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Forging Ahead Together for a Better Future

Chinese Banking Sector 2021 Review and 2022 Outlook

MAKING AN IMPACT THAT MATTERS since 1845

Contents

Foreword

Its first centenary goals, the Communist Party of China ("CPC") celebrated its 100th anniversary and embarked on a new journey to the second centenary goals.

In 2021, amid complicated risks and challenging circumstances at home and abroad, the CPC and Chinese Government also led the country to work as one in response to COVID-19, pursuing economic and social development, and attaining remarkable achievements.

Overcoming the impact of COVID-19, China's banking sector made new strides in improving its capacity to serve the real economy, preventing systemic risks, and achieving high-quality development. By the end of 2021, total assets of commercial banks had reached RMB288.6 trillion, up 8.6% year-on-year, falling back to single-digit growth. Asset expansion in the financial system also moderated. Outstanding non-performing loans ("NPLs") amounted to RMB2.8 trillion, representing an NPL ratio of 1.73%, down 0.11 percentage points from end-2020.

The quality of credit assets remained stable. China’s new yuan-denominated loans totaled nearly RMB20 trillion, with the balance of medium- and long-term loans to the manufacturing sector increasing by almost 30% year-on-year, loans for technology research and development up 28.9%, green credit rising by 21%, and the growth of inclusive loans to small and micro businesses reaching nearly 25%. All of these loans effectively supported the recovery and development of the real economy. Risks in key areas remained under control, with macro leverage ratio dropping by about eight percentage points. The high-risk shadow banking sector continued to shrink, great progress was made in non-performing asset disposal, and positive trends were seen in the hidden debt of local governments. The momentum of the real estate bubble and "financialization" was reversed and the resilience of the banking sector against the risk of external shocks was enhanced further.

Looking ahead to the rest of 2022, China will confront opportunities and challenges in its social and economic development. The CPC will hold the 20th National Congress, which will have a far-reaching impact on China's future economic and social development.

As the COVID-19 pandemic should be contained by the end of 2022, the banking sector will need to keep providing substantial financial support to achieve the "dual carbon" goals and address climate risks. China’s banking industry will also stand to benefit from these favorable external factors.

However, there are still significant uncertainties in the external, global environment. China's economic development is facing "triple pressure" from a demand contraction, supply shocks, and weakening expectations. Technological advancements and regulatory policy changes continue to reshape financial development and market competition. These factors will constantly expose the Chinese banking sector to new challenges.

To seize opportunities and address risks and challenges, the banking sector could adopt the following measures: adhere to the development direction of "serving the real economy, preventing and controlling financial risks and deepening financial reform", and explore new profit drivers in business model transformation. It should properly manage the relationship between asset size and asset quality to achieve robust, sustainable growth, and attach great importance to risk prevention and controls to be fully prepared for the possible worst-case scenarios. The sector must also fulfill its corporate responsibilities and incorporate environmental, social and governance ("ESG") requirements into every aspect of operations and management, continue to deepen digital transformation, take advantage of digital technologies to improve the quality and efficiency of development, and invest continually in talent to improve leadership and professional skills.

This Chinese banking sector 2021 review and 2022 outlook is the 14th in a series of analytical reports. In this edition, the Deloitte China FSI research team reviews 2021 economic and financial development, analyzes the performance and business operation of Chinese listed banks in 2021, and covers a host of hot topics.

Taking 10 representative commercial banks (see Table 1) in China as a sample, the report also provides an overview of the Chinese banking sector's achievements in 2021 and identifies key trends in its future development based on a systematic analysis of profitability, assets, liabilities, and the capital position of Chinese listed banks. It also gives an overview of business development, operating model, and regulatory change in the sector.

To draw on the best practical experiences of Chinese banks' international peers, the report also analyzes six non-Chinese global systemically important banks ("G-SIBs") that rank 5th to 10th in the Top 1,000 World Banks 2021 of The Banker, a British magazine (see Table 2).

This report also presents our experts' insights on various industry hot topics, including the analysis of banks' strategic deployment at the beginning of the 14th Five-year Plan; new rules on corporate governance and their implications; practices and suggestions for the reform and development of rural cooperative financial institutions; a study of the Chinese financial culture; an overview of fintech subsidiaries of banks; and the strategies for banks to accelerate and stay ahead in wealth management. The Chinese banking sector 2021 review and 2022 outlook report is as a valuable reference for Chinese commercial banks as they embark on a new journey towards the goals of the 14th Five-year Plan.

Table 1: 10 domestic commercial banks (hereinafter referred to as the "domestic banks")

Industrial and Commercial Bank of China (ICBC)
China Construction Bank (CCB)
Agricultural Bank of China (ABC)
Bank of China (BOC)
Postal Savings Bank of China (PSBC)
Bank of Communications (BOCOM)
China Merchants Bank (CMB)
Industrial Bank (IB)
China CITIC Bank (CITIC Bank)
Ping An Bank (PAB)

Table 2: 6 foreign systematically important banks (hereinafter referred to as the "foreign banks")

J.P. Morgan Chase & Co (JPM)
Bank of America (BAC)
Wells Fargo (WFC)
Citigroup (Citi)
HSBC
MUFG Bank

The data in this report, unless otherwise indicated, are from the annual reports published by the above banks. The balance sheet data of foreign banks are converted at the respective year-end exchange rate, and the income statement data are converted at the average exchange rate of each year. Among them. The MUFG bank's FY2020 reporting period was from April 1, 2020 to March 31, 2021, and the first-half reporting period of FY2021 was from April 1, 2021 to September 30, 2021. Since the FY2021 annual report of MUFG bank has not been released, the data of MUFG bank's FY2021 semi-annual report were used—the income statement data were annualized and other periods were accordingly calculated. Unless otherwise specified, the average indexes listed in this report are all weighted average indexes of the examples.

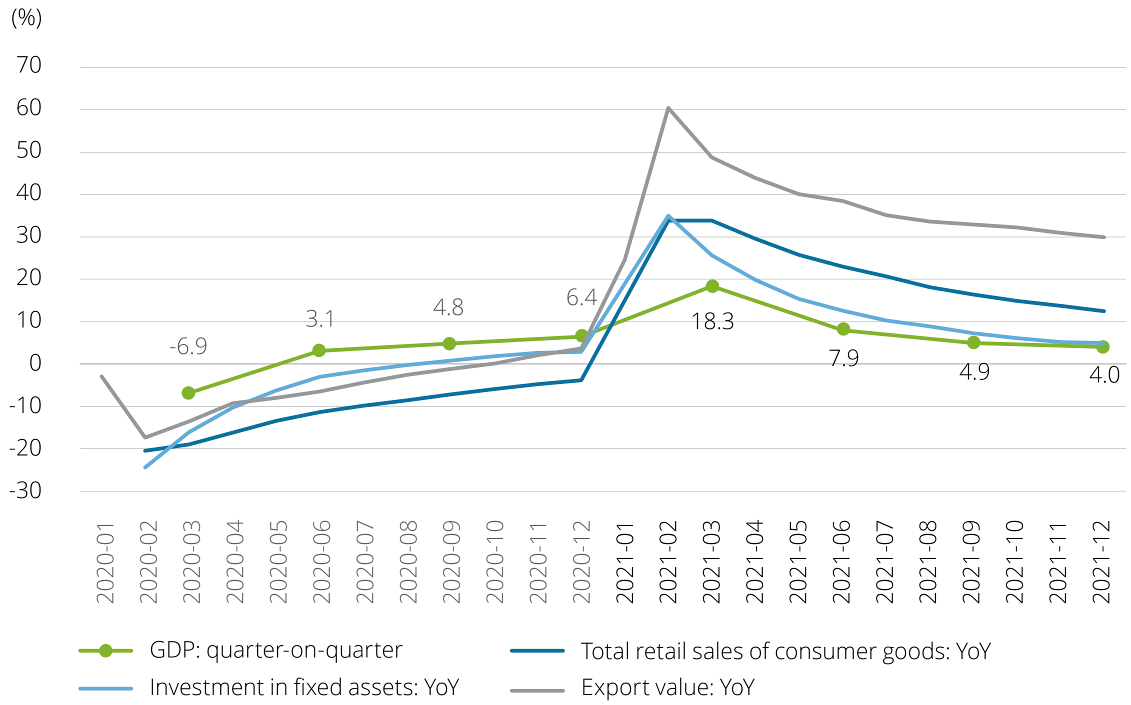
1. 2021 Macroeconomic and Financial Review

Steady post-COVID economic recovery in China

In 2021, the global economy gradually recovered to regular operation. China's economy continued stable recovery amid the pandemic, with its GDP growing by 8.1%. The total retail sales of consumer goods increased by 12.5% over the previous year, with more upgraded consumer demands unleashed. Online retail sales increased by 14.1% from a year earlier. The domestic consumer market demonstrated sustained resilience due to the strong consumer confidence among young people, cyclical drivers of low interest rates, and other factors.

Investment in fixed assets grew by 4.9% over the previous year. Compared with the real estate and infrastructure sectors, manufacturing saw a more robust growth of 13.5%. In particular, the investment in high-tech manufacturing increasing 22.2%, which reflected China's efforts to lay a solid foundation for fostering manufacturing core competitiveness and to nurture specialized and sophisticated enterprises that produce new and unique products. Export remained the most powerful driver for steady economic growth. Thanks to the increasing overseas demand and China's stable supply chain, the export of goods recorded a high growth rate of 29.9% (in USD) in 2021.

Figure 1: China's Economic Growth

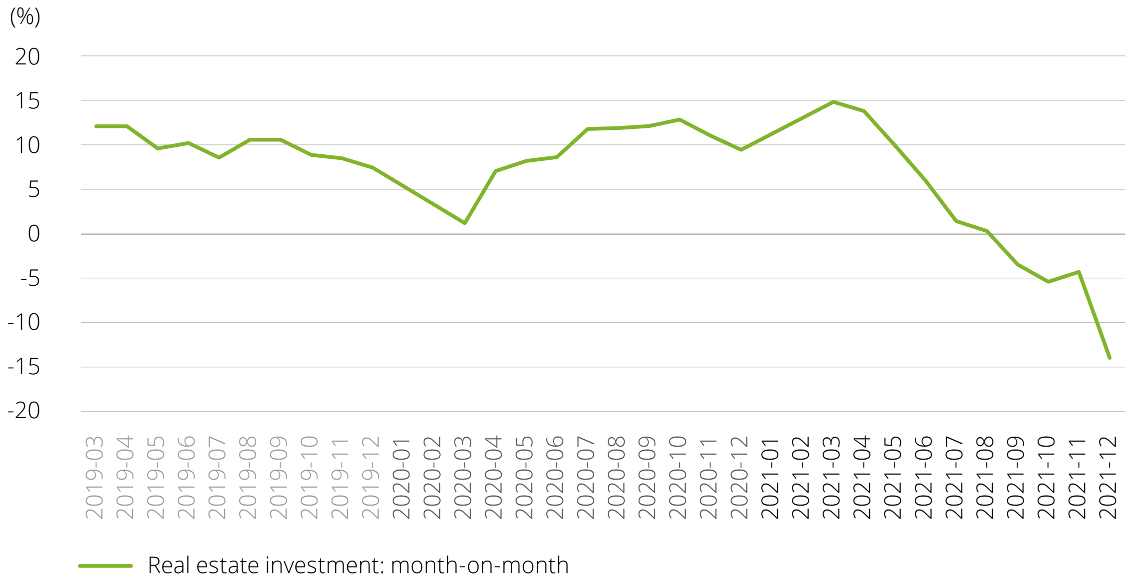


Source: National Bureau of Statistic

Real estate investment slowed

During the second half of 2021, Evergrande Group's debt crisis attracted global attention, which immediately drove the monthly growth rate of real estate investment negative. As the real estate sector plays an important role in economic development and indirectly affects many industries and local finance, the Government continued to uphold the principle of "housing is for living in, not speculation", and adopted multiple measures to prevent spillover effects of the Evergrande event. For instance, the relevant M&A loans for debt-assumed acquisitions of the real estate enterprises or projects having liquidity difficulties are no longer subject to the "three red lines" indicators.

Figure 2: Real Estate Investment Declined



Source: National Bureau of Statistic

Promoting common prosperity amid high-quality development

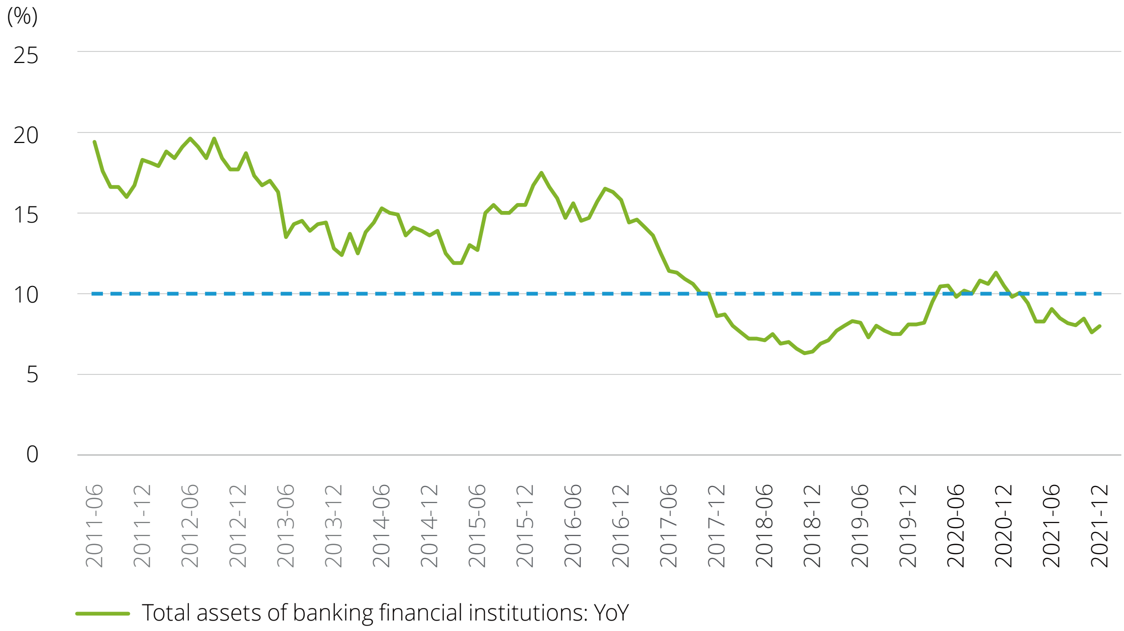
"Substantial progress in realizing common prosperity for all" is one of the Long-Range Objectives through the Year 2035. In August 2021, the tenth meeting of the Central Committee for Financial and Economic Affairs pointed out that we should maintain a proper relationship between efficiency and fairness, and establish a basic institutional framework for coordinating and supporting primary, secondary, and tertiary distribution. The central Government stressed "promoting common prosperity" and proposed requirements for "primary, secondary and tertiary distribution", which indicated that spending to meet basic living needs and financial transfers would continue to increase to narrow the income gap. However, common prosperity is not "equalitarianism". The annual Central Economic Work Conference held in December 2021 emphasized again that the nation should first "make a bigger and better cake" through joint efforts of the people, and then divide and distribute the cake properly through rational institutional arrangements. The Government attaches importance to private investment, and strives to maintain entrepreneurs' and market confidence.

Stable banking sector

In recent years, the financial supply-side structural reform has deepened, and the asset expansion of the banking sector has slowed (the growth rate falling to single digits in 2021). According to the data of the China Banking and Insurance Regulatory Commission (CBIRC), by the end of the fourth quarter of 2021, the total assets of banking financial institutions were RMB344.76 trillion, up 8.0% year on year. The outstanding nonperforming loans of commercial banks were RMB2.8 trillion, with a nonperforming loan ratio of 1.73%, down 0.02 percentage points from the end of the previous quarter and 0.11 percentage points from the end of 2020. The quality of commercial banks' credit assets remained stable.

Banking stability ensures financial steadiness. The total assets of China's banking sector account for more than 90% of the total assets of the financial sector. Thus the banking sector is "the ballast" for a stable financial system. According to the banking financial institution ratings disclosed by the People's Bank of China, in the fourth quarter of 2021, among the 4,398 banking financial institutions in China, 4,082 institutions were assessed as being within the security boundary, with assets accounting for 98.96% of the total banking assets, and the assets of 316 high-risk institutions accounted for 1.04%; the 24 large banks, with assets accounting for about 70% of the total, maintained good ratings.

Figure 3: Asset Expansion of the Banking Sector Declined to Single-Digit Growth



Source: CBIRC

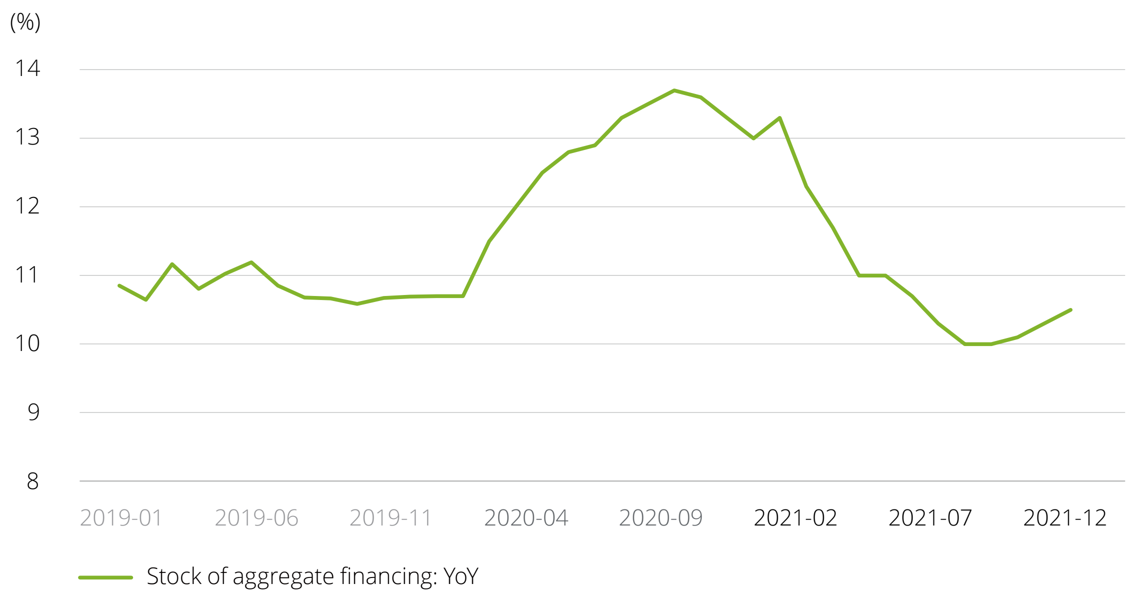
Financial assistance to the real economy

In 2021, the stock of aggregate financing grew by 10.3% year on year—the growth rate rose to 13% at the beginning of the year, fell to the lowest of 10% in September (lower than the average level in 2019), and rebounded gradually in the fourth quarter to approximate the pre-pandemic level in 2019.

In terms of different categories of loans, green loans grew fastest, with the loan balance increasing by 33% year on year at the end of 2021, 12.7 percentage points higher than that at the end of 2020. The inclusive loan balance grew 23.2% year on year, one percentage point lower than the growth rate at the end of 2020. The growth rate of medium - and long-term industrial loans increased by 22.6% year on year. Affected by regulation, the growth rate of real estate development loans decreased tremendously, which gradually approached zero in the fourth quarter of 2021.

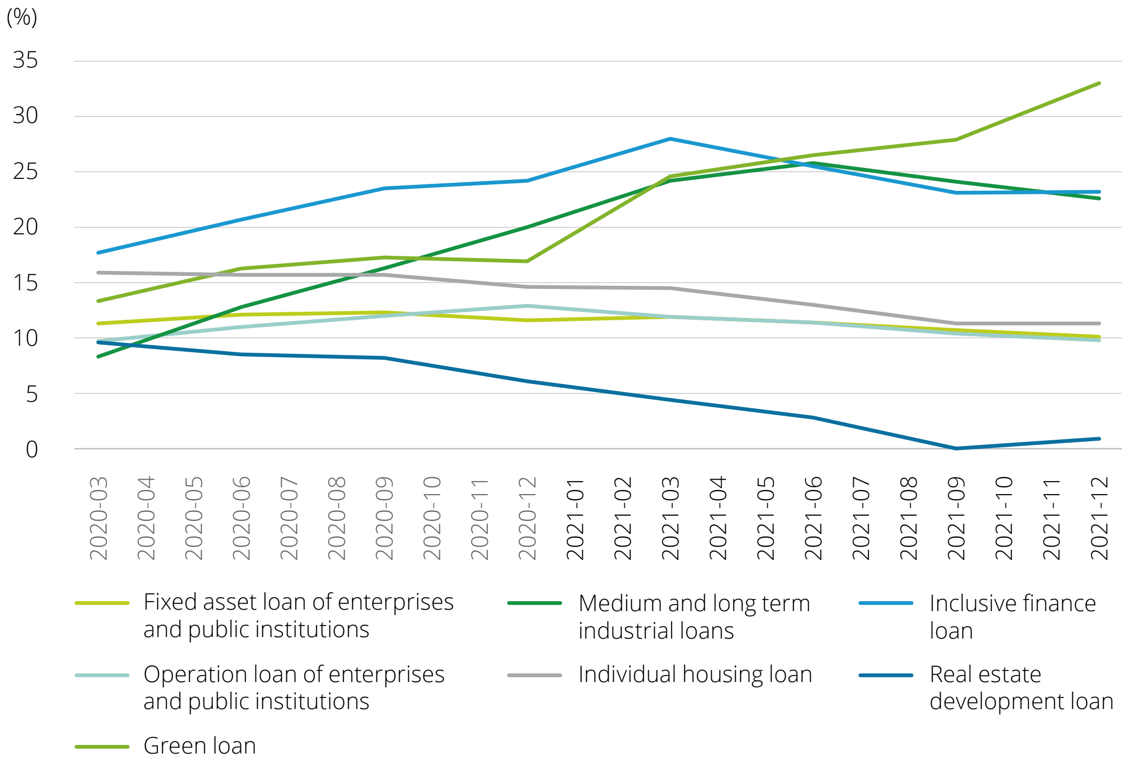
According to the survey of the People's Bank of China, small and micro enterprises have the highest loan demand. In 2021, the balance of banking financial institutions' inclusive loans to small and micro enterprises totaled RMB19.07 trillion, up 24.9% year on year, and the five large state-owned banks recorded an increase of 41.4%, exceeding 2021's growth target of 30%. Guo Shuqing, chairman of the CBIRC, said at the press conference of the State Council Information Office in March 2022 that the average growth rate of inclusive loans to small and micro enterprises exceeded 25% over the past four years, and the interest rates dropped by more than two percentage points. Innovative products such as online insurance and digital credit saw accelerated development. The coverage and accuracy of inclusive finance significantly improved.

Figure 4: Aggregate Financing Growth Recovered to Pre-pandemic Level



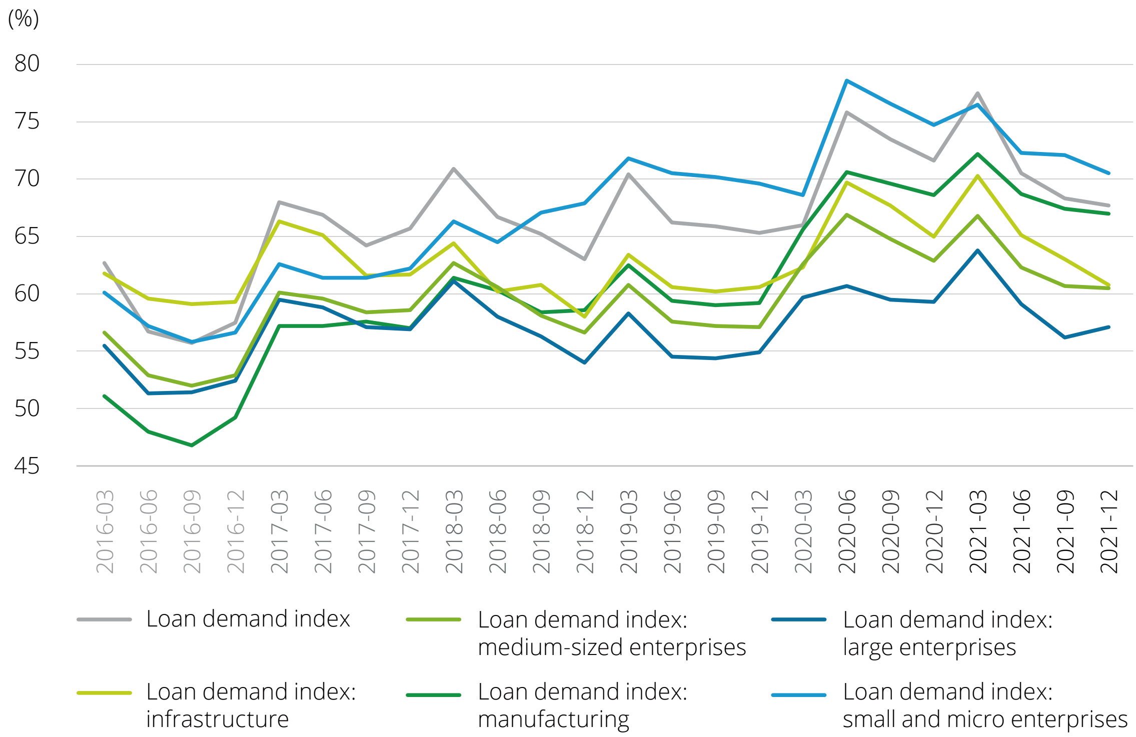
Source: People's Bank of China

Figure 5: Green Loans Grew Fast While Real Estate Loans Declined to Nearly Zero



Source: People's Bank of China

Figure 6: Small and Micro Enterprises Have the Highest Loan Demand



Source: People's Bank of China

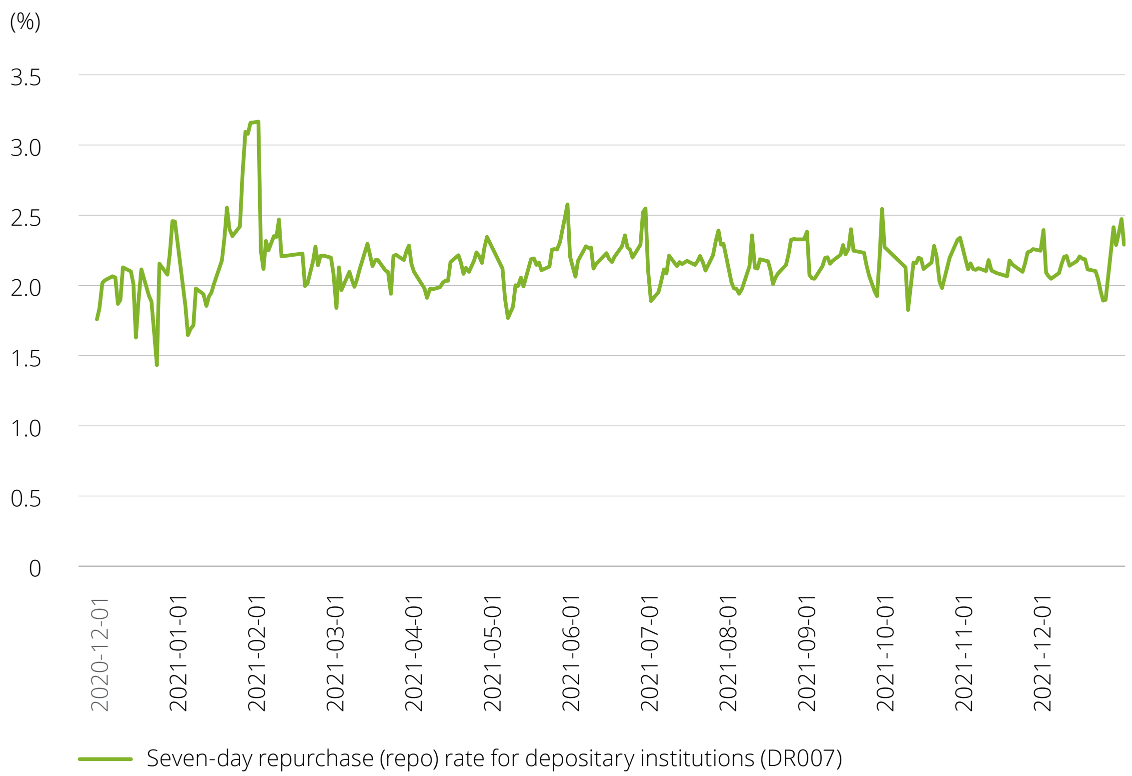
Interest rates fell while the RMB exchange rate rose steadily

Since 2018, the People's Bank of China has lowered the reserve requirement ratio 12 times, releasing about RMB10.3 trillion of long-term funds. As of December 15, 2021, financial institutions' average required reserve ratio was 8.4%, 6.5 percentage points lower than that at the beginning of 2018, and the reserve requirement ratio of large, medium-sized and small banks were respectively 10.0%, 8.0%, and 5.0%.

In the monetary market, the annual average of the seven-day repurchase (repo) rate for depositary institutions (DR007) was 2.17%, which only rose slightly during the Spring Festival. In 2021, the corporate loan interest rate was 4.61%, the lowest level in more than four decades since China's reform and opening-up. With targeted RRR cuts, inclusive finance loans increased significantly, and financing costs declined, which played a positive role in supporting epidemic prevention and control and enterprises' resumption of work and production.

The RMB exchange rate rose steadily and moderately. At the end of 2021, the CFETS (China Foreign Exchange Trade System) RMB exchange rate index was 102.47, up 8.1% from the end of the previous year. Moreover, RMB strengthened against the US dollar, with the year-end central parity rate of 6.3757, an appreciation of 2.3% compared with the end of 2020. In 2021, China's economic fundamentals were relatively stable compared with European and American economies, with moderate CPI and robust export to support RMB appreciation.

Figure 7: Interest Rate Changes in the Monetary Market



Source: Wind, Deloitte's financial research

Risk prevention and wealth management transformation

Shadow banking decreased further. According to the CBIRC, from 2017 to 2021, the dismantling of high-risk shadow banking totaled RMB25 trillion. In 2021, the size of shadow banking was further reduced by RMB4.2 trillion to about RMB29 trillion. During those five years, the cumulative disposal of nonperforming assets totaled RMB12 trillion, with more than RMB6 trillion of those assets disposed of over the past two years.

The trend in real estate was reversed. Due to implementing the management system that sets caps on real estate loans, the growth rate of real estate loans slowed significantly. P2P lending institutions ceased operation, with outstanding loans falling to RMB490 billion.

Rectification of the existing wealth management business according the new regulatory requirements was basically completed. The net-worth asset management products increased. According to the annual report released by the Banking Wealth Management Registration and Depository Center, by the end of 2021, the balance of net-worth wealth management products totaled RMB26.96 trillion, accounting for 92.97%, an increase of RMB23.89 trillion compared with that before the issuance of the new asset management regulations in 2018; the balance of non-net-worth products fell to RMB2.04 trillion, decreasing RMB16.39 trillion compared with that before the new asset management regulations.

Reform in the banking and insurance sectors

A campaign was launched that focused on shareholder equity and related party transactions. Based on the Three-year Action Plan for Improving Corporate Governance, the regulators further strengthened the supervision of related party transactions and the behavior of major shareholders to prevent financial institutions from transferring interests to shareholders and their related parties and causing potential risks.

The reform of small and medium-sized banks and rural credit cooperatives deepened. Zhejiang Rural Credit Cooperative was restructured to be Zhejiang Rural Commercial United Bank Co., Ltd. The original Datong Bank, Changzhi Bank, Jincheng Bank, Jinzhong Bank, and Yangquan Commercial Bank were merged to become Shanxi Bank. Zhongyuan Bank announced its absorption of the Bank of Luoyang, Bank of Pingdingshan, and Bank of CTS. JZ.

A financial talent pool will be constructed. Because of the accelerated M&As among small and medium-sized banks, on December 1, 2021, the CBIRC issued a document to encourage the construction of China's financial talent pool to facilitate the high-quality development of small and medium-sized institutions.

In addition, the development of third-pillar pension plans progressed. With intensified financial opening-up, the Chinese market has attracted many leading international financial institutions specializing in wealth management, disposal of nonperforming assets, financial service for the elderly, and other fields.

Table 3: Regulations on Corporate Governance of Banking and Insurance Institutions

Time	Document	Content
2020.8	*Three-year Action Plan for Improving Corporate Governance in the Banking and Insurance Sectors (2020-2022)*	Focus on defusing existing risks in time, establish a sound long-term corporate governance mechanism, and continue to promote the effective integration of the Party's leadership and corporate governance
2021.6	*Administrative Measures for Related-party Transactions of Banking and Insurance Institutions (Draft for Comment)* (effective from March 1, 2022)	Put in place provisions on the operation independence and internal management effectiveness of companies; define significant related party transactions
2021.10	*Measures for Regulation of the Behaviors of Major Shareholders of Banking and Insurance Institutions (for Trial Implementation)*	Strengthen regulation of major shareholders' behavior, and enhance penetrative supervision of shareholders

Source: Public regulatory information, Deloitte's financial research

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2. Analysis of Listed Banks's Performance in 2021

2.1 Profitability

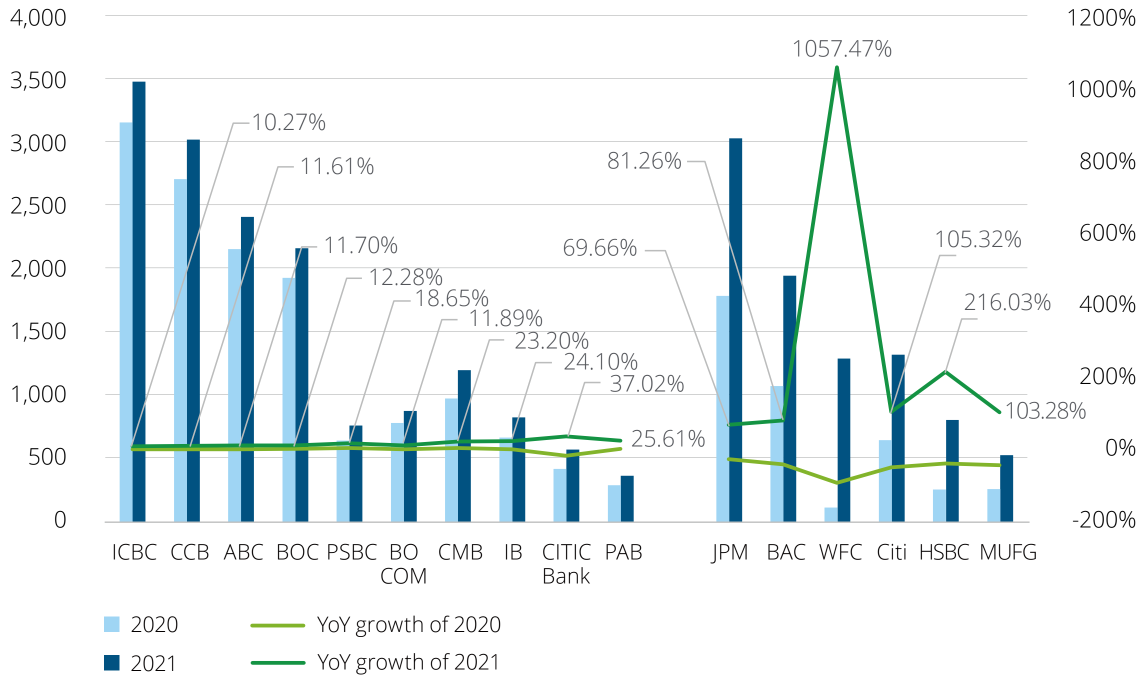
Banking profitability rallied; provisions for impairment loss decreased

In 2021, domestic banks' net profit attributable to shareholders of the parent company totaled RMB1,568.5 billion, an increase of RMB195.6 billion year-on-year, or an overall growth rate of 14.25%. All domestic banks saw double-digit growth and continuous enhancement of profitability. Specifically, the average growth rate of the state-owned banks was more than 10%, and that of the joint-stock banks exceeded 26%.

The substantial increase in domestic banks' net profit was mainly attributed to China's effective control of the pandemic, steady economic recovery and growth, continuous asset quality improvement, increased revenue, and reduced provisions, among others. Foreign banks' net profit attributable to shareholders of the parent company totaled RMB892.6 billion, up RMB479.4 billion year-on-year, or an overall increase of 116.02%. The reversal of provisions brought greater profits.

Figure 8: Net Profit Attributable to Shareholders of the Parent Company

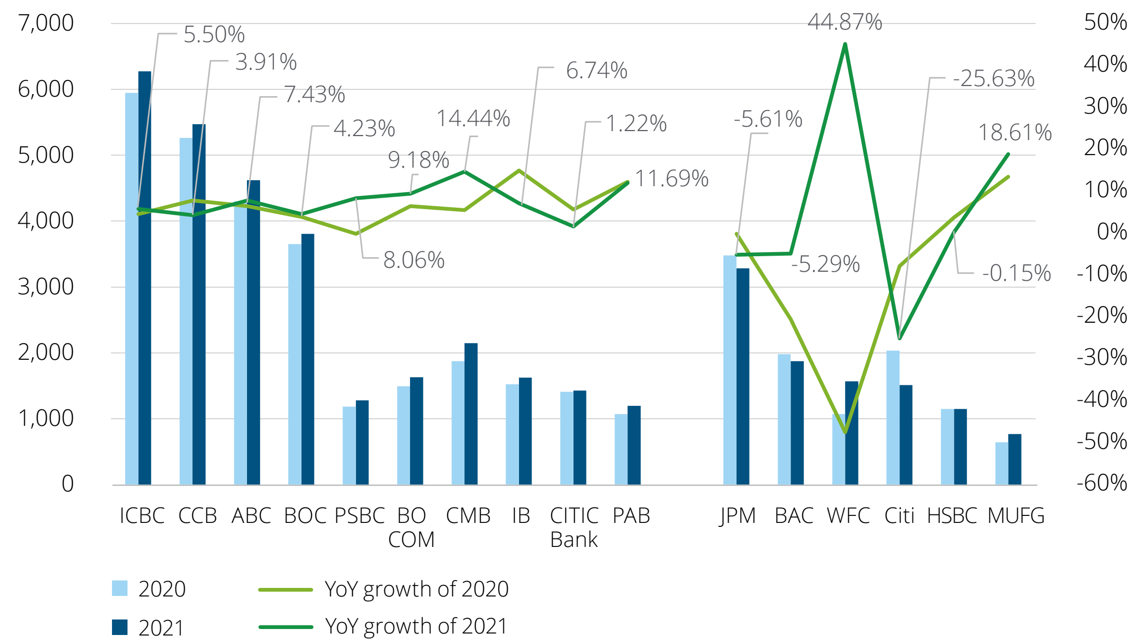
Unit: RMB100 million



In 2021, domestic banks' pre-provision operating profit (PPOP) totaled RMB2,947.2 billion, an increase of RMB175.5 billion year-on-year, or an overall growth rate of 6.33% (about 0.5 percentage points higher than the previous year's 5.83%)—the growth rates of 2020 and 2021 were lower than that of the net profit attributable to the parent company during the same period. Specifically, CMB and PAB recorded industry-leading pre-provision profit growth rates, respectively, at 14.44% and 11.69%, while the growth rate of other banks was less than 10%. The PPOP of foreign banks totaled RMB1,014.9 billion, down RMB21.5 billion year-on-year, or an overall decline of 2.08%, which was a significant improvement compared with 2020 and the first half of 2021 but was contrary to the growing trend of net profit. Specifically, MUFG registered positive year-on-year PPOP growth for two consecutive years; WFC had a significant increase in 2021; BAC saw a narrowed year-on-year decline; HSBC's growth rate turned negative; JPM and Citi saw a larger year-on-year decline. Overall, the PPOP of domestic banks trended upward, while the foreign banks had a varied performance. For domestic and foreign banks, the provision for impairment loss and reversal of provision is the main factor causing drastic fluctuation in profitability, especially for foreign banks.

Figure 9: Total PPOP

Unit: RMB100 million



Note: total PPOP = pretax profits + asset impairment loss + credit impairment loss

Multiple profitability indicators enhanced, with significant differences in per capita profitability

ROA and ROE rebounded

In 2021, the leading profitability indicators of domestic and foreign banks improved, and the return on total assets ("ROA") and return on equity ("ROE") showed an upward trend. In 2021, the average ROA of domestic banks was 0.91%, five basis points higher than the previous year's average, and the average ROE was 12.26%, 64 basis points higher than the previous year. CMB was the first to see its ROA and ROE recovery to the pre-pandemic (2019) levels. The average ROA of foreign banks was 0.87%, 45 basis points higher than the average of 2020, and the average ROE was 11.39%, 643 basis points higher than the average of 2020. In general, domestic banks' ROA and ROE increased slightly, while foreign banks recorded significant ROA fluctuation and improved ROE, mainly caused by the reversal of provisions.

