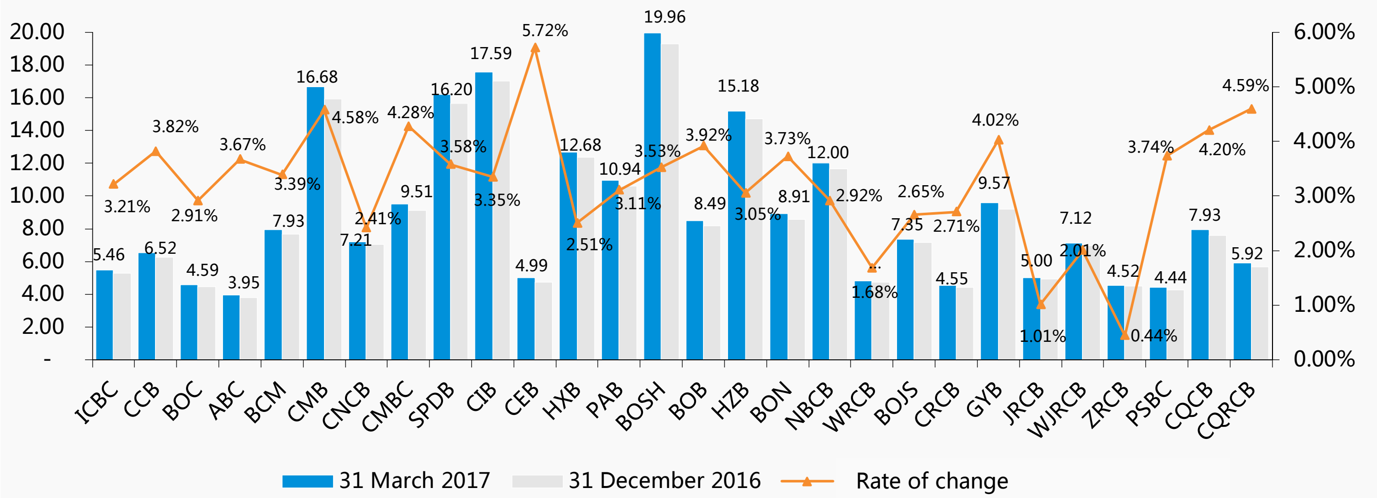
HXB and PAB saw the largest declines with their ROE falling by 388 bps and 324 bps, respectively. Only BON, NBCB and CQRCB experienced an increase in ROE, with increases of 92 bps, 80 bps and 29 bps, respectively.

Sources: The banks' 2017 Q1 report; KPMG China research

# Profitability – Key performance indicators (continued)

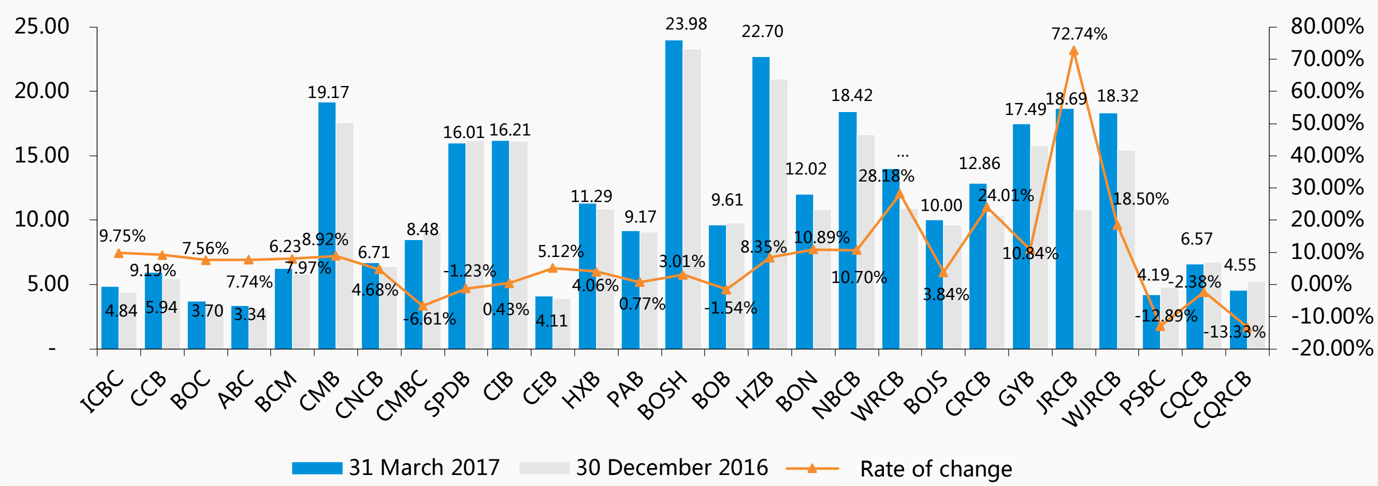
**Net asset value per share**

RMB Yuan




**Share price**

RMB Yuan




Note: ZRCB was not listed as at 30 December 2016.

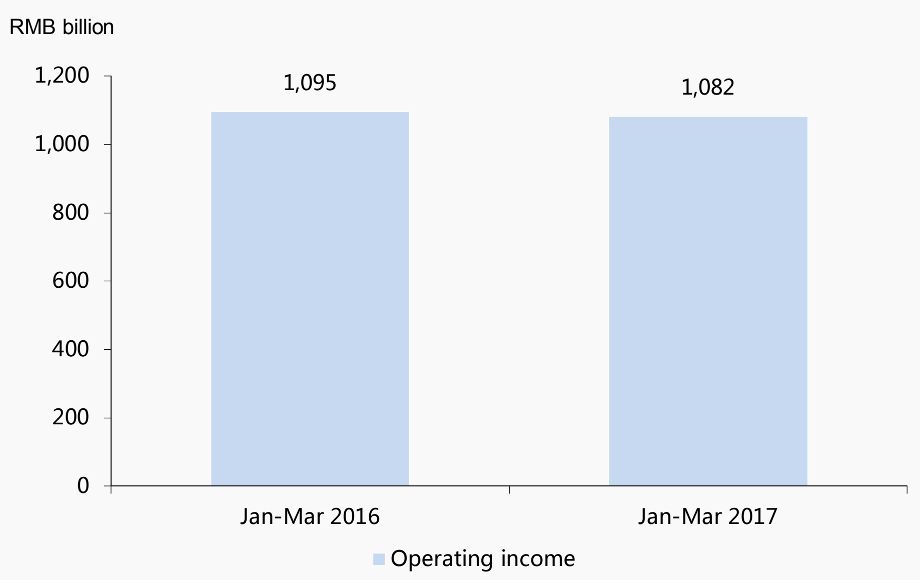
Sources: The banks' 2017 Q1 reports; KPMG China research

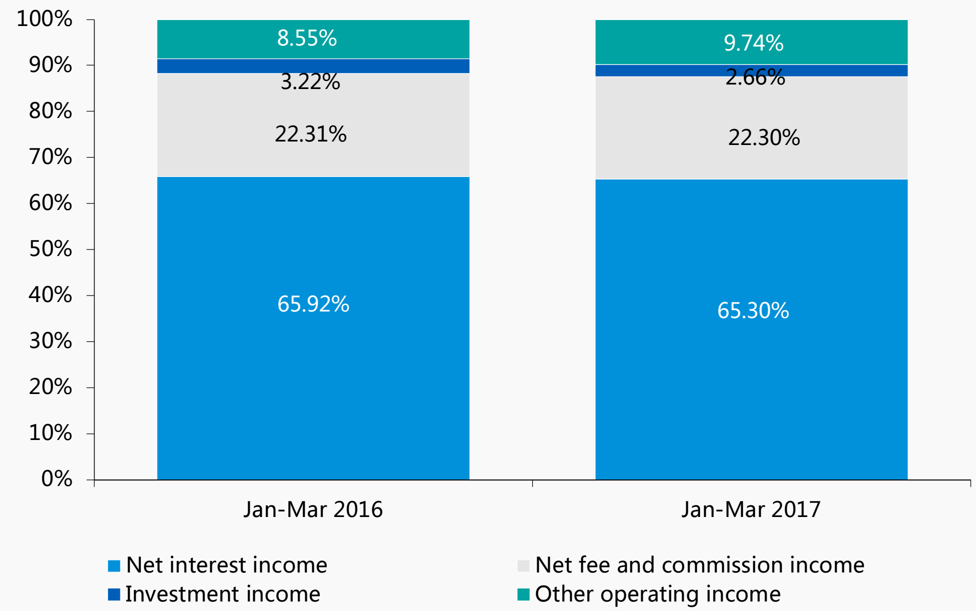
Net asset value (NAV) per share went up across the entire listed bank space. BOSH had the highest NAD per share in 2017 Q1 at RMB 19.96, which was a 3.53 percent increase over the pervious quarter. ABC had the lowest NAV per share of Rmb3.95, which was still 3.67 percent higher than 2016 Q4.

Driven by the momentum created by new bank stocks in the A-share market in 2016, the share prices of 21 out of 27 listed banks went up in 2017 Q1. ZRCB was not listed as of December 30, 2016.

JRCB was the best performer by ending the quarter at RMB 18.69 per share, which was a 72.74 percent spike over 2016 Q4. In addition, the share prices of WRCB and CRCB increased by over 20 percent. The share prices of SPDB, BOB，CMBC，PSBC, CQCB, CQRCB went down.

# Profitability — Operating income and income composition




In the first quarter of 2017, the total operating income of listed banks experienced a year on year decrease of 1.23 percent. This was attributable to a decline in net interest income as well as net fee and commission income as a result of the VAT reforms. After neglecting the effect of taxes and surcharges, operating income growth was comparable to 2016 Q1.

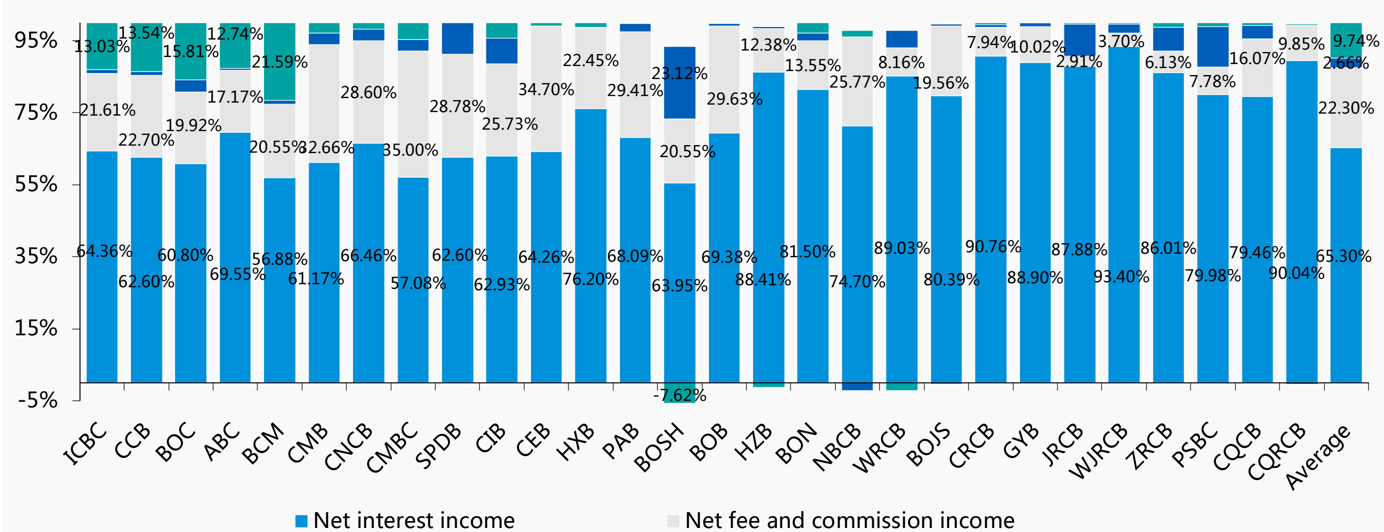
The following is a breakdown of 2017 Q1 operating income:

- Net interest income accounted for 65.30 percent of total operating income, a 62 bps decline year on year.
- Net fee and commission income accounted for 22.30 percent of total operating income.
- Investment income accounted for 2.66 percent, down 56 bps.
- Other operating income accounted for 9.74 percent, up 119 bps. This section consists mainly of gains from changes in fair value, FX and other operating income.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Profitability — Operating income and income composition (continued)

## Structure of operating income

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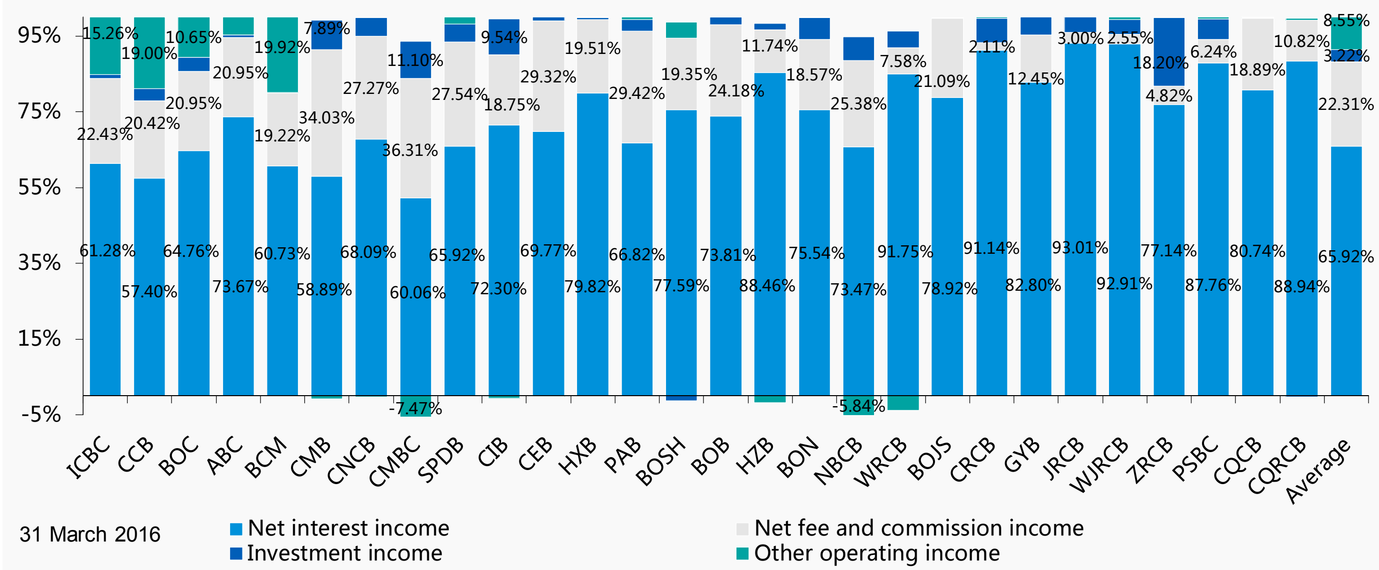



Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

In the first quarter of 2017, net interest income among listed banks accounted for 65.30 percent of operating income, while net fee and commission income and investment income accounted for 22.30 percent and 2.66 percent, respectively.