Figure 10: ROA

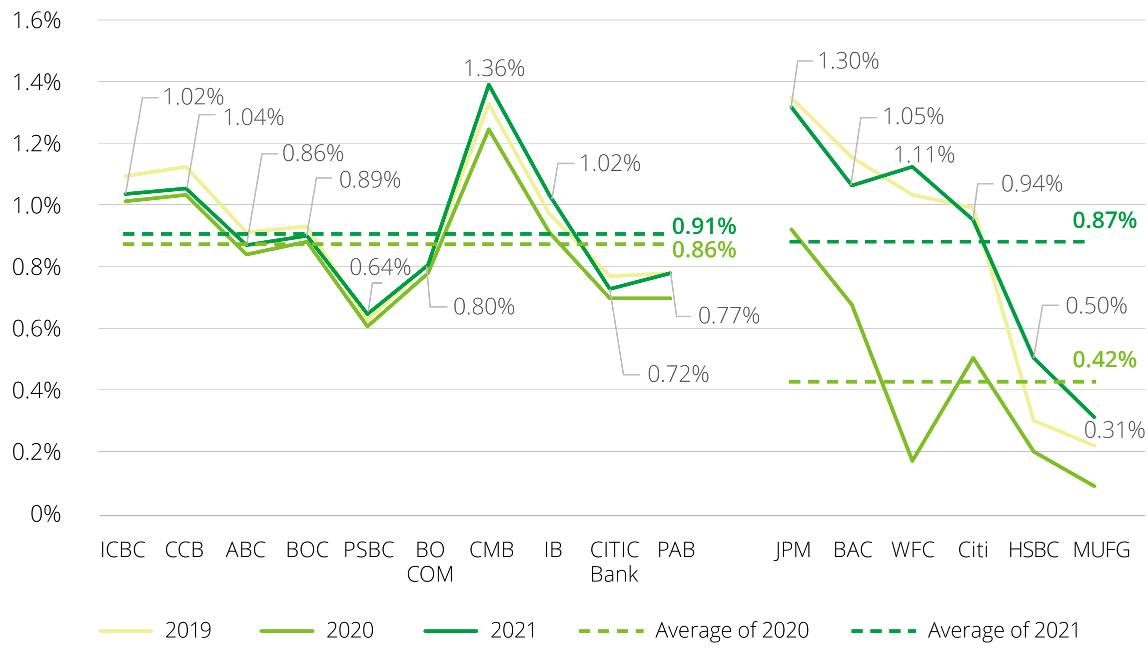
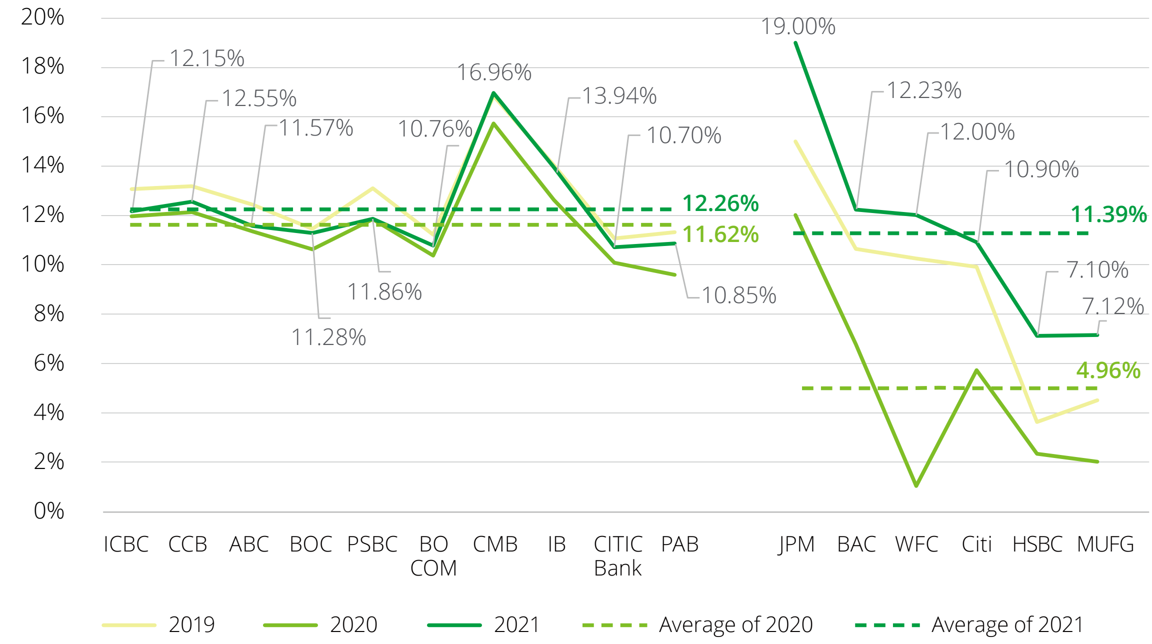


Figure 11: ROE



RORWA rose slightly; RAROC varied

In 2021, due to a higher net profit growth rate, domestic banks' average return on risk-weighted assets ("RORWA") was 1.46%, up six basis points from the previous year's average. Specifically, CMB, IB and PAB grew by 20 basis points, 18 basis points, and ten basis points, respectively, and other domestic banks also recorded varying degrees of increase. The average risk-adjusted return on capital ("RAROC") was 8.76%, up a basis point from the previous year's average. Domestic banks had different RAROC performance. Among the ten domestic commercial banks, three joint-stock banks (excluding CITIC Bank) recorded a much higher year-on-year growth than the state-owned banks; PAB, IB, and CMB increased 73 basis points, 67 basis points, and 50 basis points, respectively; ICBC, CCB, and PSBC saw a year-on-year decline, mainly due to a high net capital growth rate.

Figure 12: RORWA

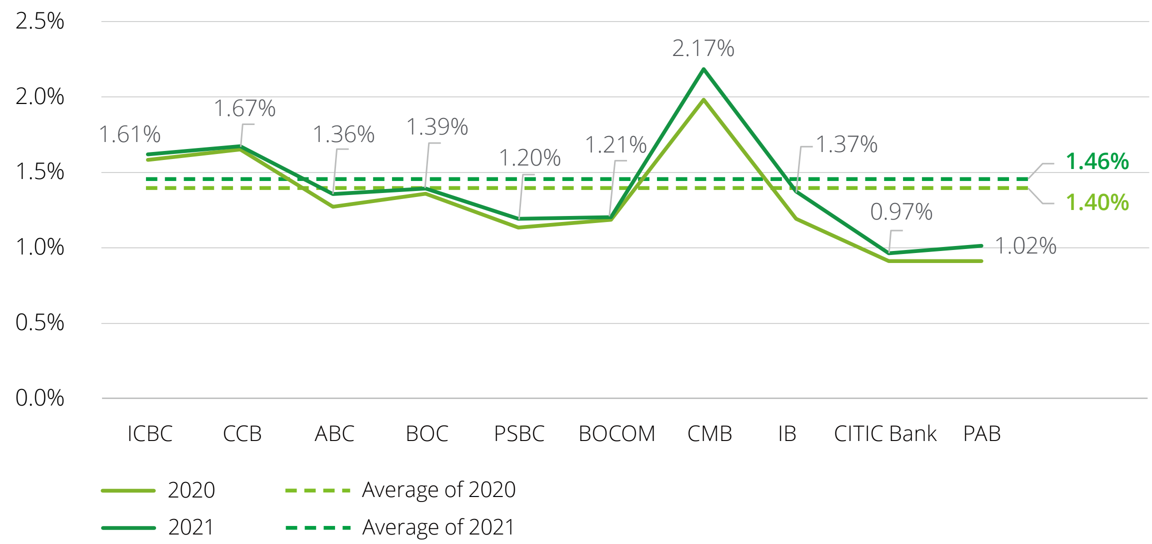
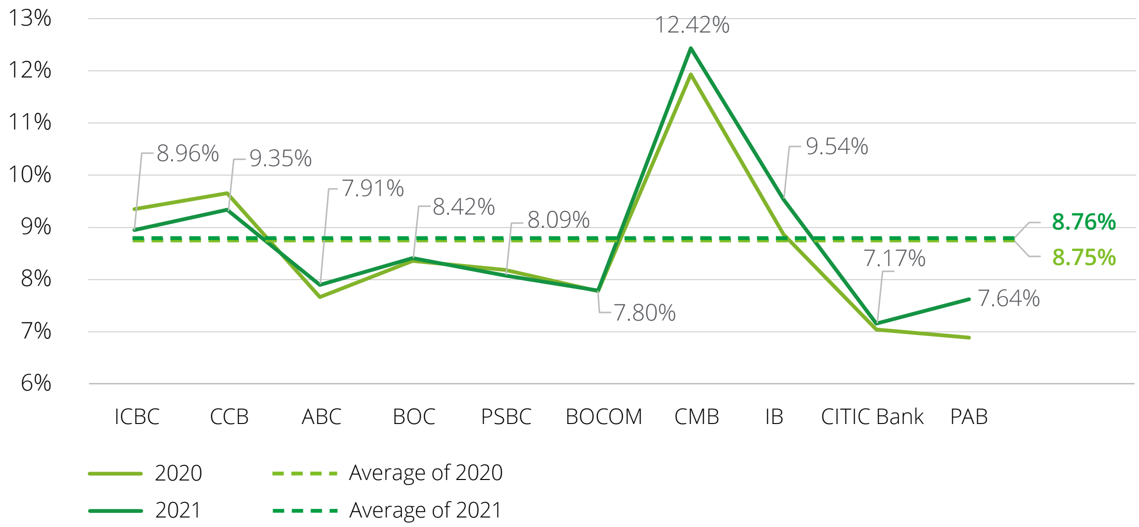


Figure 13: RAROC



Note: RAROC = net profit/net capital

Per capita net profit increase varied from banks

In 2021, domestic banks' average per capita net profit was RMB756,400, a year-on-year increase of 12.87%. Specifically, IB and CMB recorded much higher per capita net profits at RMB1,340,300 and RMB1,165,600, respectively; PSBC and ABC's per capita net profits were RMB394,600 and RMB531,500, lower than the average, which was mainly due to the expansion of outlets in towns and villages and the large number of employees. Employees of joint-stock banks increased. Specifically, CMB had 12,800 new employees this year. All large state-owned banks saw a decreased number of employees, except for CCB; among them, ICBC had 5,700 fewer employees this year, resulting in the growth of per capita net profit.

Figure 14: Per Capital Net Profit

Unit: RMB10,000

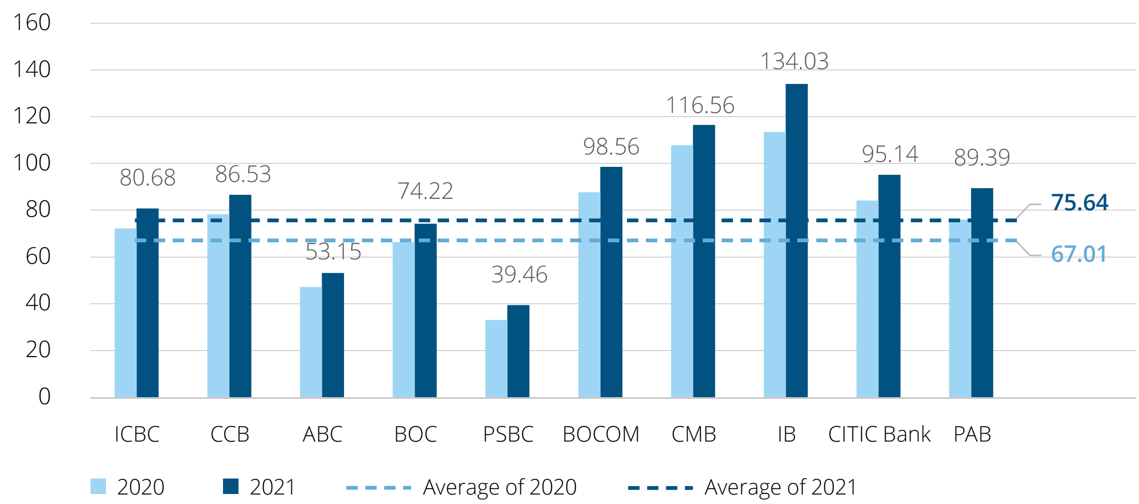


Table 4: Net Profit and Total Employees

Unit: RMB100 million/10,000 people

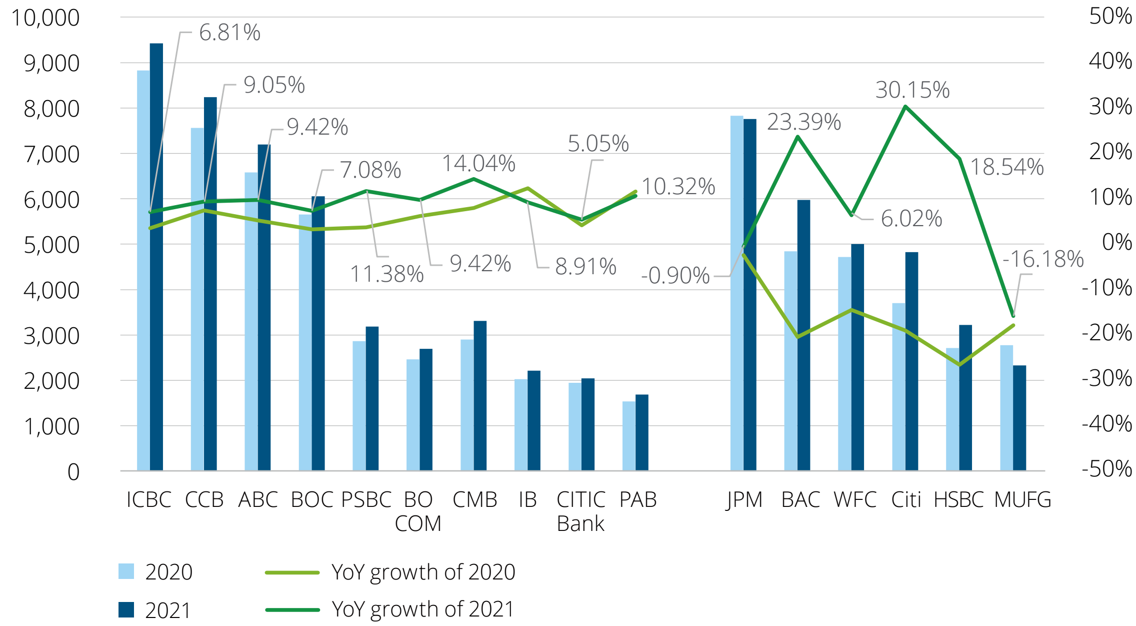
Item	ICBC	CCB	ABC	BOC	PSBC	BOCOM	CMB	IB	CITIC Bank	PAB
Net profit in 2021	3,502	3,039	2,419	2,273	765	889	1,208	838	564	363
Net profit in 2020	3,177	2,736	2,164	2,051	643	796	980	677	495	289
YoY increase	325	304	255	222	122	94	228	161	69	74
Employees at the end of 2021	43.41	35.13	45.52	30.63	19.39	9.02	10.37	6.25	5.93	4.07
Employees at the end of 2020	43.98	34.97	45.90	30.91	19.45	9.07	9.09	5.96	5.89	3.81
YoY increase	(0.57)	0.16	(0.38)	(0.28)	(0.06)	(0.05)	1.28	0.29	0.04	0.26

The operating income of domestic banks grew steadily, while that of foreign banks rebounded rapidly

In 2021, the operating income of domestic banks totaled RMB4,607.1 billion, up RMB370.8 billion year-on-year, or an overall growth rate of 8.75% (the growth rate was higher than that of 2020). Specifically, CMB, PSBC, and PAB saw double-digit growth; CMB recorded the highest year-on-year growth of 14.04%; IB and PAB's year-on-year growth slowed. The operating income of foreign banks totaled RMB2,910.7 billion, up RMB251.7 billion year-on-year, or an overall growth rate of 9.47%. Several foreign banks recorded a year-on-year increase in operating income, among which, Citi, BAC and HSBC grew 30.15%, 23.39%, and 18.54%, respectively, while JPM and MUFG recorded an income decline for two consecutive years (MUFG's operating income declined significantly). In China, several policies were introduced to guide domestic banks to support the recovery of the real economy. Therefore, in 2021, domestic banks saw stable revenue growth and continued increase in credit supply and investment, thus driving the increase of overall interest income. As the demand for various kinds of asset management increased, domestic banks enhanced investment in wealth management, custody and investment banking to further develop such non-traditional intermediate businesses, bringing additional intermediate business income. However, the overall operation of foreign banks was significantly affected by the COVID-19 pandemic, and their revenue fluctuated drastically. Many foreign banks maintained resilience and remarkably recovered amid the pandemic.

Figure 15: Operating Income

Unit: RMB100 million



Continuous support for the real economy drove reduction of interest rates; the scale factor supported the growth of interest income

In 2021, domestic banks' net interest income totaled RMB3,348.1 billion, up RMB165.2 billion year-on-year, with an average growth rate of 5.19%. The year-on-year growth rate of many banks slowed. Specifically, the net interest income of CITIC Bank decreased, and the net interest income growth rate of IB dropped significantly. In contrast, the growth rate of ICBC, PSBC, and CMB increased year-on-year—CMB recorded a growth rate of more than 10%, with an absolute amount exceeding RMB200 billion. The net interest income of foreign banks totaled RMB1,403.6 billion, down 4.07% on average. The year-on-year decline narrowed. Averagely, the net interest income of domestic banks accounted for 73% of their operating income; among them, PSBC's net interest income accounted for 85% of its operating income. Foreign banks' net interest income average accounted for 48% of their operating income. Generally, domestic banks assumed the responsibility of supporting the real economy, so they continued to increase credit supply. Net interest income was still their primary source of revenue.

Figure 16: Net Interest Income

Unit: RMB100 million

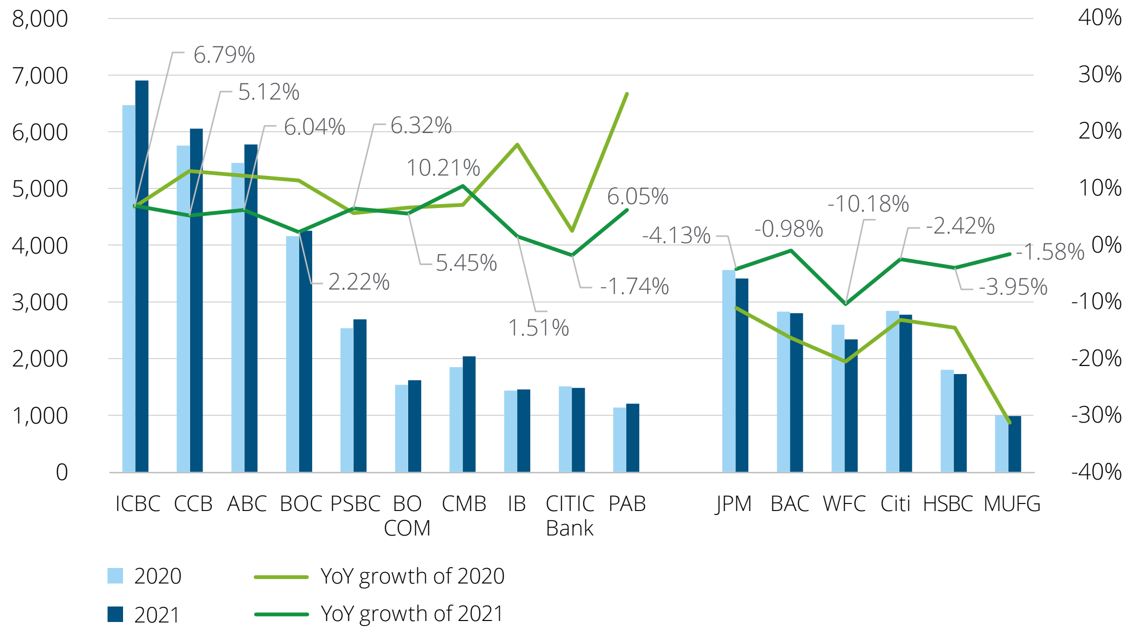
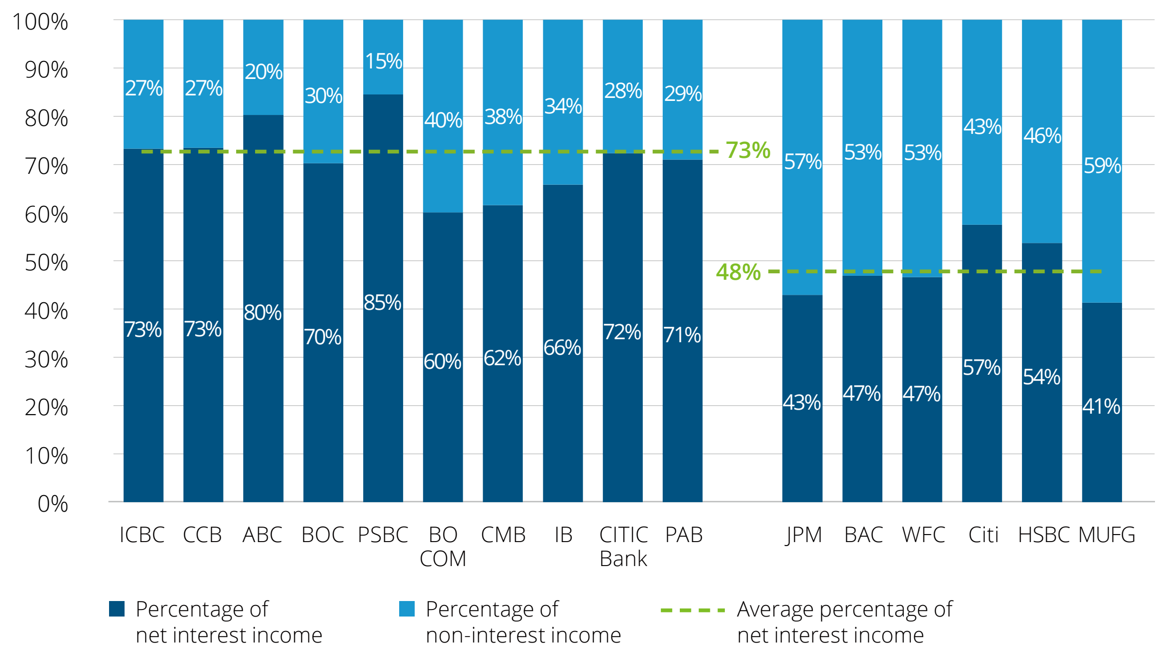
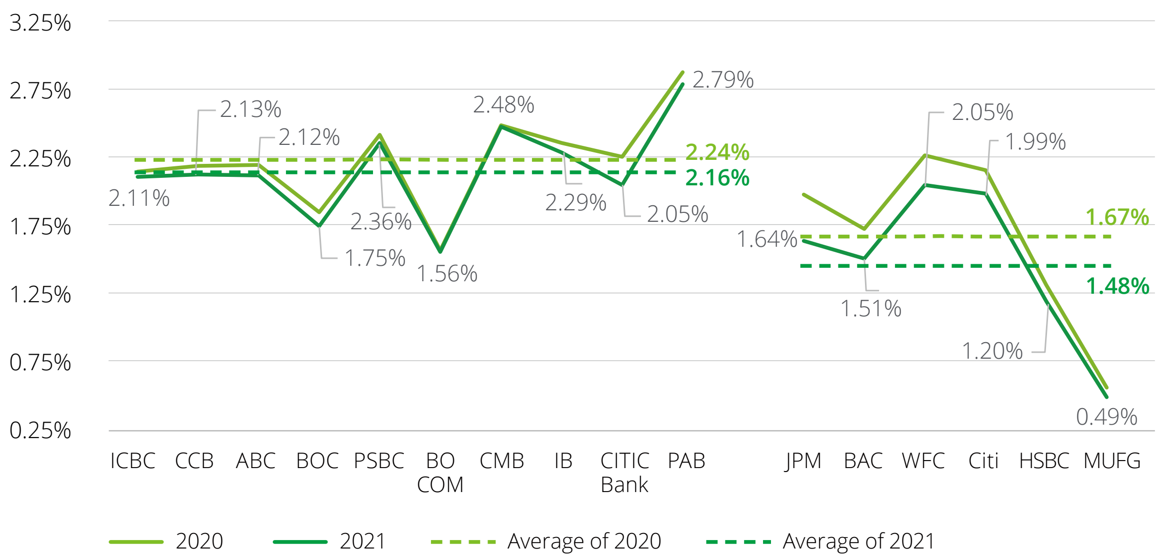


Figure 17: Proportion of Net Interest Income



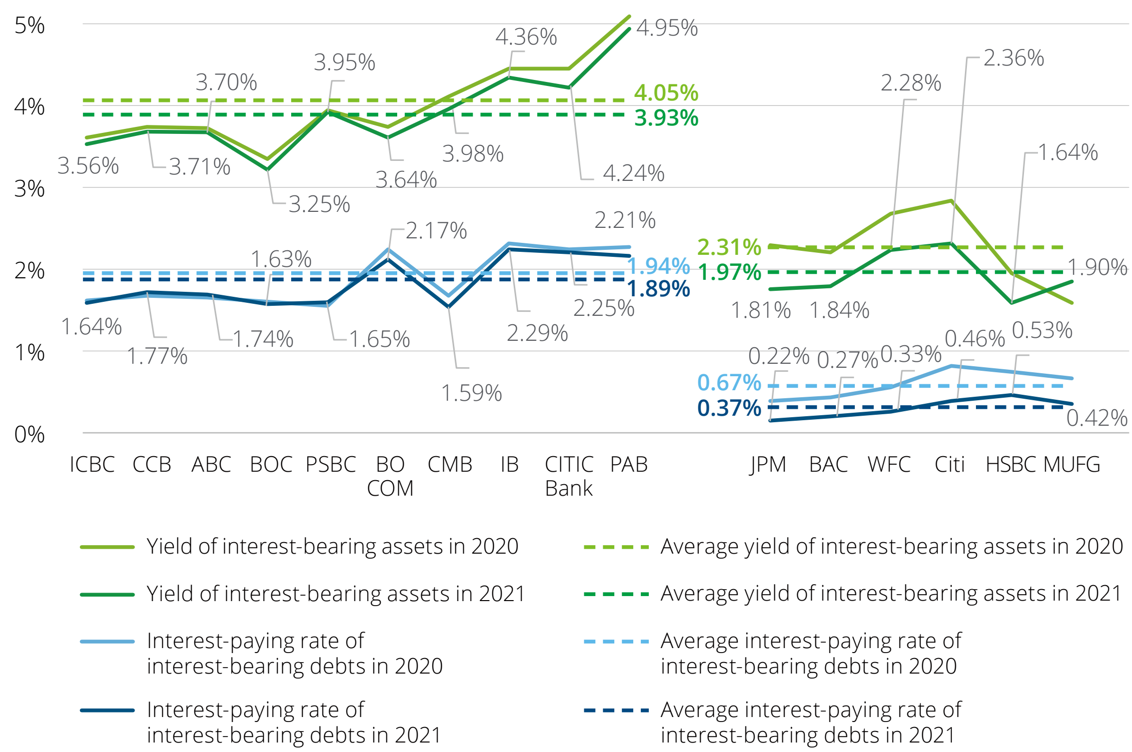
In 2021, domestic and foreign banks' average net interest margin of was 2.16% and 1.48 %, respectively, down eight basis points and 19 basis points year-on-year. On the whole, the domestic banking sector was guided by policies to further support the real economy through measures such as lowering lending rates and cutting fees, thus constantly reducing the financing cost of the real economy. In addition, the net interest margin further narrowed with the advancement of the LPR reform. The net interest margin of foreign banks fell to a record low. The market interest rates in Europe, US and Japan, remained low or negative, and there was not much room for their already low interest-paying cost rate to further decline, thus resulting in a more narrowed net interest margin compared with domestic banks. It is expected that domestic banks will face great challenges in maintaining a stable net interest yield in the future. First, the domestic demand has not recovered as expected, and some enterprises are still under considerable operation pressure. In 2022, policies will continue to focus on reducing the financing cost of the real economy. Second, the People's Bank of China ("PBC") will coordinate various government departments to maintain a regular deposit market, use monetary policy tools to adjust both the monetary aggregate and the monetary structure, maintain liquidity at a reasonable and ample level, and expand financing channels to benefit small and medium-sized enterprises, thus keeping the deposit liability cost stable.

Figure 18: Net Interest Margin



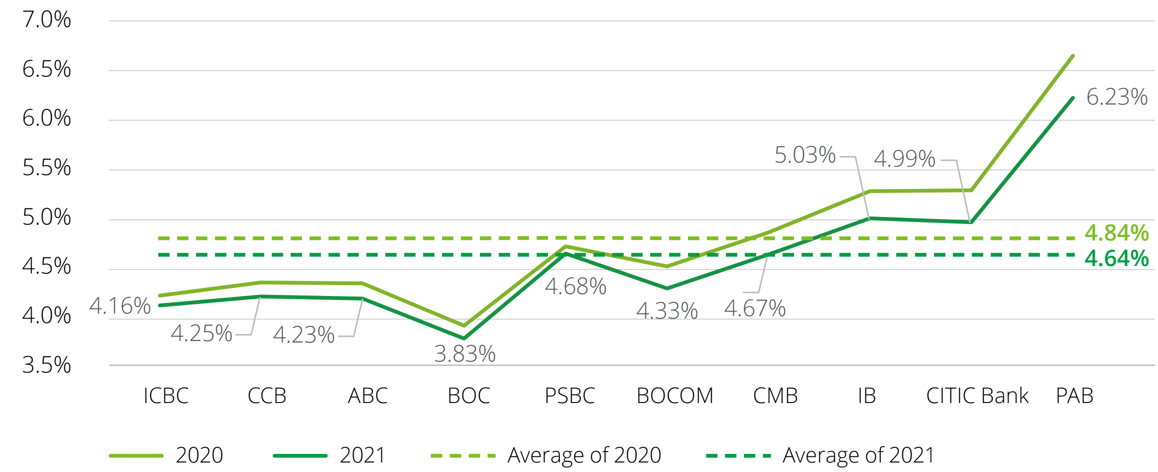
Specifically, domestic banks' average yield of interest-bearing assets and the average interest-paying rate of interest-bearing debts fell by 12 basis points and five basis points, respectively, leading to a narrowed net interest margin. That was because, for assets, the LPR cuts and banks' implementation of lower lending rates and fees to support the real economy drove down loan yields. While liabilities were mainly associated with customer deposits, banks faced great deposit competition pressure. Their liability costs did not benefit much from the low interest rates due to the relatively rigid core deposit costs. In the long run, the liability costs of the domestic banks will further decrease to better guide the loan interest rates to go down. The average yield of interest-bearing assets and the average interest-paying rate of interest-bearing debts of foreign banks decreased significantly by 34 basis points and 30 basis points, respectively, year-on-year, which was mainly affected by the pandemic. In 2020, central banks cut interest rates significantly, and monetary policies featured zero interest rates in major countries. To maintain a steady economic recovery, although inflationary pressure intensified in the first half of 2021, the US Federal Reserve remained patient in adjusting monetary policies and began to taper asset purchases at the end of the year. In 2022, major developed economies accelerated interest rate hikes due to inflationary pressure. At the same time, affected by the Federal Reserve's balance-sheet reduction plan, the net interest margin of foreign banks is expected to stabilize and gradually increase.

Figure 19: Yield of Interest-bearing Assets & Interest-paying Rate of Interest-bearing Debts



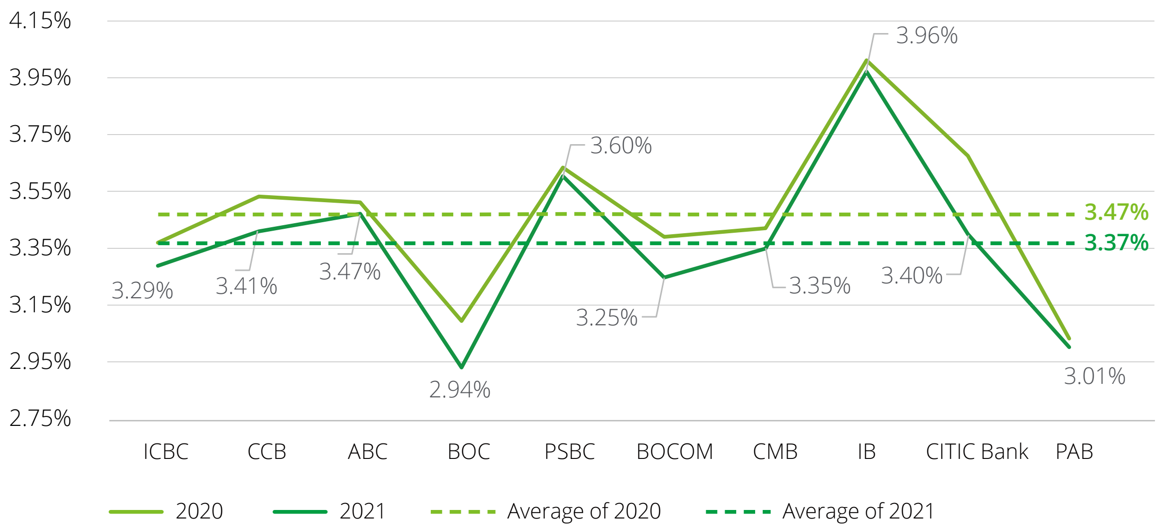
In 2021, domestic banks' average customer loan & advance yield and financial investment yield were 4.64% and 3.37%, respectively, down 20 basis points and ten basis points year-on-year. Domestic banks actively responded to the policy requirements, continued to lower interest rates and cut fees to support the real economy, and adjusted their credit structure, resulting in further declined loan yields. In addition, the one-year LPR was lowered to 3.80% in December 2021, and the one-year LPR and over-five-year LPR were lowered again to 3.70% and 4.60% in early 2022. Although the interest rates of long-term loans (such as mortgage loans) are generally adjusted on January 1, and the over-five-year LPR reduction has no immediate impact, domestic banks' loan yields are under pressure in the long run. The decline of financial investment yield was mainly caused by the decreased bond yield due to lower market interest rates. IB's financial investment yield stood at 3.96%, significantly higher than its peers.

Figure 20: Customer Loan & Advance Yield



Note: The bill discount business of PAB was not included in calculating the customer loan and advance yield.

Figure 21: Financial Investment Yield



In 2021, domestic banks' average deposit interest-paying rate was 1.82%, up four basis points year-on-year. Among them, ABC and CCB's deposit interest-paying rates were eight basis points higher than the previous year—ABC's interest-paying rates of corporate current deposits and individual fixed-term deposits were both higher than that of 2020; CCB's interest-paying rates of corporate deposits and individual fixed-term deposits were higher than that of 2020. Domestic banks' average interest-paying rate of interbank businesses was 1.91%, down seven basis points year-on-year, which was caused by market interest rate fluctuations. Among them, ICBC and BOCOM's interest-paying rate of interbank businesses fell sharply year-on-year, respectively by 40 and 32 basis points.

Figure 22: Deposit Interest-paying Rate

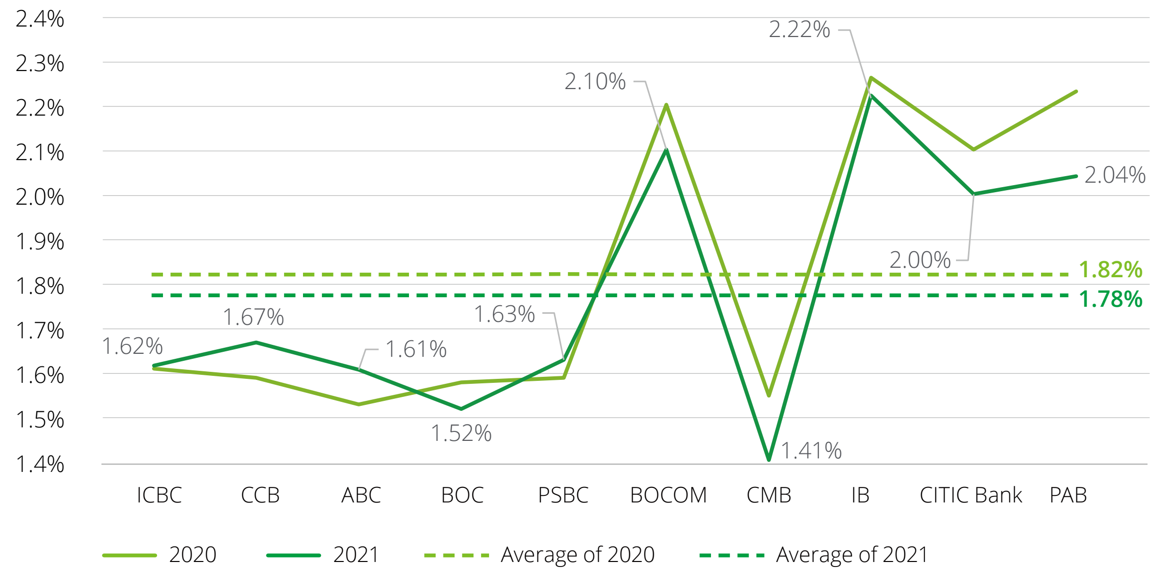
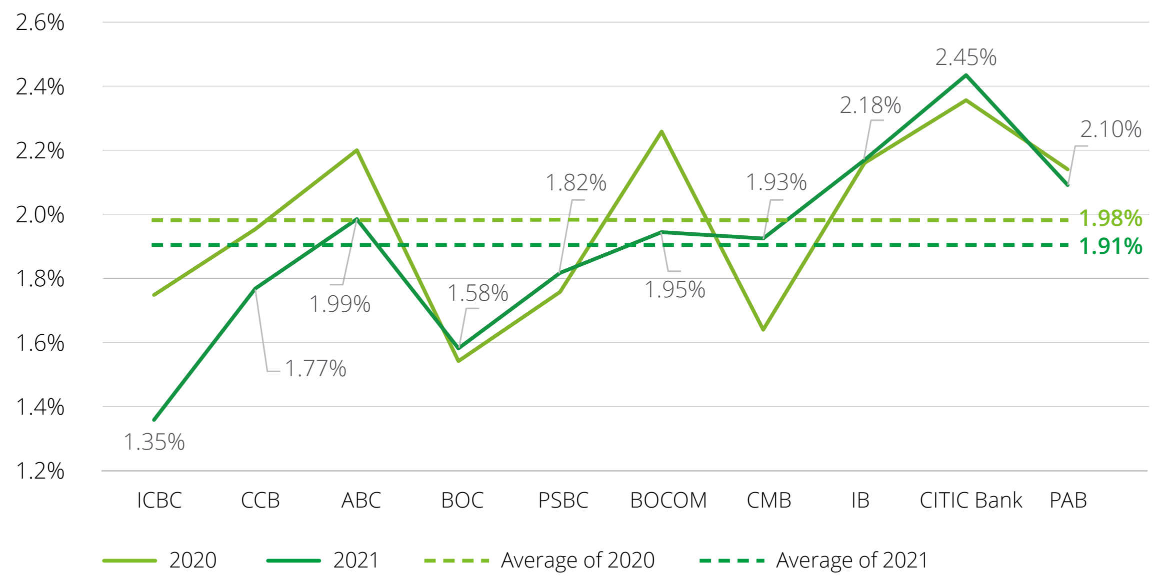


Figure 23: Interest-paying Rate of Interbank Businesses



Note: interbank businesses include interbank deposits and inter-financial institution deposits, loans from other banks and financial institutions, financial assets sold for repurchase, etc. (for BOC it also includes the liabilities to the People's Bank of China)

Transformation and upgrading of wealth management; high-quality development of intermediate business

In 2021, as banks attached great importance to customers' wealth management needs, domestic and foreign commercial banks' net income from commission charges increased from the previous year, with a higher growth rate. Domestic banks' net income from commission charges totaled RMB691.9 billion, up RMB58.8 billion year-on-year, or an average growth rate of 9.28%. Foreign banks' net income from commission charges totaled RMB785.8 billion, up RMB91.6 billion year-on-year, or an average growth rate of 13.19%. Among the state-owned banks, PSBC accelerated upgrading its wealth management system, transforming from simple product sales to diversified asset allocation for customers. Thus, PSBC recorded a rapid increase in income from commission charges of insurance agency, fund distribution and other proxy sales as well as wealth management businesses, with a year-on-year increase of RMB5.5 billion, up 33.42%.

In terms of the size and the proportion of net income from commission charges in the total operating income, both domestic and foreign banks saw a slight average increase. However, there was still a certain gap between domestic and foreign banks. In 2021, the domestic banks' net income from commission charges averagely accounted for 16.29% of their operating income, among which the average of state-owned banks and joint-stock banks were 13.00% and 21.21% respectively, lower than the overseas banks' 25.81%. Among the state-owned banks, PSBC recorded a single-digit proportion of intermediate business income over the past two years, indicating a great space for further development of intermediate businesses. Among the joint-stock banks, CMB's intermediate business income accounted for 28.51% of its total operating income, the only domestic bank with that proportion exceeding the average of the foreign banks. This is due to its continuous exploration of the 3.0 Era model while furthering the "light bank" strategic transformation proposed in 2014, highlighting the advantages of CMB's extensive wealth management business model.

Figure 24: Net Income from Commission Charges

Unit: RMB100 million

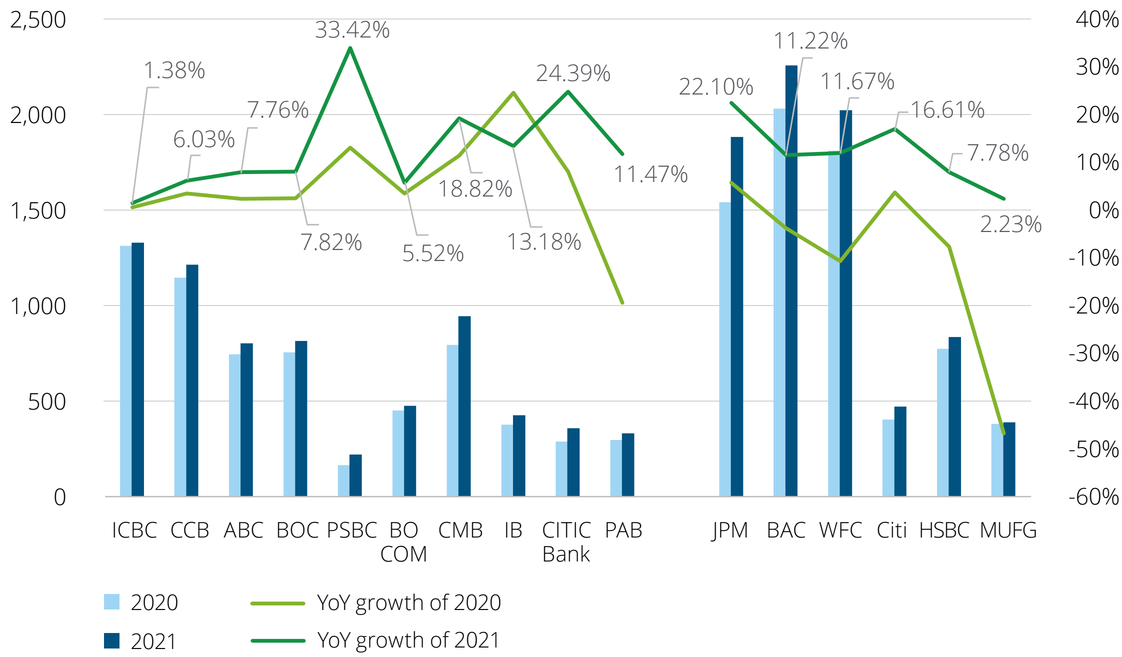
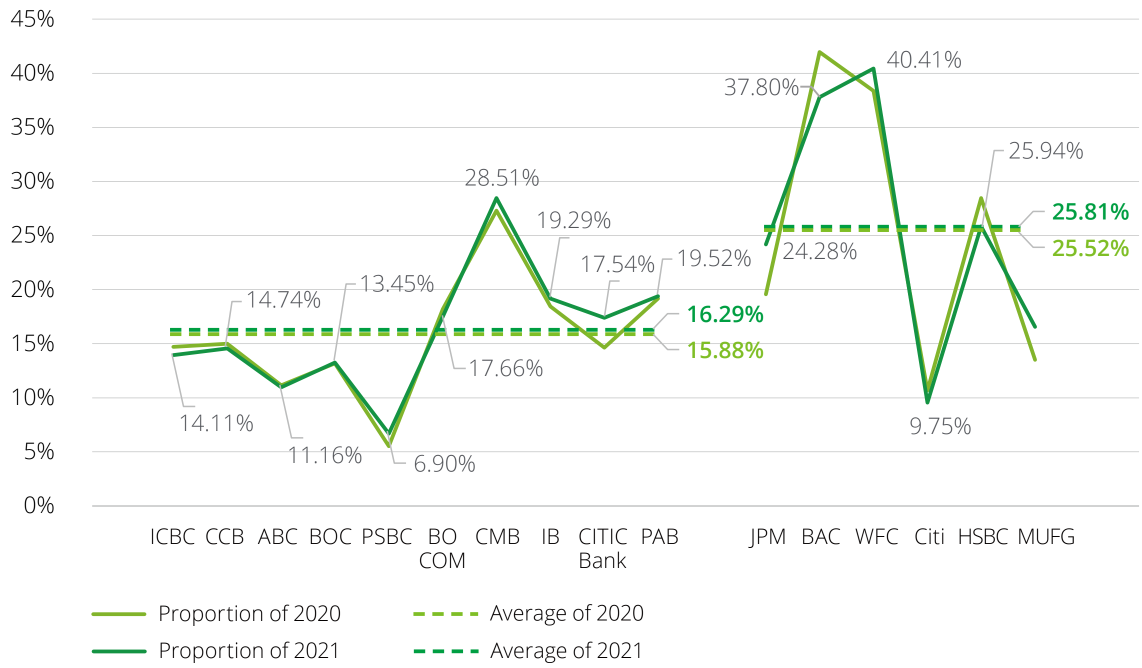


Figure 25: Proportion of Income from Commission Charges



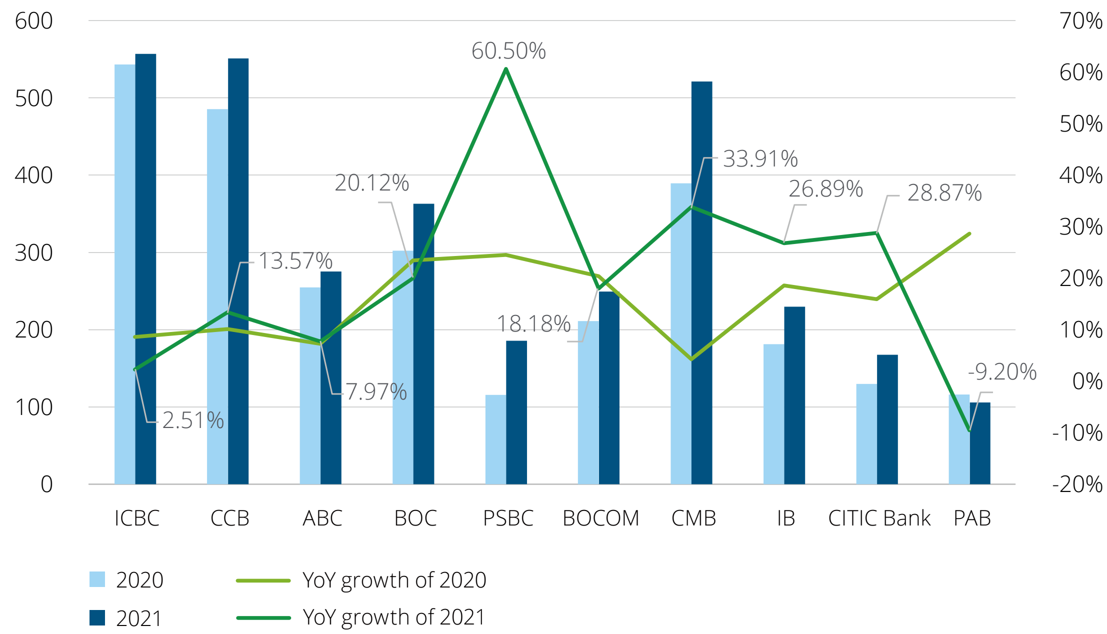
Asset management transformation accelerated; income from intermediate businesses increased

In 2021, according to the regulatory requirements, listed banks accelerated the transformation of asset management, enriched their wealth management products, and improved risk management. In the meantime, many banks vigorously developed agency businesses, boosting the income from intermediate businesses. In 2021, domestic banks' income from commission charges of wealth management, agency and custody businesses totaled RMB320.5 billion, an increase of RMB47.6 billion or 17.46%. CMB's income from commission charges of wealth management, agency and custody businesses totaled RMB52.1 billion in 2021, a year-on-year increase of 33.91%, which was mainly contributed by fund distribution, insurance, wealth management and other proxy sales businesses as well as the asset management business. In addition, BOC, PSBC, IB and CITIC Bank's year-on-year growth all exceeded 20%, among which PSBC saw a 60.50% increase, mainly due to the rapid income growth from the proxy sales business.

In 2021, China's average per-capita disposable income stood at RMB35,128, an increase of 9.1% over the previous year, or deducting the price factor of 8.1% in real terms. With increasing wealth, residents' demand for wealth management increased, gradually changing from pursuing high yields to asset preservation and appreciation through reasonable asset allocation. Sensing such market opportunities, commercial banks provided diversified comprehensive professional services and enhanced their financial service capabilities to accommodate customers' needs. As the transitional period of the New Asset Management Regulation (Guiding Opinions on Regulating the Asset Management Business of Financial Institutions) ends, domestic banks' wealth management products scale up steadily and the product structure continues to improve, which will better meet customers' diversified needs of wealth management. Commercial banks will further digital transformation in the future and leverage their business scenarios to tap the potential needs of customers and improve customer satisfaction, enhancing the contribution of wealth management business to the income of intermediate businesses.

Figure 26: Wealth Management, Agency and Custody Businesses

Unit: RMB100 million



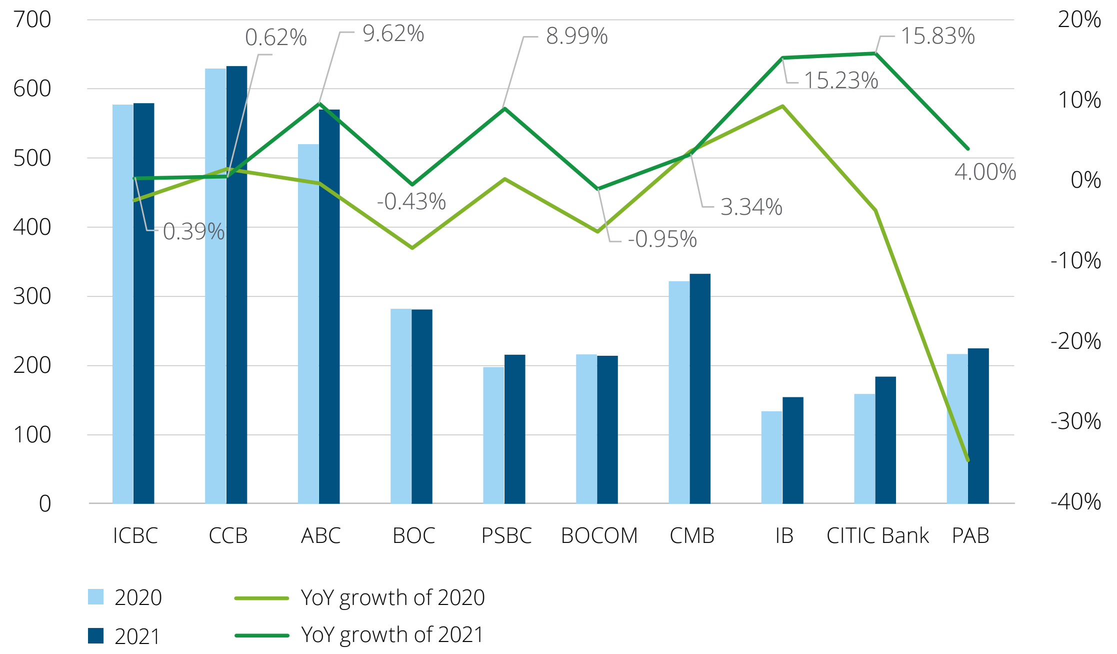
Note: In PAB's annual report, the income from commission charges of the wealth management business is included in "Others", so PAB's relevant data cannot be calculated and thus not shown in the figure above.

Income from the traditional intermediate businesses remained stable; electronic payment became a major growth point

In 2021, domestic banks generated revenue of RMB339 billion from the traditional intermediate businesses such as bankcard and settlement & clearing businesses, a slight increase of 4.17% from the previous year. ABC and PSBC grew by more than 8%, IB and CITIC Bank by more than 15%, and CMB and PAB by more than 3%, while the rest banks recorded a similar level as 2020. The remarkable growth of ABC, PSBC and IB was mainly because they focused on customers' financial demands, followed the mobile payment trend, and enriched their online payment products and channels, thus steadily expanding the electronic payment transactions and increasing relevant income.

Figure 27: Bank Card, Electronic Banking and Settlement & Clearing Businesses

Unit: RMB100 million

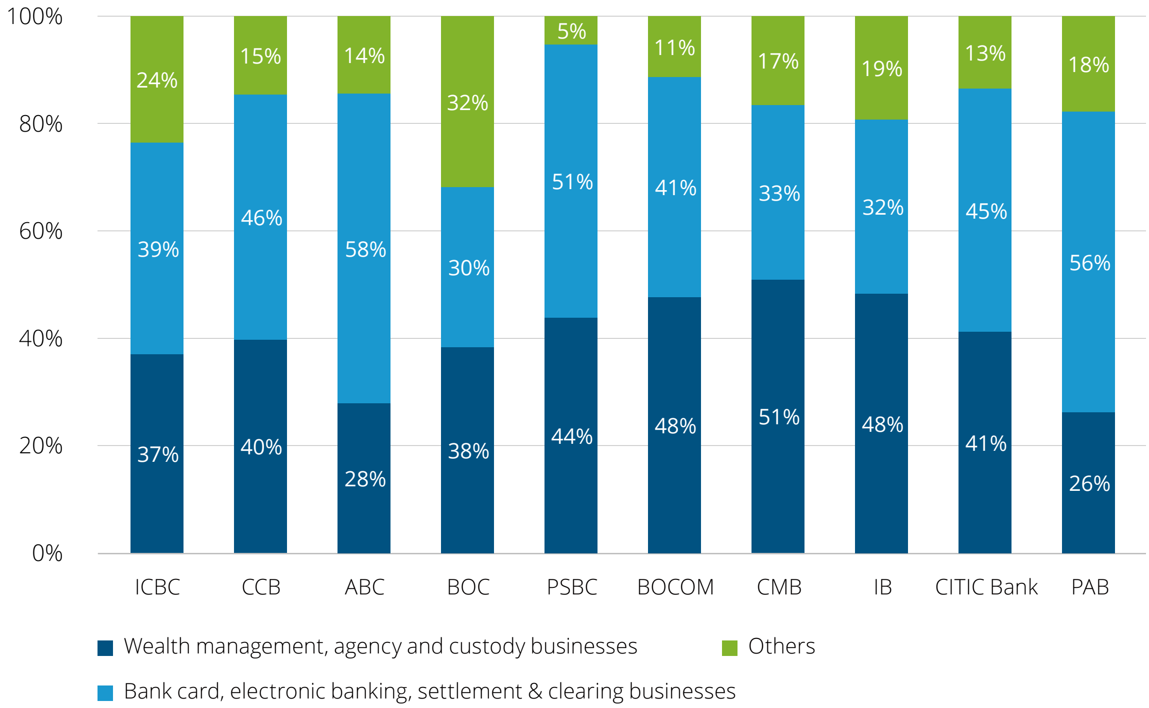


Note: According to the *Circular on Strictly Implementing the Accounting Standards for Business Enterprises and Effectively Strengthening the Work on the 2020 Annual Reports of Enterprises*, jointly issued by the Ministry of Finance, State-owned Assets Supervision and Administration Commission of the State Council, CBIRC and China Securities Regulatory Commission, in PAB's FY2021 annual report, the income from the credit card installment business, which was previously included in commission charges, was reclassified into interest income, and FY2020's comparative data were restated.

Income structure of the intermediate businesses changed slightly; wealth management became the major means of adjustment

The domestic banks' intermediate business income structure changed slightly. The average proportion of income from wealth management, agency and custody businesses in total commission income rose from 37% in 2020 to 40% in 2021; the average ratio of bank card, electronic banking, and settlement & clearing businesses decreased from 45% in 2020 to 43%; the proportion of other categories was stable. PSBC, CMB and IB emphasized improving the wealth management business to meet customers' diversified needs, thus seeing greater changes in their intermediate business income structure. The proportion of their wealth management, agency and custody business income increased by more than 5 percentage points. PSBC determined the Strategy of Boosting the Leapfrog Growth of Fee and Commission Income, and strengthened linkage between businesses to meet customers' wealth management needs. CMB continued to promote the comprehensive integration of various businesses under the extensive wealth management value chain of "Wealth Management-Asset Management-Investment Banking" to enhance the contribution of the income from extensive wealth management to the intermediate business income. IB accelerated the construction of the "wealth management ecosystem" to build a wealth management brand.

Figure 28: Commission Income Structure in 2021

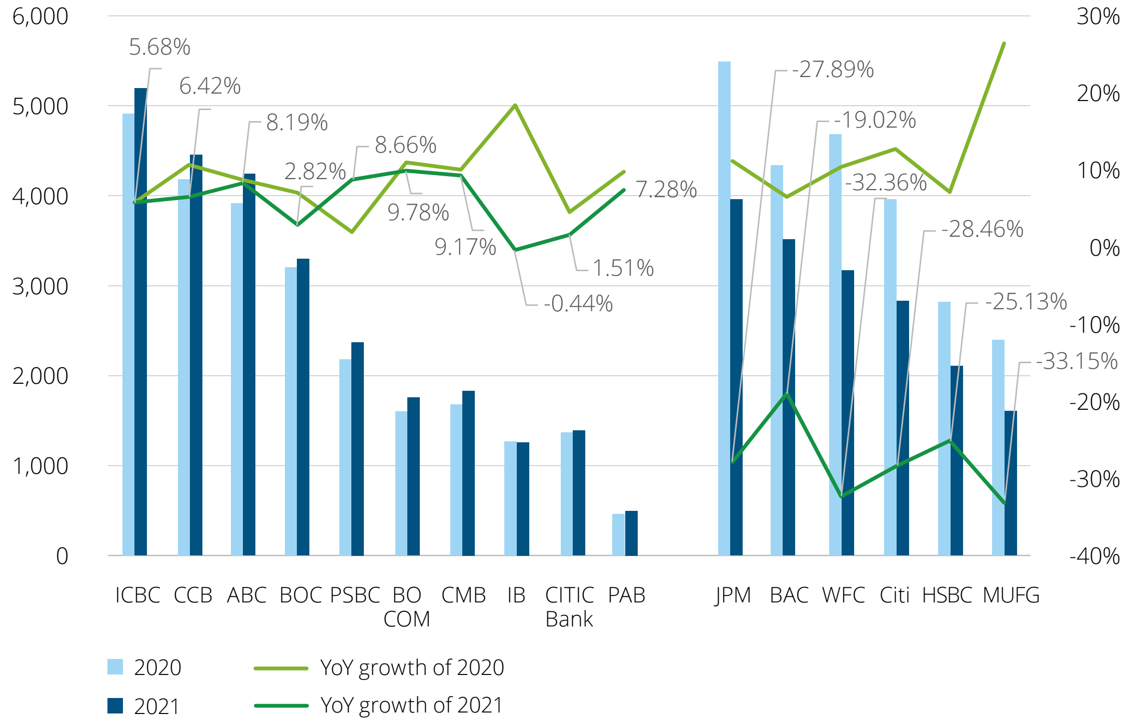


The causes for changes in operating expenses varied from domestic and foreign banks; impairment loss trended downward

In 2021, the operating expenses of domestic banks totaled RMB2,629 billion, up RMB150.8 billion or 6.08% year-on-year, among which, impairment losses were RMB1,041.1 billion, down RMB42.2 billion or 3.90% year-on-year, and the business and administration expenses amounted to RMB1,361.2 billion, an increase of RMB168.3 billion or 14.11% year-on-year. The operating expenses of foreign banks totaled RMB1,718.6 billion, a year-on-year decrease of RMB650.2 billion or 27.45%. Specifically, impairment losses were reversed by RMB142.8 billion, down RMB620.9 billion year-on-year; the business and administration expenses amounted to RMB1,752.9 billion, basically unchanged from 2020. Domestic banks' increase of operating expenses was mainly due to the double-digit increase in business and administration expenses, impairment losses declined but generally leveled off, while the foreign banks' sharp decline of operating expenses was brought about by the significant reversal of impairment losses.

Figure 29: Operating Expenses

Unit: RMB100 million

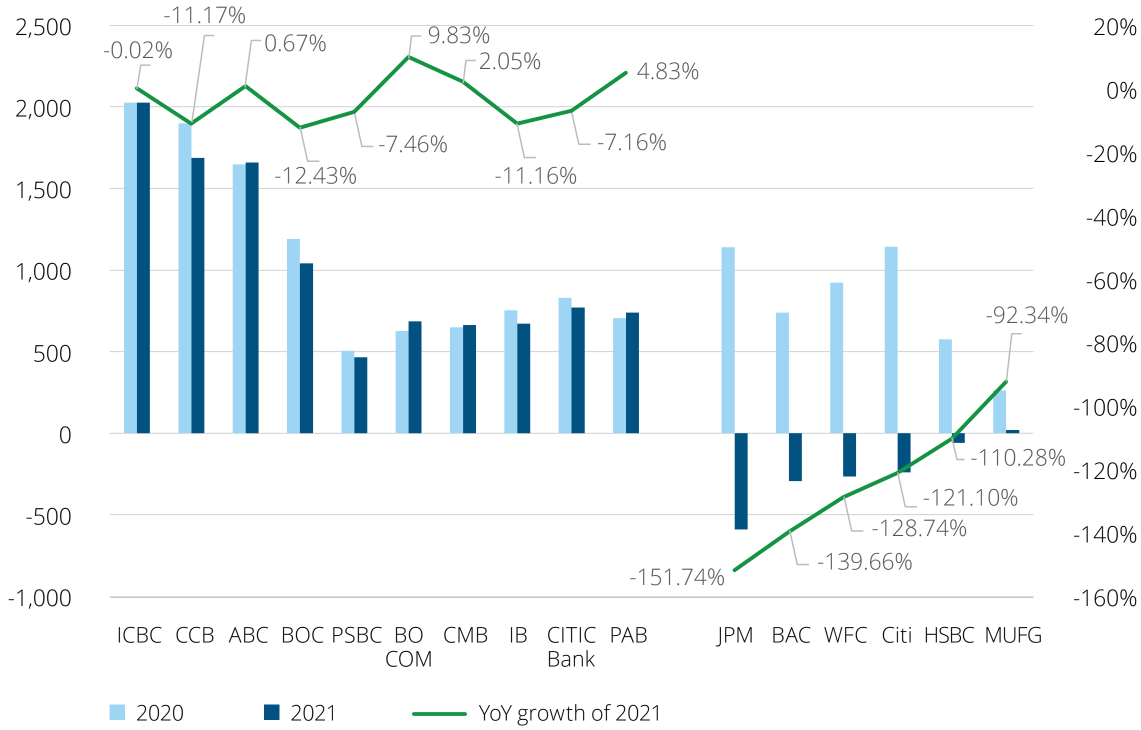


Foreign banks' impairment losses significantly reversed; domestic banks' asset quality stabilized

In 2021, domestic banks' total provision for impairment losses reached RMB1,041.1 billion, a year-on-year decrease of RMB42.2 billion or 3.90%, among which the decline of CCB, BOC and IB exceeded 10%. Foreign banks' reversed impairment losses totaled RMB142.8 billion, down RMB620.9 billion year-on-year, or 129.87%. The impairment loss provisions of the six foreign banks were reversed substantially. On the whole, foreign banks' impairment provisions fluctuated enormously, with an increase of 196% in 2020 and a decrease of nearly 130% in 2021. The asset quality of major foreign banks was impaired as a result of the COVID-19 impact on the global economy in 2020. In 2021, foreign countries introduced many macro policies to stimulate the economy, and the global economic recovery saw remarkable progress. The pandemic was well contained in China, which provided a better economic environment. Therefore, domestic listed banks saw steady operation, their asset quality was controllable, and they had adequate ability to resist credit risks amid the pandemic.

Figure 30: Impairment Losses

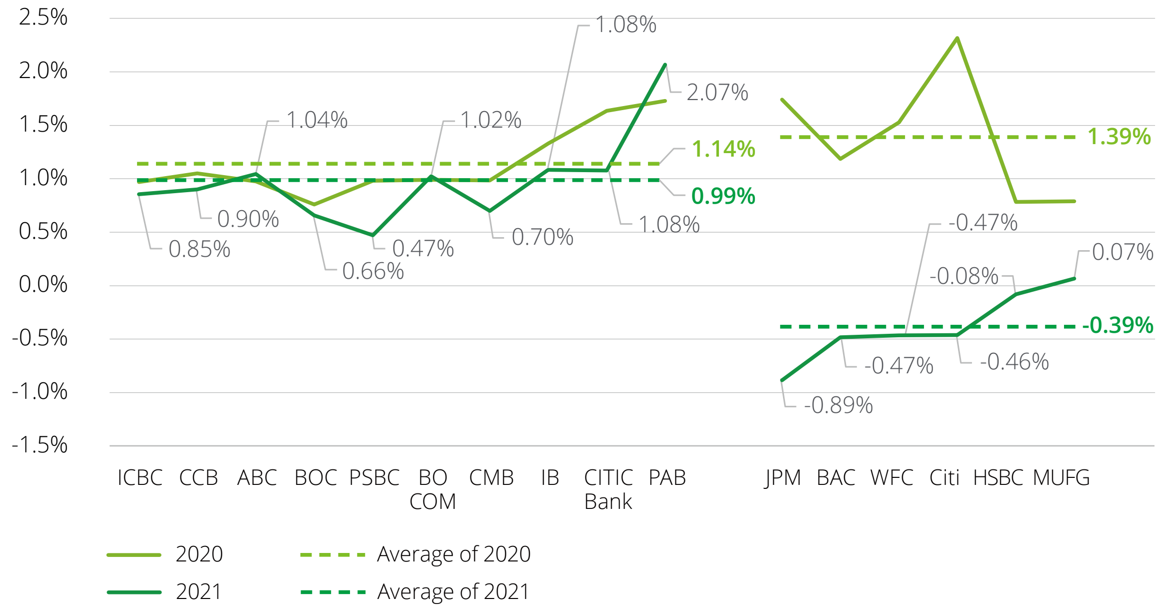
Unit: RMB100 million



Note: negative impairment losses indicate that the expected credit losses have been reversed.

In 2021, due to higher loan balances and lower impairment provisions, the average credit cost ratio of domestic banks fell to 0.99%, down 15 basis points from 2020. Among them, PSBC, CMB, IB and CITIC Bank saw a larger decline, with an average decrease of 40 basis points. Foreign banks' average annual credit cost ratio stood at -0.39%, down 178 basis points year-on-year. Overall, a slight increase in credit cost ratio was recorded at ABC, BOCOM and PAB, while that of other domestic and foreign banks trended down.

Figure 31: Credit Cost Ratio



Note: Credit cost ratio=credit impairment loss of loans/average loan balance

Social insurance reduction policy expires; staff costs rose slightly; business and administration expenses increased significantly

In 2021, domestic banks' business and administration expenses totaled RMB1,361.2 billion, an increase of RMB168.3 billion or 14.11%. Foreign banks' business and administration expenses totaled RMB1,752.9 billion, the same as the previous year. Specifically, Citi increased by RMB25.6 billion year-on-year, or 9.08%; WFC and MUFG saw a year-on-year decline of RMB32.8 billion and RMB26.7 billion, or 8.73% and 19.75%, respectively. Generally, domestic banks' business and administration expenses showed an upward trend; foreign banks have much higher business and administration expenses than domestic banks, mainly due to higher labor costs.

In 2021, staff costs of domestic banks totaled RMB747.7 billion, an increase of RMB84 billion year-on-year, or 12.65%. All domestic banks recorded double-digit growth in staff costs except PAB, and that of PSBC, CMB, IB, and CITIC Bank increased by more than 15% year-on-year. There were two major causes in the rise of domestic banks' staff costs. First, China's policy that cut corporate contributions to social insurance to help enterprises withstand the pandemic terminated; second, domestic banks increased investment in Fintech, and accelerated the construction of a professional talent team. Staff costs of foreign banks totaled RMB1,062.8 billion, a year-on-year increase of RMB51.4 billion or 5.08%.

Figure 32: Business and Administration Expenses

Unit: RMB100 million

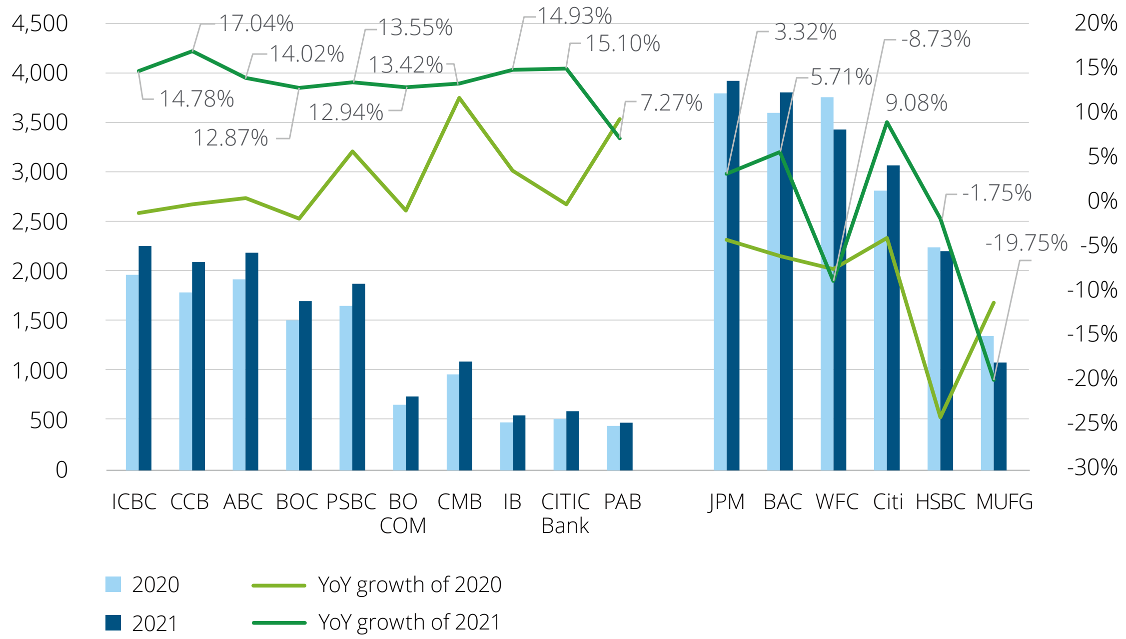
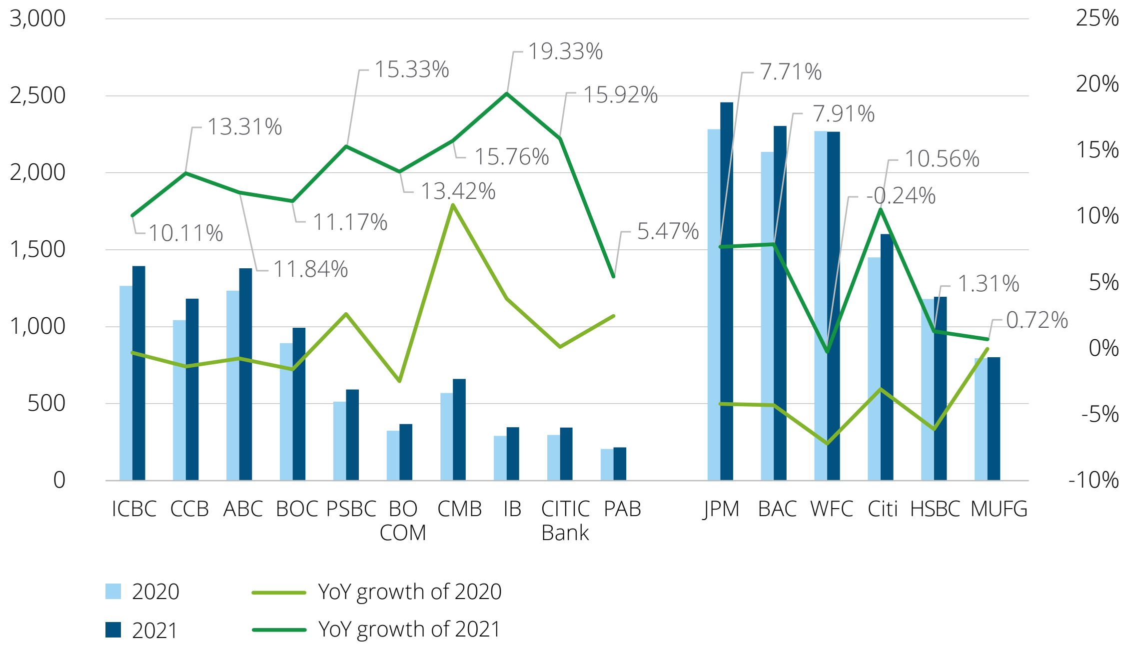


Figure 33: Employee Compensation

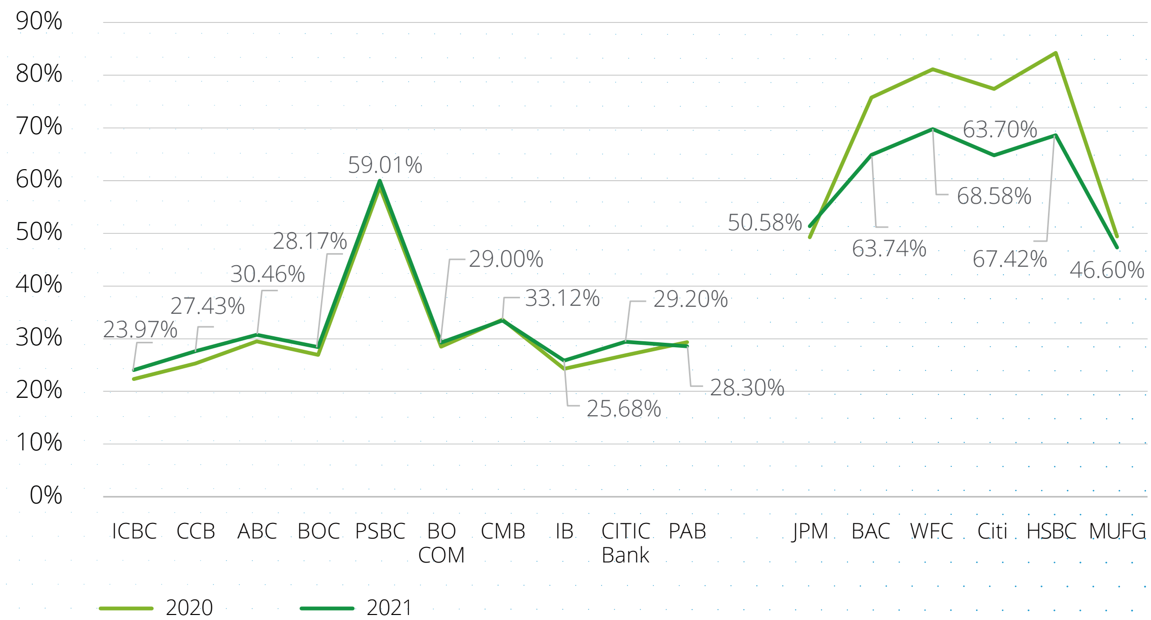
Unit: RMB100 million



Domestic banks increased investment in Fintech, resulting in a small increase in cost-income ratio; foreign banks' income growth led to a sharp decline of cost-income ratio

In 2020, the average cost-income ratio of domestic banks decreased, and that of foreign banks increased significantly. However, the overall situation changed in 2021. Domestic banks' average cost-income ratio was 31.43% in 2021, an increase of 4.22% year-on-year. CCB and CITIC Bank saw their cost-income ratio increase by more than 2 percentage points (2.31% and 2.55% respectively). CCB actively supports strategy implementation and digital operation, fintech investment and marketing expenditure rose remarkably; CITIC Bank enhanced investment in science and technology and accelerated its digital transformation. The average cost- income ratio of foreign banks was 60.10%, 8.21% lower than that of the previous year. Their business and administration expenses were basically the same as 2020, and their operating income achieved almost double-digit growth due to the improved global economy.

Figure 34: Cost-income Ratio



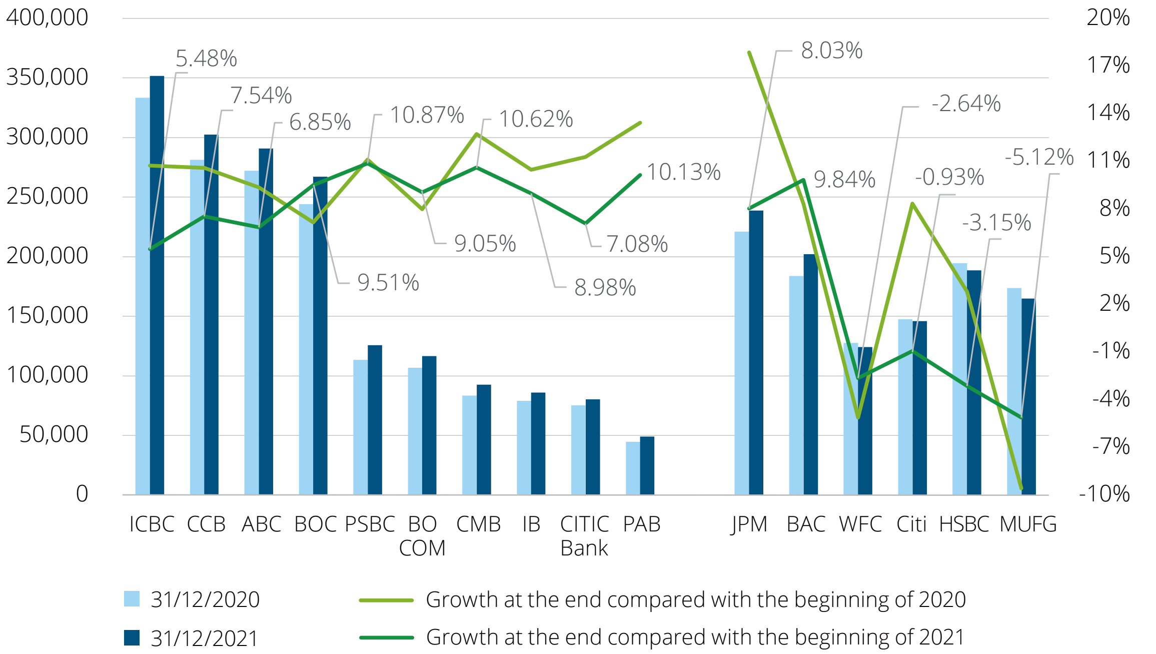
2.2 Assets

Domestic banks' asset expansion slowed; foreign banks' asset scale changes varied

At the end of 2021, the assets of the six large state-owned banks totaled RMB145.47 trillion, an increase of RMB10.33 trillion compared with the beginning of the year, representing an average growth rate of 7.65%. Among them, PSBC's total assets grew 10.87%, ranking the first among the six state-owned banks; BOC and BOCOM's growth was faster than the previous year. The assets of the four joint-stock banks totaled RMB30.82 trillion, an increase of RMB2.59 trillion compared with the beginning of the year, with an average growth rate of 9.14%. Among them, the growth rate of CMB was 10.62%, and the growth of all the four joint-stock banks was lower than the previous year. The total assets of the six foreign banks reached RMB106.44 trillion, an increase of RMB1.61 trillion compared with the beginning of the year, with an average growth rate of 1.53%. BAC recorded the fastest growth rate at 9.84%, followed by JPM at 8.03%; the other four foreign banks saw a negative asset growth. Generally, as of the end of 2021, the four state-owned banks were at an absolute leading position in terms of asset scale. The total assets of domestic banks in this period was on the rise, but the growth rate of most banks slowed year-on-year. For foreign banks, the changes in asset scale varied, with some showing a negatively growing trend.

Figure 35: Total Assets

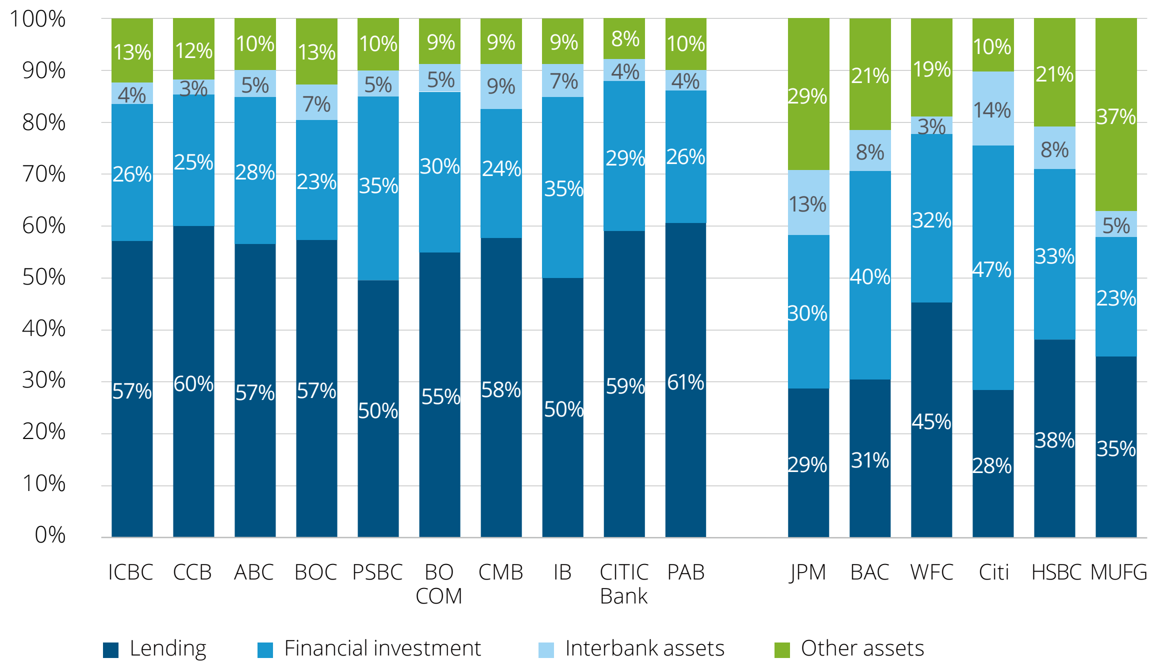
Unit: RMB100 million



At the end of 2021, the average proportion of domestic banks' lending, financial investment and interbank assets were 56.32% (up 1.59 percentage points from the beginning of the year), 28.12% (down 0.07 percentage points) and 5.28% (down 0.55 percentage points), respectively. Lending was still a major component in domestic banks' asset structure. The large state-owned banks increased their loan supply; thus their lending proportion rose. Among them, ABC's lending proportion increased by more than 3.11% compared with the beginning of the year. Domestic banks' financial investment, interbank assets and other assets accounted for a lower proportion on average in 2021.

The lending proportion of foreign banks was generally lower than that of domestic banks, and they focused on different aspects in asset allocation. At the end of 2021, the average proportion of foreign banks' financial investment increased by 0.26 percentage points compared with the beginning of the year. Against the backdrop of the economic downward pressure caused by COVID-19 and global political frictions, following the guiding principles of the Central Economic Work Conference, domestic banks increased loan supply to better support the real economy. Foreign banks enhanced financial investment to promote economic recovery.

Figure 36: Asset Composition



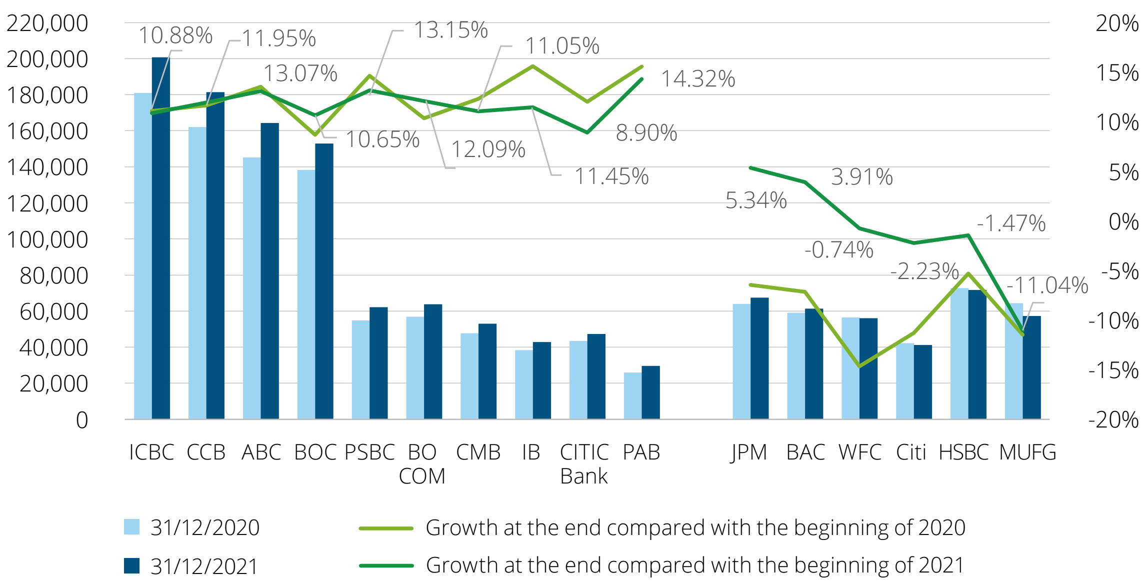
Loans grew steadily; credit structure improved

In 2021, to consolidate the outcomes of effective COVID-19 response and the achievements of economic and social development, the People's Bank of China maintained a proper and adequate level of liquidity supply and applied a combination of monetary policy tools such as reserve requirement ratio cuts, re-lending and rediscounting to ensure steady growth of total credit. Domestic banks' increase of loans and advances reached a new high, but the growth rate of loans declined.