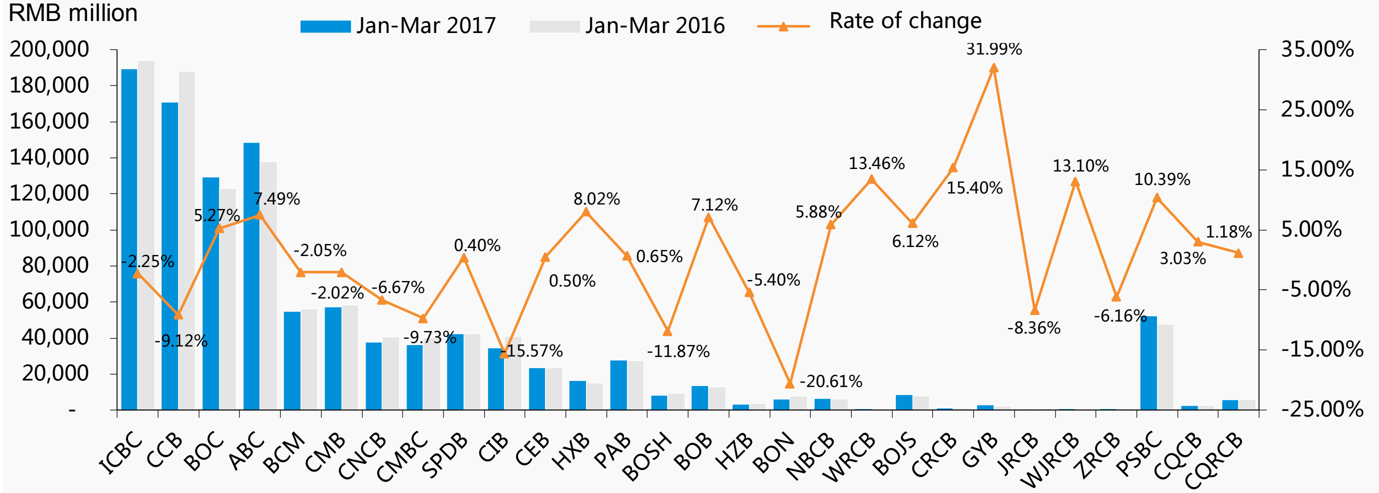
Both commission income and investment income were more or less flat compared to 2016 Q1.

However, the share of investment income within total operating income decreased by 56 bps, while the share of other operating income increased by 119 bps YoY.

Compared to 2016 Q1, the average share of net interest income within operational income fell as a result of the VAT reforms and narrowing of interest margins. Listed banks are proactively adjusting their income structures and reducing their reliance on interest income against this backdrop of tightening net interest margins.

# Profitability —Operating income and income structure analysis

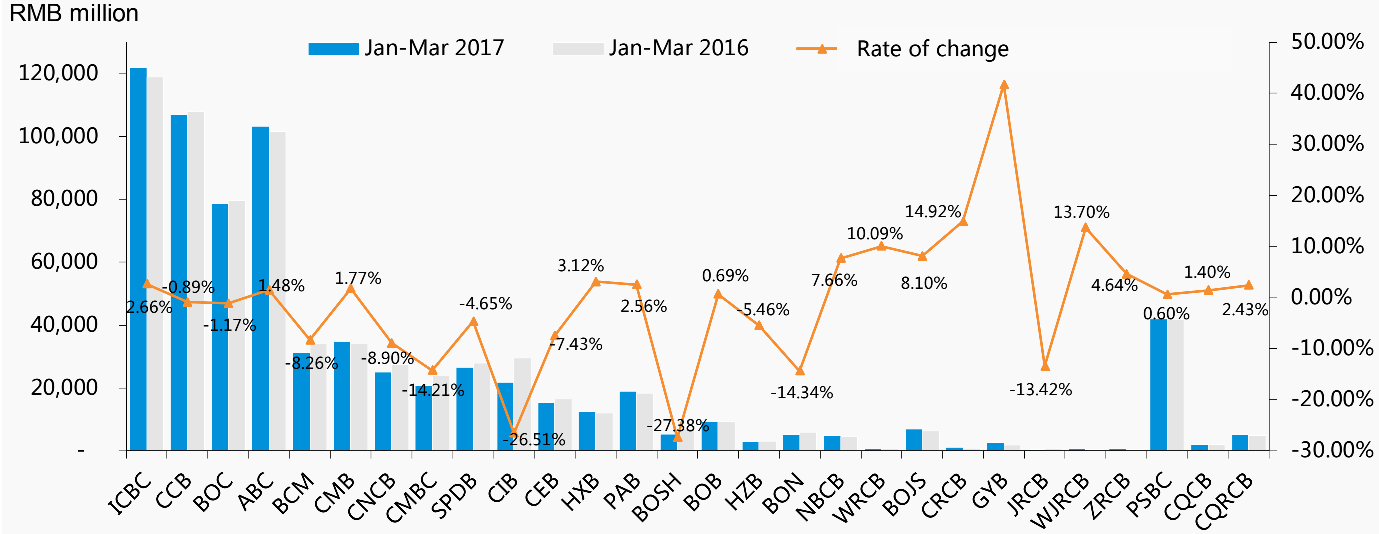
## Operating income




In 2017 Q1, 16 listed banks recorded year on year increases in operating income. Top of the list were GYB and CRCB, which registered operating income spikes of 31.99 percent and 15.40 percent, respectively.

Some 12 listed banks saw their operating income fell year on year. BON and CIB experienced the biggest drop with declines of 20.61 percent and 15.57 percent, respectively.

## Net interest income




Similar to operating income, 16 listed banks recorded an increase in net interest income in 2017 Q1. Once again, GYB and CRCB posted the highest growth with increases of 41.71 percent and 14.92 percent, respectively.

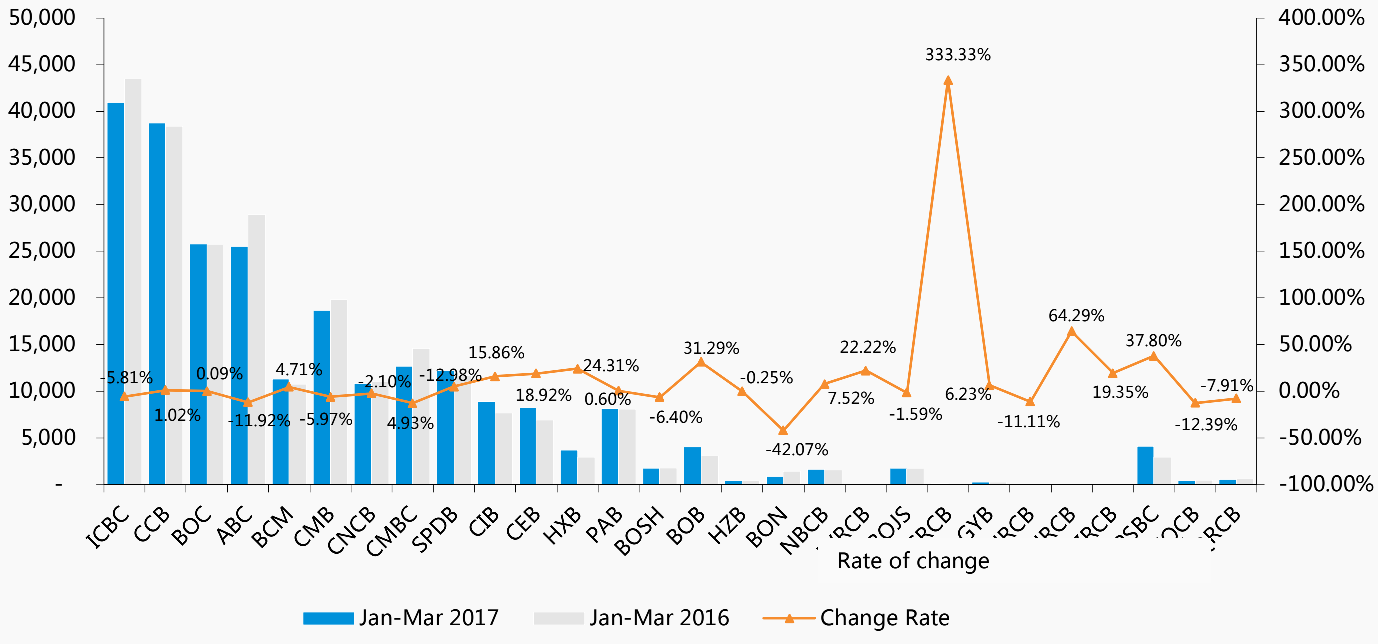
At the other end of the spectrum, BOSH and CIB posted the largest drop in net interest income with declines of 7.38 percent and 26.51 percent, respectively.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Profitability –Operating income and income structure analysis (continued)

**Net fee and commission income**

RMB million

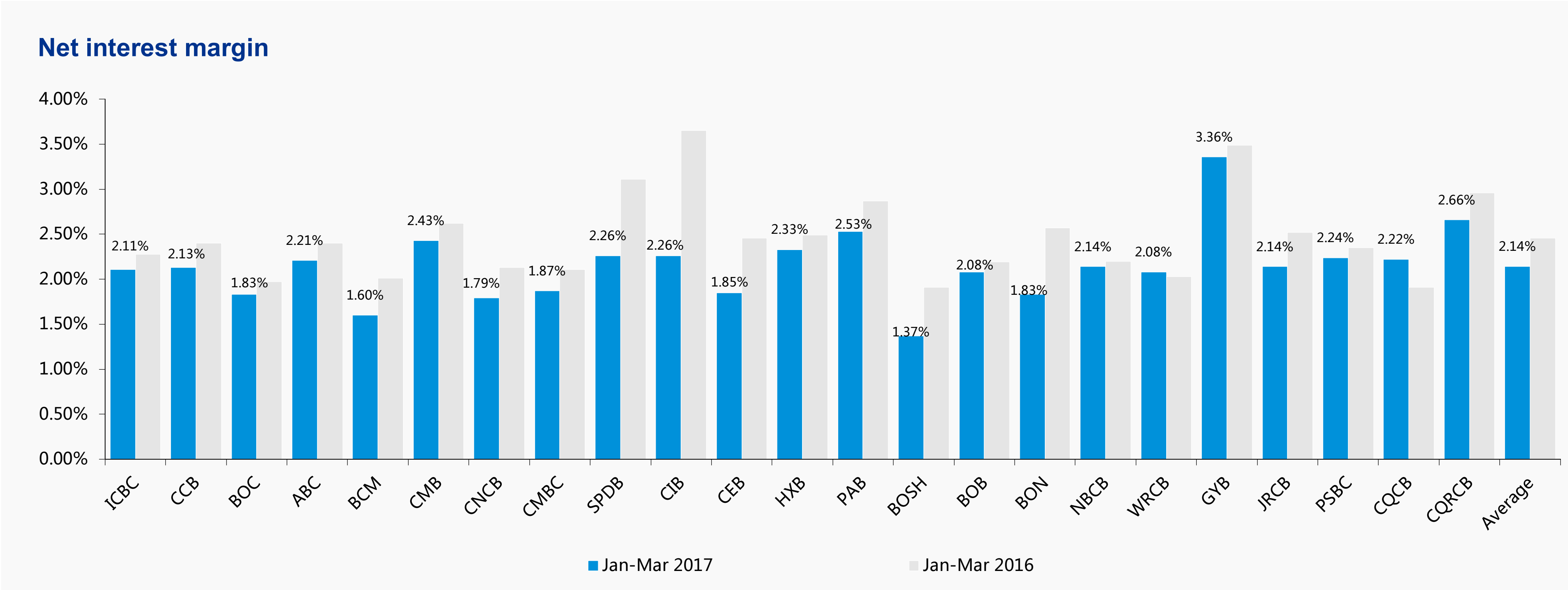



In 2017 Q1, 12 listed banks experienced year on year drops in net commission income. This was the result of stricter monitoring policies and the emergence of newer financial services and business models. On the back of a slowdown in traditional banking businesses, listed banks are proactively adjusting their income structures, promoting financial innovation, diversifying profit-making sources and reducing their reliance on traditional businesses. Many banks, for example, are increasing their investments in investment banking, bank card, custodian services, gold leasing, and other intermediary businesses.

CRCB recorded the highest rise in net commission income with a 333.33 percent increase driven mainly by a spike in investment banking fees and its asset management business. WKRCB and PSBC were the other two banks to have experienced significant improvements in net commission incomes with increases of 64.29 percent and 37.8 percent, respectively.

Sources: The banks' 2016 annual reports and 2017 Q1 reports; KPMG China research

# Profitability —Net interest margin




In the first quarter of 2017, the average net interest margin of 23 listed banks was 2.14 percent, down 32 bps over the same period in 2016. Five listed banks did not disclose their relevant data. The *Overview of Financial Market* published by the PBOC revealed that market rates have been increasing in an accelerating pace since the end of 2016 Q4 with a noticeable increase in the interest rates of managed liabilities within the banking sector.

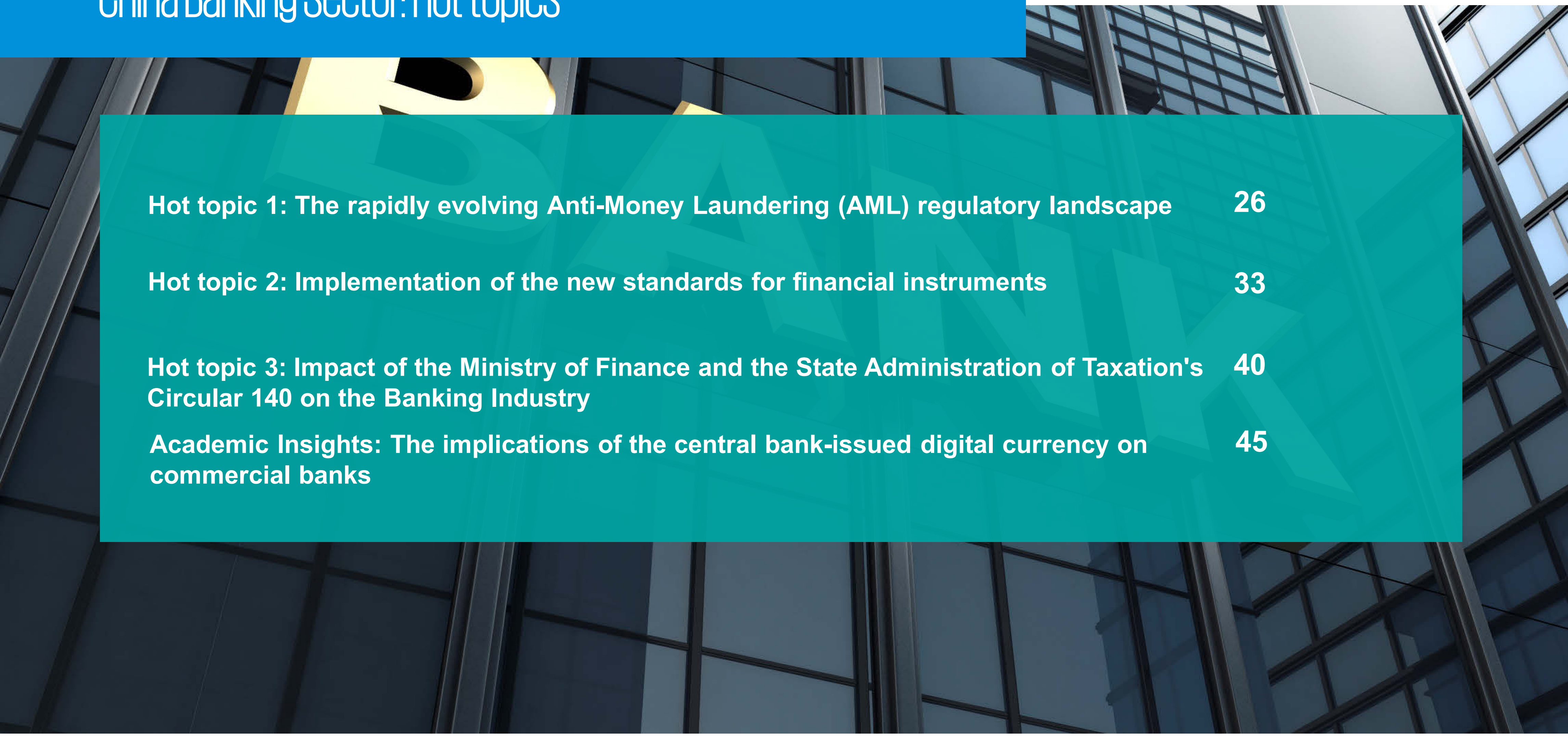
Unsurprisingly, net profit margins were also under pressure as credit asset prices lagged behind the increasing market interest rates. Among the 23 listed banks, which disclosed the relevant data, CIB saw its net interest margin declined the most with a drop of 139 bps.