Specifically, the book value of loans and advances issued by domestic banks at the end of 2021 totaled RMB100.08 trillion, an increase of RMB10.44 trillion or 11.65% compared with the beginning of the year. The growth rate of loan supply decreased slightly by 0.13 percentage points year-on-year. CCB, BOC and BOCOM saw a higher year-on-year growth rate of loan supply, while the growth rate of all other domestic banks declined year-on-year. The loan growth of IB and CITIC Bank decreased by 4.15 percentage points and 3.12 percentage points, respectively. The book value of loans and advances issued by foreign banks totaled RMB35.83 trillion, slowing down RMB0.59 trillion from the beginning of the year, with an average decline of 1.63%. JPM and BAC's loans increased, while the other four banks declined. Overall, against the backdrop of a stable domestic epidemic, domestic banks intensified their support for the real economy, resulting in a steady increase in loans; with the global economic recovery, foreign banks' balance of loans and advances declined at a slower rate than 2020.

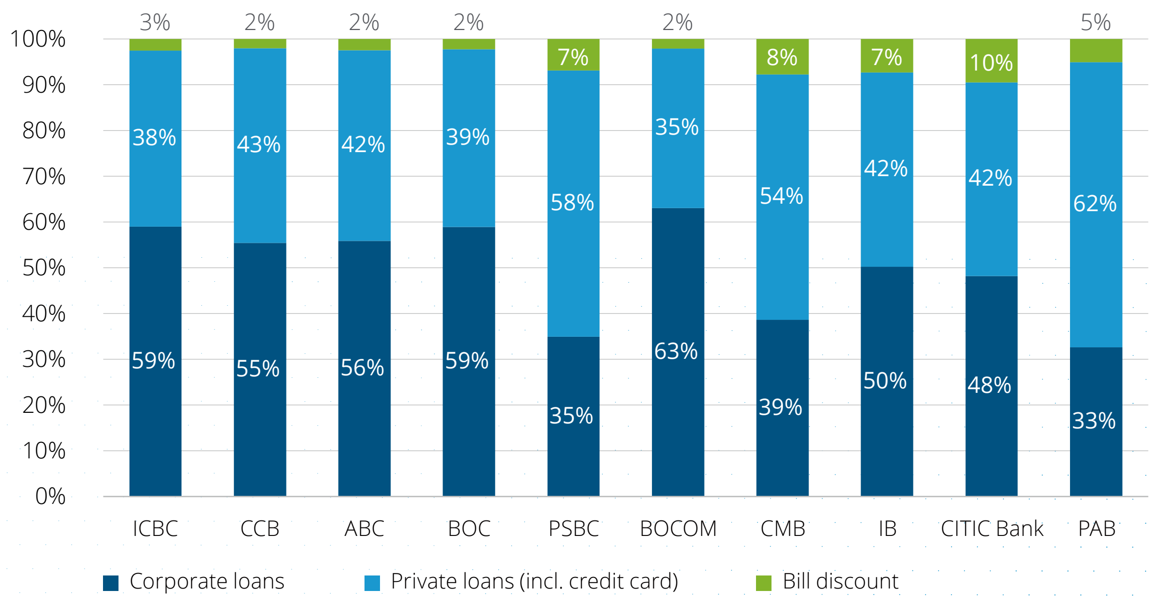
Figure 37: Book Value of Loans and Advances

Unit: RMB100 million



Regarding credit asset structure, retail loans were a major component of domestic banks' credit loans in the context of expanding domestic demand and boosting consumption. At the end of 2021, the average proportion of domestic banks' corporate loans, private loans and bill discount balances were 53.81% (down 0.22 percentage points from the beginning of the year), 42.67% (up 0.07 percentage points) and 3.52% (up 0.15 percentage points), respectively. BOCOM's corporate loans accounted for 63.08%, the highest proportion among the domestic banks; PAB recorded the highest proportion of private loans at 62.36%, followed by PSBC at 58.20%; CITIC Bank's bill discount business recorded the highest proportion at 10%.

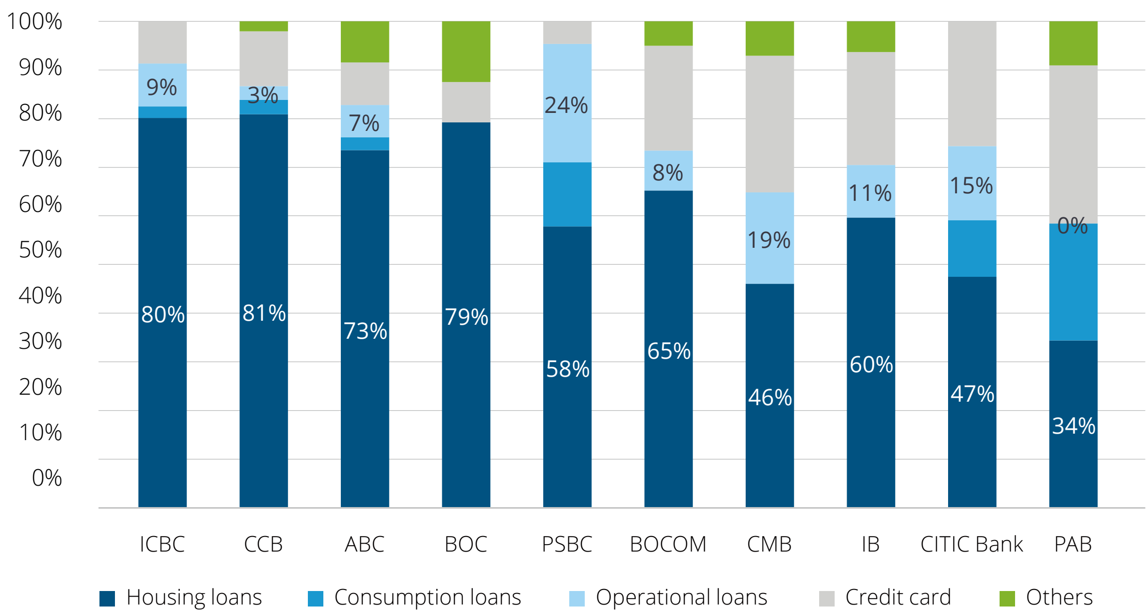
Figure 38: Credit Asset Structure



Regarding the structure of private loans, at the end of 2021, the average proportion of domestic banks' housing loans was 69.65%, down 0.69 percentage points from the beginning of the year. Credit card loans accounted for an average of 13.22%, down 0.33 percentage points from the beginning of the year. The average proportion of individual operational loans was 8.13%, up 0.99 percentage points from the end of the year. The growth of individual operational loans reflected the domestic banks' practical actions in supporting the small and micro enterprises, individual businesses, and farmers' agricultural production.

With the implementation of the concentration management system in real estate loans, although the proportion (an average proportion of 75.41%, down 0.58 percentage points from the beginning of the year) of individual housing loans declined at the end of 2021, individual housing loans were still the most important part of the private loan business for the six state-owned commercial banks. The average proportion of individual housing loans of the four joint-stock banks was 47.80%, down 1.11 percentage points from the beginning of the year.

Figure 39: Private Loan Structure (31/12/2021)

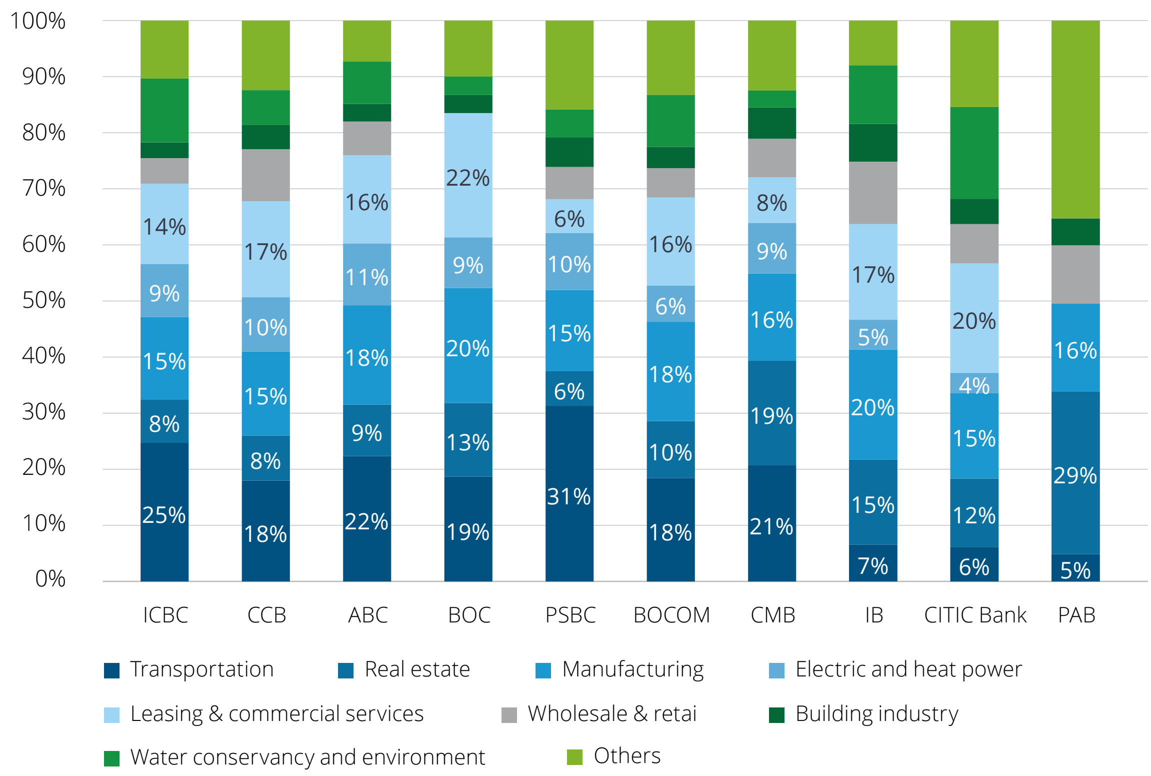


Note: BOC did not separately disclose the balance of consumption loans and operational loans; BOCOM, CMB, IB and PAB did not separately disclose the balance of consumption loans; PAB's consumption loans mainly included the separately disclosed "Xinyidai" and automobile loans, excluding the petty consumption loans disclosed in "others".

In 2021, domestic banks enhanced their support for the real economy and increased their lending to transportation, leasing & commercial services, manufacturing, and other key fields. The lending to leasing & commercial services, transportation, and manufacturing respectively increased by RMB1.23 trillion, RMB1.21 trillion, and RMB0.90 trillion from the beginning of the year.

Due to the concentration management system of real estate loans and the exposure of real estate risks, the growth rate of domestic banks' real estate loans declined significantly. Real estate loans grew by RMB337.8 billion from the beginning of the year, an increase of only 6.26%, much lower than the 11.65% average growth rate of loans. In 2021, the proportion of real estate loans was 10.32%, down 0.48 percentage points from the beginning of the year. PSBC, BOCOM, and PAB saw a growing proportion of real estate loans, while that of the rest domestic banks all trended down.

Figure 40: Corporate Loan Structure (31/12/2021)



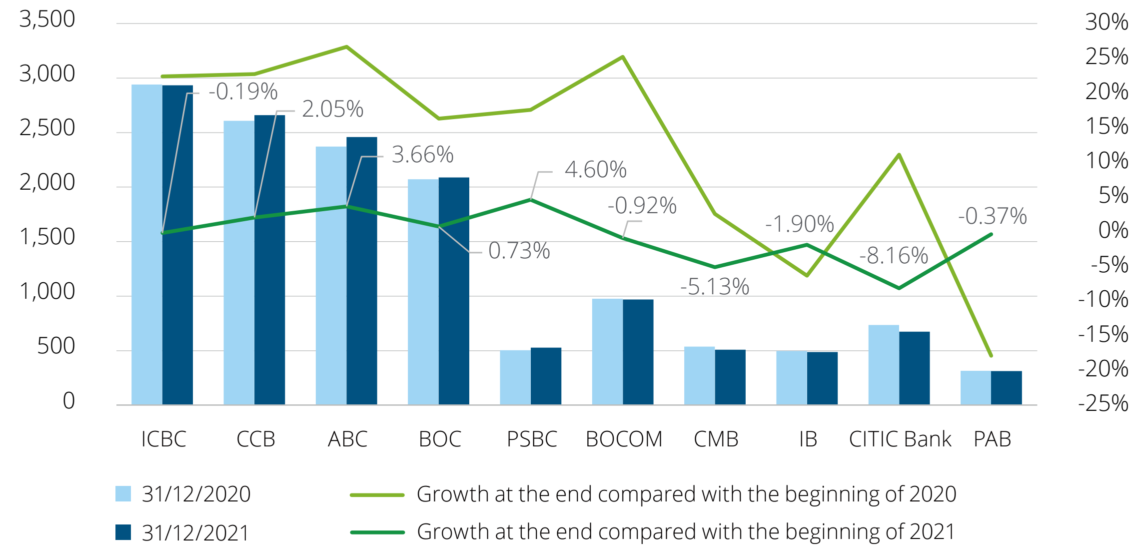
Note: PAB did not separately disclose loans to the leasing and commercial services, water conservancy & environment, and electric & heat power sectors; BOC did not separately disclose loans to the wholesale & retail sector. In addition, to make the banks' data comparable, the proportions were calculated with notes discounted.

Loan quality improved steadily; non-performing loan ratio dropped significantly

In 2021, China's economy continued to recover, varying in different regions and industries. Some enterprises and individuals could not repay their loans, so banks faced challenges in controlling asset quality. Domestic banks strengthen risk management, and their asset quality remained stable. At the end of 2021, the outstanding nonperforming loans of domestic banks totaled RMB1,361.9 billion, increasing RMB6.6 billion from the beginning of the year.

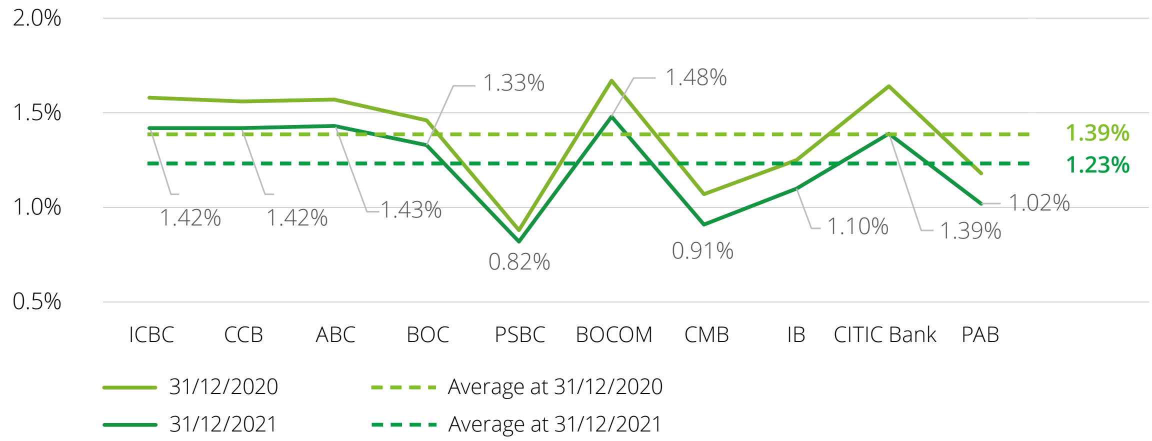
Figure 41: Non-performing Loan Balance

Unit: RMB100 million



Domestic banks' average non-performing loan ratio was 1.23%, down 0.16 percentage points from the beginning of the year. The non-performing loan ratio of all domestic banks trended down. Specifically, CITIC Bank saw the largest decline by 0.25 percentage points; PSBC's non-performing loan ratio was still the lowest at 0.82%. CMB's non-performing loan ratio fell to 0.91%. In general, domestic banks' non-performing loans did not change much from the beginning of the year, but their average non-performing loan ratio declined significantly.

Figure 42: Non-performing Loan Ratio



Structural risks of loans were exposed; non-performing ratio in the mining and real estate sectors increased substantially

In 2021, China achieved remarkable outcomes in coordinating the COVID-19 response with economic and social development. Domestic banks strictly controlled incremental risks and continued optimizing credit assets' quality. The average non-performing loan ratio of corporate loans was 2.02%, down 0.25 percentage points from the beginning of the year. Affected by the pandemic, a high average non-performing loan ratio was recorded in the wholesale & retail, mining, and manufacturing sectors. The non-performing loan ratio in the real estate sector increased significantly.

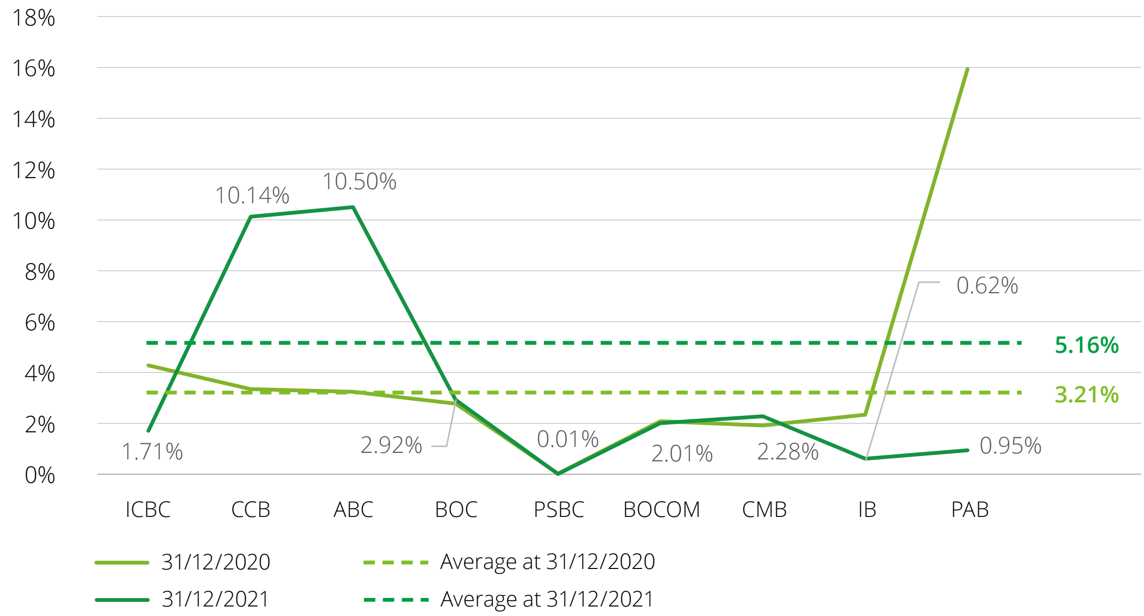
Figure 43: Industries with A High Non-performing Loan Ratio

Note: BOC did not disclose its non-performing loan ratio in the wholesale & retail sector; CITIC Bank did not disclose its non-performing loan ratio in the mining sector.

The tightening of regulatory policies, eliminating outdated production capacity, and banks' increasingly strict standards for identifying non-performing loans led to fluctuating non-performing loan ratios in some industries, such as mining and real estate. At the end of 2021, the average non-performing loan ratio with mining companies was 5.16%, up 1.95 percentage points compared with the beginning of the year, the highest among all industries. ABC and CCB saw a rapidly growing non-performing loan ratio in the mining sector, which rose 7.25 percentage points and 6.79 percentage points. PAB's non-performing loan ratio in the mining sector dropped 14.98 percentage points respectively.

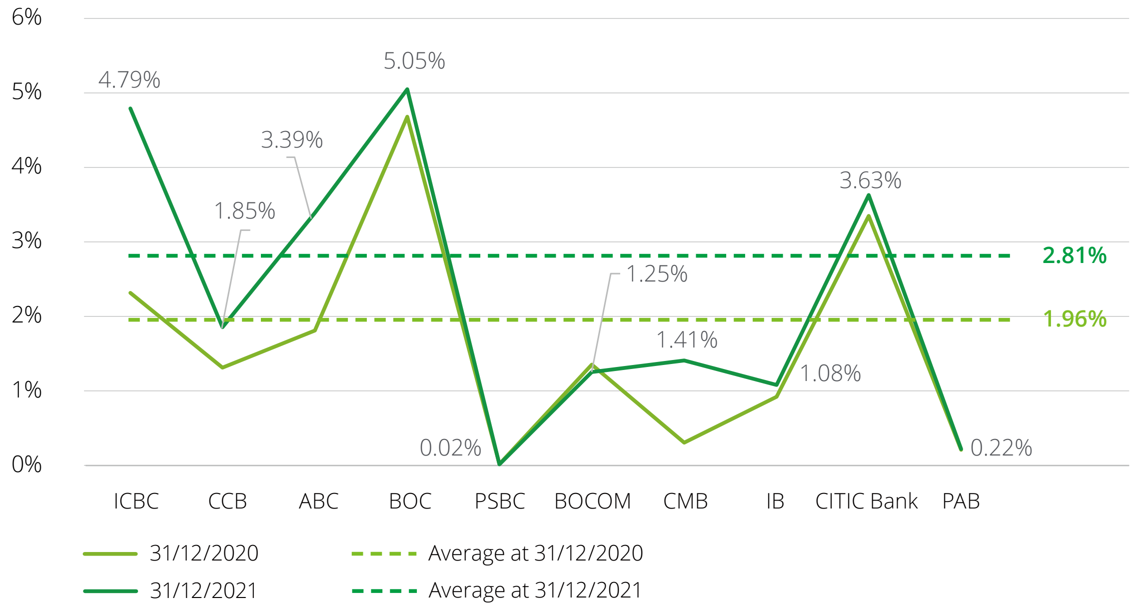
Since the second half of 2021, risks driven by various factors begun to emerge in the real estate sector. Some real estate enterprises with a high leverage ratio suffered capital chain rupture. Therefore, credit risks were exposed. The asset quality of banks' real estate business was undermined. Domestic banks' average non-performing loan ratio in the real estate sector was 2.81%, up 0.85 percentage points from the beginning of the year, second only to the mining industry. ICBC and ABC saw a faster growing non-performing loan ratio in the real estate sector, respectively rising by 2.47 percentage points and 1.58 percentage points.

Figure 44: Average Non-performing Loan Ratio in the Mining Sector



Note: CITIC Bank did not disclose its non-performing loan ratio in the mining sector.

Figure 45: Average Non-performing Loan Ratio in the Real Estate Sector



Adhered to the principle that houses are for living in, not for speculation to facilitate the healthy and steady transformation of the real estate sector

In 2021, the implementation of the "three red lines" policy and the concentration management system of real estate loans tremendously affected the development of the real estate sector. Some real estate enterprises could not sustain their cash flow, and residents' house-purchase willingness declined. To reverse the market expectations, in October 2021, relevant departments introduced various policies to prevent and mitigate market risks and meet residents' purchasing needs, and put forward supporting measures to promote real estate transformation.

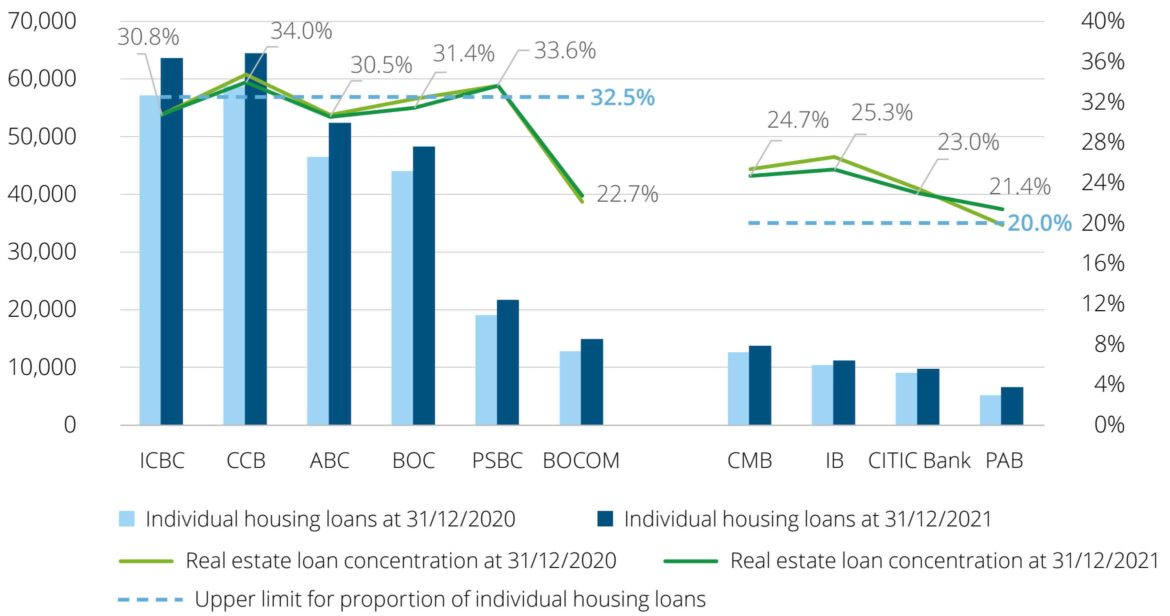
Therefore, commercial banks supplied individual housing loans in accordance with the regulatory requirements. As of the end of 2021, the total balance of individual housing loans reached RMB30.66 trillion, up RMB2.98 trillion or 10.77% from the beginning of the year; the domestic banks' average proportion of individual housing loans decreased. Specifically, BOCOM and PAB's proportion increased, ICBC and PSBC's proportion remained unchanged, and the rest domestic banks all saw a lower proportion. Some banks still exceeded the regulatory limit. Specifically, among the large commercial banks, CCB and PSBC exceeded the regulatory limit by 32.50%--CCB recorded the highest proportion of 34%; among the joint-stock banks, CMB, IB, CITIC Bank and PAB exceeded the regulatory limit by 20%--IB recorded the highest proportion of 25.3%. In accordance with the requirements of the *Circular on the Establishment of Real Estate Loan Concentration Management System for Banking Institutions* issued by the CBIRC, banks exceeding the regulatory red line by less than two percentage points will be given a transition period of two years for adjustment, starting from the effective date of the Circular, and banks exceeding the regulatory limit by two percentage points and above will be given a transition period of four years for adjustment.

In December 2021, PBC and CBIRC jointly issued the *Circular on Effectively Carrying out Financial Services for M&As of Risk Response Projects of Key Real Estate Enterprises,* which encourages banks to carry out M&A loan business in a steady and orderly manner, and supports high quality real estate enterprises to acquire high quality real estate projects with liquidity difficulty. In February 2022, PBC and CBIRC jointly issued the *Circular on Excluding Affordable Rental Housing Loans in the Real Estate Loan Concentration Management*, encouraging financial institutions to scale up support for affordable rental housing. In February 2022, CBIRC and MOHURD issued the *Guiding Opinions on Supporting the Development of Affordable Rental Housing by Banking and Insurance Institutions*, which proposed that commercial banks should provide professional and diversified financial services, and optimize and integrate financial resources to actively support the construction, purchase, renovation, operation & management, and transaction & settlement of affordable rental housing. In March 2022, PBC and CBIRC issued the *Circular on Strengthening Financial Services for New Citizens*, encouraging banks and insurance institutions to optimize housing financial services to help intensify the supply of affordable housing, facilitate the healthy development of the rental housing market, and meet the housing needs of new citizens.

Sticking to the principle that houses are for living in, not for speculation, during the adjustment period, commercial banks will continue to optimize the real estate business structure, upgrade resource allocation, and accelerate product and service innovation to support the steady and healthy transformation and development of the real estate sector.

Figure 46: Balance and Proportion of Individual Housing Loans

Unit: RMB100 million/%



Domestic banks’ credit card business grew, with non-performing loan ratio decreased

In 2021, the overall scale of the credit card business increased due to the post-pandemic recovery of the economy and consumption. PBC’s cancellation of the upper and lower limits on credit card overdraft interest rates and other factors drove the development of the credit card business.

According to the *Overall Operation of the Payment System in 2021* issued by PBC, in 2021, the total outstanding balance of credit cards was RMB8.62 trillion, a year-on-year increase of 8.90%. In general, at the end of 2021, the total balance of domestic banks' credit card loans reached RMB5.81 trillion, up RMB487.4 billion or 9.16% from the beginning of the year—the growth rate was lower than that of the total loan balance. All commercial banks recorded an increase. Specifically, PSBC saw the highest growth rate of 20.90%; CMB's credit card loan base increased by 12.92% to about RMB800 billion.

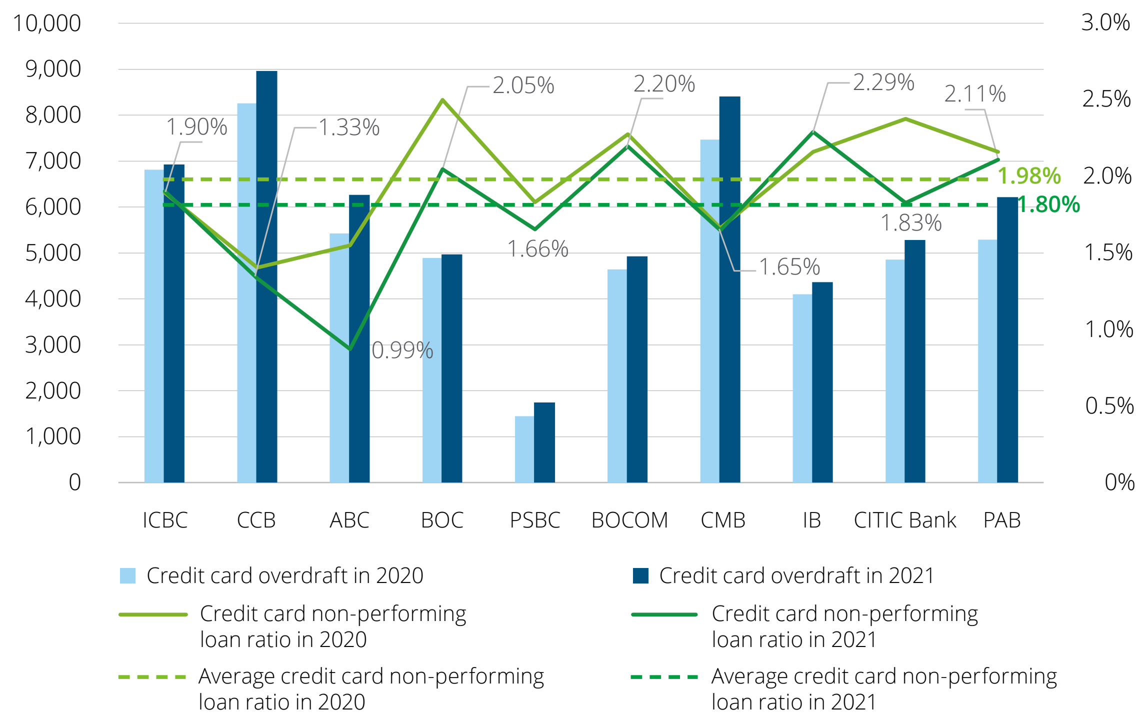
In recent years, the issuing banks began to adjust credit card risk control strategies, paid more attention to risk control and mitigation, implemented various measures (such as risky customer identification and control, illegal transaction restriction, and adjustment of credit card cash-out and points rules) to prevent new business risks, and combined a mixture of approaches, such as write-off and non-performing assets securitization, to dispose of non-performing loans. Thus, the overall credit card non-performing loan ratio declined in 2021. According to the *Overall Operation of the Payment System in 2021*, the outstanding credit card loans that were overdue for half a year totaled RMB86.039 billion in 2021, accounting for 1.00% of total credit card outstanding balance, down 0.06 percentage points year-on-year.

As of the end of 2021, domestic banks' average credit card non-performing loan ratio was 1.80%, a decrease of 0.18 percentage points compared with the beginning of the year. Specifically, ABC and CITIC Bank’s credit card non-performing loan ratio decreased faster by 0.56 percentage points and 0.55 percentage points to 0.99% and 1.83% respectively; ICBC and IB saw a slight increase; BOC, BOCOM, IB, and PAB’ s credit card non-performing loan ratio still exceeded 2%.

With the rapid development over the past 20 years, the credit card market is increasingly competitive and polarized, bringing great transformation pressure and opportunities to the credit card business. In December 2021, CBIRC issued the *Circular on Further Promoting the Standardized and Healthy Development of Credit Card Business (Draft)*, which put forward adjustment suggestions for credit card business from the perspectives of operation and management, standardized issuing of credit cards, and credit risk control. It is expected that under the regulatory guidance, commercial banks' credit card business will shift from extensive management to fine management, and transform towards high-quality development, to more scientifically support the upgrading of mass consumption.

Figure 47: Credit Card Overdraft Balance and Non-performing Loan Ratio

Unit: RMB100 million/%



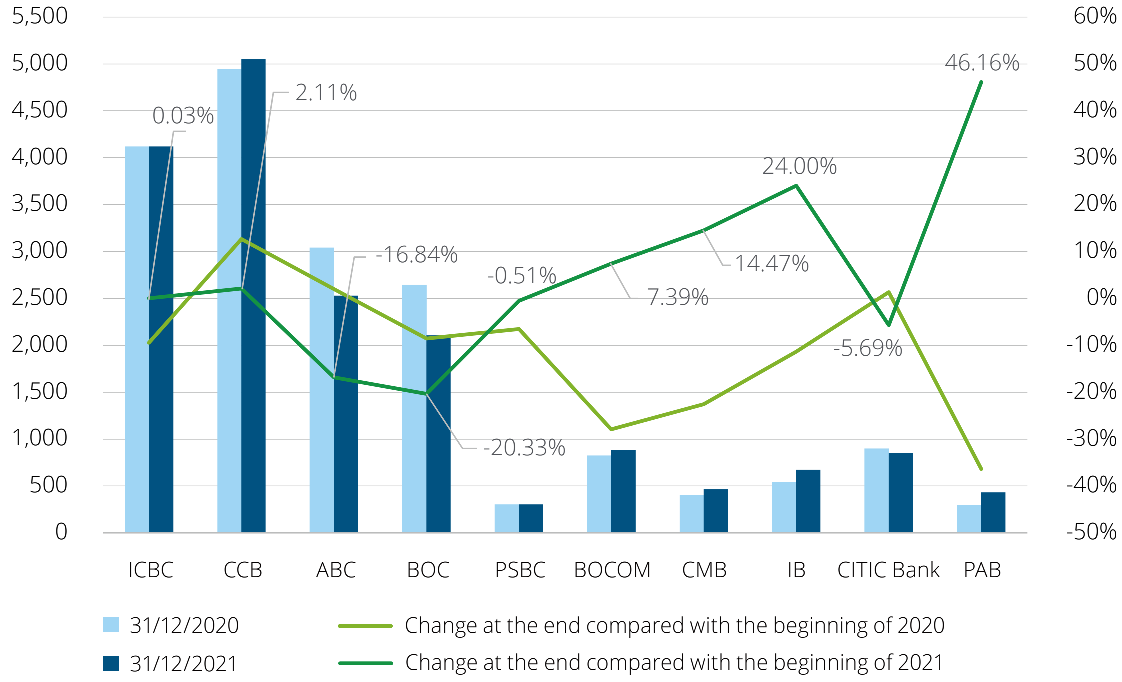
Special-mention loan proportion and migration ratio decreased, with less pressure of non-performing loans

In general, domestic banks saw a continuous decline in special-mention loans, due to the stricter non-performing loan identification standards and the policy allowing principal and interest repayments to be deferred. Specifically, at the end of 2021, the total balance of domestic banks' special mention loans reached RMB1.74 trillion, RMB61 billion less than that at the beginning of the year, with an average decline of 3.38%.

The total balance of the six state-owned commercial banks' special-mention loans reached RMB1.5 trillion, down RMB88.6 billion or 5.57%. Specifically, CCB had the largest scale of special mention loans, with an increase of RMB10.4 billion from the beginning of the year; PSBC had the smallest scale of special mention loans. The balance of joint-stock banks' special-mention loans totaled RMB242.4 billion, up RMB27.541 billion or 12.82%. PAB saw a remarkable increase of 46.16%.

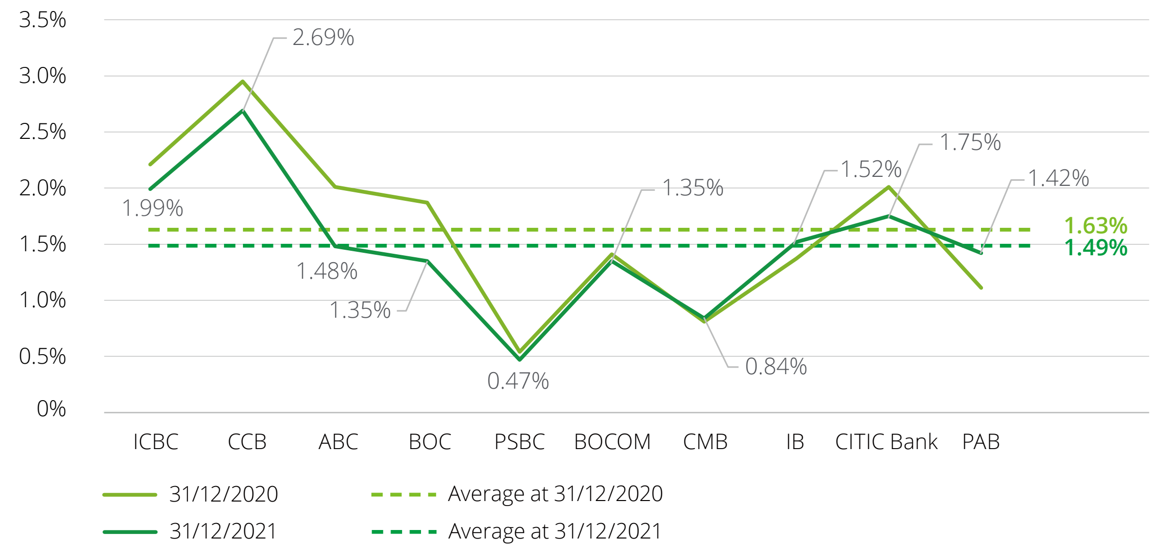
Figure 48: Special-mention Loan Balance

Unit: RMB100 million



The special-mention loans of domestic commercial banks on average accounted for 1.49% of the total, down 0.14 percentage points from the beginning of the year. PAB's proportion of special-mention loans rose to 1.42%, IB rose to 1.52%, CMB rose to 0.84%, while all other commercial banks' proportion of special-mention loans dropped. Overall, domestic commercial banks' proportion of special-mention loans declined in 2021.

Figure 49: Proportion of Special-mention Loans



In 2020, the average migration ratio of domestic banks' pass loans was 1.83%, 0.24 percentage points lower than 2020. The average migration ratio of special mention loans was 26.11%, down 10.17% from 2020 to the pre-pandemic level. As the policy for postponing principal and interest repayments lasted till the end of 2021, the downward migration of pass loans slowed. With recovering economy, non-performing loans were gradually cleared, and the migration ratio of special-mention loans dropped.

Figure 50: Migration Ratio of Pass Loans

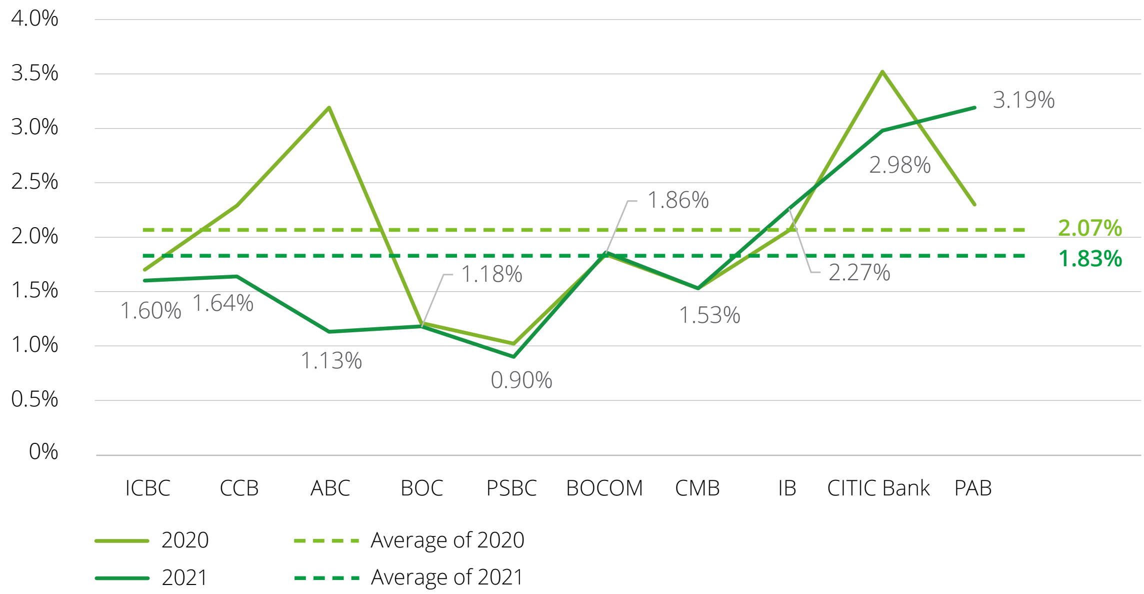
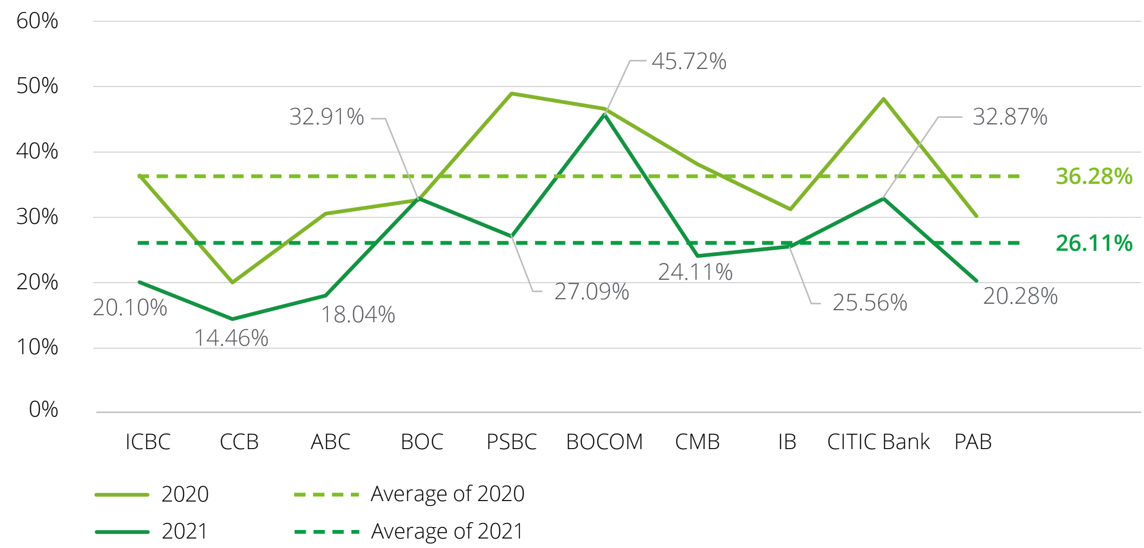


Figure 51: Migration Ratio of Special-mention Loans

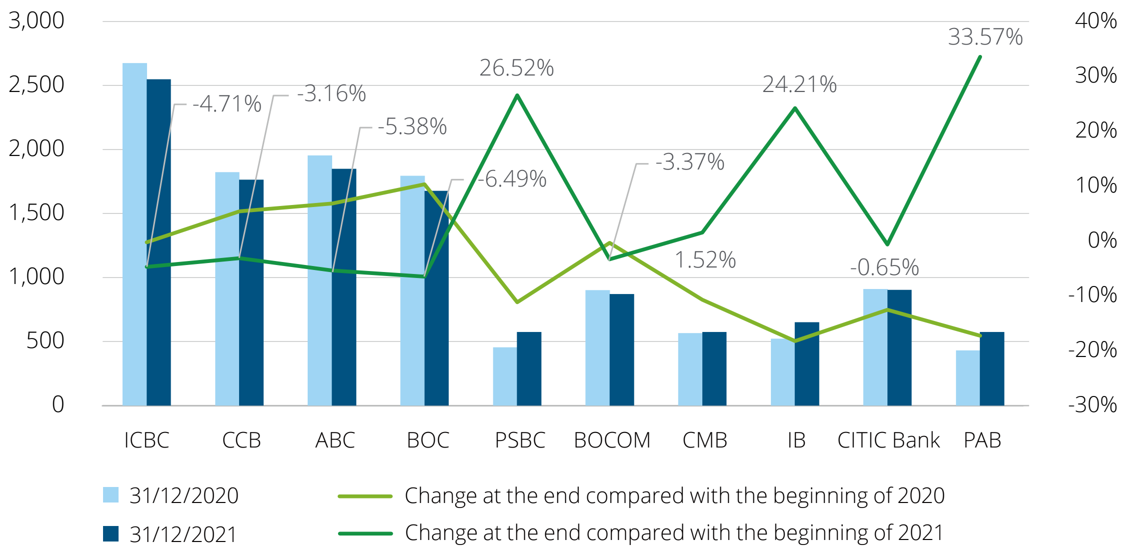


Non-performing loan ratio and overdue loan ratio declined; the ratio of overdue loans-to-impaired loans exceeded 100%

As of 2021, domestic banks' overdue loans balance totaled RMB1.18 trillion, down RMB26.5 billion or 2.20% from the beginning of the year. PSBC, CMB, IB, and PAB's overdue loans increased, while the rest banks' overdue loans decreased. PAB's overdue loan balance increased by RMB14.5 billion or 33.57%. PSBC and IB's overdue loan balance increased more than 20% from the beginning of the year.

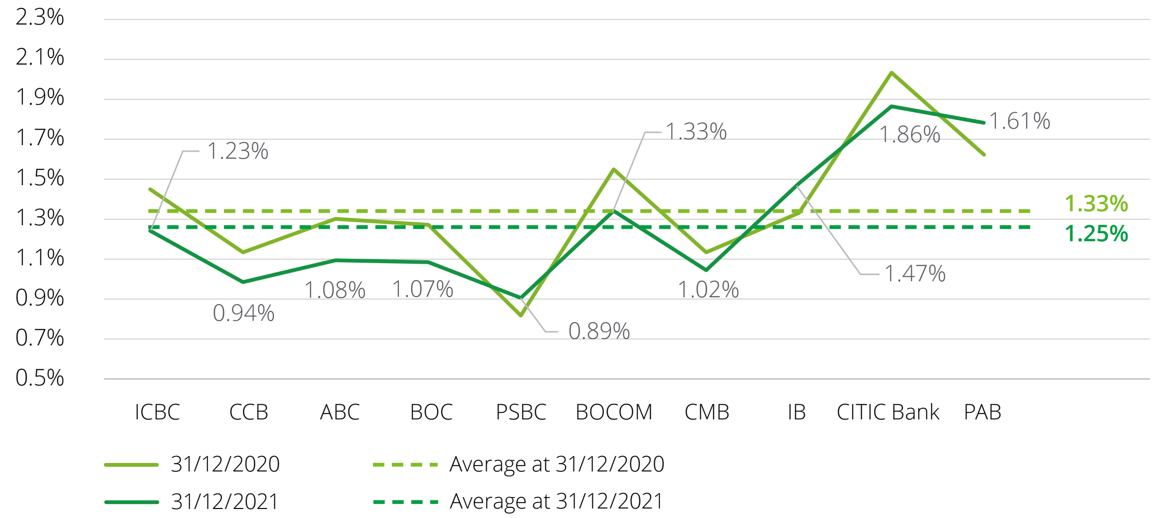
Figure 52: Balance of Overdue Loans

Unit: RMB100 million



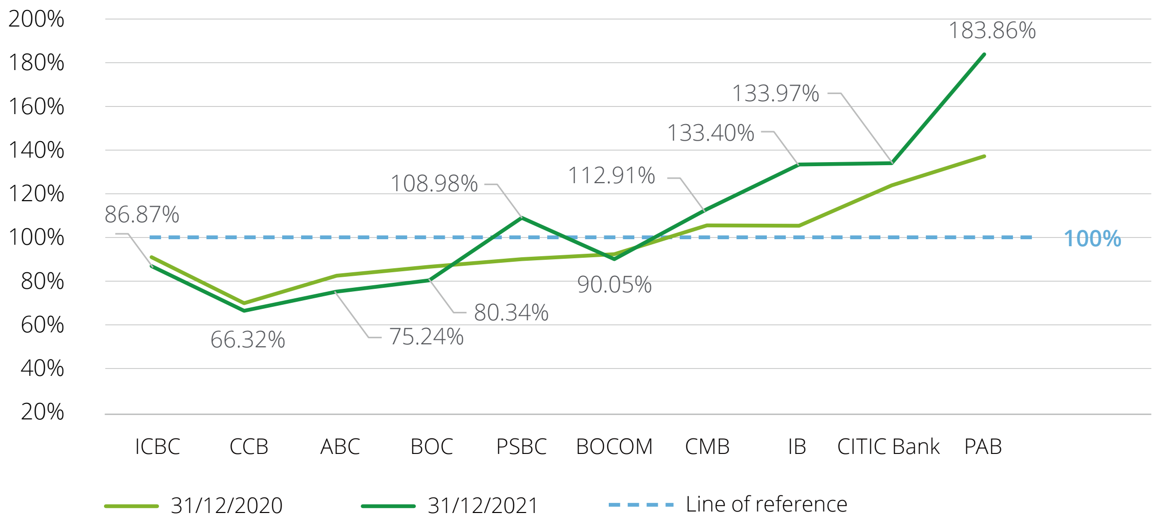
Regarding the changes in the overdue loan ratio, domestic banks' average overdue loan ratio was 1.25%, down 0.08 percentage points from the beginning of the year. In general, the overdue loan balance and overdue loan ratio of PAB, PSBC, and IB increased. CMB saw an increase in overdue loan balance but a decrease in overdue loan ratio. Other banks recorded a decline in both the overdue loan balance and the overdue loan ratio.

Figure 53: Overdue Loan Ratio



As of the end of 2021, the average ratio of overdue loans to non-performing loans of domestic banks was 107.19%, up 8.78 percentage points from the beginning of the year. Specifically, PAB recorded the highest ratio of 183.86%, and CCB recorded the lowest of 66.32%; PAB, IB, PSBC, and CITIC Bank's ratios increased by 46.71, 28.03, 18.88, and 10.13 percentage points, respectively.

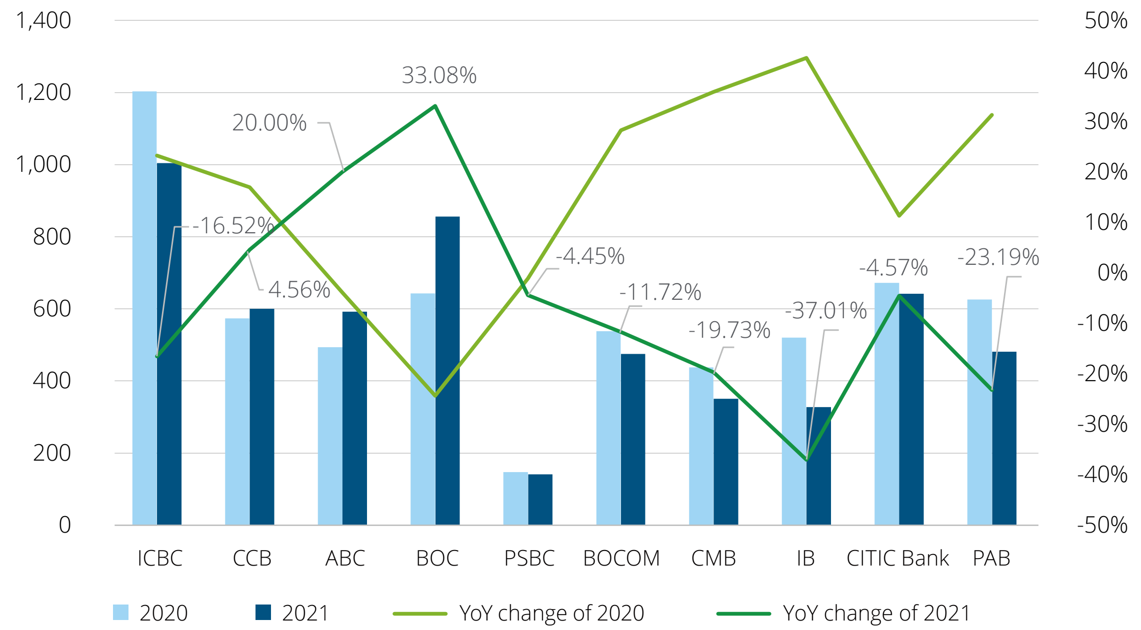
Figure 54: Ratio of Overdue Loans to Non-performing Loans



According to the latest data released by PBC, the written-off non-performing loans in the banking sector totaled RMB1.03 trillion, accounting for 33% of the total non-performing loans, a year-on-year decrease of 16% (RMB192.6 billion). In 2021, the loans written off and transferred out by domestic banks totaled RMB547 billion, a decrease of RMB38.6 billion or 6.59% year-on-year. Specifically, BOC saw the largest increase of RMB21.3 billion or 33.08%; ICBC and IB's written-off and transferred-out loans decreased by RMB19.9 billion and RMB19.3 billion, respectively.

Figure 55: Written-off and Transferred-out Loans

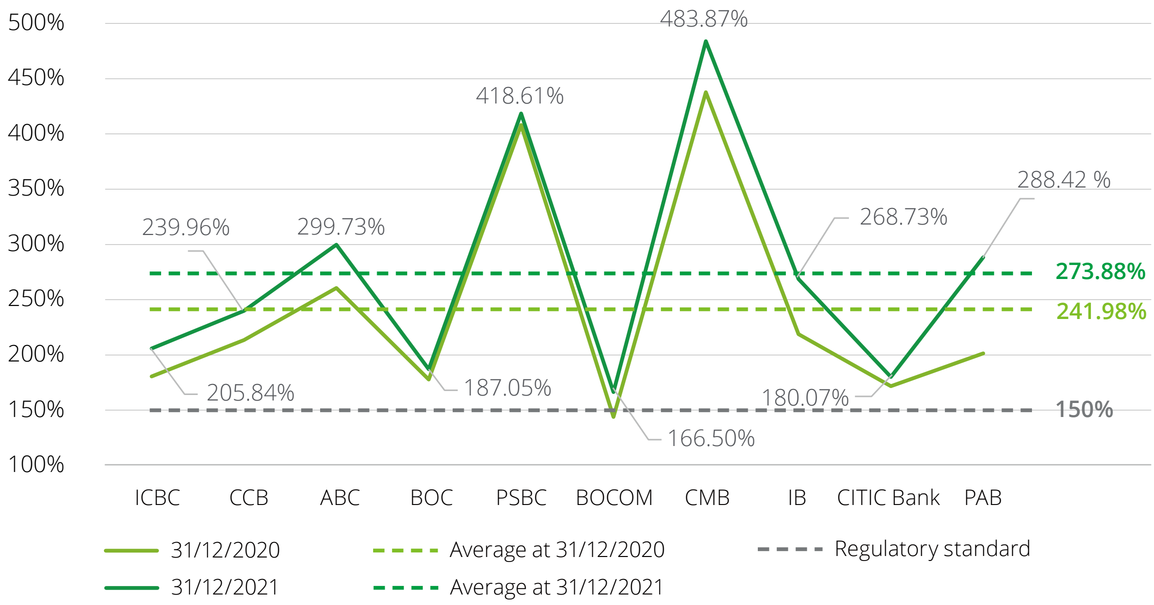
Unit: RMB100 million



Loan provision ratio and provision coverage increased; risk-resistance ability enhanced

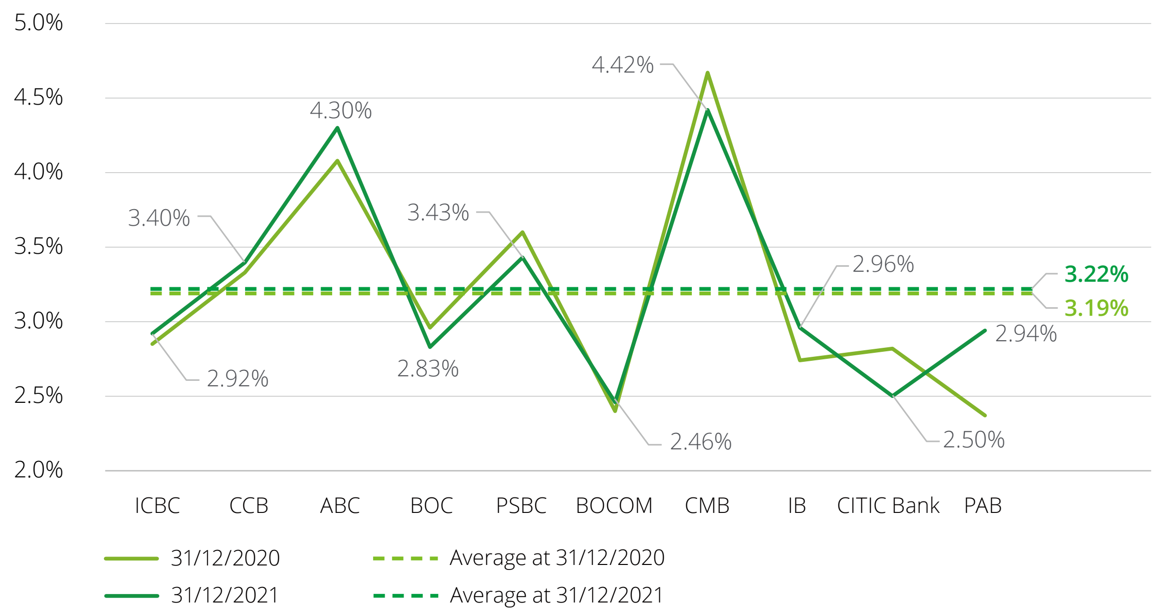
As of the end of 2021, with the average non-performing loan ratio, special-mention loan ratio and overdue loan ratio decreased, the average loan provision ratio (3.22%), and average provision coverage (273.88%) of domestic banks rose by 0.03 and 31.90 percentage points respectively from the beginning of the year. Domestic banks show varying degrees of growth in provision coverage ratios, BOCOM's provision coverage at the end of 2021 was 166.50%, lower than that of other domestic banks. The provision coverage of CMB and PSBC maintained positive growth and exceeded 400%. Generally, as the non-performing loans were gradually cleared over the past few years, the provision coverage of domestic banks was relatively stable, with a slight increase compared with the beginning of the year; however, the provision coverage of banks differed significantly.

Figure 56: Provision Coverage



In 2021, domestic banks' loan provision ratio changed variedly. PAB'S loan provision ratio increased 0.57 percentage points compared with the beginning of the year; CITIC Bank, CMB, PSBC, and BOC's ratio decreased by 0.32 percentage points, 0.25 percentage points, 0.17 percentage points, and 0.13 percentage points, respectively.

Figure 57: Loan Provision Ratio

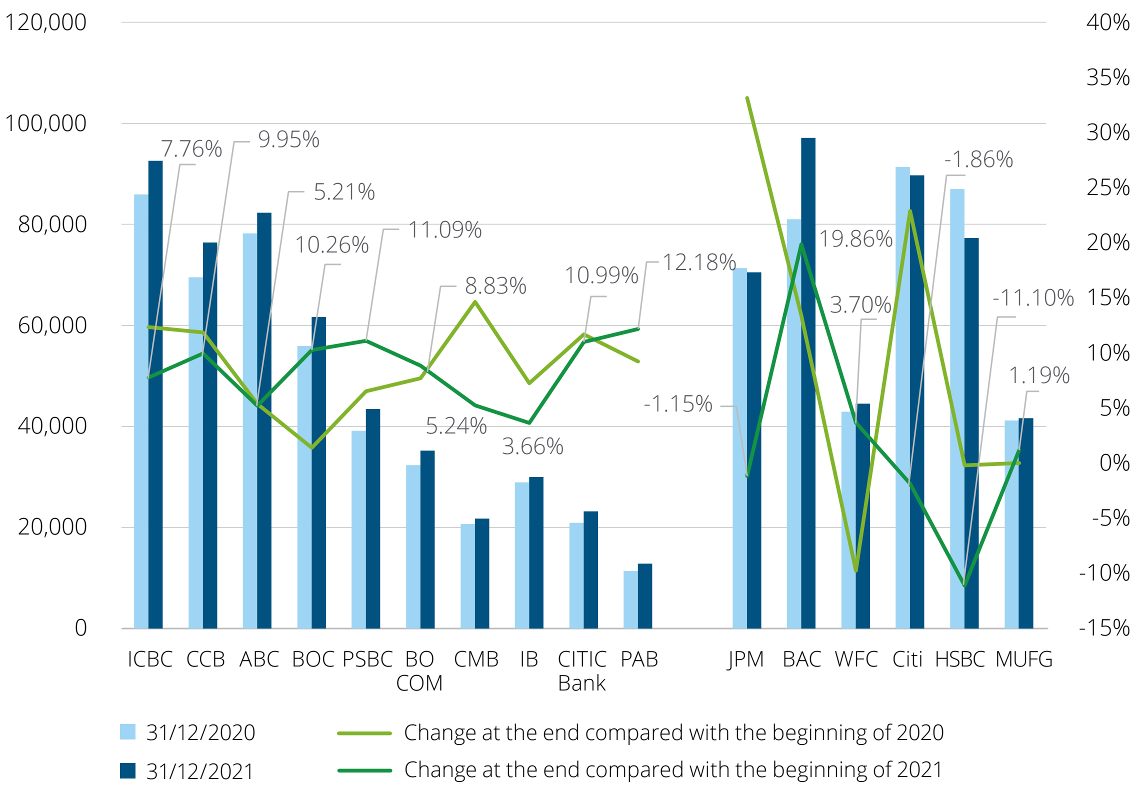


The global financial market fluctuated violently; domestic and foreign banks saw varied changes in financial investment

As of the end of 2021, the book value of the six state-owned banks' financial asset investment totaled RMB39.17 trillion, up RMB3.06 trillion from the beginning of the year, with an average growth rate of 8.47%, which was 0.82 percentage points higher than the growth rate of total assets and 3.29 percentage points lower than the growth rate of loans. Among them, PSBC saw the fastest growth rate of 11.09%. The book value of the four joint-stock banks' financial asset investment totaled RMB8.78 trillion, up RMB0.58 trillion from the beginning of the year, with an average growth rate of 7.11%, which was 2.03 percentage points lower than the growth rate of total assets and 3.99 percentage points lower than the growth rate of loans. Among them, PAB saw the fastest growth rate of 12.18%. The book value of foreign banks' financial asset investment totaled RMB42.08 trillion, up RMB0.60 trillion from the beginning of the year, with an average growth rate of 1.45%. Among them, BAC had a relatively higher year-on-year growth rate of 19.86%. On the whole, for large state-owned banks, the growth rate of financial asset investment was higher than that of total assets which jointly contributed to the growth rate of bank asset scale with loan issuance business. The joint-stock banks saw a lower year-on-year growth rate of financial investment. Foreign banks saw polarized financial investment growth: BAC had a significant growth, but most banks recorded negative growth due to the drastic fluctuation of the global financial market, risk aversion and other reasons.

Figure 58: Financial Asset Investment

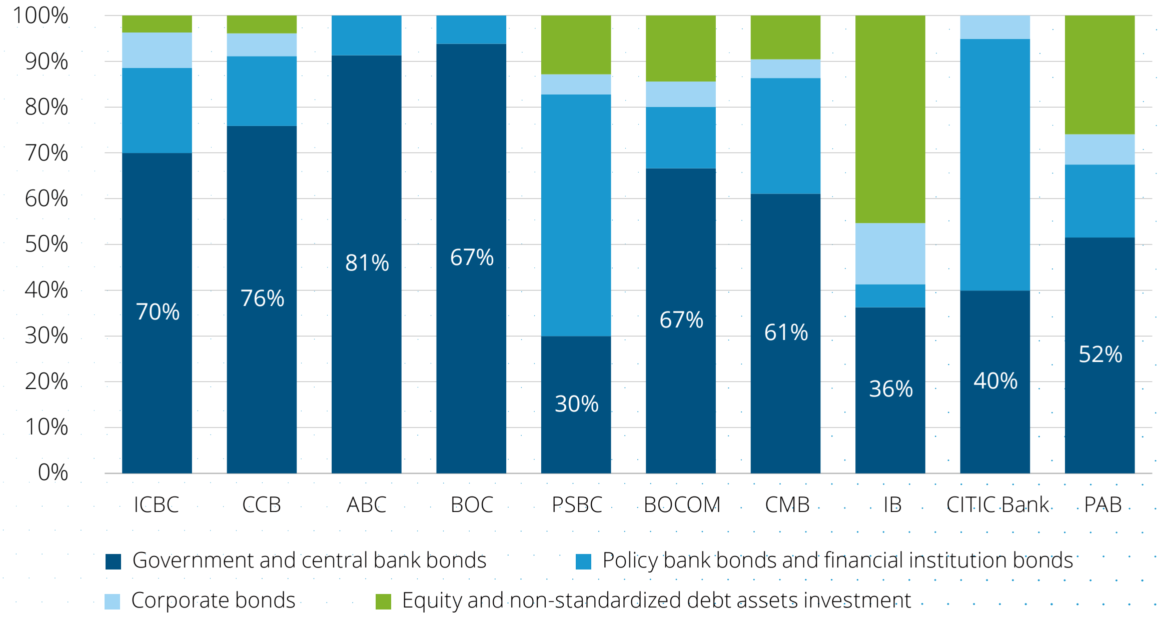
Unit: RMB100 million



Bond investment was a major component of domestic banks' financial asset investment; government and central bank bond investment grew steadily

As of 2021, bond investment accounted for a dominant proportion in domestic banks' financial asset investment. Compared with the end of 2020, domestic banks' average proportion of government bond and central bank bond investment increased by 0.38 percentage points, policy bank bond and financial institution bond investment decreased by 2.94 percentage points, corporate bond investment decreased by 1.63 percentage points, and equity and non-standardized debt assets investment increased by 0.20 percentage points. Seven domestic banks (excluding PSBC, IB and CITIC Bank) mainly held government and central bank bonds. PSBC and CITIC Bank had relatively more policy bank bonds and financial institution bonds, accounting for more than 50%; IB had the highest proportion of equity and non-standardized debt assets investment. In general, facing the volatile financial market, domestic banks continued to enhance their asset allocation capability to reduce capital occupancy.

Figure 59: Financial Investment Structure

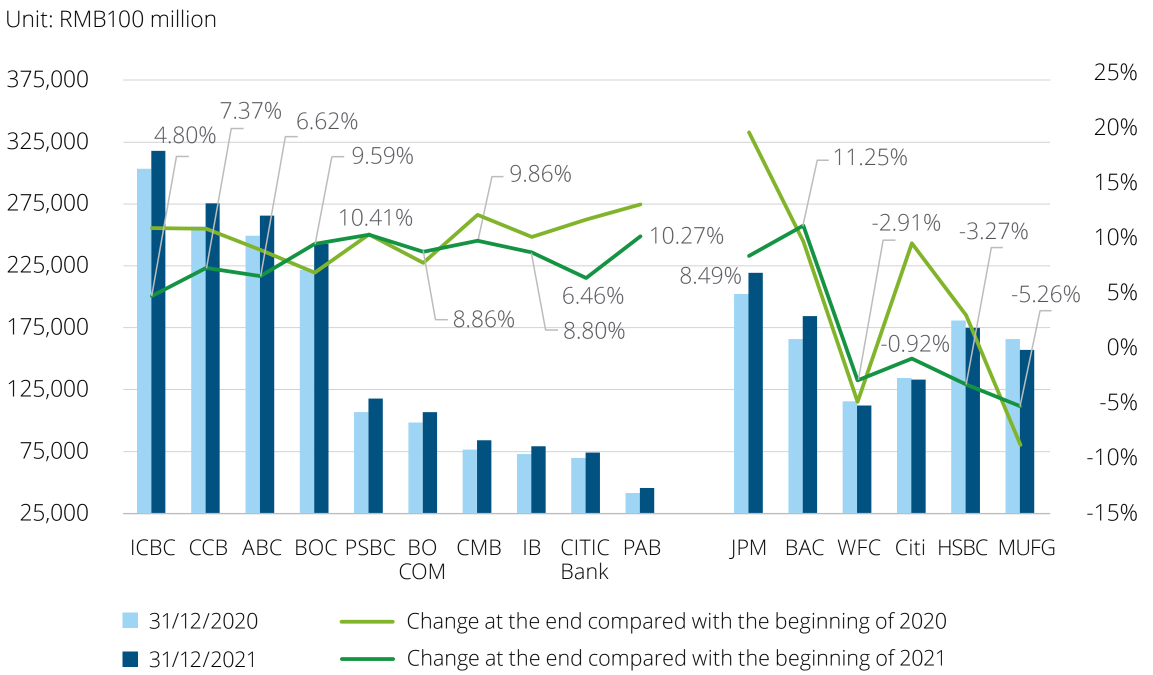


2.3 Liabilities

Domestic banks saw a lower growth rate of total liabilities; foreign banks' liability scale changed diversely

As of the end of 2021, the liabilities of domestic banks totaled RMB161.25 trillion, up RMB11.39 trillion year-on-year, with an average growth rate of 7.60%. Specifically, ICBC's total liabilities exceeded RMB31 trillion, the highest among domestic banks; PSBC recorded the fastest year-on-year growth rate of 10.41%. Generally, domestic banks' liabilities grew steadily. Apart from BOC and BOCOM, the liability growth rate of all other domestic banks declined year-on-year. The liabilities of foreign banks totaled RMB98 trillion, up RMB2 trillion year-on-year, with an average growth rate of 1.72%. The liabilities of foreign banks, excluding JPM and BAC, scaled down year-on-year.

Figure 60: Total Liabilities

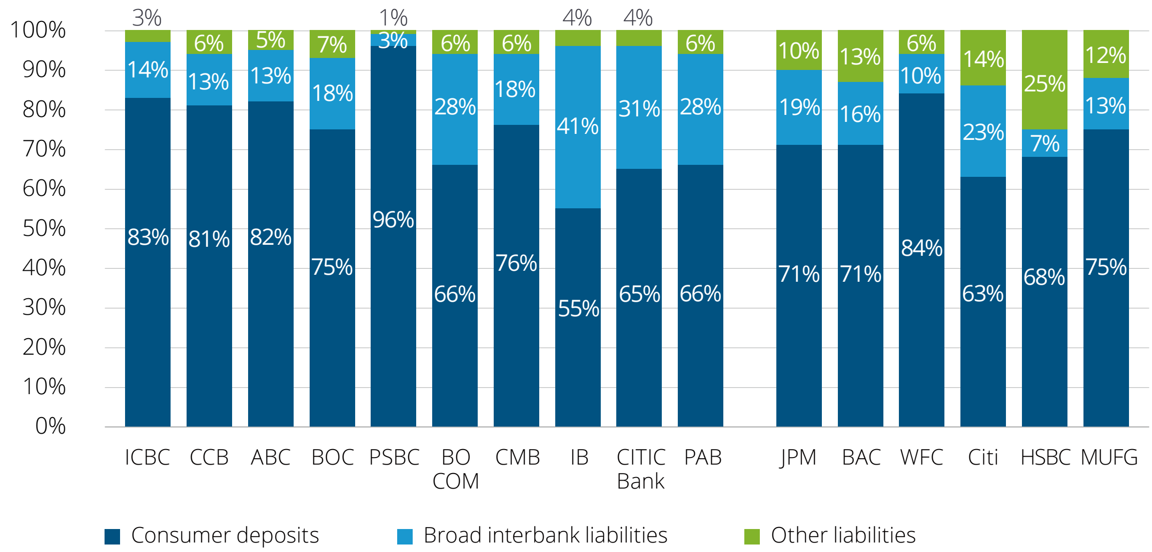


Liability structure was stable; customer deposits decreased slightly

As of the end of 2021, the liability structure of domestic banks was relatively stable, specifically: (1) ICBC, ABC, and CCB's customer deposits accounted for more than 80% of the total, and PSBC's exceeded 96%; (2) BOC, BOCOM, CMB, and CITIC Bank's customer deposits were maintained between 65% and 76%, and their customer deposits and broad interbank liabilities recorded relatively balanced proportions; (3) IB's customer deposits accounted for 55%, a smaller proportion compared with other domestic banks.

For foreign banks, the average proportion of customer deposits stood at 72.16%, lower than that of domestic banks (74.47%), and the average proportion of broad interbank liabilities was 14.68%, lower than that of domestic banks (20.72%); the average proportion of other liabilities was about 13.16%, 10.56 percentage points higher than that of domestic banks. Foreign banks had a more diversified liability structure than domestic banks. In 2021, with the regulatory provisions on systemically important banks and the additional capital requirements, domestic banks issued capital bonds to supplement capital, thus increasing the proportion of broad interbank liabilities.

Figure 61: Liability Structure at 31/12/2021



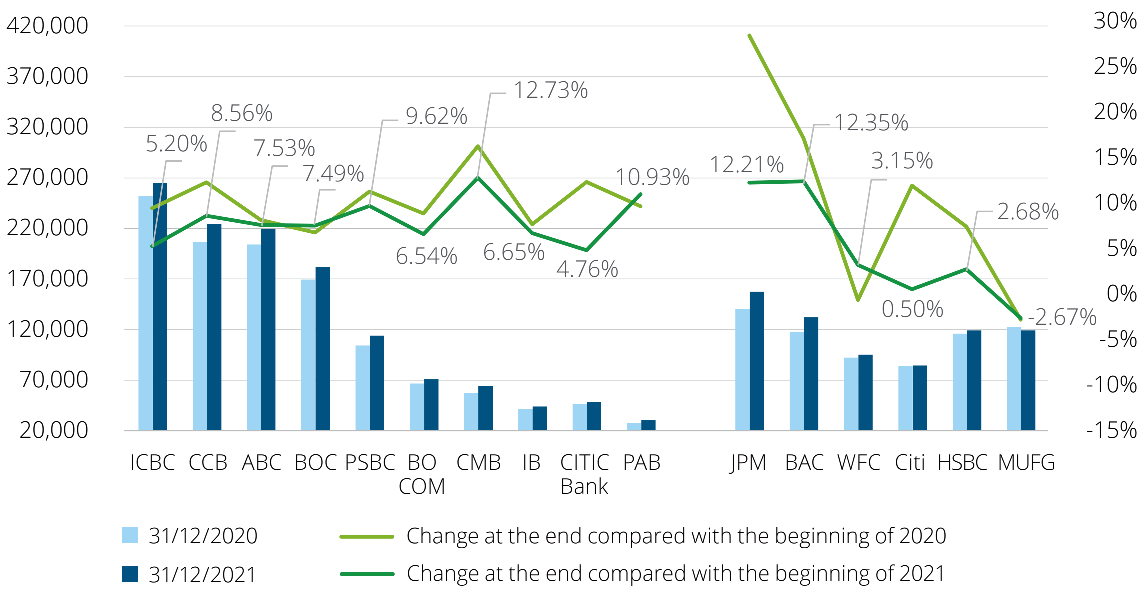
Note: broad interbank liabilities include interbank deposits and inter-financial institution deposits, loans from other banks and financial institutions, financial assets sold for repurchase, bonds payable and Certificates of Deposit (CDs) issued.

Customer deposits growth slowed, deposit-taking pressure sustained

At the end of 2021, the customer deposit scale of domestic and foreign banks grew to varying degrees. Domestic banks' customer deposit balance totaled RMB125.79 trillion, up RMB8.80 trillion from the beginning of the year, representing a growth rate of 7.52% (the growth rate was lower than that of overall liabilities). Specifically, ICBC, CCB, and ABC's deposit balance exceeded RMB20 trillion; CMB recorded the highest growth rate of 12.73%. Due to the slowed growth of M2 and a recovering economy, the deposit growth rate of most domestic banks dropped, so they still faced deposit-taking pressure. Foreign banks' balance of customer deposits totaled RMB70 trillion, up RMB3 trillion from the beginning of the year, representing a growth rate of 5.18%. All other foreign banks recorded a year-on-year customer deposit increase, except MUFG bank. The growth rate of JPM and BAC exceeded 12%, while other foreign banks' growth rates stood between 0.5% and 3.15%.

Figure 62: Deposit-taking

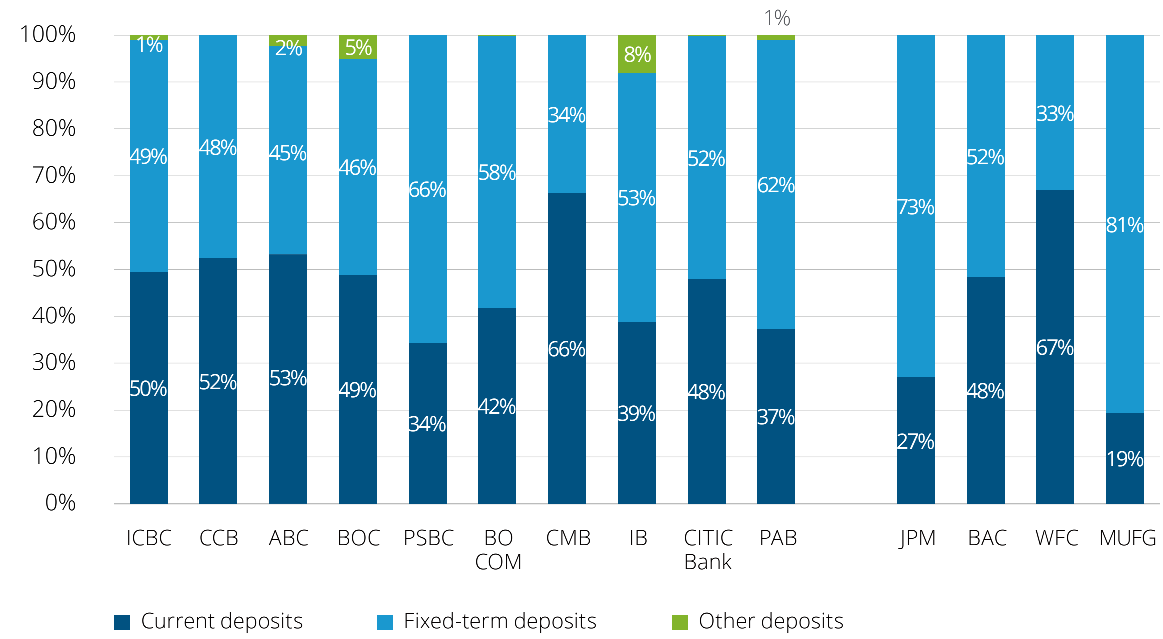
Unit: RMB100 million



In terms of deposit composition, as of 2021, current average deposits of domestic banks accounted for 47%, slightly lower than that of fixed-term deposits. The current deposits of the four major banks accounted for about 50%, indicating a balance between current deposits and fixed-term deposits. Among the domestic banks, PSBC recorded the highest proportion of fixed-term deposits at approximately 66%, up 1.96 percentage points year-on-year; CMB recorded the highest proportion of current deposits at 66%, a stable proportion compared with 2020.

As of 2021, the current deposits of foreign banks averagely accounted for 40% (lower than that of domestic banks), while their fixed-term deposits accounted for 60%. Specifically, WFC recorded the highest proportion of current deposits at 67%, up 1.91 percentage points year-on-year; Citi recorded the highest proportion of fixed-term deposits at 81%, down 1.66 percentage points year-on-year.

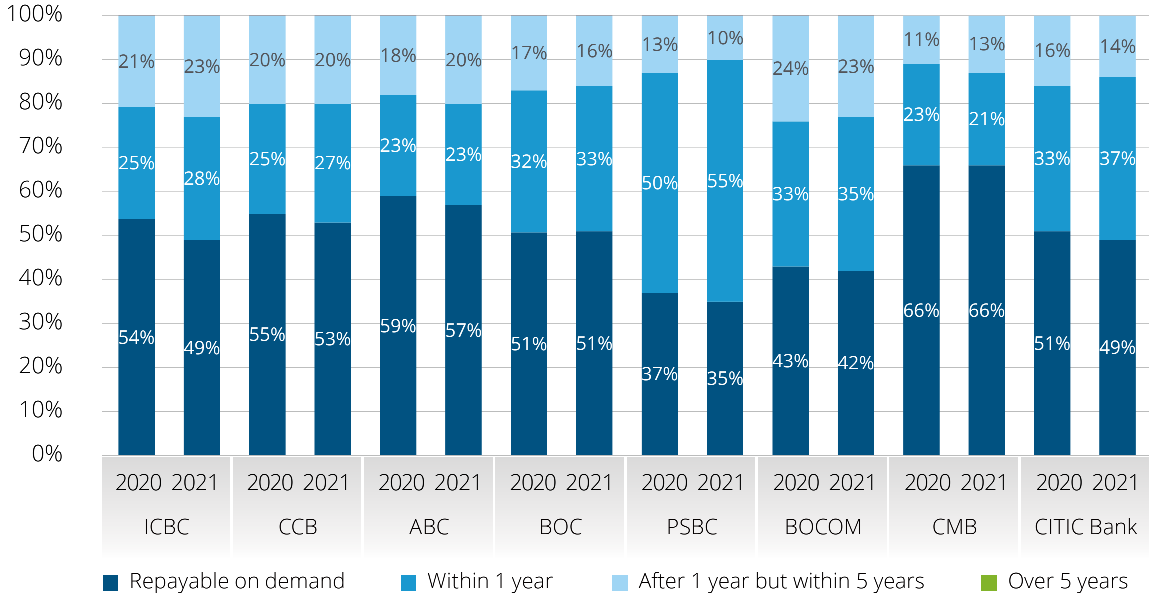
Figure 63: Deposit Composition in 2021



Note: HSBC and MUFG Bank's deposits composition were not disclosed.

Regarding the remaining maturity of deposits, by the end of 2021, domestic banks' deposits repayable on demand averagely accounted for 50.09% of the total, down 1.68 percentage points year-on-year; the average proportion of deposits within one year was 32.49%, up 1.82 percentage points year-on-year. For most domestic banks (except for PSBC), the deposits repayable on demand held the highest proportion, which was in line with the high proportion of current deposits. The *Circular of the People's Bank of China on Strengthening the Management of Deposit Interest Rates* issued in March 2020 required financial institutions to strictly implement the administrative regulations on deposit interest rates as well as calculation and settlement of interest; in addition, the self-discipline upper limit of deposit interest rates changed from June 2021. Therefore, banks' short-term deposit rates rose slightly, while the medium and long term deposit rates dropped significantly. It was less feasible for banks to absorb deposits by increasing savings deposit rates. The proportion of deposits within one year rose, while the proportion of deposits over one year dropped.

Figure 64: Proportion of Deposits by Remaining Maturity

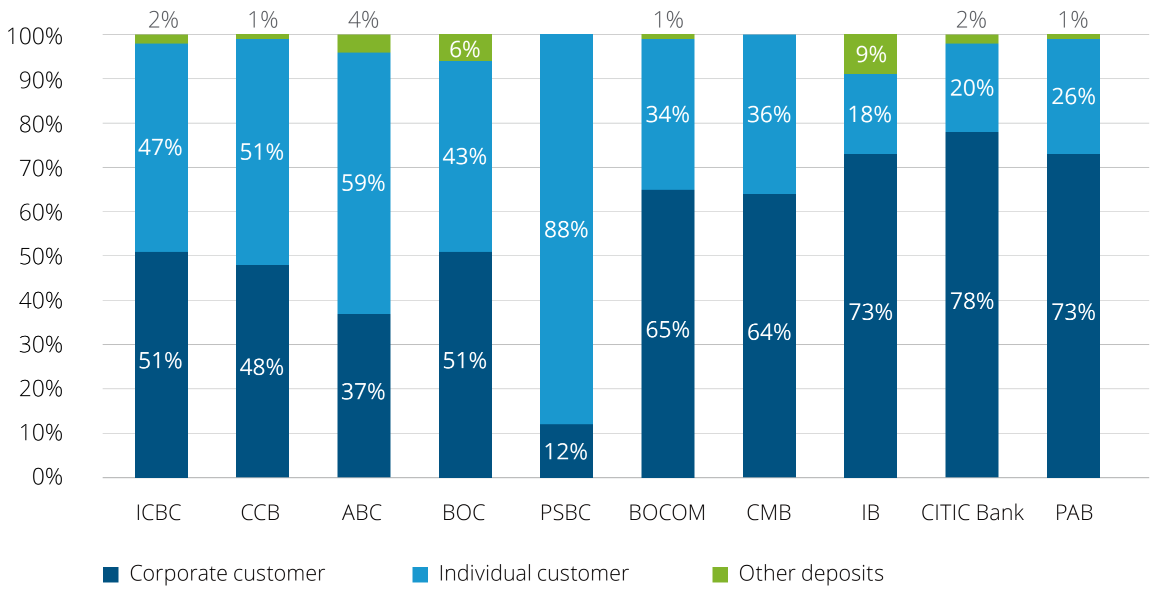


Note: IB and PAB did not disclose the remaining maturity information of deposits.