Note: HZB, BOJS, CRCB, WJRCB and ZRCB did not disclose the relevant data.

Source: The banks' 2016 annual reports and 2017 Q1 reports; Overview of Financial Market by People's Bank of China; KPMG China research

# 2 Banking sector Hot topics

# China Banking Sector: Hot topics



# Hot topic 1

## The rapidly evolving Anti-Money Laundering (AML) regulatory landscape

# Hot topic 1: The rapidly evolving AML regulatory landscape

Financial institutions are on the front line of a rapidly changing regulatory environment. While AML has always been a top regulatory concern, it is quickly becoming a key political and business agenda internationally.

The United States' main AML law, for example, came into effect nearly half a century ago and the political climate surrounding AML changed dramatically in the aftermath of the 9/11 terrorist attacks. In 2012, when a Senate Subcommittee held hearings to investigate a global financial institution's AML compliance issues, it levelled harsh criticism at the regulator's degree of supervision. This has had a profound impact on the regulatory landscape as AML regulators in the US have since stepped up their supervision and enforcement efforts.

With AML regulators worldwide ramping up their degree of supervision, financial institutions are under growing pressure to develop and implement a robust and effective AML compliance programme that are consistent with best market practices and local regulatory requirements.

Currently, three issues are having a significant impact on AML developments among Chinese financial institutions: the implementation of the PBOC's No.3 decree, the Financial Action Task Force (FATF) mutual evaluation, and overseas regulatory developments.

# Hot topic 1: The rapidly evolving AML regulatory landscape (continued)

## 1 Effective implementation of the PBOC's No. 3 Decree

Promulgated by the PBOC on December 28, 2016, the No. 3 Decree is an important milestone in China's AML regulatory development. A highlight of the No. 3 Decree is a set of requirements pertaining the reporting of suspicious transactions. The Decree repealed the previous prescriptive transaction monitoring parameters and thresholds, which were universally applied to all financial institutions in 2007. Instead, the No. 3 Decree requires every financial institution to develop their own transaction monitoring rules and implement them by July 1, 2017. In addition, all financial institutions will need to:

- Conduct periodic reviews over the effectiveness of their transaction monitoring rules
- Perform detailed analysis of alerts
- Keep detailed records of the decision-making process during an alert review such as the rationale behind why an alert was cleared or why further investigation was initiated

The Decree also mandates that a suspicious transaction report (STR) is filed when the financial institution knows or has reasons to suspect that their client, client's funds or assets, or transactions conducted or attempted by their client may involve potential money laundering or terrorism financing related criminal activity, regardless of the amount involved.

# Hot topic 1: The rapidly evolving AML regulatory landscape (continued)

## 1 Effective implementation of the PBOC's No. 3 Decree (continued)

In order to ensure the quality of the alerts, financial institutions will need to develop an effective set of transaction monitoring rules, while taking into account their money laundering risk profile (i.e., products, services, customers, transactions, and geographic locations) and risk appetite. This can be a challenge for the following reasons:

- Excessive low quality alerts will cause financial institutions to invest unnecessary human and capital resources through the hiring of more compliance staff to analyse the alerts. It could also lead to relationship managers having to spend more time on gathering information to explain a customer's transactional behavior, which may adversely affect a customer's experience. On the other hand, if a financial institution's aim is to have least number of alerts in a bid to save compliance costs, it defeats the purpose of developing the transaction monitoring rules in the first place.
- Substantial amount of testing and analysis required for the establishment and fine tuning of transaction monitoring rules. The review of parameters, thresholds, and algorithms could require going through vast amounts of historical data.
- The effectiveness of transaction monitoring relies on and is influenced by various components of the AML compliance program. This includes: the adequacy of institutional risk assessment, robustness of the Know-Your-Customer (KYC) process, the sophistication of the transaction monitoring system and KYC system. In addition, data flows and the interplay between upstream and downstream systems, detailed alert management and analysis procedures, STR decision-making and reporting process, continuing activity and post-STR filing actions, and the experience and competency of compliance personnel are all important elements

# Hot topic 1: The rapidly evolving AML regulatory landscape (continued)

## 2 FATF mutual evaluation will accelerate the improvement of AML regulatory measures

The FATF is conducting its fourth round of mutual evaluation of its member countries' AML regimes. FATF is an intergovernmental agency that sets global AML standards. The FATF mutual evaluation is an independent assessment of a country's AML system.

While China received a positive outcome from the previous round of FATF mutual evaluation, the upcoming assessment contains a few additional areas of focus, including the Designated Non-Financial Businesses or Professions (DNFBPs), cross-border activities, and the effectiveness of the implementation of AML measures such as its practicality in the real world.

Our analysis of other jurisdictions' FATF mutual evaluation reports or preparation showed that regulation formulation and enforcement measures tend to move swiftly towards global best practices before or after the mutual evaluation.

- Regulation formulation: enhanced application of the 'risk-based' principles, and more regulatory guidance were rolled out to align with international standards
- Enforcement measures: supervisory efforts were stepped up to increase the level of scrutiny and enforcement actions for non-compliance (e.g., cease and desist order, fines, and prosecutions); and the supervisory and enforcement powers of the regulator were increased

China is scheduled to undergo its FATF mutual evaluation in 2018. As a result, we anticipate the pace of China's AML regulatory development will begin to pick up with more regulatory guidance, stricter supervision, and stronger enforcement.

# Hot topic 1: The evolving AML regulatory landscape (continued)

## 3 Overseas regulatory environment

Chinese foreign institutions operating overseas also need to adhere to local AML requirements, which can be different to the requirements in China. The challenge is particularly great in relation to complying with US and UK requirements where financial institutions face potentially severe enforcement actions if they do not comply with local regulations.

In addition, foreign regulators are raising the bar for individual accountability. For example, a UK law requiring annual compliance certification from a designated ‘senior manager’ became effective in March 2016 and the Department of Financial Services (DFS) in New York implemented AML regulations in January 2017 that requires annual compliance certification from the Board of Directors or senior management. The increased focus to hold senior leadership accountable for AML compliance will impact how the head office oversees its overseas branches.

# Hot topic 1: The rapidly evolving AML regulatory landscape (continued)

## 4 How can financial institutions respond proactively to regulatory changes?

Both China's AML regulatory beliefs and measures are developing in line with international standards and practices. Financial institutions should therefore keep pace with and anticipate any regulatory changes in order to strategically develop an effective and sustainable AML compliance program that is consistent with international standards.

Those that act now and are proactively preparing for the inevitable changes to the AML regulatory landscape will reap the most benefits in the future. The following recommendations are meant to help financial institutions to utilise their resources in the most efficient manner whether they are developing their transaction monitoring rules, undergoing relevant system upgrades, or enhancing internal controls based on the newly issued guidelines.

- Conduct an institutional risk assessment covering all business lines, products, services, customers, transactions and geographic locations of the institution. The assessment should also seek to understand an institutions' inherent risks, existing internal controls and mitigating measures, and subsequent residual risks.
- Develop or enhance the AML compliance program (including transaction monitoring rules) and relevant systems based on the results of the above risk assessment.
- Conduct a gap analysis, benchmark the institution's existing AML compliance program against the relevant Chinese laws and regulations, international standards, and best market practices. Enhance the AML compliance program based on the gap analysis findings and recommendations.
- Build an AML compliance Target Operating Model or roadmap, which takes into account future business developments. Adopt a phased approach to deploy and improve the institution's AML compliance program.
- Provide AML training to relevant personnel at all levels; including the Board of Directors, senior management, compliance, internal audit, frontline business units and operations division. In addition, increase efforts to improve their understanding of the importance of AML compliance, knowledge of regulations and internal procedures, and relevant experience.

# Hot topic 2

## Implementation of the new standards for financial instruments

# Hot topic 2: Implementation of the new standards for financial instruments

## Background

**International Accounting Standards Board (IASB)**

**2002**

The IASB signed the **Norwalk Agreement** with the Financial Accounting Standards Board (FASB) to launch a revised set of accounting treatments for financial instruments and a number of other amendments.

**2008**

After the financial crisis in 2008, the Group of Twenty (G20) nations requested the IASB to step up its revision of accounting standards revolving financial instruments. This was to address issues including financial instruments being classified arbitrarily, provisions for impairment of financial assets not being made adequately or in a timely manner.

**2009-2013**

In 2009, the IASB launched the project to reform the accounting standards for financial instruments.
During the period from 2009 to 2013, the IASB issued exposure drafts and supplementary documents on the classification, measurement and impairment of financial assets.

**2014-2015**

In July 2014, the IASB issued **IFRS 9 - Financial Instruments,** which will be implemented on January 1, 2018. Early implementation is allowed.

**2016-2017**

Chinese commercial banks started their work relating to the implementation of the new standards for financial instruments following the release by the Ministry of Finance **of the *Letter on Soliciting Opinions on the Three Sets of Standards Including the Accounting Standards for Business Enterprises No. 22 Recognition and Measurement of Financial Instruments (Revised)*** *(Exposure Draft)* on 1 August 2016.

On March 31, 2017, the Ministry of Finance revised and promulgated **the Accounting Standards for Business Enterprises No. 22 - Recognition and Measurement of Financial Instruments, Accounting Standards for Business Enterprises No. 23 - Transfer of Financial Assets and Accounting Standards for Business Enterprises No. 24 - Hedge accounting.**

**IFRS 9**

In July 2014, the IASB issued IFRS 9 - Financial Instruments (IFRS 9). The new standards have simplified the classification of financial assets, introduced the expected credit loss method as the basis of impairment of financial instruments, simplified the accounting treatments of embedded derivatives, and improved the applicability of hedging accounting.

**China standard**

On March 31, 2017, the Ministry of Finance revised and promulgated the Accounting Standards for Business Enterprises No. 22 - Recognition and Measurement of Financial Instruments, Accounting Standards for Business Enterprises No. 23 - Transfer of Financial Assets and Accounting Standards for Business Enterprises No. 24 - Hedge accounting. The time points for implementation of the new standards by different kinds of Chinese enterprises were also released, in a sign that the China Accounting Standards for Business Enterprises were converging with IFRS 9 with regard to financial instruments.

# Hot topic 2: Implementation of the new standards for financial instruments (continued)

## The new standards for financial instruments: Key revisions and timetable





### Major revisions in the new standards

- Financial assets will be classified into three instead of four categories;
- The impairment of financial assets will be accounted for using the expected loss method instead of the incurred loss method;
- Hedge accounting will more faithfully reflect enterprises' risk management activities;

### Implementation timetable

- Enterprises listed in both China and abroad, and enterprises listed on global stock exchanges, which adopt IFRS or the Accounting Standards for Business Enterprises are required to adopt the new accounting standards for financial instruments starting from January 1, 2018;
- Other domestically listed enterprises are required to adopt the standards starting from January 1, 2019
- Unlisted enterprises adopting the Accounting Standards for Business Enterprises are required to implement the new standards for financial instruments starting from January 1, 2021.
- Enterprises that have the ability to implement the new standards in advance are encouraged to do so.

# Hot topic 2: Implementation of the new standards for financial instruments (continued)

## Challenges in classification and measurement of financial instruments

**Impact**

- For many banks, the impact of the new classification and measurement of financial instruments will be on certain special financial instruments in which the contractual cash flows do not pass the SPPI test. (Contractual cash flows consisting only of principal and interest)
- The measurement of financial assets and the structure of balance sheets are broadly unchanged under the new financial instrument standards. As a result, financial instruments will be mainly classified as amortised cost. However, some parts of financial assets will be reclassified as fair value through profit or loss at amortised cost or at fair value through other comprehensive income.

**Obstacles**

**SPPI test**

- **Requires individual assessment of contracts with non-standard terms**
  (heavy workload and time consuming)
- **Test of benchmarking cash flow**
  (the frequency of interest repricing may not be consistent with the frequency of interest collection, or average/lagging interest rate value may be used)
- **Evaluation of cash flows of special products**
  (It is not clear whether SPPI test is satisfied if any early repayment terms or contract link instruments are contained in the product)

**Evaluation of business model**

- It is mainly reflected in the definition of 'non-frequent and non-material disposal' under the new standards. Assets should be appropriately classified and measured based on subjective judgements.

**Valuation**

- Post reclassification valuation

**Summary**

For banks, the impact of the new classification and measurement of financial instruments under the new rules is highly dependent on their business model and products. The more standardised or conventional their products are, the fewer problems they will encounter in the SPPI test.

# Hot topic 2: Implementation of the new standards for financial instruments (continued)

## Classification and measurement of financial instruments

### 1 Classify balance sheet operations, propose the principle for classification and conduct scenario analysis

- Classify all on and off balance sheet operations in accordance with the new standards, including the classification of existing financial assets, business contract terms and the business model for financial instruments.
- Propose a general principle for the classification of financial instruments and conduct scenario analysis on items with multiple possibilities.

### 2 Set up a SPPI model

- Set up a SPPI model, classification criteria, judgment process and adjustment plans. This includes adjustment plans for existing products, as well as the classification criteria and judgment process for products to be added in the future.

### 3 Make plans for evaluating business models

- Formulate methodologies for identifying business models
- Formulate plans for analysing changes in business models

### 4 Determine the classification of financial

- Evaluate and determine the classification of financial instruments based on the results of the SPPI calculations and business model of the bank. Subsequently, evaluate the ultimate financial impact.

### 5 Design account title system and financial statements

- Design the account title system and financial statements under the new standards, including the plans for reforming account titles and the relevant systems and methods, changes to the financial statements and notes, and the relevant presentation methods.