The four large state-owned banks balanced the development of corporate and individual customers, PSBC focused on individual customers, while other banks focused on corporate customers

Regarding customer type, for the four large state-owned banks, the average proportion of corporate and individual customer deposits were 47% and 50%, respectively. With a large number of outlets, PSBC continuously expanded the retail business and recorded the highest proportion of individual customer deposits at 88%. For other domestic banks, corporate customer deposits averagely accounted for 71%.

Figure 65: Proportion of Corporate and Individual Customer Deposits at 31/12/2021

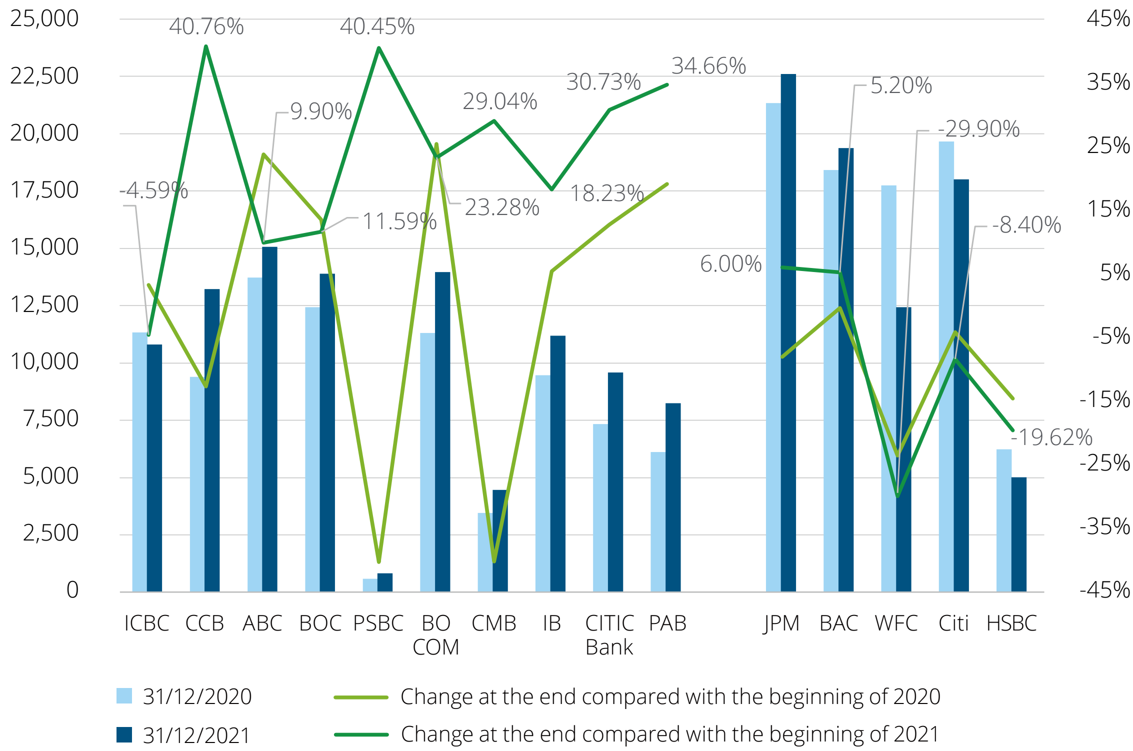


Issuance of debt instruments increased; domestic banks' external capital was supplemented

The implementation of the regulatory and additional capital requirements for domestic systemically important banks (D-SIBs) in 2021 drove the banks to issue more capital instruments. As of 2021, domestic banks' balance of bonds payable and CDs issued totaled RMB10.13 trillion, up 18.88% year-on-year. ICBC's bond issuance decreased year-on-year, while that of other domestic banks increased. CCB's issuance of debt instruments grew by more than 40%. Foreign banks' balance of bonds payable totaled RMB7.74 trillion, down RMB0.59 trillion from the beginning of the year. JPM and BAC's bonds payable grew, while all other foreign banks decreased.

Figure 66: Bonds Payable and CDs

Unit: RMB100 million



Note: MUFG Bank's bonds payable and CDs were not disclosed.

2.4 Capital position

Additional Regulatory Provisions on Systemically Important Banks (for Trial Implementation) implemented
On September 30, 2021, the PBC and CBIRC officially adopted the *Additional Regulatory Provisions on Systemically Important Banks (for Trial Implementation)*, specifying that in addition to the minimum capital requirement and the reserve capital and countercyclical capital requirements, systemically important banks shall also meet certain additional capital requirements, which are to be satisfied by core Tier 1 capital.

The D-SIBs are divided into five buckets. Banks in bucket 1 to bucket 5 shall be respectively subject to an additional capital requirement of 0.25%, 0.5%, 0.75%, 1% and 1.5%. This will cause direct capital supplement pressure on the banks.

On October 15, 2021, based on 2020's data, the PBC and CBIRC confirmed 19 D-SIBs, including 6 state-owned commercial banks, 9 joint-stock banks and 4 city commercial banks, which are shown below:

Table 5: D-SIBs Buckets and Regulatory Requirements

Bucket	Bucket 1	Bucket 2	Bucket 3	Bucket 4	Bucket 5
Bank	PAB China Everbright Bank Hua Xia Bank China Guangfa Bank Bank of Ningbo Bank of Shanghai Bank of Jiangsu Bank of Beijing	SPD Bank CITIC Bank China Minsheng Bank PSBC	BOCOM CMB IB	ICBC BOC CCB ABC	N/A
Additional capital requirement	0.25%	0.5%	0.75%	1%	1.5%

Four major state-owned banks were concurrently identified as a Chinese and global systemically important banks (G-SIBs), so the additional capital requirements shall not be superimposed, with the higher capital requirement applying. Therefore, ICBC, CCM and BOC continued to execute the 1.5% additional capital requirement, and ABC stayed with the 1% requirement. Generally, the additional capital regulatory requirements for the four banks remained unchanged, which was aligned with international standards.

The capital regulation bottom line for the ten domestic banks as of the end of 2021 is shown as follows:

Table 6: Capital Regulation Bottom Line

Bank	Core Tier 1 Capital Adequacy Ratio	Tier 1 Capital Adequacy Ratio	Capital Adequacy Ratio	SIB Category
ICBC	9.00%	10.00%	12.00%	G-SIBs, Bucket2 D-SIBs, Bucket4
CCB	9.00%	10.00%	12.00%	G-SIBs, Bucket2 D-SIBs, Bucket4
BOC	9.00%	10.00%	12.00%	G-SIBs, Bucket2 D-SIBs, Bucket4
ABC	8.50%	9.50%	11.50%	G-SIBs, Bucket1 D-SIBs, Bucket4
BOCOM	8.25%	9.25%	11.25%	D-SIBs, Bucket3
CMB	8.25%	9.25%	11.25%	D-SIBs, Bucket3
IB	8.25%	9.25%	11.25%	D-SIBs, Bucket3
PSBC	8.00%	9.00%	11.00%	D-SIBs, Bucket2
CITIC Bank	8.00%	9.00%	11.00%	D-SIBs, Bucket2
PAB	7.75%	8.75%	10.75%	D-SIBs, Bucket1

Capital adequacy ratio of domestic and foreign banks rose steadily

As of 2021, the core tier 1 capital adequacy ratio, tier 1 capital adequacy ratio, and capital adequacy ratio of the six state-owned commercial banks and the four joint-stock banks all met the regulatory requirements, showing a steady increase compared with the beginning of the year. The three ratios of the 10 banks were on average, 11.01%, 12.89%, and 15.85%, up 0.15 percentage points, 0.36 percentage points and 0.63 percentage points, respectively. The core tier 1 capital adequacy ratio, tier 1 capital adequacy ratio and capital adequacy ratio of foreign banks were 13.15%, 15.07% and 16.93%, up 0.29 percentage points, 0.36 percentage points and 0.17 percentage points, respectively, from the beginning of the year.

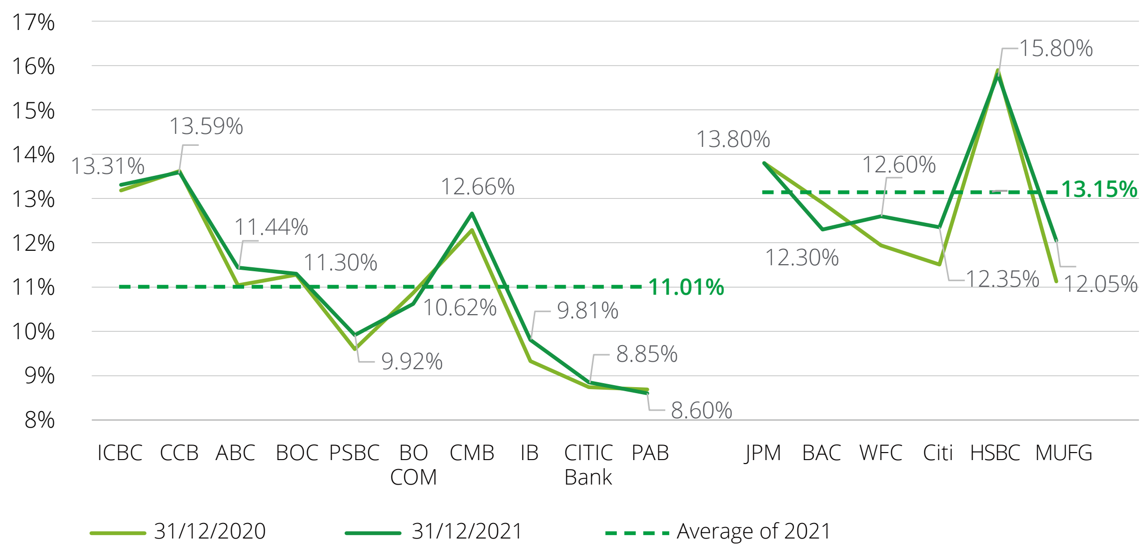
Outstanding performance drove the steady increase of net tier 1 capital; commercial banks' endogenous capital strengthened

Factors such as profit growth rate and external capital supplement led to an overall increase in core tier 1 capital adequacy ratio. As the economy improved, banks' profitability enhanced, and profit increase led to an increase of net core tier 1 capital.

For the domestic banks, CCB, BOCOM and PAB saw a slight decline of core tier 1 capital adequacy ratio, while that of other banks increased steadily compared with the beginning of the year. Specifically, PSBC supplemented core tier 1 capital through private placement of ordinary shares, balancing profit growth and control of risk-weighted assets growth, thus increasing the core tier 1 capital adequacy ratio by 0.32 percentage points compared with the beginning of the year; other banks saw a significant increase of net profit, so they recorded a higher growth rate of net core tier 1 capital than that of risk-weighted assets, and also a rising core tier 1 capital adequacy ratio.

All foreign banks' core tier 1 capital adequacy ratio steadily increased, except BAC. The increase was driven by enhanced net profits. The core tier 1 capital adequacy ratio of BAC dropped by 0.60 percentage points compared with the beginning of the year, because its net core tier 1 capital was reduced due to share repurchases.

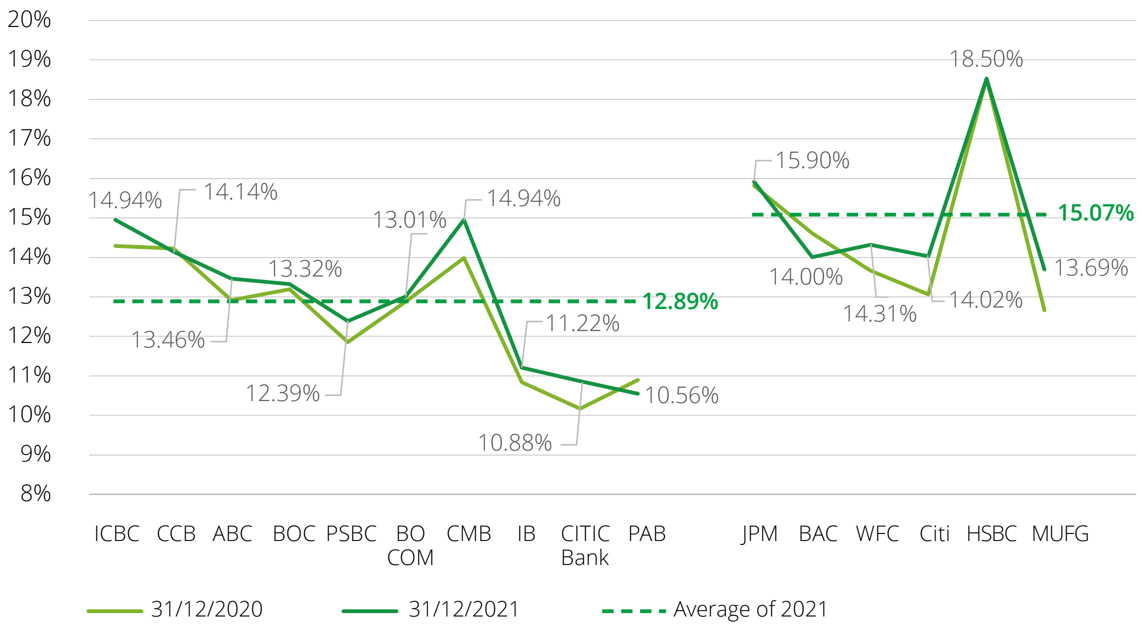
Figure 67: Core Tier 1 Capital Adequacy Ratio



The tier 1 capital adequacy ratio and capital adequacy ratio of domestic and foreign banks rose steadily due to increased external capital supplement and net profits.

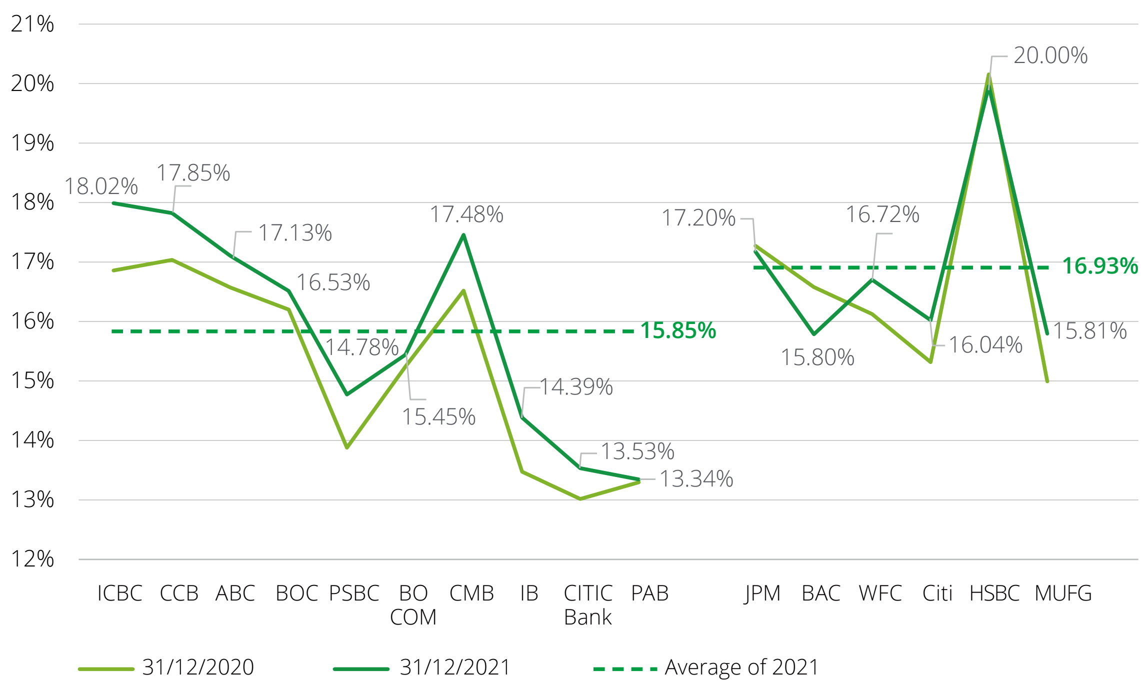
CCB, PAB, and BAC saw a year-on-year decrease in tier 1 capital adequacy ratio, while the rest of domestic and foreign banks rose. In particular, BOCOM's core tier 1 capital grew slower than its risk-weighted assets. Still, it achieved a year-on-year increase in tier 1 capital adequacy ratio by issuing RMB41.5 billion tier 1 capital instruments. Among the domestic banks, ICBC and CMB recorded the highest tier 1 capital adequacy ratio of 14.94%, while PAB recorded the lowest ratio of 10.56% (higher than the regulatory requirement).

Figure 68: Tier 1 Capital Adequacy Ratio



Domestic banks' capital adequacy ratio rose year-on-year, while foreign banks changed variedly. ICBC recorded the highest capital adequacy ratio (18.02%) among the domestic banks. Except for CMB and CITIC Bank, domestic banks' growth rate of capital adequacy ratio was higher than that of their tier 1 capital adequacy ratio, which was mainly because that they issued tier 2 capital instruments. In comparison, CMB and CITIC Bank only issued tier 1 capital instruments. Among the foreign banks, WFC, Citi, and MUFG Bank saw a year-on-year increase of capital adequacy ratio; BAC recorded a decline due to the same reason that caused the decline of its core tier 1 capital adequacy ratio; JPM and HSBC's capital adequacy ratio decreased but their tier 1 capital adequacy ratio rose year-on-year, which was mainly due to the year-on-year decrease in the balance of tier 2 capital instruments and the balance of excess loan provision that can be included into tier 2 capital.

Figure 69: Capital Adequacy Ratio



Capital management faced additional capital requirement; domestic banks supplemented capital through various channels; capital instruments accounted for a higher proportion in total net capital

In 2021, domestic banks enhanced external financing arrangements to supplement capital. Their total capital instruments increased year-on-year. One of them (PSBC) supplemented the core tier 1 capital by RMB30 billion through external financing; 8 of them supplemented other tier 1 capital totaling RMB414.5 billion through external financing; 7 of them supplemented the tier 2 capital totaling RMB505 billion. This year ICBC and CCB issued a greater amount of capital instruments, respectively at RMB190 billion and RMB145 billion, accounting for 15.11% and 23.08% of their total capital instruments.

Table 7: External Capital Supplement

Unit: RMB100 million

Bank	Financing Instrument	Capital	Financing Scale
ICBC	Perpetual bonds	Other tier 1 capital	1,000
	Tier 2 capital bonds	Tier 2 capital	900
CCB	Tier 2 capital bonds	Tier 2 capital	1,450
ABC	Perpetual bonds	Other tier 1 capital	400
BOC	Perpetual bonds	Other tier 1 capital	700
	Tier 2 capital bonds	Tier 2 capital	750
PSBC	Public offering of ordinary shares	Core tier 1 capital	300
	Perpetual bonds	Other tier 1 capital	300
	Tier 2 capital bonds	Tier 2 capital	600
BOCOM	Perpetual bonds	Other tier 1 capital	415
	Tier 2 capital bonds	Tier 2 capital	300
CMB	Perpetual bonds	Other tier 1 capital	430
IB	Convertible bonds	Other tier 1 capital	500
	Tier 2 capital bonds	Tier 2 capital	750
CITIC Bank	Perpetual bonds	Other tier 1 capital	400
PAB	Tier 2 capital bonds	Tier 2 capital	300

As for the proportion of external Capital Supplement, financing instruments in the total net capital varied among domestic banks. CCB’s capital instruments accounted for less than 20% of its total net capital; the proportion of BOC, PSBC, and BOCOM exceeded 40%, while other bank's proportion were between 20% and 40%. With the implementation of the regulatory and additional capital requirements for D-SIBs, domestic banks will continue to enhance external capital supplements and adjust the business structure to more efficiently use their capital.

Table 8: Proportion of Capital Instruments

Unit: RMB100 million

Item		ICBC	CCB	ABC	BOC	PSBC	BOCOM	CMB	IB	CITIC Bank
Total capital instrument	2021	12,574	6,282	9,498	11,188	4,557	5,018	2,489	2,818	2,570
	2020	10,351	4,838	9,098	10,060	3,657	4,343	2,060	1,649	2,170
	Growth rate	21.48%	29.85%	4.40%	11.21%	24.61%	15.54%	20.83%	70.89%	18.43%
Total net capital	2021	39,097	32,523	30,579	26,988	9,460	11,400	9,726	8,782	7,858
	2020	33,962	28,327	28,179	24,511	7,846	10,212	8,213	7,628	7,017
	Growth rate	15.12%	14.81%	8.52%	10.11%	20.57%	11.63%	18.42%	15.13%	11.99%
Proportion of capital instrument	2021	32.16%	19.32%	31.06%	41.46%	48.17%	44.02%	25.59%	32.09%	32.71%
	2020	30.48%	17.08%	32.29%	41.04%	46.61%	42.53%	25.08%	21.62%	30.92%
	Growth rate	1.68%	2.24%	-1.23%	0.42%	1.56%	1.49%	0.51%	10.47%	1.79%

Note: Total capital instrument is the amount (regulatory standard) of qualified capital instruments disclosed in the commercial banks' annual reports or capital adequacy supplementary reports. PAB did not disclose its total capital instrument.

Domestic banks' RWA increased; CRWA remained a major component but with a lower proportion

With the implementation of the regulatory and additional capital requirements for D-SIBs in 2021, commercial banks intensified capital supplement. They increased external capital; in the meantime, they optimized asset structure and enhanced green loans to control the growth rate of RWA and save capital.

In 2021, the six major state-owned commercial banks recorded a total RWA increase of RMB6,685.4 billion or 8.24%. The four joint-stock banks recorded an increase of RMB1,869 billion or 9.75%.

Specifically, the CRWA of the six state-owned banks accounted for more than 91% of their RWA, with an average of 92.51%, down 0.22 percentage points from the average (92.73%) at the beginning of the year. Among them, BOC recorded the highest proportion of CRWA at 93.46%. The CRWA proportion of joint-stock banks was slightly lower than that of the six major state-owned banks. All the joint-stock banks recorded a lower CRWA proportion compared with the beginning of the year, except CMB.

Table 9: RWA Composition

Item	ICBC	CCB	ABC	BOC	PSBC	BOCOM	CMB	IB	CITIC Bank	PAB
CRWA	92.40%	92.42%	92.80%	93.46%	92.07%	91.92%	88.16%	90.55%	92.94%	89.40%
Market risk-weighted assets	0.71%	0.49%	0.75%	0.64%	1.51%	2.73%	1.20%	3.41%	0.69%	2.54%
Market risk-weighted assets	6.89%	7.09%	6.45%	5.90%	6.42%	5.35%	10.64%	6.04%	6.37%	8.06%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: CMB used the risk-weighted assets without taking into consideration the floor requirements during the parallel run period to calculate the RWA composition.

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3. Observation of Listed Banks' Business in 2021

3.1 Real estate risks were defused in an orderly way, and capital was steadily channeled to high-quality property enterprises to promote virtuous development in the sector

3.2 Inclusive finance has been growing continuously at speed, with multiple measures taken to improve its quality and efficiency and promote sustainable development

3.3 Retail banking registered continuous growth, strategic transformation saw solid progress with risk management and controls strengthened further

3.4 Acceleration in technology adoption, explore innovative service models

3.5 Opening up new horizons in a shifting landscape as the transition period of new asset management regulation ends

3.1 Real estate risks were defused in an orderly way, and capital was steadily channeled to high-quality property enterprises to promote virtuous development in the sector

Real estate sector: sales declined, financing channels narrowed, default recorded with some real estate enterprises

In 2021, China introduced a series of policies to regulate the real estate market, featuring a variation trend of tightening policies to easing policies throughout the year. In the first half of 2021, after implementing the long-term mechanism for real estate, the government introduced the "three red lines", concentration management, centralized and unified land administration, and other policies. Since the second half of 2021, affected by regulatory policies and decrease in customers' demand, the sales price and volume in the real estate sector continued to decline year-on-year. Most real estate enterprises faced liquidity risks and some were in default. During the end of 2021 and into the first quarter of 2022, many central ministries expressed opinions to stabilize the real estate sector. The Ministry of Finance specified there would be inadequate conditions for expanding the pilot reform of property tax in more cities this year, which was another signal to maintain stability.

Figure 70: Important Policies and Events in the Real Estate Sector

- **1/1/2021** Implementation of the "three red lines" policy
- **1/2/2021** Debt default of China Fortune Land Development Co., Ltd. exploded
- **28/2/2021** Major cities implemented the "centralized announcement and centralized supply" policy
- **16/3/2021** The *Circular on Preventing Loans for Operational Purposes from Unlawfully Flowing into Real Estate Sector* issued
- **30/6/2021** Shenzhen, Ningbo, Chengdu and other cities launched a guiding price mechanism for second-hand houses
- **31/8/2021** Regulators set a cap on the amount used to buy land for the major real estate enterprises piloting the "three red lines" policy: not exceeding 40% of the annual sales
- **8/9/2021** Evergrande Group announced termination of redemption, with debt exceeding 1 trillion
- **23/10/2021** The NPC authorized the State Council to pilot property tax reform in some regions
- **29/1/2022** Aoyuan Group announced that it would not repay the approximately USD1.1 billion soon-to-mature debt
- **16/3/2022** The State Council's financial stability and development committee and five ministries gave a strong signal of "stabilizing the real estate sector"

Table 10: Key Real Estate Policies Issued in 2021 and the First Quarter of 2022 and Impact

Issued by	Time and nature	Content and Impact
PBC, Ministry of Housing and Urban-Rural Development	1/1/2021 Contractionary	• The Capital Monitoring and Financing Management Rules for Real Estate Enterprises (the "three red lines" policy) was officially implemented; • Regulated the supply side to improve the long-term real estate mechanism, which restricted the excessive growth of real estate enterprises.
Ministry of Natural Resources	18/2/2021 Contractionary	• Residential land classification regulation documents required to implement the policy of centralized announcement of the sales of residential land in major cities (centralized announcement should not exceed three times in 2021), and centralized organization of the sales activities; • Raised the threshold of land auction to calm the land market.
CBIRC, the Ministry of Housing and Urban-Rural Development, PBC	16/3/2021 Contractionary	• The *Circular on Preventing Loans for Operational Purposes from Unlawfully Flowing into Real Estate Sector* further strengthened qualification verification of borrowers, credit demand review, loan term management, collateral management, etc. • Prevented loans for operational purposes from unlawfully flowing into the real estate sector.
Housing and Urban-Rural Development Bureau of Shenzhen, Ningbo, Chengdu, Sanya, etc.	First half of 2021 Contractionary	• Launched a guiding price mechanism for second-hand houses; • The implementation of second-hand housing guiding prices indicated that the "keeping prices, expectations and market stable" control had covered the whole market process of real estate.
PBC, the Ministry of Housing and Urban-Rural Development	26/7/2021 Contractionary	• The amount used to buy land by the real estate enterprises piloting the "three red lines" policy should not exceed 40% of the annual sales; • Further limited the cost for land procurement of real estate enterprises.
Standing Committee of the NPC	23/10/2021 Contractionary	• State Council was authorized to pilot property tax reform in some regions; • Both the supply and demand side in the real estate market will be affected.
The Financial Stability and Development Commission of State Council	16/3/2022 Expansionary	• Proposed in special meetings the need to timely study and put forward effective risk prevention and response plans, and proposed measures to support the transformation towards new development models; • PBC, CBIRC, CSRC, the State Ministration of Foreign Exchange, and the Ministry of Finance gave the signal of "stabilizing the real estate sector".

Table 11: Default of Some Risky Real Estate Enterprises in 2021 and First Season of 2022

Real estate enterprise	Risk
China Fortune Land Development Co., Ltd.	• In February 2021, China Fortune Land Development Co., Ltd. announced that it held RMB5.2 billion overdue debt, but had only RMB800 million funds available
Languang Group	• In August 2021, Languang Group failed to redeem a number of matured bonds, totaling RMB5.4 billion
Evergrande	• In September 2021, Evergrande announced termination of redemption, with debt exceeding 1 trillion
KAISA Group	• In November 2021, overdue financial products totaled RMB12.7 billion
Aoyuan Group	• In January 2022, Aoyuan Group announced that nearly USD1 billion bills were defaulted; the redemption of financial products was delayed
Yuzhou Group	• In March 2022, Yuzhou Group announced the rollover of two bonds; USD500 million matured bills could not be redeemed; short-term liquidity pressure piled up; external rating was downgraded to RD (Restricted Default).

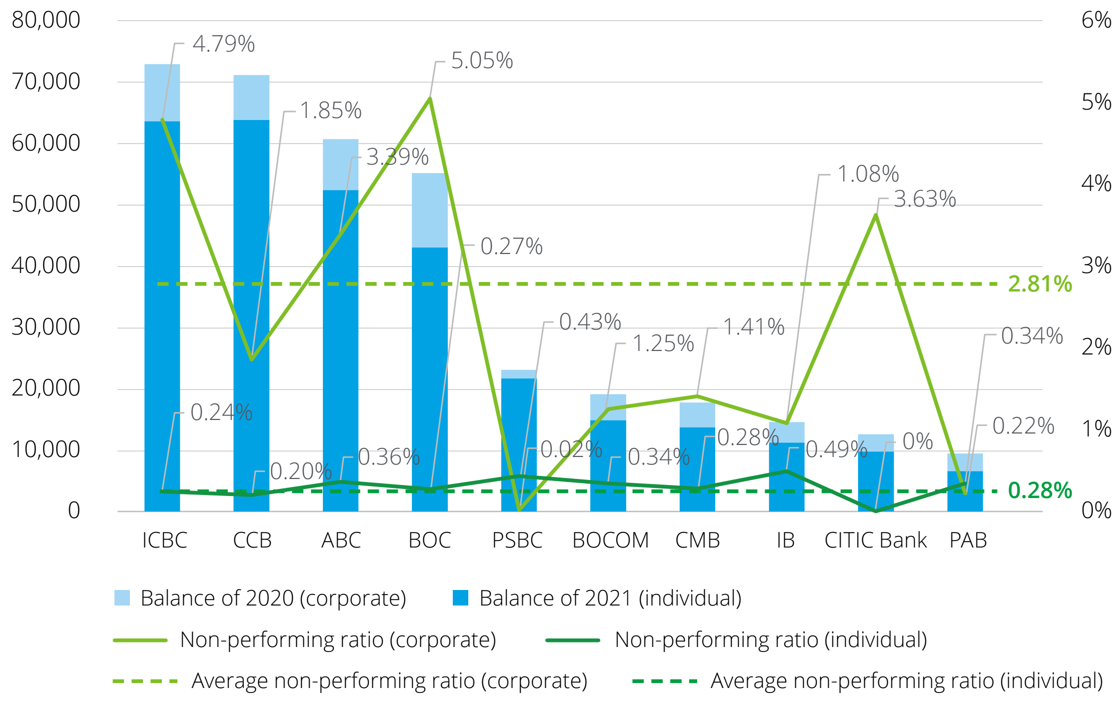
Commercial banks' real estate loan exposure: growth rate of loan supply slowed; non-performing loans increased

Commercial banks' real estate loans are mainly composed of three parts: loans to the real estate sector (corporate business), individual housing loans, and off-balance-sheet businesses (including wealth management, entrusted loans, commissioned trusts and funds, and other businesses that invest capital in the real estate sector and do not assume credit risks). Specifically, individual housing loans accounted for a larger proportion; credit risks mainly existed in the corporate business.

Analysis of real estate loan exposure

Generally, commercial banks will voluntarily disclose the real estate corporate and individual housing loans from which they assume credit risks. As of the end of 2021, the balance and non-performing ratio of real estate corporate and individual housing loans are shown in the figure below.

Figure 71: Balance and Non-performing Ratio of Main Real Estate Loans



Note: CITIC Bank did not disclose the non-performing ratio of individual housing loans

As of December 31, 2021, for the ten commercial banks, individual housing loans accounted for an average proportion of 84%, and loans to the real estate sector accounted for 16%.

Individual housing loans are linked to personal credit, with a low collateral rate and stable collateral. The average non-performing ratio of individual housing loans was 0.28%, indicating relatively lower credit risks, while the average non-performing ratio of loans to the real estate sector was 2.81%.

In addition, four joint-stock banks (ICBC, IB, CITIC Bank and PAB) also disclosed the loan exposure of businesses investing in the real estate sector, without credit risks, such as wealth management, entrusted loans, and commissioned trusts and funds. The scale of such businesses was relatively small and shows a decreasing trend, the relevant risks were controllable.

Table 12:

Unit: RMB100 million

Bank	Real estate businesses without credit risk
CMB	Businesses (such as wealth management investment and entrusted loans) without credit risks totaled RMB412.1 billion, down 21% from 2020
IB	Businesses (such as domestic non-principal guaranteed financial products and bond underwriting) without credit risks totaled RMB130.1 billion
CITIC Bank	Businesses (such as wealth management investment and entrusted loans) without credit risks totaled RMB121.1 billion, down 20% from 2020
PAB	Businesses (such as wealth management investment and entrusted loans) without credit risks totaled RMB120.7 billion

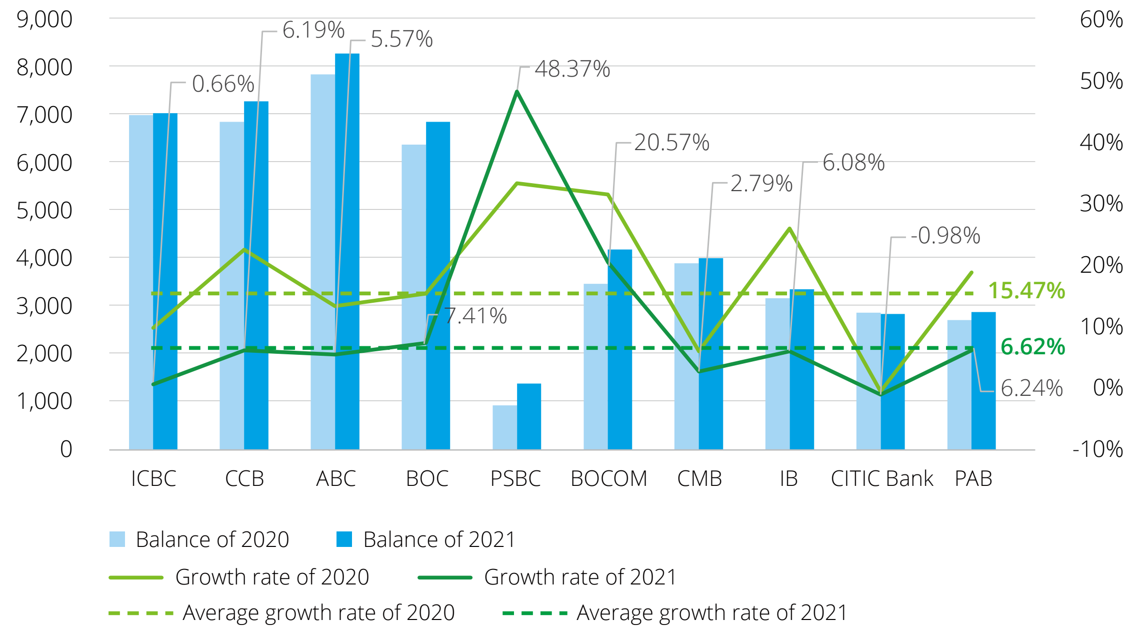
Note: Other six banks did not disclose the real estate businesses without credit risks.

Loans to the real estate sector decreased

In 2021, several commercial banks gradually decreased the loan supply to the real estate sector. In 2021, the average growth rate of real estate corporate loans of the ten banks was 6.62%, a significant decrease from that (15.47%) of 2020.

Figure 72: Balance and Growth Rate of Loans to the Real Estate Sector

Unit: RMB 100 million



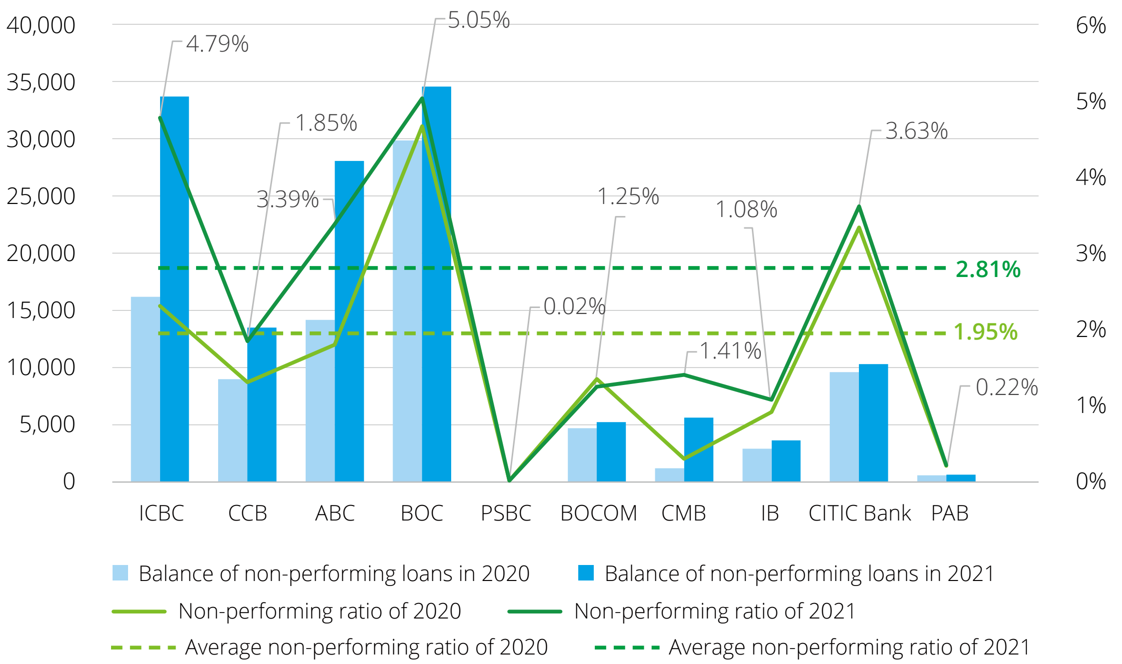
In 2021, the growth rate of loans to the real estate sector of most commercial banks slowed. Specifically, the growth rate of CCB, BOCOM, IB, and PAB fell by more than ten percentage points; CITIC Bank saw negative growth for two consecutive years.

Non-performing ratio of loans to the real estate sector rose

In 2021, with real estate market turmoil and adjustment, some high-leverage real estate enterprises defaulted on loans. Therefore, the non-performing ratio of loans to the real estate sector rose as of the end of 2021. The non-performing loans and non-performing ratio of eight commercial banks (excluding PSBC and BOCOM) increased, with the average non-performing ratio rising from 1.95% at the end of 2020 to 2.81%.

Figure 73: Non-performing Loans to the Real Estate Sector

Unit: RMB million



As of the end of 2021, the domestic commercial banks recorded varied non-performing ratios of loans to the real estate sector. Specifically, affected by the default of some large private real estate enterprises, the non-performing ratio of BOC, ICBC, CITIC Bank, and ABC exceeded 3%, with BOC and ICBC recording the highest non-performing ratio of 5.05% and 4.79%; the non-performing ratio of other banks was below 2%, with PSBC and PAB recording the lowest of 0.02% and 0.22%, respectively.

All ten commercial banks saw an increase in non-performing loans to the real estate sector. Specifically, the non-performing loans of CMB and ICBC increased by more than 100%, and ABC's increased by 98%.

Commercial banks' real estate business development measures: strengthening risk mitigation, steady investment, and developing affordable rental housing

As real estate sector loan risk exposure increased, some leading commercial banks disclosed more information about the concerns of investors and regulators such as risk-resistance results of real estate corporate business, risk control measures, and development outlook in their annual reports, and further elaborated on such information in their performance announcements. Commercial banks will follow policy guidance, scale up risk mitigation efforts, maintain the steady investment, and develop affordable rental housing to advance their real estate corporate business.

Table 13:

Bank	Risk-resistance achievements	Risk control measures	Outlook
ICBC	• The bank executed prudent criteria for determining non-performing loans, and real estate corporate non-performing loans were fully and truly reflected; • The bank had sufficient provisions to cover all losses and risks of real estate corporate loans.	• Steadily carried out the prudential management requirements for real estate, continued to set limits in managing commercial real estate investment and financing; • Paid close attention to the changes of real estate market risks in various regions, strictly guarded against the risks of real estate group customers engaging in high-leverage expansion, and improved refined management.	• With policies promoting the virtuous cycle and healthy development of the real estate sector, the real estate market will steadily recover and the overall risk mitigation trend will be positive; • Adhere to the principle that "houses are for living in, not for speculation", and satisfy the first-time home buyers' and other reasonable needs.
CCB	• Real estate asset quality remained relatively stable, with the non-performing loan ratio lower than the average non-performing ratio of domestic corporate loans; loans to key real estate enterprises accounted for a relatively smaller proportion, thus the impact on asset quality was controllable.	• Maintained a stable, balanced, and orderly allocation of real estate loans, actively supported the reasonable housing needs of residential households; • Innovated and explored feasible paths to support the development of housing rental.	• In the process of building a new development pattern, some customers will inevitably have risks exploded and cleared. This will not affect the smooth and healthy development of the whole industry • Adhere to the principle that "houses are for living in, not for speculation", enhance organizational adjustment, and focus on advancing rental housing strategies.

Bank	Risk-resistance achievements	Risk control measures	Outlook
CMB	• More than 80% of real estate loan projects were in first and second tier cities; purely credit-based projects accounted only for 1.4%; more than 80% of the projects were valued more than 1.5 times than the financing coverage; • The proportion of real estate loan provision was twice higher than that of the bank's overall loan provision.	• Followed the overall strategy of "total volume control, focus on customers and regions, adjustment of structure, and strict management", and maintained a stable and orderly granting of credit loans to the real estate industry.	• Closely follow the macro policies on real estate sector and reinforce the research and judgment of real estate risks. It is expected that against the backdrop of the current macro environment and industry policies, the quality of real estate assets of the Group will remain stable as a whole; • The real estate sector is still a pillar industry of the national economy. CMB will cooperate with excellent real estate developers and actively increase mortgage loan supply.
IB	• About 90% of IB's self-operated real estate business was in the first and second tier cities, and the central cities of the three major metropolitan areas, with stable value; over 80% of the real estate corporate business financing was protected by the national "guaranteed delivery" policy; • Potentially risky real estate corporate projects totaled about RMB20 billion, with adequate provision for asset impairment. The provision coverage ratio for real estate corporate business was 305%.	• Credit risk control for real estate corporate business was the priority of asset quality management. The head office uniformly controlled the access of real estate enterprises and the credit supply; • Reduced credit supply to real estate developers with difficulties through closed-loop operation and M&A financing. IB has disposed of RMB6.2 billion risky real estate assets through M&A.	• The market will gradually recover, the domestic market will not suffer systemic risks, and the quality of credit assets will remain stable; • Intensify M&A of real estate projects, with RMB20 billion arranged for M&A, actively promote M&A of quality developers, facilitate the decoupling of full-value projects with troubled developers, and eliminate the hidden risks of the "guaranteed delivery" projects.