## Overview of classification and measurement of financial instruments

Characteristics of contractual cash flows → Business model test → Basis of measurement → Options

**Contractual cash flows consisting only of capital and interest** →

- Held contractual cash flows → Amortised cost (The same impairment method)
- Held contractual cash flows and sales → Financial instruments at fair value through other comprehensive income (FVOCI)
- Other business models → Financial instruments at fair value through profit or loss (FVPL) (No impairment)

→ Can be classified into FVTPL to reduce accounting mismatch (optional)

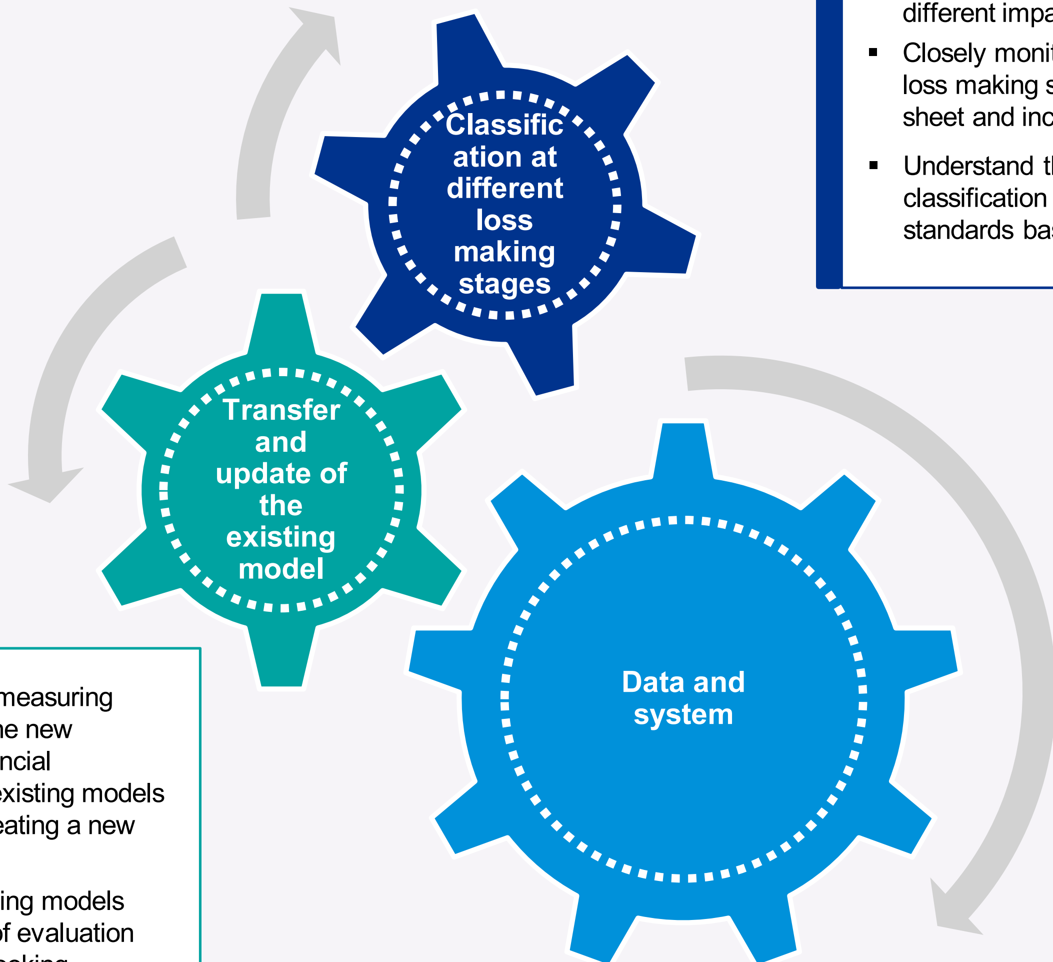
**All other instruments:**

- Equity instruments
- Derivatives
- Other hybrid contracts

→ Financial instruments at fair value through profit or loss (FVPL) (No impairment) → Equity instruments can be presented as FVOCI (Alternative)

# Hot topic 2: Implementation of the new standards for financial instruments (continued)

## Challenges in impairment of financial assets




- Classification standards at different loss making stages (different levels of credit risk) will lead to different impairment measurement results.
- Closely monitor the status and changes in different loss making stages, and their impact on balance sheet and income statement
- Understand the interplay between the five-level classification standards and the classification standards based on different loss making stages

- To fulfil the requirements of measuring expected credit loss under the new standards, it is better for financial institutions to improve their existing models and processes instead of creating a new model.
- Transferring away from existing models requires significant amount of evaluation and development. Forward-looking adjustments would have to be made to the results from the existing model.

- Extensive and detailed data and well-rounded systems are required to calculate 12 months of expected credit loss as well as for the entire duration.

# Hot topic 2: Implementation of the new standards for financial instruments (continued)

## Impairment of financial assets

### 1 Determine the scope of impairment measurements

- Classify all financial instruments, and clarify the scope of impairment measurements

**Scope of impairment**

- Financial assets measured at amortised cost
- Financial assets at fair value through other comprehensive income (equity financial instruments not included)

### 2 Impairment measurement Classification of exposures

- Exposures will be classified based on status quo analysis and industry practices. The classification will be based on the impairment measurement plan chosen subsequently.
- **Corporate loans**
- **Personal loans**
- **Bond investments**
- **Inter-bank business**
- **Receivables as investments**

**Factors for classification**

- Classification category
- Availability of internal or external ratings
- Applicability of the five-tier classification
- Degree of support from existing impairment measurement methods and data
- Historical data

### 3 Three-stage model

- Establish the definitions and criteria for 'a significant increase in credit risk' and default risk, and determine the stage to which a debt belongs:

**Stage 1: No evidence of a significant increase in risk** → $PD_1 \times LGD_1 \times EAD_0$

**Stage 2: Significant increase in risk** → $\sum_{t=1}^{N} \left( PD_i \times LGD_i \times EAD_i \times \frac{1}{(1+EIR)^t} \right)$

**Stage 3: Default confirmed** → $LGD_1 \times EAD_0$

### 4 Impairment calculation

- Forward-looking adjustments
- Transitional plan for impairment measurement
- Long-term plan for impairment measurement

### 5 Evaluation and analysis of the impairment measurement results

- Evaluate and analyse the impairment measurement results. Conduct multi-scenario analysis and comparisons regarding the selection of methods, parameters and criteria, and determine the optimal plan
- Develop methods for applying accounting treatments, plans for disclosure and application, establish and improve the accounting systems and management methods in the bank

**Distribution of losses and comparison of provisions**

### Determine whether there is a significant increase in credit risk

- Stage 1 includes financial instruments that have not had a significant increase in credit risk since initial recognition. For these assets, provision for impairment losses is calculated based on 12-month expected credit losses.
- Stage 2 includes financial instruments that have had a significant increase in credit risk since initial recognition. For these assets, provision for impairment losses is calculated based on lifetime expected credit losses.
- Stage 3 includes financial instruments that have objective evidence of impairment. For these assets, provision for impairment losses is calculated based on lifetime expected credit losses.

# Hot topic 3

## Impact of the Ministry of Finance and the State Administration of Taxation's Circular 140 on the Banking Industry

# Hot Topic 3: Impact of the Ministry of Finance and the State Administration of Taxation's Circular 140

## Background of Circular 140

Business tax in the financial industry was formally replaced by value-added tax (hereinafter referred to as 'VAT Reform') in May 1, 2016. Following its launch, the Ministry of Finance and the State Administration of Taxation have issued a series of provisions to clarify the innovative reform. In December 21, 2016, the authorities released the *Notice on Clarifying the Policy of Value-added Tax on Financial, Real Estate Development, and Educational Assistance Services* (Cai Shui [2016] No. 140) (the 'Circular 140'). Article 4 of the circular states that for VAT taxable behavior incurred in the operation of asset management products, the manager of the asset management products shall be the VAT taxpayer. The authorities subsequently followed that up with the *Supplementary Notice on Relevant Issues Concerning VAT Policy of Asset Management Products* (Cai Shui [2017] No. 2) (the 'Circular 2'), which reveals that the rules will be implemented starting July 1, 2017.

In its policy interpretation of certain provisions of Circular 140, the Ministry of Finance and the State Administration of Taxation clarified that 'asset management products' is the general term for any product types that relates to the managing of assets. This includes fund products issued by fund companies, trust schemes of trust companies, and financial products provided by banks. In essence, the concept of asset management is to be entrusted to handle financial issues on behalf of others. Fund companies, trust companies and banks, for example, are entrusted by investors to manage assets management products and are therefore the managers of the asset management products. As a result, asset management products such as financial products from banks will be impacted by Circular 140. As the managers of the financial products, banks will be required to pay the VAT in respect of the taxable income from the asset management products.

# Hot Topic 3: Impact of the Ministry of Finance and the State Administration of Taxation's Circular 140 (continued)

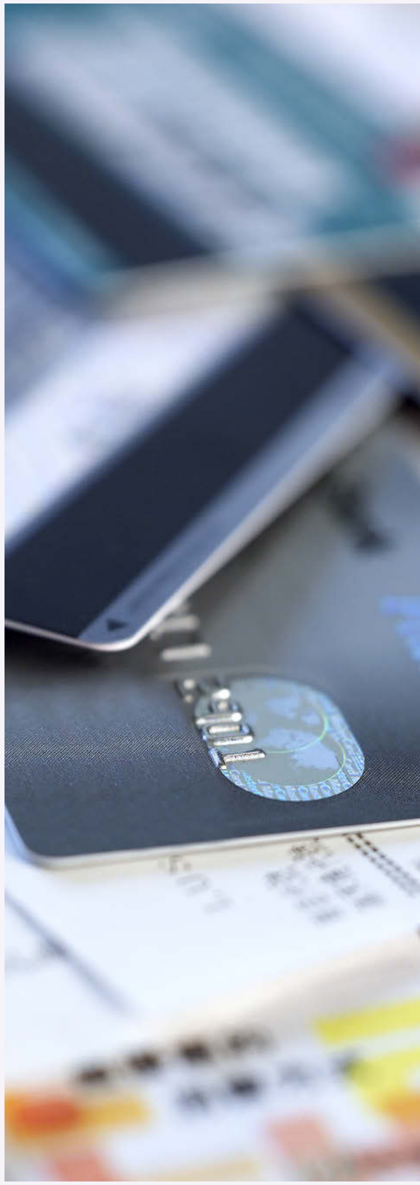
## Significant Impact on Bank Financial Products

1. If part or all of the investment income of financial products is VAT taxable income, VAT cost will be incurred. If the VAT cost is passed down to investors, it will affect the yield of the products. Assuming a non-standard debt instrument has a yield of 5 percent, the yield after tax would work out to 4.72 percent under the general tax method for 6 percent VAT. The new VAT may therefore, affect the sale of the financial products.

2. Banks generally tend to pass their payable VAT burden on to investors. This requires banks to carry out a series of activities including communication with investors, adding tax burden to the product release, and calculating the VAT to be deducted from the investment income of the product. Given the variety of bank financial products, the abundance of investment targets, and frequent transactions of the underlying assets, the calculation of deductible VAT can be fairly complex. As a result, banks will need to transform their existing asset management system.

3. According to Circular 140, the income of guaranteed investment is VAT payable on the basis of loan service income. This meant that banks' guaranteed products may face the possibility of double taxation - investment income at the product level and product income when it is allocated to investors. Double taxation will have a negative impact on the net return of investors and therefore affect the sale of guaranteed products.

4. As VAT taxpayers of asset management products, banks are required to comply with a series of VAT requirements, including VAT invoice, input authentication, tax declaration and accounting. These increase the compliance costs for banks. In addition, regulatory requirements dictate that the operation of  products must be independent from the operations of the company, which further increases operational cost as additional manpower are needed to handle VAT compliance at the product level.



# Hot Topic 3: Impact of the Ministry of Finance and the State Administration of Taxation's Circular 140 (continued)

## Solutions for banks

To mitigate the potential impact of Circular 140, banks will have to develop a response plan with respect to the VAT treatment of asset management products.

| | Now | Implementing date ( 1 July 2017 ) / The first season after the implementation | |
|---|---|---|---|
| **Business** | • Evaluate affected products, assess impact on costs and gains<br>• Develop plans for existing products<br>• Design investment framework and contract terms for new products<br>• Communicate the tax burden with investors, any expected costs/gains, and amend the contract terms | • Follow the latest regulatory developments and adjust product strategy in a timely fashion | **Actively respond to the impact of the Document No. 140** |
| **Law** | • Review contract terms<br>• Review documents to communicate with and notify stakeholders | | |
| **IT** | • Review and upgrade the system related to product transaction and evaluation<br>• Upgrade tax related systems | | |
| **Finance and Tax of Product** | • Design accounting treatment for products<br>• Provide tax training to staff<br>• Design compliance and risk control process for products<br>• Design the declaration process for products | • Adopt new finance and taxation system<br>• Monitor work flow<br>• Follow the latest regulatory trends | |

***Tax and IT consulting assistance***

**Implementation of the new VAT rules for asset management products**

**Conduct the first VAT declaration on 15 October 2017**

# Hot Topic 3: Impact of the Ministry of Finance and the State Administration of Taxation's Circular 140 (continued)

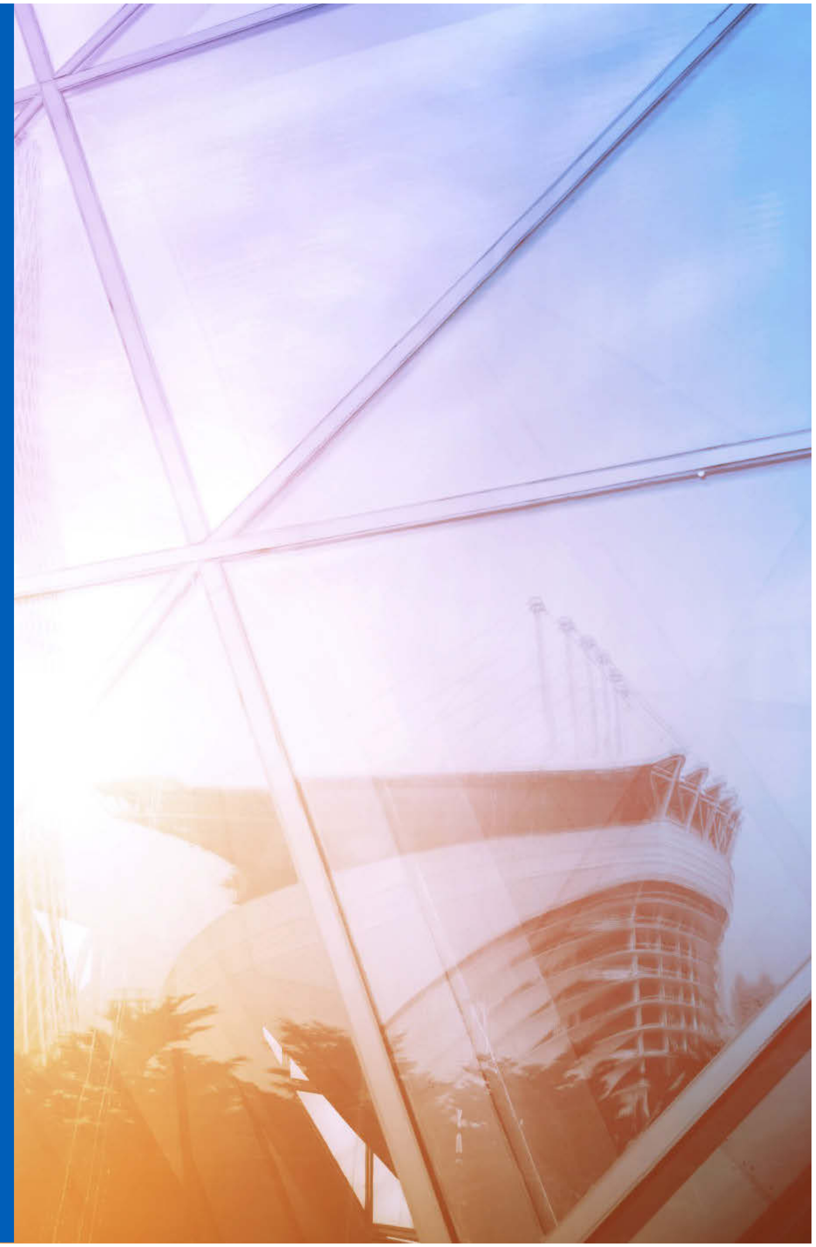
## Regulatory landscape outlook

Circular 140 sets the general tone for VAT to be applicable to asset management products. However, other relevant information such as implementation details, the scope of the rules, collection method, tax rate, invoices and declaration of asset management products have yet to be clarified. In addition, whether VAT will be applicable to products under certain preferential policies will also need further clarification. The Ministry of Finance and the State Administration of Taxation are now working on the relevant rules which may include:

1) Supplementary provisions of Circular 140 to clarify some policy treatment, such as the scope of certain preferential policies under current VAT rules applicable to asset management products.