Commercial banks' real estate business trend: stable investment to facilitate the virtuous cycle and healthy development of the real estate sector

In 2022, under the guidance of the policies introduced by central and local governments, reasonable housing demand is expected to be further released. Although some real estate enterprises are still coping with existing problems and risks but the overall process is nearing the end, the industry structure will improve, and the advantages of the stably-operating real estate enterprises keep emerging. Meanwhile, the decline in China's population growth rate and the increase in housing stock changed the supply and demand structure in the real estate market. In the future, real estate enterprises need to transform towards new development models, providing consumers with higher quality, diversified and refined products, such as long term rental housing, affordable housing, old neighborhood renovation and community elderly care, which are in line with the national livelihood programs and have huge market potential.

Development opportunities and trends of real estate business:

- Under the policy guidance of "keep land prices, housing prices and market expectations stable", it is expected that commercial banks will sustain reasonable loan supply to stably-operating real estate enterprises; real estate enterprises will undergo dynamical structural adjustment and clear their risks; the concentration of quality real estate enterprises is expected to improve;
- The house purchase demand will be gradually released, and commercial banks are expected to increase the supply of housing mortgage loans;
- Loans to risky real estate enterprises will be effectively dealt with. Commercial banks curtail risk exposures through M&A, closed-loop operation of projects, quickly disposing of the non-performing loans, auction of suspended projects, and other means. Thus, asset quality will be stable and controllable;
- Commercial banks will comply with regulatory policies and develop high-quality real estate business. They may increase financing exposure related to long-term rental housing and affordable housing.

Challenges facing real estate business:

- The pandemic impacted residents' income and market expectations. The pressure of repaying housing mortgage loans piles up, and residents' willingness to purchase houses may decline; meanwhile, the risks with defaulted or suspended real estate enterprises may be further transmitted to the mortgage loans of houses that have not been delivered;
- Some "high-debt, high-leverage, high-turnover" private real estate enterprises are incapable of resolving the debt risks; the debt risks of "lying flat" real estate enterprises (those who choose to skate by and become a couch potato) may continue to rise;
- During China's economic transformation, the support for real estate varies from region to region, so the real estate market may remain depressed in some regions or continue to overheat in others.

Looking ahead, with expanding opportunities and rising challenges, commercial banks will advance steadily to facilitate the virtuous cycle and healthy development of the real estate sector!

3.2 Inclusive finance has been growing continuously at speed, with multiple measures taken to improve its quality and efficiency and promote sustainable development

Commercial banks vigorously supported the rapid development of inclusive finance

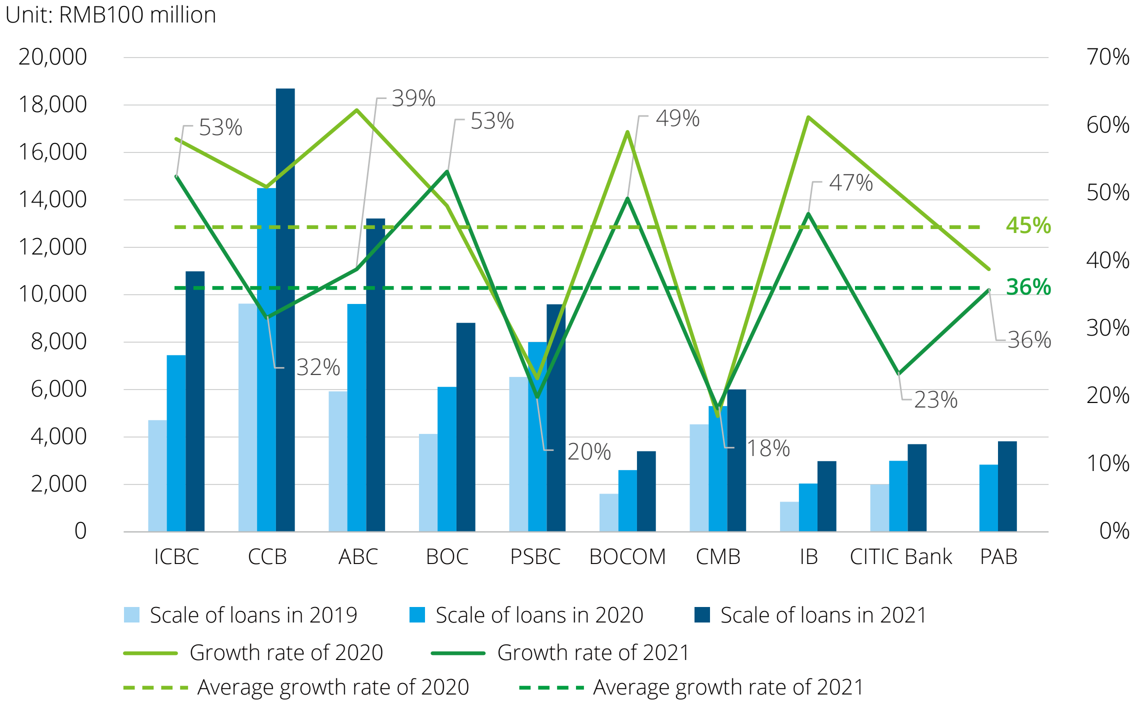
From 2019 to 2021, the *Report on the Work of the Government* required financial institutions, especially large commercial banks, to increase inclusive finance lending by over 30% year-on-year. Meanwhile, regulators introduced a series of monetary, fiscal, and regulatory policies to stimulate financial institutions to enhance efforts in inclusive financial services, and promote the construction of an inclusive financial operation mechanism in which banks are confident and willing to grant loans.

The statistics of PBC show that the balance of financial institutions' inclusive loans was RMB11.59 trillion, RMB15.1 trillion, and RMB19.23 trillion for the past three years, respectively, up 23.1%, 30.3%, and 27.3%. Specifically, the six large state-owned banks continued to lead the industry, with an average YoY growth rate of more than 30%; joint-stock commercial banks and city commercial banks intensified inclusive finance lending, and developed specialized and diversified products and services; the large number of scattered rural financial institutions mainly served the local small and micro enterprises, so they made relatively higher inclusive financial contributions. Therefore, inclusive finance was also the main driving force for rural financial institutions' business development.

Inclusive loans to small and micro enterprises continued to increase with expanding customer groups; interest rates of newly issued loans kept falling

Commercial banks disclosed the information of inclusive finance business separately in their annual reports for the past three years. The scale and customer number of inclusive finance lending, and the interest rates of newly issued loans of the ten commercial banks are as follows:

Figure 74: Scale of Inclusive Loans to Small and Micro Enterprises



Note: the statistics of 2020 were data of the small and micro enterprises granted with total loans of RMB10 million or less; the data of 2021 excluded discounted bills and rediscount business; PAB did not disclose the balance of inclusive loans to small and micro business in 2019

Loan supply increased year-on-year, with a lower growth rate

In 2021, eight commercial banks (except for BOC and CMB) recorded a lower growth rate of inclusive loans to small and micro enterprises compared with 2020, with the annual average growth rate dropping from 45% to 36%, which still beat the growth target set at the beginning of the year.

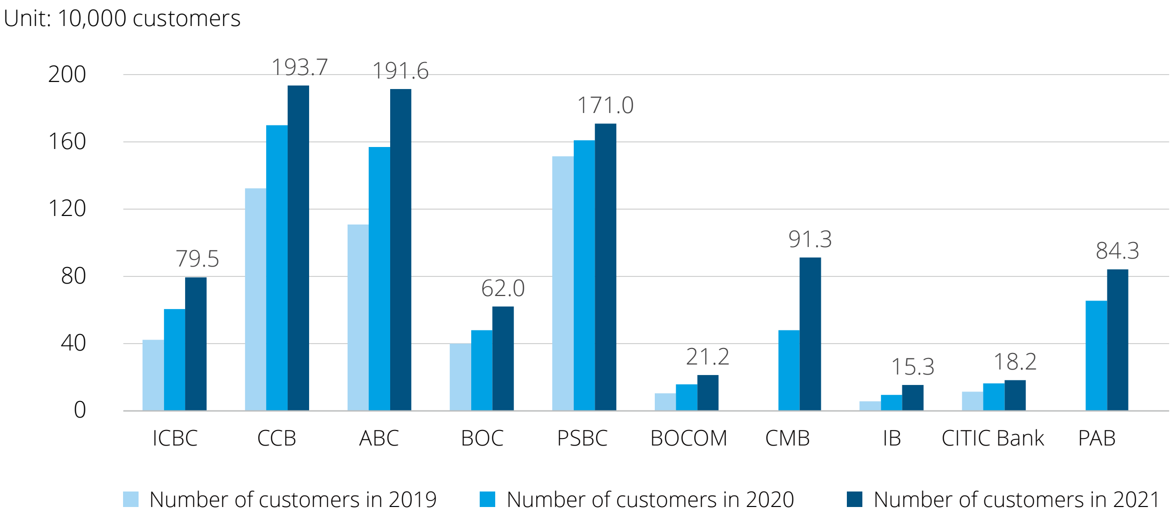
As of the end of 2021, CCB had the largest scale and the largest increase of inclusive loans to small and micro businesses, with a loan balance of RMB1.87 trillion, up RMB449.9 billion from the end of 2020; ABC was No.2 in terms of the loan scale and amount of increase, with an inclusive loan balance of RMB1.32 trillion, up RMB369.3 billion from the beginning of this year; BOC recorded the highest growth rate, with a balance of RMB881.5 billion, up 53.15% from the end of 2020, which was followed by ICBC whose balance was RMB1.1 trillion, up 52.5% from the end of 2020.

Among the joint-stock banks, CMB recorded the largest balance of inclusive loans at RMB601.1 billion; IB recorded the highest growth rate, with a balance of RMB298.7 billion, up 47% from the end of 2020 (IB has recorded the highest growth rate for two consecutive years).

Loan coverage further expanded; inclusive finance gradually reached agriculture, rural areas, and rural people

In 2021, inclusive loans became more inclusive to cover a broader range of customers. The number of customers with inclusive loans totaled 33.58 million, an increase of 7.85 million year-on-year or 31%, beating the growth target set at the beginning of the year. [1] As of the end of 2020, CCB had most inclusive loan customers, totaling approximately 1.937 million, an increase of 236,000 or 14% from the end of the previous year; ABC and PSBC recorded the second largest number of customers at 1.916 million and 1.71 million, respectively; ICBC, BOC, CMB and PAB's inclusive loan customers all exceeded 500,000.

Figure 75: Number of Customers with Inclusive Loans

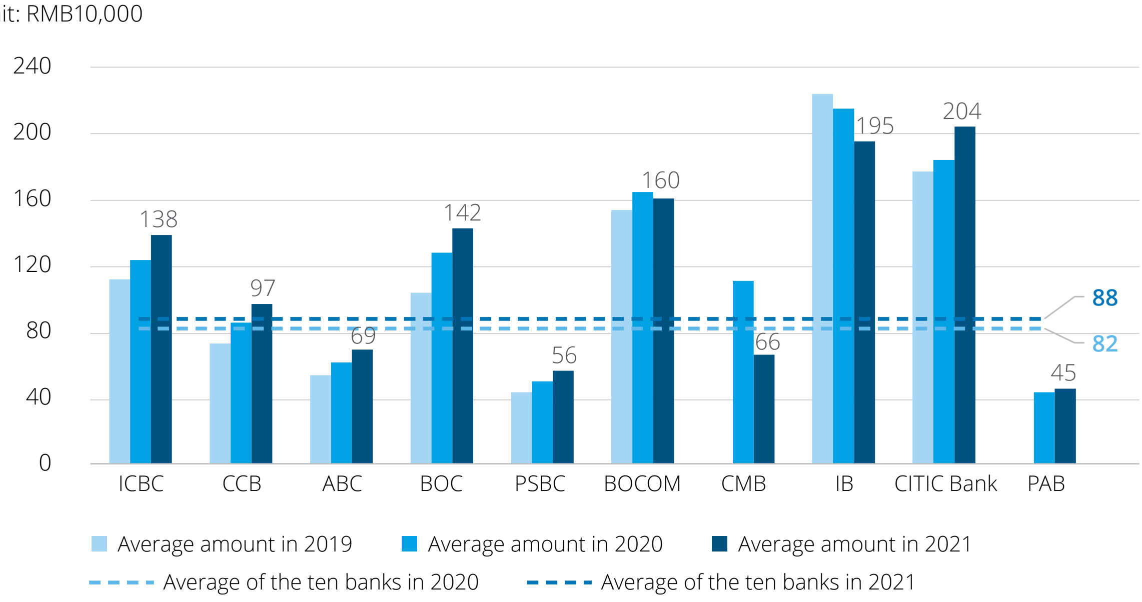


Note: CMB and PAB did not disclose the number of inclusive loan customers in 2019.

In 2021, regarding the average amount of inclusive loans to small and micro enterprises, the ten commercial banks had an average of RMB880,000, which was not a significant change compared with 2020 (RMB820,000). As of the end of 2021, PAB recorded the lowest average amount (RMB450,000) of inclusive loans to small and micro enterprises, and the figure of CMB, ABC and PSBC were all below the average level; CITIC Bank recorded the highest average amount of RMB2.04 million. The commercial banks had different development strategies for inclusive finance business and product characteristics, so their average amount of inclusive loans to small and micro enterprises varied greatly. Through inclusive finance strategies, the banking sector is building a financial environment where everyone takes part and has a share, gradually narrowing the gap between the urban and rural areas and promoting common prosperity of the whole society.

1: Source: China Banking and Insurance News

Figure 76: Average Amount of Inclusive Loans to Small and Micro Enterprises



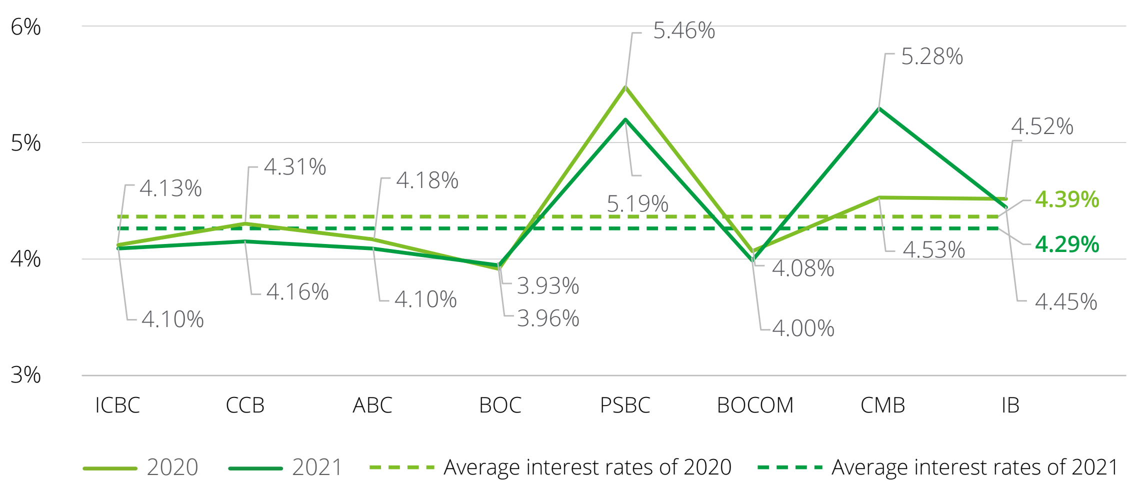
Note: CMB and PAB did not disclose the number of inclusive loan customers in 2019.

Commercial banks made reasonable interest concessions for small and micro enterprises; interest rates of newly issued loans fell year by year

The interest rates of newly issued loans are decreasing year by year. In 2021, apart from BOC and CMB, the interest rates of other commercial banks were lower than those in 2020. Inclusive finance was truly inclusive and becoming more beneficial for customers.

In 2021, BOC recorded the lowest interest rate of newly issued loans at 3.96%; CCB saw a large interest rate decline from 4.31% to 4.16%, down 15 base points; ICBC, ABC and BOCOM's interest rates dropped to around 4.10%; IB had a small drop to 4.45%.

Figure 77: Interest Rates of Newly Issued Inclusive Loans to Small and Micro Enterprises



Note: CMB and IB did not disclose the interest rates of newly issued loans in 2019.

Developed featured businesses and enriched product lines to further the high-quality development of inclusive finance

Commercial banks mostly leverage Fintech to expand the coverage of inclusive financial services. In the meantime, they developed different strategies, took different development paths, and created various products, thus jointly promoting the high-quality development of inclusive finance.

Table 14:

	Strategy	Development model	Major products
ICBC	Continued to push forward product innovation, strengthen service channels, improve comprehensive services and promote the **high-quality and sustainable** development of inclusive financial services	• Made vigorous efforts in developing digital inclusive finance and supply chain finance, and scaled up small and micro loans; • Continuously provided stable and efficient inclusive credits; adhered to digital inclusive development, accelerated the improvement of the centralized operation system and online and offline integrated service channels in line with the characteristics of digital inclusive finance; • Provided targeted support for the key links of inclusive finance, optimized the regional layout, attained the key regions-driven development, and stepped up support for regions with weak business foundation; • Constantly advanced the innovation of inclusive finance products; • Continuously enhanced the capability of inclusive finance services, leveraged its comprehensive business advantages to render the inclusive finance services that combined financing, consulting and commercial services.	• Launched the "ICBC Xingnongtong" brand to expand the breadth and depth of ICBC's financial support for the endeavor of rural revitalization; • Upgraded the "Quick Lending for Operation", accelerated the integration and application of multidimensional data, improved the non-contact service mode, launched innovative scenarios such as "Technical Innovation Loan", "Prosperous Agriculture Loan" and "Solar Power Loan" to better meet the needs of market segments; • Continued to promote the online transformation of the whole process of "e-Mortgage Quick Loan" product, to improve business processing efficiency and customer experience; "e-Enterprise Quick Loan", an innovative financing product, was launched to further enrich online collateral products; • Optimized the financial service platform for supply chain, created a unified service portal for digital supply chain financing, and further enhanced its service capability.
CCB	Reinforced our lead in inclusive finance and continued to prioritise small and micro businesses and private businesses, **warming the dream-catchers with the flowing water of finance**	• Continued to develop the model of digitalised inclusive finance featuring "batch customer acquisition, accurate profiling, automated approval, intelligent risk control, and integrated services", and pressed steadily ahead with the high-quality development of inclusive finance services; • Enhanced platform operation with digital technology and other technologies to improve market responsiveness;	• Upgraded the "CCB Huidongni" App and the acceleration of integrating the three advantageous service tools; the "CCB Huidongni" APP had attracted over 150 million online user visits and been downloaded more than 19 million times; it had 14,433.4 thousand registered users and 6,396 thousand certified enterprises, an increase of 1,947.3 thousand from 2020; it had 1,260.6 thousand credit customers, and granted RMB989.9 billion loans, an increase of RMB550,050 million from 2020;

	Strategy	Development model	Major products
		• Focused on the diverse needs of inclusive finance groups such as small and micro businesses, individual business owners, agriculture-related customers, as well as upstream and downstream customers in the supply chain, and diversified product lines so as to improve ability and efficiency to meet customer demands; • Upgraded "CCB Start-up Station" service models for medium, small and micro businesses engaging in sci-tech innovation and enhanced the service capabilities in technological innovation; gave full play to the advantages of outlets and channels and strengthened the integrated development to make its service more accessible to common people online and provide warm and high-quality offline service; • Explored and established an inclusive finance risk control mechanism with two-way synergy between the front and middle offices, to improve the efficiency of risk control and ensure the high-quality development of key strategic businesses.	• Loans granted through products with new characteristics such as "Quick Loan for Small and Micro Businesses" totalled RMB5.93 trillion since their launch, benefiting 2,524.9 thousand customers; • "Yunongtong" significantly expanded the service scope of inclusive finance, and innovations in technology enabled "livestock" to be used as collateral and being converted into digital assets, enhancing the credit of farmers; CCB established 510,000 "CCB Yunongtong" inclusive finance service sites, covering 80% of towns and administrative villages, and 37% of the service sites were jointly set up with the CPC village committees and villagers' self-governance committees; • The coverage ratio of the risk alert and detection (RAD) system on the NPL borrowers of small and micro businesses exceeded 80%; and the risk screening and detection (RSD) system automatically screened 78,971,200 transactions and effectively blocked 357,100 dubious transactions.
ABC	Highlighted the two positions of **"a leading bank serving rural revitalization" and "a major bank serving the real economy"**; continuously promoted the high-quality development of inclusive finance business	• Strengthened the construction of the inclusive finance service system, established a two-level inclusive finance specialized institution system, and established a classified operation and management system for the outlets; • Continued to build the digital marketing service system for inclusive finance; • Optimized and innovated the online system for inclusive finance products. ABC improved the layered and classified product innovation mechanism, and enriched financing scenes; • Improved the long-term service mechanism for inclusive finance, and established differentiated policies and systems for inclusive business; • Improved the digital risk control system for inclusive finance. ABC made full use of data cross-validation, optimized the risk identification system and implemented the whole-process risk prevention and control so as to control the non-performing rate of inclusive loans in a tolerant range.	• Created the "ABC E-loan" product series to meet the financing needs of inclusive customers such as small and micro businesses, individual industrial and commercial households and farmers; • Optimized the features of the "inclusive E station" system and deployed it to corporate mobile banking, portal website, WeChat Apps and local administrative systems; • The "Rural Version" mobile banking was launched. ABC launched the "Rural Version" mobile banking based on the preference of customers in County Areas and added exclusive services such as Huinong wealth management and Huinong E-loan. ABC carried out special marketing activities with the theme of "Revitalizing Villages and Benefiting Rural People with Mobile Banking" and established an activity brand of "Huinong Service Day".

	Strategy	Development model	Major products
PSBC	PSBC gives full play to its role as an advocate, pioneer and facilitator of inclusive finance to achieve sustainable development of inclusive financial businesses. **PSBC sowed the seed of inclusive finance in the field of hope.**	• Strengthen the institutional support for inclusive finance, and added inclusive finance-related responsibilities to the working rules of the Strategic Planning Committee of the Board of Directors; • Clarified the "12345" work framework, put forward ten core programs for serving rural revitalization, built an all-round digital Sannong finance development framework covering channels, products, platforms, operation and risk control to create a universal brand of Sannong Financial Services, and established a digital bank serving rural revitalization; • Compiled a collection of typical cases of serving Sannong and county economy, and promoted advanced practices across PSBC. Moreover, PSBC strengthened the research on key industries of rural revitalization, established a collaborated research mechanism between the Head Office and branches; • Deepened the digital transformation of microfinance by establishing a "5D" system featuring digital marketing system, digital product system, digital risk control system, digital operation model and digital service model.	• Launched "PSBC SMEs Partner Application" for mobile banking targeting MSEs, in a bid to provide them with one-stop "finance plus scenario" services anytime at any places; • Continued to push forward the development of "Easy Small and Micro Loan" and "Speedy Micro Loan" service scenarios, centered around various operation and management scenarios within the life cycle of MSEs, accessed government affairs data including taxation, invoice, government procurement and customs, as well as specialized data such as project bids, logistics and industrial chain transactions. PSBC launched an innovative industrial chain model of Easy Small and Micro loan, providing convenient and efficient financing services to the upstream and downstream customers of core enterprises; • Based on traditional outlets, PSB further expanded the reach of microfinance services. Using online channels such as mobile business terminals and the mobile banking APP, PSBC was able to provide MSEs with full-process, online and self-service loan drawdown, so that customers can apply for and draw down loans without visiting banking outlets and enjoy the contactless window service.
IB	Inclusive finance will develop faster in the context of furthering rural revitalization and promoting common prosperity; the pandemic drove the development of online financial services and digital platforms, which will lead to breakthroughs in **digital inclusive finance**	• The subsidiary Fujian Jin Fu Yun Co., Ltd continued to explore digital financial services and digital operations, further optimized and improved the Jin Fu Yun platform, deepened the links among the government, banks and enterprises, and promoted policy implementation, information exchange and bank-enterprise connection; • IB explored to build a new digital inclusive finance ecosystem. It adhered to the concept of "open, sharing and connecting everything" and rolled out the "Industrial Inclusive Loan" platform, striving to build an open inclusive financial service ecosystem to facilitate the development of real economy and rural revitalization.	• IB utilized digital technology to build a new digital inclusive finance ecosystem. The Fujian Jin Fu Yun attracted 110 financial institutions, with a total of 31,100 financing requests amounting to RMB104.106 billion resolved, up 163% and 136% year-on-year, respectively; the average amount of the financing requests was RMB3,342.4 thousand, and about 98% were inclusive loans to small and micro businesses; • IB launched the "Industrial Inclusive Loan" platform to provide comprehensive, online and scenario-based services. As of the end of 2021, the platform was connected to 274 external platforms; the contract amount of online financing for small and micro enterprises totaled RMB12.8 billion, and the "Industrial Inclusive Loan-Quick Easy Loan" products continued to be enriched.

Three balance points for the sustainable development of inclusive finance

The 2022 Report on the Work of the Government no longer had a specific growth rate requirement for inclusive finance. Instead, it proposed that more inclusive finance loans would be granted to customers in broader areas, with lower interest rates. The future development of inclusive finance businesses will face opportunities and challenges. Commercial banks should nail down three balance points to promote the sustainable and high-quality development of inclusive finance:

Balance rapid development and risk prevention of inclusive finance

In 2022, China will still focus on stabilizing the overall economic performance, promote economic growth to a reasonable range, and continue to ensure stability on six key fronts (employment, financial operations, foreign trade, foreign investment, domestic investment, and expectations) and maintain security in six key areas (job, basic living needs, operations of market entities, food and energy security, stable industrial and supply chains, and the normal functioning of primary-level governments). Developing inclusive finance businesses should also consider risk prevention and consider worst-case scenarios to keep a dynamic balance between inclusive finance development and risk prevention, thus forestalling systemic risks.

Over the past three years, inclusive loans to small and micro businesses increased significantly, with loans to new customers accounting for a large proportion of existing loans. New customers' loans are at the growth stage, thus showing few credit risks. According to the data released by commercial banks, the non-performing ratio of inclusive loans was declining, which was lower than the average non-performing ratio of all loans. The small and micro enterprises are less capable of resisting risks and more sensitive to the impact of economic cyclical changes, so they inherently bring about relatively higher credit risks. Since the outbreak of COVID-19, the policy allowing small and micro enterprises to postpone principal and interest repayments and the credit loan support policy have been extended twice until the end of 2021. Principal and interest repayments will be negotiated and market-oriented starting from 2022. Commercial banks should continuously pay attention to credit risks of inclusive loans, enhance risk management concept, optimize risk management model, and improve digital transformation of risk control, to build a sound risk management system.

Balance the relationship between online risk control model and offline manual verification

Digitalization is the main approach for commercial banks to implement inclusive finance. Banks established digital platforms, introduced online loan businesses, built intelligent online risk control models, and developed real-time monitoring, automatic warning, automatic detection and other intelligent function modules, effectively reducing operational risks and labor costs. However, it is usually difficult to obtain complete operation and financial data of small and micro enterprises, and they often have loans of private lending and loans based on mutual guarantee or joint guarantee. Therefore, it is hard to use the risk control models to monitor their risks.

While vigorously developing inclusive finance, commercial banks should enhance their credit managers' soft power to deeply understand of the local economy and secure the local credit market. Commercial banks should constantly explore the dynamic balance mechanism for the online risk control model and offline manual verification, and build tough and competent local credit teams to remedy the "man-caused" risks that the risk control models cannot monitor.

Balance interest concession and sustainable development

Since 2020, commercial banks have scaled up their support for small and micro enterprises and made substantial interest concessions to support the real economy. For instance, commercial banks postponed principal and interest repayments of inclusive loans to small and micro businesses per the government's requirements. They lowered interest rates of newly issued loans year by year. Inclusive finance meets the needs of people's livelihood, and has excellent development potential in the future. Besides being inclusive and beneficial, commercial sustainability is the key factor in driving inclusive finance's long-term development.

Regulators introduced supporting policies to encourage financial institutions to strengthen inclusive financial services. For example, commercial banks are encouraged to issue financial bonds for small and micro enterprises; PBC executes targeted RRR cuts for inclusive finance; Financial institutions enjoy tax exemption for the interest income from the petty loans granted to small and micro enterprises; the Macro Prudential Assessment (MPA) implements favorable policies for the loans to small and micro enterprises. Regulators have implemented several constructive policies, providing effective support for commercial banks to develop inclusive finance. Meanwhile, commercial banks continued with digital transformation, built online and offline integrated digital inclusive financial service systems, and leveraged data technology to expand their inclusive finance business, control operational risks and reduce labor costs.

> Following the guidance of national policies, inclusive finance gained good momentum over the past three years, yielding preliminary results, which laid an important foundation for the common prosperity of the whole society. Commercial banks continued to explore better service models to accommodate customers' needs and created specialized inclusive scenarios to allocate credit resources accurately. In the meantime, commercial banks accelerated the integration of Fintech and inclusive finance to effectively improve service efficiency and optimize risk management capabilities, thus promoting the sustainable, high-quality development of inclusive finance.

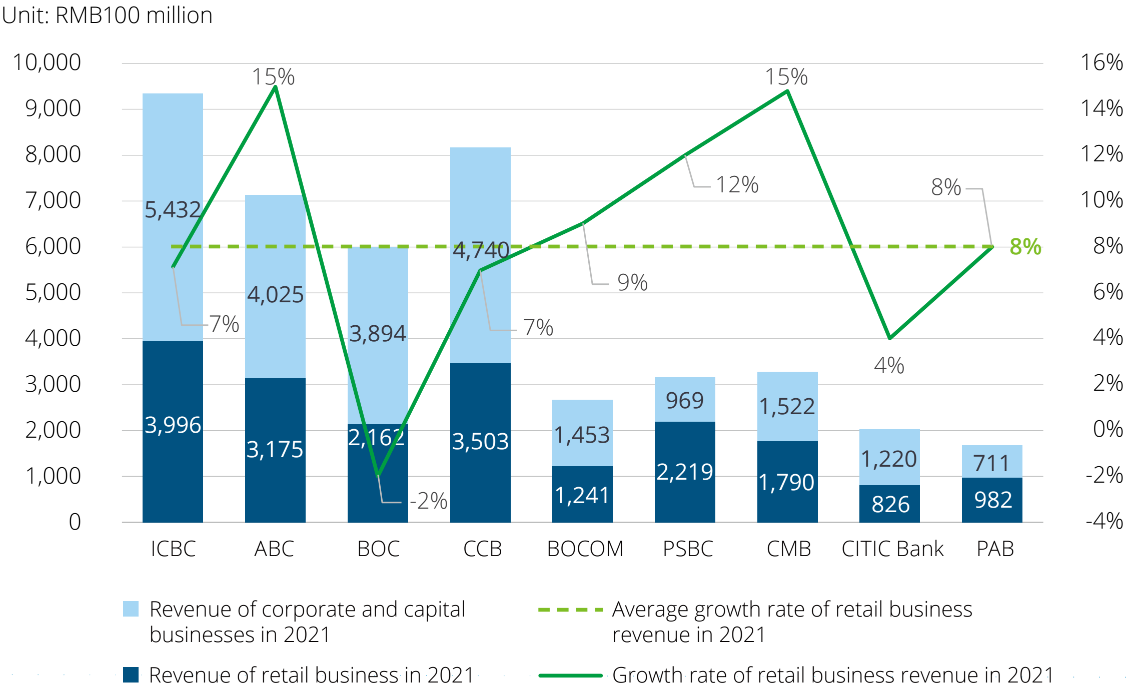
3.3 Retail banking registered continuous growth, strategic transformation saw solid progress with risk management and controls strengthened further

In 2021, as China implemented regular pandemic prevention and control measures, the domestic economy saw rapid recovery and consumption demands increased gradually. In the meantime, the market-oriented interest rate reform deepened; the capital market developed substantially; commercial banks' credit spreads narrowed; corporate credit risks increased; the regional resurgences of COVID-19 cases complicated the development of banks; banks paid more attention to retail banking, which is more capable of resisting the impact of economic cyclical changes; banks' profits steadily increased as a result of enhanced resource investment. Banks focused on developing wealth management, and strove to improve customer experience through the "online+offline" operation model. Banks will continue to pay close attention to the regulatory and risk management issues during retail business development.

Retail revenue and profits increased steadily

According to the revenue of different business segments disclosed by the ten domestic commercial banks in 2021, the retail financial business averaged 48% of their total revenue. For five of the six state-owned banks (excluding BOC), their retail business revenue accounted for more than 40% of the total revenue, with that of PSBC reaching 70%. Among the joint-stock banks, the retail business of CMB and PAB contributed more than 50% of their total revenue, and that of CITIC Bank contributed more than 40%. The average growth rate of the retail business revenue of the ten domestic commercial banks stood at 8%. Specifically, ABC and CMB recorded the highest growth rate of 15%; PSBC had a 12% growth. Overall, the retail business revenue and its proportion to the total revenue of the ten domestic commercial banks steadily increased.

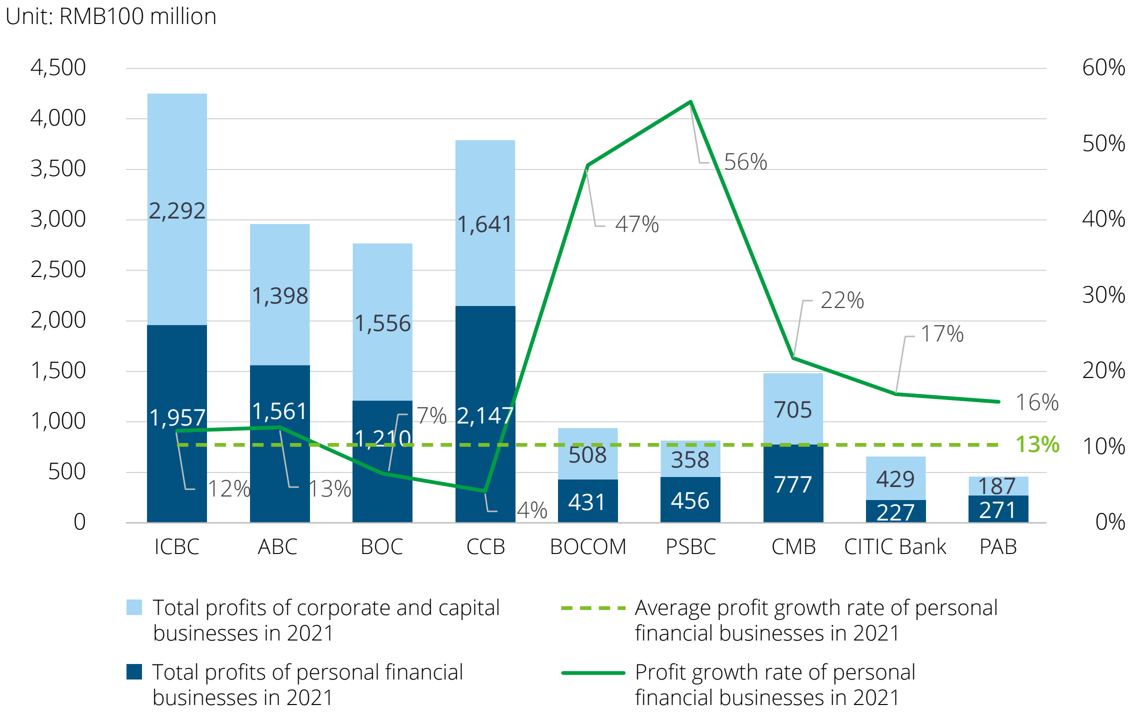
Figure 78: Retail Business Revenue



Note: IB did not disclose the information of personal banking business in its FY2021 annual report.

According to the data disclosed by the ten domestic commercial banks in 2021, the retail business profits averagely accounted for more than 50% of their total profits. The six major state-owned banks have a relatively stable business structure, with the retail business contributing more than 40% of the total profits; among them, CCB and PSBC's retail profits accounted for 56%. Among the joint-stock banks, the retail profits of CMB and PAB accounted for more than 50% of the total profits, with that of PAB reaching 59%. The average growth rate of the retail profits of the ten banks reached 13%. Specifically, PSBC recorded the highest growth rate of 56%; the growth rate of BOCOM was 47%. ICBC recorded a steady growth rate of 12% in 2021. In general, the retail profits and its proportion to the total profits of the ten banks rose steadily.

Figure 79: Retail Business Profits

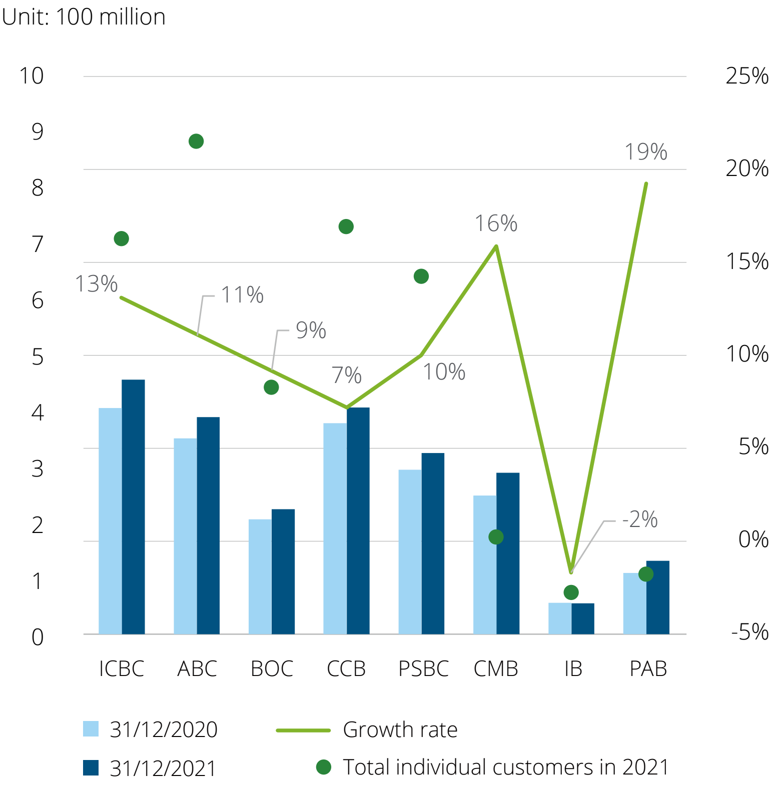


Note: IB did not disclose the information of personal financial businesses.

The banking sector is playing an increasingly important role in supporting the real economy, promoting rural revitalization and achieving common prosperity. Banks actively embraced digital transformation, built channels and scenarios, and innovated products to contribute to common prosperity. ICBC set up specialized agencies to serve rural revitalization, and launched the "ICBC Xingnongtong" brand; PSBC built nearly 40,000 outlets into wealth investment education centers and value-creation platforms to strengthen financial support for rural devitalization; IB continued to expand its interbank network, and connected the supply and demand sides of wealth management to provide high-quality wealth management products in the third and fourth-tier cities and rural areas to increase residents' property income, with wealth management scale reaching nearly RMB1.8 trillion and retail sales of wealth management products exceeding RMB5 trillion.

All banks achieved remarkable results, especially in retail business, where customer size and activity continued to grow. Individual customers increased steadily at all banks. Mobile banking was the primary front-end channel of retail business. Banks actively developed digital customer acquisition models, and strove to create new growth points of customer acquisition by optimizing customer experience, upgrading functions and services, and expanding the scenario ecosystem. According to the FY2021 annual reports, Except IB, mobile banking users of ICBC, ABC, BOC, CCB, PSBC, CMB and PAB maintained a growth rate of over 7%, with PAB's growth rate reaching 19%. The mobile banking monthly active users (MAUs) of ICBC and ABC exceeded 150 million, followed by CCB whose MAU exceeded 100 million. The popular CMB Life APP recorded MAUs of 46 million. PSBC's personal mobile banking users rose to 326 million, with MAUs exceeding 47 million. BOC's number of mobile banking users was much smaller than other state-owned banks, but it vigorously promoted mobile banking in 2021, with users growing by 9%.

Figure 80: Number of Mobile Banking Users



Note: The number of mobile banking users was the total number of mobile banking users and card APP users disclosed by the banks.

Note: BOC's number of individual customers was the total of corporate online banking customers, individual online banking customers and mobile banking customers.

Note: The data of ICBC was the number of individual online banking customers; ICBC did not disclose the number of card APP users in 2020 and 2021.

Note: IB's number of individual customers was the total retail banking customers (including credit card customers).

Note: BOCOM did not disclose the number of mobile banking users. CITIC Bank did not disclose the number of mobile banking users in 2021.

Table 15:

Bank	Mobile Banking MAU	Card APP MAU
ICBC	Over 150 million	Undisclosed
ABC	Over 150 million	Undisclosed
BOC	Over 71 million	Undisclosed
CCB	149 million	Undisclosed
BOCOM	38 million	Undisclosed
PSBC	Over 47 million	2.5 million
CMB	65 million	46 million
IB	15 million	Undisclosed
PAB	48 million	Undisclosed
CITIC Bank	30 million	Undisclosed

Online and offline channels integrated to provide quality financial services

All banks continued to accelerate the development of Fintech in 2021. They enriched and optimized the interactive scenarios with customers, gave full play to the advantages of digital customer acquisition and services, and improved the efficiency and coverage of financial services, to better help customers manage their financial life.

Online scenarios enriched; transactions reached new highs

Online businesses were in full swing, providing customers with more diversified scenarios. Online transactions and individual mobile banking users continued to increase.