2) Detailed implementing rules for the collection of VAT of asset management products, to explain the various aspects of VAT operation requirements. Enterprises may be required to carry out compliance work regarding VAT payment for their asset management products.

Enterprises need to pay attention to these developments in order to pay VAT for their asset management products. If there are still aspects of the rules that are unclear after the introduction of the above regulations, enterprises will need to communicate with the relevant tax authorities to obtain their interpretation of laws and regulations.



# Academic Insights

## The implications of central bank-issued digital currency for commercial banks

# Academic Insights: The implications of central bank-issued digital currency for commercial banks

Digital currency, or e-currency, has developed in recent years thanks to the prevalence of digital payment. e-currency has a number of advantages over traditional paper money such as higher efficiency. The digital tender has been on the PBOC's agenda since 2014 and a lot of progress has been made in terms of its development.

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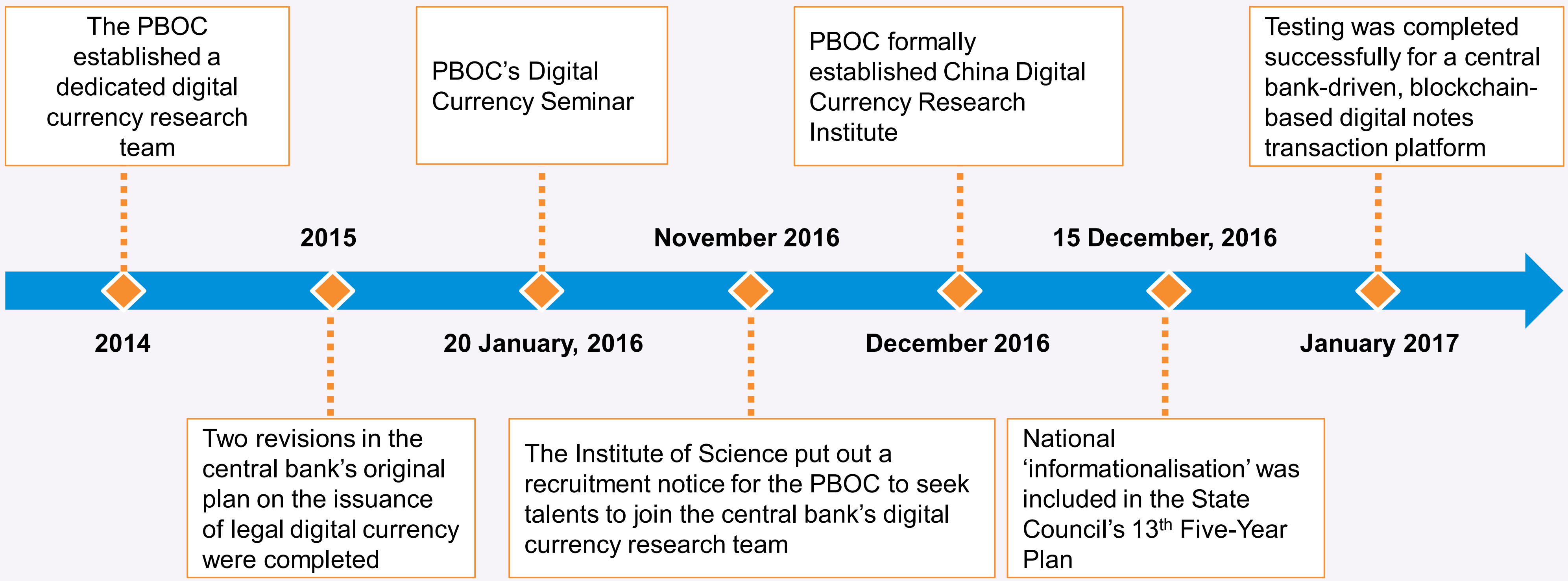
## The development of legal digital currency

Discussions at the PBOC's Digital Currency Seminar held in Beijing on 20 January 2016 stated that the issuance of currency 'is of positive practical significance and far-reaching historical significance.' The issuance of digital currency is able to reduce the cost of paper money, enhance economic convenience and transparency, combat money laundering, tax evasion and other crimes, enhance the role of monetary policies, facilitate inclusive finance, improve payment system and enhance payment and settlement efficiency.

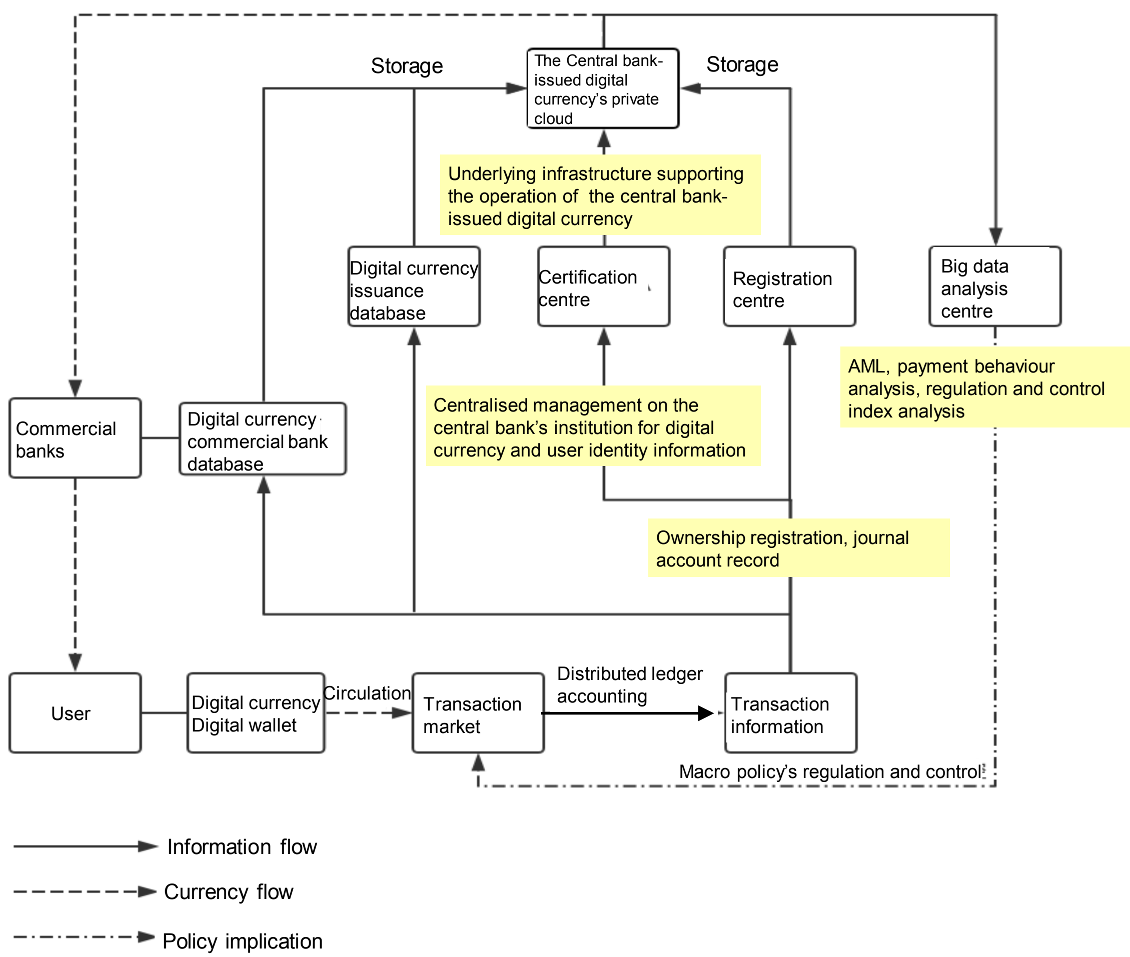
However, e-currency issued by the central bank is very different to decentralised digital currencies such as bitcoin. The issuance of digital currency will inevitably result in changes in the issuance and circulation mechanism of paper currency, which would have significant implications on commercial banks. These implications, and corresponding countermeasures, are discussed by analysing the issuance mechanism of digital currency.




Source: People's Bank of China http://www.pbc.gov.cn/

Chart 1: The development of legal digital currency

## The issuance mechanism of the central bank-issued digital currency




The issuance and circulation of digital currency – a new e-currency - is inevitably very different to traditional currency. The following is the issuance and circulation process of digital currency.

Chart 2: The issuance mechanism of legal digital currency

# Academic Insights: The implications of central bank-issued digital currency for commercial banks (continued)

## The issuance mechanism of the central bank-issued digital currency (continued)

### 1 From a macro perspective

As described in the previous diagram, the issuance mechanism of e-currency comprises of one cloud storage platform, two databases and three centres. Among them, legal digital currency's private cloud, also known as trusted service management module based on cloud computing, is the underlying infrastructure that serves the entire issuance and circulation mechanism of legal digital currency, including cloud computing, big data, TSM and other technologies. The two databases – commercial bank database and issuance database are responsible for the storage and issuance of digital currency. The three centres are all closely related to user data and transaction data. Certification centre is responsible for the centralised management of digital currency-related institutions and user identity information, the issuance of relevant certificates and the provision of a safe payment channel for all parties of digital currency transactions.

Registration centre records the corresponding relationship between digital currency and user identity and the journal account of digital currency transactions, which is defined as the digital currency's 'Book of Life and Death'. The big data centre analyses market transaction behaviour through big data analytics, cloud computing and other technologies, to ensure security and prevent money laundering and other crimes.

### 2 From a micro perspective

Another notable issue is that the central bank plans to issue digital currency in two alternative forms. One is similar to e-cash - electronic cash and coins – which records the number of currency by a string of ordinary numbers from a digital wallet. This is easy to develop as it only requires basic changes to the existing payment system. However, as the third-party payment market is saturated, central bank participation is likely to have limited benefits in improving payment convenience (with the exception of national credit endorsement). The same goes for its impact on transactional demand and effectiveness of monetary policies.

The other form draws on the experience of private digital currency. In this instance, legal digital currency comes in the form of 'a string of numbers verified by specific cryptography and consensus algorithm' and can be further applied to mobile terminals through blockchain technology or distributed ledger technology. With the utilisation of these various advanced technologies, the issuance of legal digital currency will significantly enhance the portability and transparency of transactions and decrease KYC and AML cost. This system, however, is much more complex than e-cash and requires an entirely new ecosystem to be built for it. Difficulties in technology requirements, R&D, operations and maintenance should not be underestimated.

# Academic Insights: The implications of central bank-issued digital currency for commercial banks (continued)

## The implications of digital currency for commercial banks

The issuance of legal digital currency will certainly bring about great changes to China's overall financial ecosystem such as advances in digitalisation or further innovation in the settlement system. As a key component of China's financial system, commercial banks mainly function as credit and payment intermediaries. They also provide credit creation and financial services. If 'comprehensive digitalisation' is completed, it is to be expected that a commercial bank's ability to act as credit and payment intermediaries, or as a credit creator will be greatly hampered. Naturally, financial services will gradually become their main source of revenue.

Our analysis finds that the creation of central bank driven digital currency will affect commercial banks via the following methods:

### 1 Improved efficiency of currency issuance and circulation

The issuance of legal digital currency will improve the efficiency of currency issuance and circulation. The digital currency proposed by the central bank differs from private digital currency and is a digital version of cash with state credit, which means it is a recognised currency that belongs to the M0 (cash) category. According to the PBOC, digital currency will be circulated in conjunction with physical cash for a period of time with the ultimate aim of eventually replacing the latter as the mainstream currency. The issuance, circulation and withdrawal (including remittance, transfer, settlement and deposit) of China's currency will therefore advance from the physical level to the electronic level. Such changes will leave out many cumbersome intermediary processes and greatly improve the efficiency of bank payment systems such as the Bulk Electronic Payment System (BEPS).

### 2 Commercial banks to lose its dominance in monetary transactions

On the other hand, digital currency will pose a serious challenge to commercial banks' dominance in monetary transactions. While the mobile payment terminal proposed by the central bank is similar to existing third-party payment platforms, its function goes beyond closing balances, but is instead a string of encrypted numbers for deposits and digital wallets. It can also improve the functions of KYC (know your customer) and AML (anti-money laundering). The advantages of digital currency speak for themselves, which will have a serious impact on commercial banks via the following ways:

1) Demand physical bank outlets will decline. While the elderly, who are not accustomed to mobile terminals, might continue to visit physical bank branches, this demand will gradually fade out. Banks will have to review their physical outlet strategy such as the layout, the number of physical outlets and the number of equipment related to the monetary transactions (ATM).

2) Banks will have to review their headcount as the demand for staff engaging in monetary transactions including cashiers, tellers, money-printing and cash transportation will be lower.

## The implications of digital currency for commercial banks (continued)

### 3 Impaired capacity of commercial banks to raise funds and supply credit

As Ben Broadbent, Deputy Governor for Monetary policy at the Bank of England, pointed out in his speech 'Central Banks and Digital Currencies' last year that 'the economic effects of digital currency would depend on how exactly a legal digital currency, namely the Central Bank Digital Currency (CBDC) is designed – and in particular the extent to which it competes with the main form of money in the economy, commercial bank deposits'.

The more similar the legal digital currency is to bank deposits, the more obvious their trade-off relationship will be. Admittedly, legal digital currency falls within the cash category, does not generate interest, and has less functions than cash deposits. But it must be noted that people have a strong desire to hold cash and gold during economic depression. The same applies to the legal digital currency. In other words, demand for legal digital currency and commercial bank deposits could alternate with each other periodically and fluctuate with economic volatility. This could potentially rewrite the balance sheets of the central bank and commercial banks and radical changes could occur to the existing financial system.

Commercial banks might no longer have a stable source of deposits. This would impair their financing capacity, which would then affect their ability to supply credit.

### 4 Disintermediation of commercial banks as a result of blockchain

The new currency system is likely to adopt the existing binary system of having a central bank and commercial banks. Commercial banks will be mobilised to diversify any possible risks that could appear in the transitional period and accelerate service innovation. At the same time, the central bank could find inspiration in private digital currency and apply blockchain technology to the legal digital currency, which would increase the risk of disintermediation of commercial banks. In other words, the existing settlement system may be replaced by the distributed ledger function of blockchain. If this occurs, commercial banks will lose not only one of their most important sources of revenue - handling fee - but also customer transaction information generated through its settlement function.

The biggest difference between legal digital currency and private digital currency is centralisation, which means that the corresponding technical pillars of both types of currency are likely to be different. PBOC Deputy Governor Fan Yifei mentioned in the article 'Theoretical Basis and Architecture Selection of China's Legal Digital Currency' that '(We must) change a flat network into a hierarchical structure, change the publicly-owned chains into alliance-based chains and competitive ledgers into cooperative ledgers, and involve some key nodes in the ledger system'. Commercial banks are likely continue to participate in the accounting process, but under a new identity similar to a 'miner' in bitcoin. This could mitigate the disintermediation of commercial banks to some extent and maintain commercial banks' control over transaction information. The loss of commission fees, however, is inevitable.

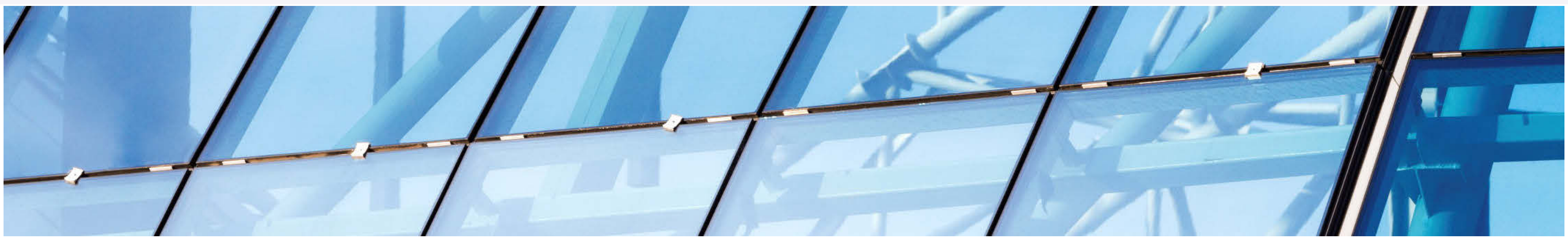
## The implications of digital currency for commercial banks (continued)

### 5 Financial services: The new focus of commercial banks

Wen Xinxiang, Deputy Director of the PBOC's Monetary Policy Division pointed out in the article 'The Implications of Digital Currency on Monetary Policy' that the issuance of digital currency by the central bank will affect commercial banks although financial services provided by the latter will remain indispensable.

Under the new digital currency system, the central bank will continue to adopt the existing binary system of a central bank and commercial banks. This is because of cost and technology reasons, as well as to protect commercial banks and facilitate their successful transition in a full-fledged digital age. Under this system, commercial banks can apply to the central bank for digital currency, and record the circulation and credit-granting of digital currency through their databases, which are used to store the central bank-issued digital currency. The massive amount of information recorded in the databases, combined with big data analysis and cloud computing, will further improve the financial services provided by commercial banks. This includes credit investigation, risk management and risk pricing.

As things stand, the main revenue stream of Chinese commercial banks is based on net interest spread rather than handling fees, commission or other service charges. The issuance of legal digital currency by the central bank is likely to prompt commercial banks to change their operational beliefs and shift their focus to financial services – an ongoing trend as a result of the rise of third-party payments and recent liberalisation of interest rates.



# Academic Insights: The implications of central bank-issued digital currency for commercial banks (continued)

## Countermeasures and suggestions

We have identified several countermeasures for commercial banks to adopt in order to mitigate the impact of legal digital currency

### 1 Moving operations from offline to online

With the issuance of legal digital currency by the central bank, the principal activities of commercial banks will move from offline to online, which would require plenty of adjustments. To begin with, the frequency of offline transactions will decrease rapidly and so will demand for physical bank outlets by individuals and companies. From a cost perspective, commercial banks should rearrange branch layouts and reduce the number of physical outlets without affecting customer convenience. Meanwhile, the number of monetary transaction equipment such as ATMs as well as the headcount of associated staff including cashiers and tellers should be reviewed accordingly.

While the online payment functions of commercial banks are losing ground to emerging third-party payment institutions, legal digital currency can provide banks with a second chance. The prospects of mobile payment, for example, is very promising. However, third-party payment institutions are currently winning the battle as their product transactions are more convenient and efficient, while their designs caters more towards a user’s spending habits. Commercial banks need to pay more attention to the changes and development of customer behaviour and habits, as well as transaction patterns. They should also adjust their service patterns, such as the design of the mobile client and the architecture of the settlement system.

The online trading model of commercial banks should be characterised by intelligence and convenience. It needs to deliver a better experience for their customers in order to compete in the new age of digitalisation.

## Countermeasures and suggestions (continued)

### 2 Participate actively in the research and issuance of digital currency

The PBOC regards commercial banks as an indispensable part of the new digital currency framework. Commercial banks should therefore take the initiative to master the relevant techniques required for the issuance and circulation of digital currency such as data encryption and big data analysis. This will ensure their prominence in the new system.

Commercial banks could also carry out some bold experiments. For example, Citibank has developed its own encrypted currency, Citi Coin, on its digital testing platform, which utilises the distributed ledger blockchain technology. Through in-depth study of digital currency, commercial banks can master the required technologies and have a deeper understanding of the potential issues involved. Such research efforts can also serve as a reference for the architecture design of the digital currency proposed by the central bank. This would align their developmental pace and, possibly, achieve a smooth connection between the digital currency issuance system and other relevant function designs.

### 3 Accelerating technical innovation to facilitate inclusive finance

The World Bank estimated that approximately 2 billion adults could not get access to the most basic financial services around the world in 2014 per its report “The Global Findex Database 2014 - Measuring Financial Inclusion around the World” issued in April 2015. In China, it can be difficult for some small and micro businesses, farmers, low-income urban residents, the disabled and the elderly to gain access financial services. The issuance of legal digital currency, however, could help turn that around. Commercial banks will usher in new customers, which will be followed by new information, new platforms and new opportunities. But it should be noted that inclusive finance is not a charity and relief campaign and commercial banks do not need to give up their own business principles for the social value of this objective.

# Academic Insights: The implications of central bank-issued digital currency for commercial banks (continued)

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# 3 Appendix: 2017 Q1 financial data of listed banks

# Appendix - Total assets

| RMB million | Cash and balances with central bank | | Loans and advances to customers | | Investments | | Interbank assets | | Other assets | | Total assets | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 |
| | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec |
| ICBC | 3,437,830 | 3,350,788 | 13,267,798 | 12,767,334 | 5,664,974 | 5,481,174 | 1,554,511 | 1,553,100 | 979,823 | 984,869 | 24,904,936 | 24,137,265 |
| CCB | 2,981,283 | 2,849,261 | 11,877,235 | 11,488,355 | 5,160,524 | 5,068,584 | 967,438 | 858,462 | 708,724 | 699,043 | 21,695,204 | 20,963,705 |
| BOC | 2,540,457 | 2,349,188 | 10,124,969 | 9,735,646 | 4,169,309 | 3,972,884 | 1,185,351 | 1,176,482 | 897,463 | 914,689 | 18,917,549 | 18,148,889 |
| ABC | 2,831,875 | 2,811,653 | 9,703,407 | 9,319,364 | 5,687,722 | 5,333,535 | 1,506,394 | 1,526,665 | 594,586 | 578,844 | 20,323,984 | 19,570,061 |
| BCM | 1,010,524 | 991,435 | 4,244,850 | 4,009,046 | 2,408,858 | 2,314,445 | 696,503 | 715,787 | 372,976 | 372,453 | 8,733,711 | 8,403,166 |
| CMB | 599,101 | 597,529 | 3,308,271 | 3,151,649 | 1,565,887 | 1,450,922 | 350,557 | 581,963 | 176,858 | 160,248 | 6,000,674 | 5,942,311 |
| CNCB | 519,072 | 553,328 | 2,871,468 | 2,802,384 | 1,877,435 | 1,852,670 | 323,697 | 546,653 | 160,190 | 176,015 | 5,751,862 | 5,931,050 |
| CMBC | 453,510 | 524,239 | 2,543,720 | 2,397,192 | 2,256,562 | 2,206,909 | 374,246 | 461,837 | 328,569 | 305,700 | 5,956,607 | 5,895,877 |
| SPDB | 457,304 | 517,230 | 2,840,944 | 2,674,557 | 2,177,444 | 2,135,088 | 229,837 | 356,116 | 184,134 | 174,272 | 5,889,663 | 5,857,263 |
| CIB | 444,229 | 457,654 | 2,122,930 | 2,007,366 | 3,259,532 | 3,292,074 | 161,253 | 100,994 | 241,227 | 227,807 | 6,229,171 | 6,085,895 |
| CEB | 360,597 | 381,620 | 1,850,311 | 1,751,644 | 1,387,544 | 1,318,143 | 376,711 | 425,935 | 151,817 | 142,700 | 4,126,980 | 4,020,042 |
| HXB | 286,176 | 222,173 | 1,222,020 | 1,184,355 | 651,694 | 640,162 | 196,610 | 271,680 | 42,555 | 37,865 | 2,399,055 | 2,356,235 |
| PAB | 269,541 | 311,258 | 1,504,184 | 1,435,869 | 801,995 | 759,438 | 242,885 | 273,208 | 187,590 | 173,661 | 3,006,195 | 2,953,434 |
| BOSH | 135,022 | 137,037 | 572,667 | 537,397 | 889,183 | 916,154 | 152,894 | 134,928 | 32,581 | 29,855 | 1,782,347 | 1,755,371 |
| BOB | 168,888 | 166,285 | 929,171 | 867,955 | 741,025 | 676,550 | 293,029 | 365,958 | 42,346 | 39,591 | 2,174,459 | 2,116,339 |
| HZB | 55,885 | 68,902 | 255,704 | 239,130 | 331,639 | 347,326 | 88,516 | 56,421 | 8,521 | 8,645 | 740,265 | 720,424 |
| BON | 103,802 | 93,065 | 333,197 | 318,543 | 529,668 | 521,681 | 131,617 | 105,342 | 24,282 | 25,269 | 1,122,566 | 1,063,900 |
| NBCB | 81,838 | 93,377 | 303,052 | 292,788 | 469,220 | 427,775 | 39,414 | 43,462 | 26,059 | 27,618 | 919,583 | 885,020 |
| WRCB | 14,844 | 15,530 | 60,927 | 58,570 | 41,806 | 41,376 | 9,294 | 6,448 | 2,861 | 2,709 | 129,732 | 124,633 |
| BOJS | 139,782 | 135,122 | 656,133 | 632,555 | 690,911 | 688,743 | 214,805 | 96,248 | 47,390 | 45,624 | 1,749,021 | 1,598,292 |
| CRCB | 14,210 | 14,240 | 66,234 | 64,229 | 48,256 | 41,244 | 5,598 | 6,684 | 3,488 | 3,585 | 137,786 | 129,982 |
| GYB | 46,401 | 43,182 | 101,229 | 99,079 | 217,318 | 202,338 | 8,670 | 13,538 | 18,783 | 14,116 | 392,401 | 372,253 |
| JRCB | 9,617 | 11,176 | 51,347 | 50,372 | 38,466 | 37,987 | 2,402 | 2,103 | 2,508 | 2,447 | 104,340 | 104,085 |
| WJRCB | 11,030 | 12,851 | 45,252 | 43,927 | 17,140 | 15,577 | 6,082 | 6,074 | 3,055 | 2,919 | 82,559 | 81,348 |
| ZRCB | 8,616 | 9,074 | 44,450 | 42,754 | 33,105 | 31,471 | 2,248 | 4,046 | 3,204 | 2,833 | 91,623 | 90,178 |
| PSBC | 1,366,773 | 1,310,273 | 3,114,506 | 2,939,217 | 3,283,451 | 3,463,841 | 593,130 | 442,194 | 129,007 | 110,097 | 8,486,867 | 8,265,622 |
| CQCB | 39,586 | 42,813 | 152,794 | 146,789 | 130,063 | 120,313 | 68,385 | 55,706 | 8,607 | 7,483 | 399,435 | 373,104 |
| CQRCB | 94,717 | 85,836 | 299,642 | 288,116 | 263,770 | 263,657 | 151,752 | 150,854 | 14,553 | 14,695 | 824,434 | 803,158 |
| Total | 18,482,510 | 18,156,119 | 74,468,412 | 71,346,182 | 44,794,501 | 43,622,061 | 9,933,829 | 10,338,888 | 5,393,757 | 5,285,652 | 153,073,009 | 148,748,902 |

Source: The banks' 2017 Q1 & 2016 annual reports; KPMG China research

# Appendix - Loan quality

| | NPL ratio | | Allowance to NPL | | Allowance to total loans ratio | |
|---|---|---|---|---|---|---|
| | 31 March 2017 | 31 December 2016 | 31 March 2017 | 31 December 2016 | 31 March 2017 | 31 December 2016 |
| ICBC | 1.59% | 1.62% | 141.51% | 136.69% | 2.25% | 2.21% |
| CCB | 1.52% | 1.52% | 159.51% | 150.36% | 2.42% | 2.29% |
| BOC | 1.45% | 1.46% | 159.52% | 162.82% | 2.31% | 2.38% |
| ABC | 2.33% | 2.37% | 173.60% | 173.40% | 4.04% | 4.11% |
| BCM | 1.52% | 1.52% | 150.26% | 150.50% | 2.28% | 2.29% |
| CMB | 1.76% | 1.87% | 208.67% | 180.02% | 3.67% | 3.37% |
| CNCB | 1.74% | 1.69% | 151.54% | 155.50% | 2.64% | 2.63% |
| CMBC | 1.68% | 1.68% | 155.70% | 155.41% | 2.62% | 2.61% |
| SPDB | 1.92% | 1.89% | 166.82% | 169.13% | 3.20% | 3.20% |
| CIB | 1.60% | 1.65% | 215.16% | 210.51% | 3.44% | 3.47% |
| CEB | 1.54% | 1.60% | 157.64% | 152.02% | 2.43% | 2.43% |
| HXB | 1.69% | 1.67% | 167.71% | 158.73% | 2.83% | 2.65% |
| PAB | 1.74% | 1.74% | 163.32% | 155.37% | 2.84% | 2.70% |
| BOSH | 1.15% | 1.17% | 255.30% | 255.50% | 2.94% | 2.99% |
| HZB | 1.61% | 1.62% | 189.29% | 186.76% | 3.05% | 3.03% |
| BON | 0.87% | 0.87% | 449.42% | 457.32% | 3.91% | 3.98% |
| NBCB | 0.91% | 0.91% | 372.62% | 351.42% | 3.39% | 3.20% |
| WRCB | 1.31% | 1.39% | 209.00% | 200.77% | 2.74% | 2.79% |
| BOJS | 1.43% | 1.43% | 180.88% | 180.56% | 2.59% | 2.58% |
| CRCB | 1.36% | 1.40% | 241.04% | 234.83% | 3.28% | 3.29% |
| GYB | 1.47% | 1.42% | 258.10% | 235.19% | 3.79% | 3.34% |
| JRCB | 2.41% | 2.41% | 174.88% | 170.14% | 4.21% | 4.10% |
| ZRCB | 1.96% | 1.96% | 183.96% | 180.36% | 3.61% | 3.54% |
| PSBC | 0.85% | 0.87% | 279.75% | 271.69% | 2.38% | 2.37% |
| CQCB | 1.15% | 0.96% | 245.99% | 293.35% | 2.83% | 2.82% |
| CQRCB | 0.96% | 0.96% | 424.52% | 428.37% | 4.08% | 4.11% |
| Average | 1.52% | 1.53% | 216.76% | 213.72% | 3.07% | 3.02% |

Note: BOB and WJRCB did not disclose the relevant data

Source: The banks' 2017 Q1 & 2016 annual reports; KPMG China research

# Appendix - Investment structure

| RMB million | Financial assets at fair value through profit or loss | | Available-for-sale financial assets | | Held-to-maturity investment | | Investment classified as receivables | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 |
| | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec |
| ICBC | 508,943 | 474,475 | 1,761,001 | 1,742,287 | 2,985,395 | 2,973,042 | 409,635 | 291,370 | 5,664,974 | 5,481,174 |
| CCB | 582,574 | 488,370 | 1,683,649 | 1,633,834 | 2,372,235 | 2,438,417 | 522,066 | 507,963 | 5,160,524 | 5,068,584 |
| BOC | 138,411 | 124,090 | 1,675,784 | 1,609,830 | 1,957,147 | 1,843,043 | 397,967 | 395,921 | 4,169,309 | 3,972,884 |
| ABC | 502,008 | 417,955 | 1,390,801 | 1,408,881 | 3,132,065 | 2,882,152 | 662,848 | 624,547 | 5,687,722 | 5,333,535 |
| BCM | 211,891 | 179,221 | 384,465 | 342,755 | 1,413,756 | 1,407,449 | 398,746 | 385,020 | 2,408,858 | 2,314,445 |
| CMB | 56,702 | 55,972 | 395,667 | 389,138 | 486,687 | 477,064 | 626,831 | 528,748 | 1,565,887 | 1,450,922 |
| CNCB | 65,550 | 64,911 | 524,480 | 534,533 | 223,751 | 217,498 | 1,063,654 | 1,035,728 | 1,877,435 | 1,852,670 |
| CMBC | 67,625 | 89,740 | 309,044 | 307,078 | 656,554 | 661,362 | 1,223,339 | 1,148,729 | 2,256,562 | 2,206,909 |
| SPDB | 285,284 | 177,203 | 592,836 | 620,463 | 330,667 | 326,950 | 968,657 | 1,010,472 | 2,177,444 | 2,135,088 |
| CIB | 335,793 | 354,595 | 633,830 | 584,850 | 249,846 | 249,828 | 2,040,063 | 2,102,801 | 3,259,532 | 3,292,074 |
| CEB | 16,968 | 7,834 | 441,639 | 425,131 | 287,312 | 257,500 | 641,625 | 627,678 | 1,387,544 | 1,318,143 |
| HXB | 8,018 | 4,939 | 91,560 | 92,252 | 345,619 | 345,593 | 206,497 | 197,378 | 651,694 | 640,162 |
| PAB | 44,044 | 57,179 | 1,238 | 1,179 | 291,433 | 286,802 | 465,280 | 414,278 | 801,995 | 759,438 |
| BOSH | 10,734 | 7,145 | 446,680 | 432,146 | 251,979 | 236,540 | 179,790 | 240,323 | 889,183 | 916,154 |
| BOB | 37,680 | 40,952 | 165,968 | 177,026 | 213,544 | 208,431 | 323,833 | 250,141 | 741,025 | 676,550 |
| HZB | 12,618 | 7,951 | 191,855 | 220,245 | 74,038 | 66,674 | 53,128 | 52,456 | 331,639 | 347,326 |
| BON | 30,060 | 25,250 | 162,982 | 163,861 | 112,628 | 111,828 | 223,998 | 220,742 | 529,668 | 521,681 |
| NBCB | 62,150 | 8,276 | 259,825 | 280,552 | 41,118 | 39,371 | 106,127 | 99,576 | 469,220 | 427,775 |
| WRCB | 2,314 | 1,176 | 20,164 | 20,263 | 9,851 | 10,587 | 9,477 | 9,350 | 41,806 | 41,376 |
| BOJS | 4,854 | 4,681 | 321,395 | 356,736 | 138,436 | 138,720 | 226,226 | 188,606 | 690,911 | 688,743 |
| CRCB | 737 | 442 | 16,627 | 16,069 | 15,913 | 11,770 | 14,979 | 12,963 | 48,256 | 41,244 |
| GYB | 5,828 | 944 | 95,610 | 94,617 | 52,063 | 51,575 | 63,817 | 55,202 | 217,318 | 202,338 |
| JRCB | 2,022 | 1,999 | 22,537 | 22,806 | 13,707 | 12,282 | 200 | 900 | 38,466 | 37,987 |
| WJRCB | 37 | - | 11,143 | 8,851 | 5,960 | 6,726 | - | - | 17,140 | 15,577 |
| ZRCB | 1,105 | 147 | 21,532 | 23,300 | 3,227 | 3,236 | 7,241 | 4,788 | 33,105 | 31,471 |
| PSBC | 97,703 | 68,976 | 866,957 | 1,160,187 | 794,071 | 736,154 | 1,524,720 | 1,498,524 | 3,283,451 | 3,463,841 |
| CQCB | 773 | 882 | 31,121 | 23,885 | 20,893 | 19,795 | 77,276 | 75,751 | 130,063 | 120,313 |
| CQRCB | 3,188 | 4,522 | 96,218 | 90,142 | 68,889 | 67,842 | 95,475 | 101,151 | 263,770 | 263,657 |
| Average | 3,095,614 | 2,669,827 | 12,616,608 | 12,782,897 | 16,548,784 | 16,088,231 | 12,533,495 | 12,081,106 | 44,794,501 | 43,622,061 |

Source: The banks' 2017 Q1 & 2016 annual reports; KPMG China research

# Appendix - Total liability

| RMB million | Deposits | | Liabilities from banks and other financial institutions | | Debt certificates issued | | Other liabilities | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 |
| | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec | 31 Mar | 31 Dec |
| ICBC | 18,565,009 | 17,825,302 | 2,545,150 | 2,606,105 | 374,569 | 357,937 | 1,375,237 | 1,366,758 | 22,859,965 | 22,156,102 |
| CCB | 16,232,198 | 15,402,915 | 1,899,223 | 2,126,121 | 466,060 | 451,554 | 1,447,116 | 1,393,461 | 20,044,597 | 19,374,051 |
| BOC | 13,759,960 | 12,939,748 | 1,676,821 | 1,723,319 | 382,439 | 362,318 | 1,569,697 | 1,636,412 | 17,388,917 | 16,661,797 |
| ABC | 15,961,893 | 15,038,001 | 1,334,432 | 1,663,897 | 448,340 | 388,215 | 1,213,274 | 1,158,357 | 18,957,939 | 18,248,470 |
| BCM | 4,937,673 | 4,728,589 | 1,768,473 | 1,787,463 | 228,024 | 229,515 | 1,147,383 | 1,025,192 | 8,081,553 | 7,770,759 |
| CMB | 3,929,544 | 3,802,049 | 838,406 | 967,425 | 355,577 | 275,082 | 455,323 | 494,393 | 5,578,850 | 5,538,949 |
| CNCB | 3,430,435 | 3,639,290 | 1,174,915 | 1,185,511 | 464,831 | 386,946 | 288,515 | 334,807 | 5,358,696 | 5,546,554 |
| CMBC | 3,050,541 | 3,082,242 | 1,511,791 | 1,521,274 | 474,836 | 398,376 | 552,696 | 541,958 | 5,589,864 | 5,543,850 |
| SPDB | 3,097,527 | 3,002,015 | 1,412,568 | 1,532,295 | 690,921 | 664,683 | 303,376 | 285,336 | 5,504,392 | 5,484,329 |
| CIB | 2,885,353 | 2,694,751 | 1,897,398 | 2,018,489 | 719,884 | 713,966 | 329,792 | 304,279 | 5,832,427 | 5,731,485 |
| CEB | 2,243,298 | 2,120,887 | 717,227 | 967,050 | 606,074 | 412,500 | 296,648 | 268,537 | 3,863,247 | 3,768,974 |
| HXB | 1,393,517 | 1,368,300 | 384,538 | 404,959 | 310,593 | 268,184 | 154,079 | 161,819 | 2,242,727 | 2,203,262 |
| PAB | 1,912,082 | 1,921,835 | 472,421 | 463,878 | 317,079 | 263,464 | 96,874 | 102,086 | 2,798,456 | 2,751,263 |
| BOSH | 864,012 | 849,073 | 391,855 | 422,738 | 249,859 | 231,080 | 156,331 | 136,261 | 1,662,057 | 1,639,152 |
| BOB | 1,188,444 | 1,150,904 | 384,854 | 432,018 | 339,030 | 301,765 | 113,530 | 87,873 | 2,025,858 | 1,972,560 |
| HZB | 371,114 | 368,307 | 116,293 | 118,443 | 185,894 | 168,510 | 27,231 | 26,602 | 700,532 | 681,862 |
| BON | 729,656 | 655,203 | 68,147 | 120,052 | 198,054 | 170,165 | 62,330 | 56,102 | 1,058,187 | 1,001,522 |
| NBCB | 541,085 | 511,405 | 129,648 | 141,868 | 137,022 | 112,985 | 60,119 | 68,376 | 867,874 | 834,634 |
| WRCB | 100,551 | 95,461 | 10,106 | 8,805 | 5,612 | 6,687 | 4,439 | 4,807 | 120,708 | 115,760 |
| BOJS | 987,827 | 907,412 | 340,376 | 406,333 | 259,425 | 131,743 | 74,943 | 68,597 | 1,662,571 | 1,514,085 |
| CRCB | 94,096 | 88,810 | 13,925 | 19,280 | 13,626 | 6,991 | 5,438 | 4,470 | 127,085 | 119,551 |
| GYB | 271,482 | 262,998 | 38,154 | 33,173 | 54,080 | 48,108 | 5,819 | 5,974 | 369,535 | 350,253 |
| JRCB | 75,575 | 73,641 | 14,196 | 14,211 | 2,556 | 4,105 | 2,910 | 3,115 | 95,237 | 95,072 |
| WJRCB | 65,757 | 65,388 | 6,185 | 6,288 | 300 | - | 2,282 | 1,794 | 74,524 | 73,470 |
| ZRCB | 66,102 | 65,257 | 13,664 | 13,776 | 456 | 613 | 3,110 | 3,083 | 83,332 | 82,729 |
| PSBC | 7,780,555 | 7,286,311 | 138,932 | 425,634 | 74,922 | 54,943 | 132,315 | 151,846 | 8,126,724 | 7,918,734 |
| CQCB | 232,396 | 229,594 | 50,601 | 60,351 | 84,287 | 54,598 | 5,894 | 4,749 | 373,178 | 349,292 |
| CQRCB | 556,668 | 518,186 | 104,773 | 158,958 | 93,808 | 58,487 | 12,587 | 13,337 | 767,836 | 748,968 |
| Total | 105,324,350 | 100,693,874 | 19,455,072 | 21,349,714 | 7,538,158 | 6,523,520 | 9,899,288 | 9,710,381 | 142,216,868 | 138,277,489 |

Source: The banks' 2017 Q1 & 2016 annual reports; KPMG China research

# Appendix - Capital adequacy ratio and tier 1 capital adequacy ratio

| | Capital adequacy ratio | | Tier 1 capital adequacy ratio | |
|---|---|---|---|---|
| | 31 March 2017 | 31 December 2016 | 31 March 2017 | 31 December 2016 |
| ICBC | 14.66% | 14.61% | 13.51% | 13.42% |
| CCB | 14.82% | 14.94% | 13.14% | 13.15% |
| BOC | 13.77% | 14.28% | 12.04% | 12.28% |
| ABC | 13.21% | 13.04% | 11.16% | 11.06% |
| BCM | 13.64% | 14.02% | 12.03% | 12.16% |
| CMB | 14.43% | 13.33% | 12.40% | 11.54% |
| CNCB | 12.08% | 11.98% | 9.88% | 9.65% |
| CMBC | 11.63% | 11.73% | 9.19% | 9.22% |
| SPDB | 11.77% | 11.65% | 9.49% | 9.30% |
| CIB | 12.26% | 12.02% | 9.65% | 9.23% |
| CEB | 11.78% | 10.80% | 9.32% | 9.34% |
| HXB | 11.36% | 11.36% | 9.61% | 9.70% |
| PAB | 11.48% | 11.53% | 9.23% | 9.34% |
| BOSH | 13.48% | 13.17% | 11.50% | 11.13% |
| HZB | 11.89% | 11.88% | 9.94% | 9.95% |
| BON | 13.38% | 13.71% | 9.63% | 9.77% |
| NBCB | 12.15% | 12.25% | 9.46% | 9.46% |
| WRCB | 11.83% | 12.65% | 9.67% | 10.28% |
| BOJS | 10.99% | 11.51% | 8.67% | 9.02% |
| CRCB | 12.56% | 13.22% | 10.35% | 10.93% |
| GYB | 13.16% | 13.75% | 11.05% | 11.51% |
| JRCB | 13.87% | 14.18% | 12.69% | 13.08% |
| ZRCB | 13.56% | 13.42% | 12.40% | 12.26% |
| PSBC | 11.88% | 11.13% | 8.88% | 8.63% |
| CQCB | 13.70% | 11.79% | 9.72% | 9.82% |
| CQRCB | 12.72% | 12.70% | 9.93% | 9.86% |
| Average | 12.77% | 12.72% | 10.56% | 10.58% |

Note: BOB and WJRCB did not disclose the relevant data

Source: The banks' 2017 Q1 reports & 2016 annual report; KPMG China research

# Appendix - Net profit attributable to parent's shareholders

| | Jan-Mar 2017 (RMB Million) | Jan-Mar 2016 (RMB Million) | Rate of change |
|---|---|---|---|
| ICBC | 75,786 | 74,764 | 1.37% |
| CCB | 70,012 | 67,952 | 3.03% |
| BOC | 46,649 | 46,619 | 0.06% |
| ABC | 55,710 | 54,688 | 1.87% |
| BCM | 19,323 | 19,066 | 1.35% |
| CMB | 19,977 | 18,350 | 8.87% |
| CNCB | 11,389 | 11,200 | 1.69% |
| CMBC | 14,199 | 13,706 | 3.60% |
| SPDB | 14,462 | 13,922 | 3.88% |
| CIB | 16,824 | 15,700 | 7.16% |
| CEB | 8,579 | 8,446 | 1.57% |
| HXB | 4,499 | 4,431 | 1.53% |
| PAB | 6,214 | 6,086 | 2.10% |
| BOSH | 3,874 | 3,636 | 6.55% |
| BOB | 5,445 | 5,275 | 3.22% |
| HZB | 1,310 | 1,216 | 7.73% |
| BON | 2,453 | 2,119 | 15.76% |
| NBCB | 2,359 | 2,030 | 16.21% |
| WRCB | 238 | 216 | 10.19% |
| BOJS | 2,988 | 2,692 | 11.00% |
| CRCB | 316 | 284 | 11.27% |
| GYB | 967 | 809 | 19.53% |
| JRCB | 175 | 177 | -1.13% |
| WJRCB | 170 | 155 | 9.68% |
| ZRCB | 204 | 192 | 6.25% |
| PSBC | 13,796 | 12,492 | 10.44% |
| CQCB | 1,095 | 989 | 10.72% |
| CQRCB | 2,428 | 2,193 | 10.72% |
| Total | 401,441 | 389,405 | 3.09% |
| Average | 14,337 | 13,907 | 3.09% |

Source: The banks' 2017 Q1 & 2016 Q1 reports; KPMG China research

# Appendix - Key performance indicator

| | ROE | | EPS | | Net Asset Per Share ( RMB ) | |
|---|---|---|---|---|---|---|
| | Jan-Mar, 2017 | Jan-Mar, 2016 | Jan-Mar, 2017 | Jan-Mar, 2016 | Mar.31, 2017 | Dec.31, 2016 |
| ICBC | 15.80% | 17.12% | 0.21 | 0.21 | 5.46 | 5.29 |
| CCB | 17.63% | 18.53% | 0.28 | 0.27 | 6.52 | 6.28 |
| BOC | 13.74% | 14.77% | 0.15 | 0.15 | 4.59 | 4.46 |
| ABC | 17.49% | 18.72% | 0.16 | 0.16 | 3.95 | 3.81 |
| BCM | 12.10% | 14.40% | 0.26 | 0.26 | 7.93 | 7.67 |
| CMB | 19.42% | 19.84% | 0.79 | 0.73 | 16.68 | 15.95 |
| CNCB | 13.25% | 13.94% | 0.23 | 0.23 | 7.21 | 7.04 |
| CMBC | 16.71% | 17.94% | 0.39 | 0.38 | 9.51 | 9.12 |
| SPDB | 15.84% | 18.00% | 0.63 | 0.63 | 16.20 | 15.64 |
| CIB | 18.80% | 21.24% | 0.88 | 0.82 | 17.59 | 17.02 |
| CEB | 15.30% | 16.25% | 0.18 | 0.18 | 4.99 | 4.72 |
| HXB | 10.92% | 14.80% | 0.34 | 0.41 | 12.68 | 12.37 |
| PAB | 11.56% | 14.80% | 0.31 | 0.35 | 10.94 | 10.61 |
| BOSH | 13.16% | 15.44% | 0.65 | 0.67 | 19.96 | 19.28 |
| BOB | 17.20% | 18.48% | 0.36 | 0.35 | 8.49 | 8.17 |
| HZB | 13.40% | 15.04% | 0.50 | 0.52 | 15.18 | 14.73 |
| BON | 18.52% | 17.60% | 0.40 | 0.35 | 8.91 | 8.59 |
| NBCB | 20.48% | 19.68% | 0.60 | 0.52 | 12.00 | 11.66 |
| WRCB | 10.76% | 11.76% | 0.13 | 0.13 | 4.83 | 4.75 |
| BOJS | 14.27% | 16.17% | 0.26 | 0.26 | 7.35 | 7.16 |
| CRCB | 12.68% | 13.80% | 0.14 | 0.14 | 4.55 | 4.43 |
| GYB | 17.92% | 22.52% | 0.42 | 0.45 | 9.57 | 9.20 |
| JRCB | 7.96% | 9.68% | 0.10 | 0.11 | 5.00 | 4.95 |
| WJRCB | 8.68% | 9.32% | 0.15 | 0.15 | 7.12 | 6.98 |
| ZRCB | 10.32% | 10.88% | 0.12 | 0.12 | 4.52 | 4.50 |
| PSBC | 15.83% | 18.16% | 0.17 | 0.18 | 4.44 | 4.28 |
| CQCB | 17.74% | 18.23% | 0.35 | 0.32 | 7.93 | 7.61 |
| CQRCB | 18.05% | 17.76% | 0.26 | 0.24 | 5.92 | 5.66 |
| Average | 14.84% | 16.25% | 0.34 | 0.33 | 8.93 | 8.64 |

Source: The banks' 2017 Q1 & 2016 Q1 reports; KPMG China research

# Appendix - Operating income

| RMB Million | Net Interest Income | | | Net Commission Fee Income | | | Investment Income | | | Other Operating Income | | | Operating Income | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan-Mar, 2017 | Jan-Mar, 2016 | Change Rate | Jan-Mar, 2017 | Jan-Mar, 2016 | Change Rate | Jan-Mar, 2017 | Jan-Mar, 2016 | Change Rate | Jan-Mar, 2017 | Jan-Mar, 2016 | Change Rate | Jan-Mar, 2017 | Jan-Mar, 2016 | Change Rate |
| ICBC | 121,970 | 118,810 | 2.66% | 40,958 | 43,485 | -5.81% | 1,899 | 1,998 | -4.95% | 24,698 | 29,596 | -16.55% | 189,525 | 193,889 | -2.25% |
| CCB | 106,923 | 107,886 | -0.89% | 38,767 | 38,376 | 1.02% | 1,982 | 5,972 | -66.81% | 23,126 | 35,710 | -35.24% | 170,798 | 187,944 | -9.12% |
| BOC | 78,608 | 79,536 | -1.17% | 25,751 | 25,727 | 0.09% | 4,486 | 4,467 | 0.43% | 20,450 | 13,089 | 56.24% | 129,295 | 122,819 | 5.27% |
| ABC | 103,206 | 101,704 | 1.48% | 25,471 | 28,918 | -11.92% | 803 | 772 | 4.02% | 18,908 | 6,652 | 184.25% | 148,388 | 138,046 | 7.49% |
| BCM | 31,217 | 34,028 | -8.26% | 11,279 | 10,772 | 4.71% | 536 | 72 | 644.44% | 11,853 | 11,161 | 6.20% | 54,885 | 56,033 | -2.05% |
| CMB | 34,914 | 34,306 | 1.77% | 18,640 | 19,824 | -5.97% | 1,881 | 4,598 | -59.09% | 1,640 | -476 | -444.54% | 57,075 | 58,252 | -2.02% |
| CNCB | 25,108 | 27,562 | -8.90% | 10,805 | 11,037 | -2.10% | 1,174 | 1,987 | -40.92% | 691 | -107 | -745.79% | 37,778 | 40,479 | -6.67% |
| CMBC | 20,680 | 24,106 | -14.21% | 12,681 | 14,572 | -12.98% | 1,161 | 4,455 | -73.94% | 1,707 | -2,999 | -156.92% | 36,229 | 40,134 | -9.73% |
| SPDB | 26,519 | 27,812 | -4.65% | 12,191 | 11,618 | 4.93% | 3,669 | 1,969 | 86.34% | -19 | 792 | -102.40% | 42,360 | 42,191 | 0.40% |
| CIB | 21,739 | 29,581 | -26.51% | 8,890 | 7,673 | 15.86% | 2,400 | 3,903 | -38.51% | 1,517 | -240 | -732.08% | 34,546 | 40,917 | -15.57% |
| CEB | 15,203 | 16,424 | -7.43% | 8,208 | 6,902 | 18.92% | 38 | 223 | -82.96% | 208 | -9 | -2411.11% | 23,657 | 23,540 | 0.50% |
| HXB | 12,445 | 12,068 | 3.12% | 3,666 | 2,949 | 24.31% | 7 | 85 | -91.76% | 213 | 17 | 1152.94% | 16,331 | 15,119 | 8.02% |
| PAB | 18,869 | 18,398 | 2.56% | 8,150 | 8,101 | 0.60% | 611 | 824 | -25.85% | 82 | 209 | -60.77% | 27,712 | 27,532 | 0.65% |
| BOSH | 5,234 | 7,207 | -27.38% | 1,682 | 1,797 | -6.40% | 1,892 | -125 | -1613.60% | -623 | 409 | -252.32% | 8,185 | 9,288 | -11.87% |
| BOB | 9,440 | 9,375 | 0.69% | 4,032 | 3,071 | 31.29% | 116 | 249 | -53.41% | 18 | 7 | 157.14% | 13,606 | 12,702 | 7.12% |
| HZB | 2,877 | 3,043 | -5.46% | 403 | 404 | -0.25% | 13 | 56 | -76.79% | -39 | -63 | -38.10% | 3,254 | 3,440 | -5.40% |
| BON | 5,078 | 5,928 | -14.34% | 844 | 1,457 | -42.07% | 127 | 447 | -71.59% | 181 | 16 | 1031.25% | 6,231 | 7,848 | -20.61% |
| NBCB | 4,806 | 4,464 | 7.66% | 1,658 | 1,542 | 7.52% | -149 | 425 | -135.06% | 119 | -355 | -133.52% | 6,433 | 6,076 | 5.88% |
| WRCB | 600 | 545 | 10.09% | 55 | 45 | 22.22% | 34 | 28 | 21.43% | -15 | -24 | -37.50% | 674 | 594 | 13.46% |
| BOJS | 6,861 | 6,347 | 8.10% | 1,669 | 1,696 | -1.59% | 38 | 11 | 245.45% | -33 | -12 | 175.00% | 8,535 | 8,042 | 6.12% |
| CRCB | 1,040 | 905 | 14.92% | 91 | 21 | 333.33% | 9 | 63 | -85.71% | 6 | 4 | 50.00% | 1,146 | 993 | 15.40% |
| GYB | 2,572 | 1,815 | 41.71% | 290 | 273 | 6.23% | 29 | 104 | -72.12% | 2 | - | N/A | 2,893 | 2,192 | 31.99% |
| JRCB | 484 | 559 | -13.42% | 16 | 18 | -11.11% | 49 | 24 | 104.17% | 2 | - | N/A | 551 | 601 | -8.36% |
| WJRCB | 581 | 511 | 13.70% | 23 | 14 | 64.29% | 16 | 21 | -23.81% | 2 | 4 | -50.00% | 622 | 550 | 13.10% |
| ZRCB | 519 | 496 | 4.64% | 37 | 31 | 19.35% | 40 | 117 | -65.81% | 6 | -1 | -700.00% | 603 | 643 | -6.16% |
| PSBC | 41,949 | 41,700 | 0.60% | 4,083 | 2,963 | 37.80% | 5,796 | 2,575 | 125.09% | 622 | 276 | 125.36% | 52,450 | 47,514 | 10.39% |
| CQCB | 2,028 | 2,000 | 1.40% | 410 | 468 | -12.39% | 97 | 6 | 1516.67% | 18 | 3 | 500.00% | 2,552.13 | 2,477.00 | 3.03% |
| CQRCB | 5,109 | 4,988 | 2.43% | 559 | 607 | -7.91% | -20 | -19 | 5.26% | 27 | 33 | -18.18% | 5,674 | 5,608 | 1.18% |
| Total | 706,579 | 722,104 | -2.15% | 241,309 | 244,361 | -1.25% | 28,734 | 35,307 | -18.62% | 105,367 | 93,692 | 12.46% | 1,081,988 | 1,095,463 | -1.23% |

Source: The banks' 2017 Q1 & 2016 Q1 reports; KPMG China research

# Appendix - Net interest margin

| | Jan-Mar 2017 | Jan-Mar 2016 | Rate of change |
|---|---|---|---|
| ICBC | 2.11% | 2.28% | -0.17% |
| CCB | 2.13% | 2.40% | -0.27% |
| BOC | 1.83% | 1.97% | -0.14% |
| ABC | 2.21% | 2.40% | -0.19% |
| BCM | 1.60% | 2.01% | -0.41% |
| CMB | 2.43% | 2.62% | -0.19% |
| CNCB | 1.79% | 2.13% | -0.34% |
| CMBC | 1.87% | 2.11% | -0.24% |
| SPDB | 2.26% | 3.11% | -0.85% |
| CIB | 2.26% | 3.65% | -1.39% |
| CEB | 1.85% | 2.46% | -0.61% |
| HXB | 2.33% | 2.49% | -0.16% |
| PAB | 2.53% | 2.87% | -0.34% |
| BOSH | 1.37% | 1.91% | -0.54% |
| BOB | 2.08% | 2.19% | -0.11% |
| BON | 1.83% | 2.57% | -0.74% |
| NBCB | 2.14% | 2.20% | -0.06% |
| WRCB | 2.08% | 2.03% | 0.05% |
| GYB | 3.36% | 3.49% | -0.13% |
| JRCB | 2.14% | 2.52% | -0.38% |
| PSBC | 2.24% | 2.35% | -0.11% |
| CQCB | 2.22% | 1.91% | 0.31% |
| CQRCB | 2.66% | 2.96% | -0.30% |
| Average | 2.14% | 2.46% | -0.32% |

Note: HZB、BOJS、CRCB、WJRCB、ZRCB did not disclose the relevant data.

Source: The banks' 2017 Q1 & 2016 Q1 reports; KPMG China research

# Glossary of abbreviated terms

## Bank names

- ICBC – Industrial and Commercial Bank of China
- CCB – China Construction Bank
- BOC – Bank of China
- ABC – Agricultural Bank of China
- BCM – Bank of Communications
- CMB – China Merchants Bank
- CNCB – China CITIC Bank
- CMBC – China Minsheng Bank
- SPDB – Shanghai Pudong Development Bank
- CIB – Industrial Bank
- CEB – China Everbright Bank
- HXB – Hua Xia Bank Co.,Ltd
- PAB – PingAn Bank Co., Ltd
- BOSH – Bank of Shanghai Co., Ltd
- BOB – Bank of Beijing Co., Ltd
- HZB-Bank of Hangzhou
- BON – Bank of Nanjing Co., Ltd
- NBCB – Bank of Ningbo Co., Ltd
- WRCB-Wuxi Rural Commercial Bank
- BOJS-Bank of Jiangsu
- CRCB-Changshu Rural Commercial Bank
- GYB-Bank of Guiyang Co., Ltd
- JRCB-Jiangyin Rural Commercial Bank
- WJRCB-Wujiang Rural Commercial Bank
- ZRCB-Rural Commercial Bank of Zhangjiagang
- PSBC-Postal Savings Bank of China
- CQCB-Bank of Chongqing
- CQRCB-Chongqing Rural Commercial

## General terms

- MOF – Ministry of Finance
- PBOC – People's Bank of China
- CBRC – China Banking Regulatory Commission
- CSRC – China Securities Regulatory Commission
- SAFE – State Administration of Foreign Exchange
- SSE – Shanghai Stock Exchange
- SEHK – The Stock Exchange of Hong Kong
- SHIBOR – Shanghai Interbank Offered Rate
- NIM – Net interest margin

NOTE: As at 31 March 2017, there were 25 A-share listed banks. They are ICBC, CCB, BOC, ABC, BCM, CMB, CNCB, CMBC, SPDB, CIB, CEB, HXB, PAB, BOB, BOSH,BON, NBCB, HZB, WRCB, BOJS, CRCB, GYB, JRCB, ZRCB and WJRCB. Among them, ICBC, CCB, BOC, ABC, BCM, CMBC, CNCB, CEB and CMB are listed on both the SSE and SEHK. PAB, NBCB, JRCB and ZRCB are listed on the Shenzhen Stock Exchange. The rest are listed on the SSE.

As at 31 March 2017, there were 12 H-share listed banks. They are Postal Savings Bank of China, China Zheshang Bank, Bank of Jinzhou, Huishang Bank, Shengjing Bank, CRCB, Bank of Tianjin, CQCB, Bank of Qingdao, Bank of Zhengzhou, Harbin Bank and Jinlin Jiutai Rural Commercial Bank. So far, only PSBC, CQCB and CQRCB have disclosed Q1 reports.

## Contact us

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