Table 16:

Bank	Measures and achievements in expanding online scenarios and channels
ICBC	• Mobile banking met customers' diversified financial needs; seized the opportunities in implementing the strategy of expanding domestic consumption; focused on travel, shopping, catering, entertainment, e-commerce, and other fields, with mobile banking customers reaching 469 million and mobile banking MAUs exceeding 150 million ; • Actively explored cross-border e-commerce business, intensified marketing of cross-border e-commerce platforms, and strengthened cooperation with rural revitalization related platforms, serving 19.60 million personal customers.
CMB	• CMB APP had 1.914 billion transactions and a total transaction amount of RMB59.62 trillion, up by 6.16% and 45.73% year-on-year, respectively; • The number of MAUs in 28 scenarios exceeded ten million. CMB promoted the organic integration of monthly active users and total assets under management (AUM) to enable more customers to enjoy wealth management services on its platforms.
CCB	• The number of personal online banking users rose to 392 million, an increase of 20,695.7 thousand or 5.57% over 2020, and the number of transactions was 5,569 million, amounting to RMB17.57 trillion; • The number of personal mobile banking users reached 417 million, an increase of 29,168.2 thousand or 7.52% over 2020; • The volume of online payment transactions was 50,779 million, up 17.55%, amounting to RMB21.97 trillion, up 17.11% over 2020, which ranked first among banking peers in terms of user share in leading enterprises such as Alipay, JD, Meituan, Pinduoduo, and Tik Tok in China.
ABC	• The number of customers registered for mobile banking exceeded 400 million, and the monthly active users exceeded 150 million; • The balance of the "ABC E-loan" exceeded RMB2 trillion, an increase of 63.0% compared to the end of the previous year, and online supply chain financing exceeded RMB100 billion.

Bank	Measures and achievements in expanding online scenarios and channels
BOC	• The number of non-financial mobile banking scenarios totaled 612, and the number of monthly active mobile banking customers stood at 71.04 million, making mobile banking the online channel with the most active customers; • Following the "Mobile First" strategy and embracing digital transformation trends, BOC continued to intensify efforts to expand its online channels and upgrade its mobile banking services; its e-channel transaction volume reached RMB324.97 trillion, an increase of 18.18% compared with the prior year.
BOCOM	• Centering on customer experience, BOCOM provided professional and intelligent corporate online financial services via PC terminal and mobile terminal, and enhanced its ability to empower the high-quality development of corporate customers with Fintech; • The number of mobile banking MAUs was 38,110.3 thousand, increasing by 22.82% compared with 2020; • The accumulated number of registered customers of Go Pay APP was 70,265.8 thousand while the number of MAUs was 26,572.6 thousand. The frequencies of Go Pay App used in financial and non-financial scenarios were 82.99% and 55.37%, respectively.
PSBC	• The number of mobile banking customers reached 326 million and MAUs of mobile banking exceeded 47 million; • The PSBC Credit Card App 3.0 was launched with over 7 million registered users and more than 2.5 million MAUs.
IB	• Continued to strengthen the services and operations of online platforms such as mobile banking, Xingzhihui and City Service, with the number of effective mobile banking customers reaching 43,260.3 thousand (increasing 6,259.7 thousand from the end of the previous year) and MAUs reaching 15,631.5 thousand; • Mobile banking transactions totaled 301,923.9 thousand, up 10.09% year-on-year; effective customers of individual internet banking totaled 14,224.3 thousand.
PAB	• Registered customers of Ping An Pocket Bank APP reached 134,922,400, representing an increase of 19.2% as compared with the end of the previous year, specifically, the number of MAUs of the Pocket Bank APP was 48,226,400, up 19.6% from the end of the previous year; • With the empowerment of AI big data, PAB altered traditional service modes to form "mobile service forces" in a multi-queuing, customized and life-oriented manner, and provided customers with holistic life and financial scenario services through linking between online and offline services and actively reaching to customers.
CITIC Bank	• CITIC Bank had 30,228.3 thousand online MAUs; during the reporting period, the transaction amount on mobile banking APP grew by 13.18% over the previous year to RMB11.91 trillion; • CITIC Bank launched the WeChat Mini Program 2.0 to enable differentiated management at 37 branches and improve business value of the branches. Moreover, it launched the Wealth Management Station on WeCom to establish a personalized and comprehensive online business hall for wealth managers.

In recent years, banks applied big data to tap user demands to provide more accurate personalized services. They comprehensively promoted digital retail transformation by building service platforms, expanding external scenarios and conducting traffic operations. The channel transaction volume of several banks repeatedly surged to new highs.

Offline channels further optimized; online and offline synergy enhanced

Banks upgraded their outlet layout and operation, and developed intelligent channels to enhance the online and offline synergy and improve their comprehensive service capabilities.

Table 17:

Bank	Outlet layout optimization	Intelligent channel building
ICBC	• At the end of 2021, ICBC had 15,767 outlets, 24,145 self-service banks, 79,793 intelligent devices and 66,563 ATMs; • Enriched barrier-free facilities, upgraded 4,691 outlets for the elderly, promoted the service functions of self-service devices for the elderly.	• Added 3,020 outlets that offer "outlet +" one-stop government services. ICBC led the industry in launching such functions as issuance of electronic social insurance cards and printing of credit reports; • Provided online and offline integrated services via "cloud outlets, cloud studios and cloud customer service"; • Accelerated digital transformation of outlets. ICBC extensively applied new technological means such as big data, AI, intelligent voice and RPA in the layout, location selection, systems & platforms, self-service devices, and business operation of outlets.
CCB	• Continued to optimize the self-service channel network, with 69,030 ATMs, 23,679 self-service banks, including 9,741 off-premise self-service banks; • Expanded service channels and networks, with 942 outlets in state-level impoverished counties, and 129 outlet in 75 out of 160 key counties that needed national assistance in rural revitalization.	• 49,495 smart teller machines to fully support corporate and individual businesses; established 252 inclusive finance (small business) service centers and small business centers, and over 1,800 individual loan centers; • Comprehensively advanced the interoperability of information, service and risk controls through online and offline channels, and provided financial services such as appointment, form filling and "CCB Doorstep Service" to 7.09 million users based on the WeChat account "CCB Banking Centre".

Bank	Outlet layout optimization	Intelligent channel building
ABC	• Promoted the transformation of retail banking businesses and foundation-level branch outlets, and operated 56,800 super online counters • Regarding the application of 5G technology, ABC launched pilots for 5G message application; • Developed and launched the county version of mobile banking, which provide Huinong financial products that are exclusively available for customers in County Areas, with 186 million registered customers.	• Provided comprehensive and three-dimensional financial services through the service channel system of "foundation-level branch outlets, self-service outlets, Huinongtong service stations, Internet financial services, remote banking and movable services"; • Operated 62,100 cash-type self-service devices and 15,300 self-service terminals, with average daily transactions of 14,569.1 thousand.
BOC	• 27,729 ATMs and 32,367 smart counters; • BOC launched tablet-version smart counters to support outlets' "Going Out" service marketing and increase the availability of financial services.	• BOC developed featured outlet development plans based on local conditions. It also built outlets with unique features based on the "Eight Priority Areas for Enhancing Financial Services Capabilities", including technology finance, green finance, inclusive finance and cross-border services, etc., as well as demonstration outlets for education, sports and elderly services. It refined its differentiated outlet resource allocation strategy, and improved outlets' capabilities in integrating into scenario-based ecosystems and creating value.
BOCOM	• 2,779 business outlets of BOCOM provided financial services such as financing services to small and micro enterprises.	• The "all-time" online banking was linked with the "personalized" offline outlets, thereby creating a three-dimensional cycle of omni-channel customer acquisition, customer activation and customer attraction.
PSBC	• PSBC had a total of 39,603 outlets, serving over 600 million individual customers; • The existing self-service equipment numbered 145,751, among which, the number of intelligent teller machines (ITMs) were 49,755, accounting for 89.49% of non-cash business equipment.	• With the Anhui and Jiangsu branches selected as the first batch of pilot branches, PSBC worked to expand the services in public bill payment, smart campus, smart healthcare and other areas in counties and townships; • PSBC furthered the application of biometrics in self-service equipment, launched a pilot program to replace signature with fingerprint, and continuously increased the number of passbook equipment to meet transaction habits of elderly customers.

Bank	Outlet layout optimization	Intelligent channel building
CMB	• 14,746 visual counters; • Achieved a success rate of 97.56% of remote online omni-channel connection for manual services, a remote online omni-channel 20-second manual response rate of 94.37%, and a remote online omni-channel customer satisfaction rate of 97.61%.	• CMB further strengthened the AI service and closed-loop service capabilities of the smart customer service assistant of CMB APP and the smart customer service assistant of CMB Life APP, and continued to develop smart service products for customers; • Remarkable results have been achieved for AI simulating, assisting and replacing human, and smart AI customer service, voice quality inspection, intelligent reviewing and other services have achieved a total of more than 6,000 staff replacement.
IB	• Optimized outlet layout to be "light", highlighted digital features, and established outlets according to actual needs and conditions; clarified the positioning of different outlets, properly distributed the input, output and resources of outlets, conducted performance assessment, and coordinated outlet layout, to improve outlet capacity and efficiency; • 2,020 outlets, including 1,013 traditional branches and 829 community branches that all provided financial services for small and micro enterprises.	• Deepened the construction of a smart bank and promoted the intelligent development of banking business; drove socialized operation through the "Xingzhihui" app and WeChat account; • Further strengthened the services and operations of online platforms such as mobile banking, Xingzhihui and City Service, with 33 financial institutions stationed on the platforms, 94,000 registered users, and nearly 12,000 financing requests (amounting to RMB43.9 billion) addressed .
PAB	• Continued to promote the AI-enabled upgrade of its outlets and optimize its branch distribution and physical presence, and had a total of 1,177 outlets; • Promoted the outlets to meet customers' unique and diversified needs with scenario-based operations; enhanced the construction of socialized and ecological offline outlets by creating unique outlets in health, senior caring, children caring and other fields.	• Constantly migrated the traditional counter services to online and remote channels by using the self-developed "Cloud Counter". At the end of 2021, the "Cloud Counter" has covered more than 98% of the outlets' retail non-cash business.

Bank	Outlet layout optimization	Intelligent channel building
CITIC Bank	• CITIC Bank had 1,415 outlets in 153 large and medium-sized cities in China; • 1,569 self-service banks (including onsite and offsite self-service banks), 5,398 self-service terminals and 9,078 smart teller machines. As such, CITIC Bank has developed a diversified outlet pattern that consists of comprehensive outlets, boutique outlets, community/micro and small outlets and off-bank self-service outlets.	• Realized value addition for ordinary basic customers, wealthy customers, VIP customers and private banking customers relying on its all-channel advantages of "offline outlets + online mobile App" and its professional stratified service capabilities.

Consumption scenarios were iterated and upgraded, with more attention to managing retail risks

Consumer loans targeted quality consumer groups and scenarios

In 2021, among the major domestic commercial banks, ICBC, ABC, CCB, PSBC, CMB and CITIC Bank released separately the data of consumer loans, which totaled RMB1,488.259 billion, an increase of RMB101.831 billion over 2020, or a year-on-year growth of 7%.

With proper positioning and development strategies, CMB, CITIC Bank and PSBC saw faster consumer loan growth, which stood at 31%, 21%, and 12%, respectively. The balance of PSBC's auto loans surpassed RMB50 billion, with the three-year compound annual growth rate (CAGR) exceeding 98%, and the amount of new auto loans granted in 2021 exceeded RMB40 billion, with the three-year CAGR exceeding 140%. CMB strictly controlled the use of capital, carefully identified quality customers and met the reasonable demands of consumer loans; it focused on quality consumer groups with greater comprehensive contributions and superior quality assets, and vigorously developed proprietary consumer loans. CITIC Bank focused on developing high-quality scenarios and products such as "auto loans" and "comfortable housing".

Table 18:

Unit: RMB million

Bank	Balance of Consumption Loans in 2021	Balance of Consumption Loans in 2020	Growth Rate
ICBC	187,316	183,716	2%
ABC	175,770	178,559	-2%
CCB	232,979	264,581	-12%
PSBC	496,621	441,945	12%
CMB	155,984	118,945	31%
CITIC Bank	239,589	198,682	21%

However, the rampant growth of consumer credit in some areas has triggered strict regulation. Recently, a series of regulatory policies were introduced, including the administrative measures for small online loans, the new regulations on internet deposits, and the prohibition against small loan companies from issuing internet consumer loans to college students, to address the market chaos and promote regulated development of consumer credit.

Banks strengthened consumer loan risk control in the context of regular COVID-19 response. As regulators paid close attention to internet joint consumer loans, banks actively optimized the loan structure, and adjusted their pilot internet joint consumer loan business. They focused on quality consumer groups with greater comprehensive contributions and better quality assets, and vigorously developed proprietary consumer loans.

Table 19:

Bank	Risk control	Asset quality	
ICBC	Constantly promoted "mobile, digital, intelligent and specialized" credit risk management of personal loans, continued to strengthen the application of "smart brain" to empower personal loan credit risk management, improved the comprehensive risk monitoring system of personal loans, and enhanced the credit risk management capability of key business links	Non-performing ratio of personal consumer loans was 1.65%	Down 0.35 percentage points from the end of 2020
ABC	Promoted the digital transformation of personal loan business, optimized the personal loan use control, anti-fraud and other system functions, and continuously improved the capability of smart risk control of personal loans	Non-performing ratio of personal consumer loans was 1.22%	Down 0.71 percentage points from the end of 2020
CCB	Paid great attention to post-lending monitoring of personal loans, and focused on borrowers' repayment ability, the status of collateral and any changes to collateral value	Non-performing ratio of personal consumer loans was 0.98%	The same level of decline as in 2020
PSBC	Intensified the use of new technologies such as biometric identification and Fintech, and various internal and external risk data and credit rating models to control risks, and made great efforts to promote the application of automatic pre-lending approval and decision making as well as the post-lending risk warning model; established a whole-process digital risk control system featuring "big data + scorecard + new technologies"	Non-performing ratio of other personal consumer loans was 1.55%	Up 0.37 percentage points from the end of 2020
CMB	Consistently focused on high-quality customers to deeply explore the upgrading consumption scenarios and the real comprehensive consumption scenarios of individuals or families encouraged by national policies to promote the steady development of consumer financing business	Non-performing ratio of consumer loan business (incl. credit cards) was 1.55%	Down 0.05 percentage points from the end of 2020

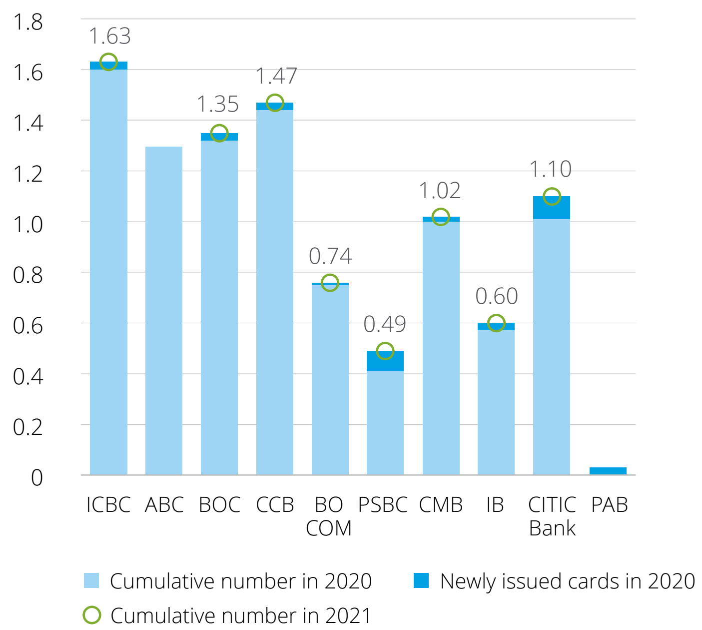
Online platforms improved and consumption scenarios expanded to advance the credit card business

Credit card is a main growth point of the retail credit business, which has been a focus of banks in developing credit business in recent years. The improvement of online platforms and the expansion of consumption scenarios have significantly boosted the development of the credit card business.

As of December 31, 2021, banks' credit card issuance and overdraft balance increased steadily compared with 2020. Specifically, PSBC recorded an increase of 12.93% in newly issued credit cards, while ICBC recorded the lowest increase of 1.87%. ICBC's cumulative issuance of credit cards was 163 million, ranking first among its peers. Following CMB, CITIC Bank was the second joint-stock bank that had issued over 100 million credit cards. In terms of overdraft balance, only CMB and CCB exceeded RMB800 billion; PSBC saw an increase of over 20% in credit card overdraft balance; ABC and CMB saw an increase of over 10%. In terms of total credit card consumption, CMB was the only bank to exceed RMB4 trillion in 2021, up 9.73% year-on-year, remaining to be No.1 among its peers. Among the six state-owned banks, CCB ranked first in credit card consumption, with RMB3.04 trillion at the end of 2021, while ICBC was RMB2.56 trillion. It is worth mentioning that for the first time, PSBC's total credit card consumption exceeded 1 trillion, up 14.11% year-on-year.

Figure 82: Credit Card Issuance of the Banks

Unit: 100 million

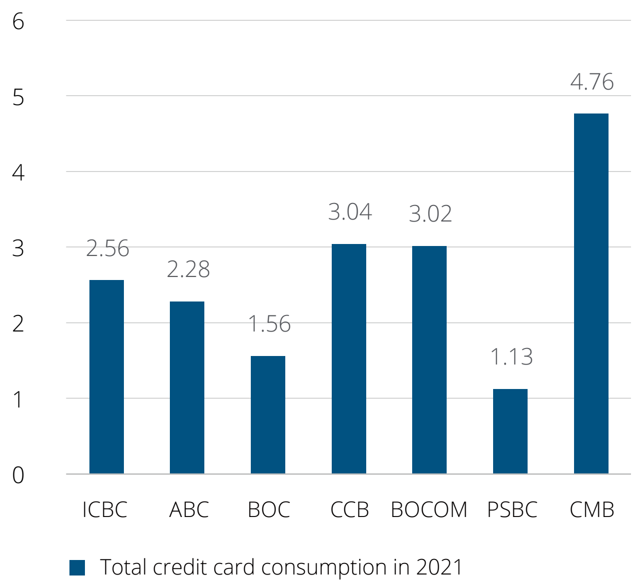


Note: ABC did not disclose the number of credit cards issued in 2021

Note: PAB only disclosed the number of newly issued credit cards

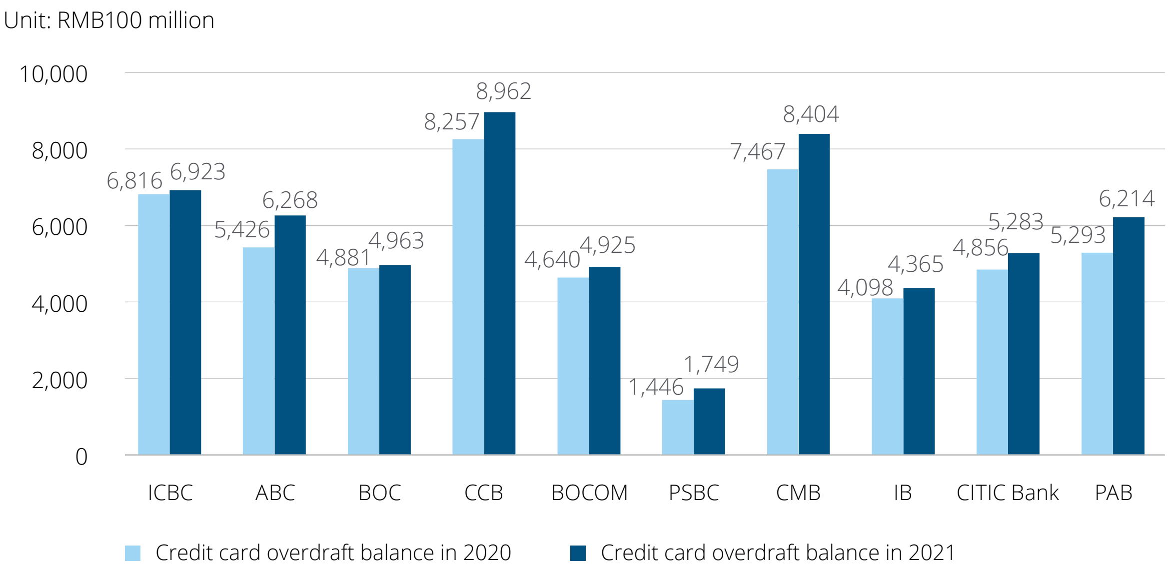
Figure 83: Total Credit Card Consumption

Unit: RMB trillion



Note: IB, CITIC Bank and PAB did not disclose the information of total credit card consumption in 2021

Figure 84: Banks' Credit Card Overdraft Balance



Wealth management scale expanded; private banking business drew greater attention

Common prosperity is a major national vision, which is also a significant opportunity for banks as more rich people mean greater wealth management demand. Wealth management has been the focus of transformation for banks. They actively strengthened the layout of wealth management businesses, including personal banking. Private banking plays an increasingly important role in banks' wealth management businesses, and it is gradually transforming from individual clients' asset allocation to providing integrated individual and corporate services.

Large state-owned banks are in a leading position in terms of the asset management scale of retail customers, and their overall AUM growth rate remained stable. As of 2021, ICBC's retail customer assets totaled RMB16.96 trillion, and that of PSBC reached RMB12.53 trillion. CCB disclosed in the FY2021 annual report that its personal customers' financial assets exceeded RMB15 trillion. ICBC's AUM increased by RMB0.96 trillion, or 6% year-on-year; PSBC's AUM increased by RMB1.28 trillion, or 11.4% year-on-year.

While seeking new drivers for business development, the joint-stock commercial banks have released momentum for growing the retail business, centering on wealth management. Specifically, CMB's individual customer assets totaled RMB10.76 trillion, ranking first among the joint-stock commercial banks, with a year-on-year growth of 20.36%. PAB ranked second with RMB3.18 trillion individual customer assets, but its growth rate (21.38%) was higher than that of CMB. CITIC Bank and IB's retail customer assets reached RMB3.4 trillion and RMB2.61 trillion, and IB's growth rate was 9.67%.

The private banking data disclosed in the banks' annual reports all showed a growing trend. Specifically, CMB's AUM from private banking customers amounted to RMB3.39 trillion, representing a YoY growth rate of 22.32%--CMB was the only bank whose private banking scale exceeded RMB3 trillion. CMB's private banking customers referred to the retail customers with minimum total daily average assets of RMB10 million per month, and the total assets per account amounted to RMB27.8043 million, much higher than other banks. ICBC, ABC, BOC and CCB were also in a leading position in AUM from private banking customers. PAB was a "dark horse" in private banking development, with a YoY growth rate of 24.06%. Although PAB's 2021 growth was much slower than in 2020 (55%) and 2019 (60%), it was still the fastest among the banks.

Table 20:

Unit: RMB trillion/10,000 customers

Bank	Retail customer AUM	Growth rate of retail customer AUM	Private banking personal financial AUM	YoY growth rate	Number of private banking customers	YoY growth rate
ICBC	16.96	6.00%	2.32	6.60%	20	9.70%
ABC	Undisclosed	Undisclosed	1.85	8.87%	17	20.20%
BOC	11.00	Undisclosed	2.16	16.76%	14	10.84%
CCB	Over 15.00	Undisclosed	2.02	13.64%	17	10.19%
BOCOM	4.30	9.00%	0.99	19.36%	7	15.30%
PSBC	12.53	11.40%	Undisclosed	Undisclosed	Undisclosed[Note1]	17.07%
CMB	10.76	20.36%	3.39	22.32%	12[Note2]	22.09%
IB	2.61	9.67%	0.74	17.16%	5	19.96%
CITIC Bank	3.40	Undisclosed	Undisclosed	Undisclosed	6	17.87%
PAB	3.18	21.38%	1.41	24.60%	7	21.60%

Note 1: PSBC did not disclose the number of private banking customers; its retail customers with integrated assets exceeding RMB100,000 totaled 42.6298 million

Note 2: CMB's private banking customers referred to the retail customers with minimum total daily average assets of RMB10 million per month.

Besides the asset scale of retail customers, the changes in the number of retail customers also reflect the banks' advantage and potential in retail finance, which is the cornerstone for the banks to boost the wealth management business.

Table 21:

Unit: 10,000 customers

Bank	Number of retail customers in 2021	Number of retail customers in 2020	YoY growth rate
ICBC	70,400	68,000	3.53%
ABC	87,800	86,000	2.09%
BOC	Undisclosed	Undisclosed	Undisclosed
CCB	72,600	70,300	3.27%
BOCOM	18,500	17,900	3.35%
PSBC	63,700	62,200	2.41%
CMB	17,300	15,800	9.49%
IB	7,922	7,956	-0.42%
CITIC Bank	12,000	11,100	8.11%
PAB	11,821	10,715	10.32%

The state-owned banks, with a solid customer base, were in a leading position in terms of customer number and growth rate. Their retail customers steadily increased. Specifically, ABC's retail customers reached 870 million, ranking first among its peers; ICBC also had a larger number of retail customers, with a YoY increase of 3.53%. The changes in the number of retail customers varied among the joint-stock banks. Specifically, as of 2021, PAB saw a YoY growth rate of 10.32%; although CMB's YoY customer growth did not exceed 10%, its customer base outmatched other banks of its kind; IB's growth rate slowed slightly year-on-year, which, according to IB's annual report, was due to the closing of the inactive zero-balance accounts in batches. However, with retail customers approximating 80 million, IB's "commercial banking+investment banking" business strategy yielded good results.

Currently, "Big Retail" is seeing steady and robust growth. The 2021 annual reports of various banks indicate that the booming of wealth management, sustained investment in digital operation, customer-centric service philosophy, strict and effective regulation as well as risk management are all enablers of the sound and stable development of retail business. Retail business will remain a priority of banks and the development of retail banking will be further explored and promoted.

3.4 Acceleration in technology adoption, explore innovative service models

2021 marks the beginning of the 14th Five-Year Plan and the final year for the first round of PBC's Fintech development plan. This year, COVID-19 still had a profound impact on residents' daily life and enterprises' business activities. The "contactless banking" services of commercial banks continued to play a critical role by virtue of Fintech.

In 2022, the PBC launched the second round of the *Fintech Development Plan (2022-2025)* (hereinafter referred to as the "Plan"), which further emphasized the importance of "digital" in Fintech. In the new year, facing more complex internal and external economic situations, commercial banks will adhere to the principle and objective of top-level design, further digital transformation, enhance technological investment, provide customers with smarter, greener and fairer financial services, and deepen financial supply-side structural reform.

Continuous technological input; enhanced talent investment

Over the past few years, commercial banks scaled up digitalization efforts. They continued to invest in Fintech and strengthened relevant talent reserve. According to the data disclosed in the 2021 annual reports, the commercial banks' Fintech investment continuously accounted for around 3% of the operating income, with an average growth rate of more than 15%. Among them, PAB's Fintech investment accounted for 4.36% of its operating income; BOCOM's Fintech investment increased by more than 50%. In the meantime, the number of sci-tech personnel grew to 10,000 in several banks. CMB and ICBC's sci-tech personnel accounted for more than 8% of their total employees.

Table 22:

Unit: RMB100 million

Bank	Fintech Investment	Growth rate	Proportion in Operating Income	Sci-tech Personnel
ICBC	259.87	9.10%	2.76%	3,5000 Fintech talent, accounting for 8.1% of total employees
ABC	205.32	12.20%	2.85%	9,059 sci-tech personnel, accounting for 2.0% of total employees
BOC	186.18	11.44%	3.07%	12,873 sci-tech personnel, accounting for 4.20% of total employees
CCB	235.76	6.64%	2.86%	15,121 Fintech talent, accounting for 4.03% of total employees
BOCOM	87.50	52.87%	3.25%	4,539 Fintech talent, accounting for 5.03% of total employees
PSBC	100.30	11.11%	3.15%	Over 53,00 IT personnel, including 3,400 at the head office (over 10,000 if including outsourced personnel)
CMB	132.91	11.58%	4.01%	10,043 R&D personnel, a year-on-year growth of 13.07%
IB	63.64	30.89%	2.88%	6.45% sci-tech personnel, rising 1.5 percentage points compared with the end of 2020
PAB	73.83	2.40%	4.36%	Over 9,000 sci-tech personnel, including outsourced personnel
CITIC Bank	75.37	8.82%	3.68%	4,286 sci-tech personnel (excluding subsidiaries), accounting for 7.73%

Fintech empowerment improved banks' operation and management

Over the past few years, major banks accumulated Fintech human and material resources. Therefore, Fintech empowered the banks to significantly strengthen their operation and management capabilities. Specifically, Fintech empowerment is mainly reflected in intelligent service, operation, and risk control.

Intelligent service

Commercial banks fully applied Fintech means, and rolled out various intelligent services in payment & settlement, credit supply, investment & wealth management, and other common scenarios, which are usually realized through mobile banking apps and WeChat mini programs. Through "contactless banking", commercial banks can provide customers with more secure, convenient, prompt, efficient and comprehensive financial services while saving themselves the operating costs of physical outlets.

Some examples of banks applying Fintech to provide remote customer services are listed in the table below.

Table 23:

Bank	Intelligent service (Remote customer service)
ICBC	ICBS launched the Personal Mobile Banking Version 7.0 in 2021 to deepen the integrated online and offline development; With 28,000 wealth managers and more than 100 remote customer service personnel from 16,000 cloud outlets, it provides integrated online and offline services through "cloud outlets, cloud studios and cloud customer service", achieving the interactive upgrading from "face-to-face" to "screen to screen".
ABC	In 2021, ABC enriched the online service scenarios, launched the remote video service in minority languages, and continuously improved the experience of mobile banking, online banking, and WeChat banking services. Intelligent robots served customers about 187 million person-times. Online customer service representatives served customers 7.18 million person-times. New media customer service reached customers by 59.52 million person-times.
BOC	BOC launched the 7.0 version mobile banking APP, which drove up the monthly active users by 17.8%; the number of corporate customers using online banking and mobile banking services increased by 24% and 113.85% respectively. In 2021, the volume of the BOC's mobile banking transactions reached RMB39.38 trillion, up 22.00% compared with the prior year. The number of non-financial mobile banking scenarios totaled 612, and the number of monthly active mobile banking customers stood at 71.04 million.
CCB	CCB continuously provided high-quality and efficient, comprehensive remote financial services for customers through multimedia, multiple scenarios, and various service functions. It introduced "Smart Bank" for online tutoring and intelligent assistance to provide whole-process and real-time support to customers. In 2021, the bank handled 1,808 million customer inquiries with a customer satisfaction rate of 98.70%. The WeChat official account "CCB Customer Service" served more than 20 million visits and had over 12 million followers.
BOCOM	BOCOM released the 6.0 version of mobile banking. The bank vigorously expanded new media channels such as "BoCom" WeChat Mini Program and Cloud Banking. The "all-time" online banking was linked with the "personalized" offline outlets, thereby creating a three-dimensional cycle of omni-channel customer acquisition, customer activation and customer attraction. In 2021, customers served by the "BoCom" WeChat Mini Program increased tenfold over the end of 2020. Cloud banking was upgraded and was accessible to WeCom of the bank, serving 2.3684 million customers.
PSBC	The bank actively improved its remote service system. The manual response rate in Remote Banking Center of the bank reached 96.26%, and the percentage of intelligent customer service increased to 94.42%. The manual response rate of the credit card business was 97.97% with customer satisfaction reaching 99.73%. Intelligent robots served customers of around 1,559,300 person-times.

Bank	Intelligent service (Remote customer service)
CMB	In 2021, CMB achieved a success rate of 97.56% of remote online omni-channel connection for manual services, a remote online omni-channel 20-second manual response rate of 94.37%, and a remote online omni-channel customer satisfaction rate of 97.61%. Its intelligent self-services accounted for 78.29%.
IB	The diversion rate of smart customer service was 36.26%, 9.29 percentage points higher than that of the previous year. The remote video banking service was further extended and applied to account opening and other business scenarios.
CITIC Bank	The bank accelerated building a channel ecological network where Mobile Banking was the main service channel with WeChat Mini Program as a supplement. As at the end of the reporting period, the bank had 30.2283 million online monthly active accounts. During the reporting period, the transaction amount on the mobile banking app grew by 13.18% over the previous year to reach RMB11.91 trillion.
PAB	With the help of AI and big data technologies, the bank continued to boost full-scale AI applications in its retail banking business through knowledge governance, data analysis and model iteration. At the end of 2021, AI account managers have launched over 900 scenarios, and the annual monthly average number of customers served by AI account managers increased by 149.3% year-on-year. The one-time problem-solving ratio and the proportion of unmanned services of the bank exceeded 90%.

Intelligent operation and intelligent risk control

In addition to empowering the front-office business, Fintech provides multidirectional support for commercial banks in upgrading their middle and back-office capabilities.

The table below listed some of the banks' intelligent operation and intelligent risk control achievements.

Table 24:

Bank	Achievements of intelligent operation	Achievements of intelligent risk control
ICBC	ICBC strived to build the world's leading "cloud computing + distributed" technology architecture, leading the industry to transform from the traditional centralized to the fully distributed model. It built the most sound and widely-applied distributed technology system in the industry, with more than 12 billion service requests per day. By using interactive techniques such as digital human, intelligent Q&As and voice interaction, the bank intensified the application of "Machine Substitution" at the front office of customer service, the back office of business operation, etc. and launched more than 600 intelligent application scenarios with digital employee attributes.	Built a "smart risk control" platform to safeguard customers' funds. Efforts were intensified to monitor unusual transactions in high-risk areas, such as sensitive transactions, anti-theft and the elderly's fund transfer.

Bank	Achievements of intelligent operation	Achievements of intelligent risk control
ABC	ABC set up a Fintech innovation center in Xiong'an New Area. It promoted the construction of an integrated cloud platform and initially built the basic environment for the "one cloud with multiple cores" technology stack. The physical nodes of the cloud platform of the Head Office reached 11,000. All new production and test resources were integrated into the cloud platform, the self-service rate of development and test resources was 100%, and the cloudification rate reached 88%. ABC advanced the development of an intelligent operation system in an orderly manner, and effectively relieved burdens of foundation-level branches via RPA technology while improving the level of intelligent and intensive operation.	ABC promoted the construction of BaaS (Blockchain as a Service) system, and applied block chain technology to credit risk control and other fields. It constructed a knowledge graph network of ten-billion-level relationship to provide graph support for chain marketing and the special governance of telecom fraud. It promoted the pilot application of privacy computing technology in marketing, risk control and other fields, applied edge AI technology to serve smart branches, and applied satellite remote sensing and image recognition technology to serve the management of credit for agriculture, rural areas, and farmers (Agriculture, rural areas, and farmers, also referred to as "Sannong" in this report).
BOC	A centralised operations platform was promoted across the bank, realising the unified sharing of processes, data and risk control, with business processing efficiency increasing by more than 60%. The users of the mobile office platform "BOC Messaging" increased significantly, and it supported 217 applications, realising online organisation, communication and processes, and significantly improving the capacity of the bank's online collaborative office function.	The bank created an efficient back office to build efficient intelligent operational capabilities and intelligent internal control and risk management capabilities. In 2021, the "Cyber Defence" smart risk control and prevention system monitored 7.69 billion transactions through online channels, up 24.1% year-on-year. As at the end of 2021, the number of customers using mobile banking-oriented digitalised authorisation tools reached 20.20 million, up 66.94% from the end of the prior year.
CCB	The bank fully rolled out the enterprise-level application of Robotic Process Automation (RPA), launched 1,162 scenarios online and saved 2.71 million man-hours. It accelerated the application of Intelligent Character Recognition (ICR) AI technology in operations and launched 11 scenarios such as foreign exchange business audit, saving a total of 950,000 man hours.	It deployed the intelligent risk control system, integrated policies, systems, data and tools across the front, middle and back offices, established a database of key issues for inclusive finance business, and continuously improved risk control technologies and tools for risk monitoring, early warning and screening, as well as customer scoring and anti-fraud management. In 2021, the coverage ratio of the risk alert and detection (RAD) system on the NPL borrowers of small and micro businesses exceeded 80%; and the risk screening and detection (RSD) system automatically screened 78,971,200 transactions and effectively blocked 357,100 dubious transactions.

Bank	Achievements of intelligent operation	Achievements of intelligent risk control
BOCOM	Robotic process automation was applied in 137 internal management processes, processing 700 thousand transactions per month. By applying the deep semantic understanding model to the self-developed Athena intelligent robot, the function points with a low online resolution rate were optimised. Also, the bank set up a "robot+" collection system to improve the collection capacity of robots and the efficiency of manual processing, while the robot stage recovery rate increased by 7 percentage points over the end of the previous year.	BOCOM launched the Phase I of digital retail risk control middle office, with direct connection to the Group's business data system and introduction of external data, boosting significant improvement in risk warning and decision-making intelligence. The phase I goal of "an integrated platform for centralised decision making, anti-fraud, modelling, supervision, data and operation" for the enterprise-level retail risk control middle-office was basically achieved, consistently enhancing the ability of digital risk control.
PSBC	PSBC built the core system for supply chain finance based on the underlying technology of blockchain. Through technologies like big data audit, AI analysis and comparison, and OCR, it has improved business processing efficiency and customer experience in all aspects, and enabled the completion of the whole process from application by supplier customers to the disbursement of loans within two hours.	The bank launched the block chain-based core system 1.0 for supply chain, and introduced functional modules such as big data risk control, customer portraits, automatic transaction background verification, electronic contracting and artificial intelligence recognition, supporting rapid connection with third-party systems.
CMB	In terms of cost reduction and efficiency enhancement, remarkable results have been achieved for AI simulating, assisting and substituting for human; smart AI customer service, voice quality inspection, intelligent reviewing and other services have achieved a total of more than 6,000 staff replacement. The Conch RPA platform independently developed by the bank has achieved a comprehensive replacement for foreign mature products, with a total of 2,000 scenario applications developed.	The intelligent risk control platform "Libra" enhanced transaction risk management and control capabilities. During the reporting period, the percentage of fraud and account takeover amount by non-cardholders was lowered to 0.90 in ten millionths, with a compound drop of 62.46% in recent three years; the early-warning system for corporate business had an early-warning accuracy rate of 75.68% for potentially risky corporate customers. The bank established an early-warning platform for default risk in debenture bonds, with an accuracy rate of 86% for early warning of significant credit events.
IB	IB deepened fine management of the operation back office. The back office automation of centralized operations and emerging business accounting continued to improve.	The Group's intelligent risk control program has rolled out the first-stage functions, realizing many functions such as one-stop risk information query, risk items screening, risk item system hard control, and group customer maintenance and rectification, which comprehensively improved the fine management of risks. It further strengthened the assessment and investigation of risk hotspots and key areas, improving the initiative and foresight of risk management.

Bank	Achievements of intelligent operation	Achievements of intelligent risk control
PAB	The digital intelligent operation platform improved the intelligence and online level of the business process of the head office and branches to empower the application of front office business scenarios. At the end of 2021, the AI outbound call increased the account opening rate of booked high net worth potential customers through the big data model, and the success rate of outbound call was 67%. The outlets empowered cash management with the machine learning model, and cash on hand at outlets was reduced by about 35% compared with the end of the previous year.	The intelligent risk control platform continued to be upgraded and optimised and focused on seven intelligent scenarios, namely intelligent approval, intelligent loan granting, intelligent post-loan, intelligent control, intelligent early warning, intelligent analysis and intelligent monitoring. At the end of 2021, the platform has achieved credit approval in seconds for 65% of its standardised business, with forward-looking early warning maintained at a higher level. The massive data of the IoT platform enriched the dimension of risk control data and effectively played the role of credit enhancement and early warning. It has realised asset monitoring and business authentication in scenarios such as vehicle financing leasing, car-free carrier, equipment financing leasing, green energy and commodity warehousing, and separately built monitoring and evaluation models before, during and after loan granting to improve the capability of timely early warning and blocking of risks.

Fintech-empowered development of the financial industry

On January 26, 2021, the CBIRC annual work conference proposed to "promote the large banks to provide risk control tools and technologies to small and medium-sized banks". Large commercial banks invested more in science and technology, thus owning abundant technology and talent reserve. Therefore, they can export technology to promote the development of the financial industry while maintaining their Fintech-empowered operations.

The table below listed a few cases of large commercial banks exporting technologies.

Table 25:

Bank	Export of Fintech
ICBC	ICBC launched the "Digital Villages" comprehensive service platform to assist agricultural and rural authorities at all levels in strengthening the standardized management of rural collective economy and improving the smart public services and social governance in rural areas, which have covered 31 provinces, 260 prefectures and cities across the country. The Bank has established information technology-based cooperation with 770 district and county-level agricultural and rural departments. The bank helped with interbank risk prevention and control through Fintech, and provided nearly 30 small and medium banks, securities companies, insurance and other interbank customers with five categories of scientific and technological products, including "ICBC BRAINS" intelligent anti-money laundering system and credit management system. The bank built a smart industrial ecosystem and provide a package of personalized financial services to empower digital transformation and upgrading.
CCB	It promoted the centralised operation of overseas entities and helped 14 overseas entities centralise their operations in head office and CCB Europe, with a total of 1.35 million centralised operations conducted in 2021, an increase of 75% over 2020. Fintech was employed to assist social governance. The bank established cooperation with 29 provincial governments, and built the "cross-provincial government service platforms" that carried more than 1,000 government service functions. By the end of 2021, the Group had provided risk tools of "Hui" series to 1,027 small and medium-sized financial institutions, to export intelligent and digital risk control technologies and promote co-governance of risks.
BOCOM	BOCOM built an interbank cooperation platform. The bank built the BOCom e-Platform, including interbank wealth management platform and value connection platform, where the former is used to provide interbank customers with wealth management, account management, payment and settlement, factor market business and other services, while the latter is used to provide the terminal customers of small and medium-sized banks with wealth management and other services. As at the end of 2021, there were 1,775 interbank customers in cooperation with the e-Platform, representing an increase of 225 customers over the end of the previous year.
IB	IB has established information system cooperation with 421 banks, and information system has been rolled out in 263 of them. By providing professional services such as capital supplement, diversified capital application, Fintech, research and training for small and medium-sized banks, IB realized its commercial value in empowering the transformation and development of small and medium-sized banks.

Fintech faces challenges and opportunities

According to PBC's *Fintech Development Plan (2022-2025)*, in the next four years, Fintech will advance from "laying foundations and defining initial structures" to "building a strong momentum" in China, which brings opportunities as well as challenges to commercial banks. With the emergence of new scenarios, business forms and technologies, Fintech has a broader space for development, which also generates "data security", "algorithm discrimination" and other problems. In this regard, the Plan in particular emphasized strengthening the construction of digital supervision capability, implementing penetrated supervision of Fintech innovation, and cementing the firewall for financial and technological risks. Commercial banks should first fully understand the possible drawbacks of applying technologies, improve the relevant prevention and disposal mechanisms, and then pursue technological innovation to advance business development in an orderly manner.

3.5 Opening up new horizons in a shifting landscape as the transition period of the new asset management regulation ends

The new asset management regulation implemented; wealth management business refined

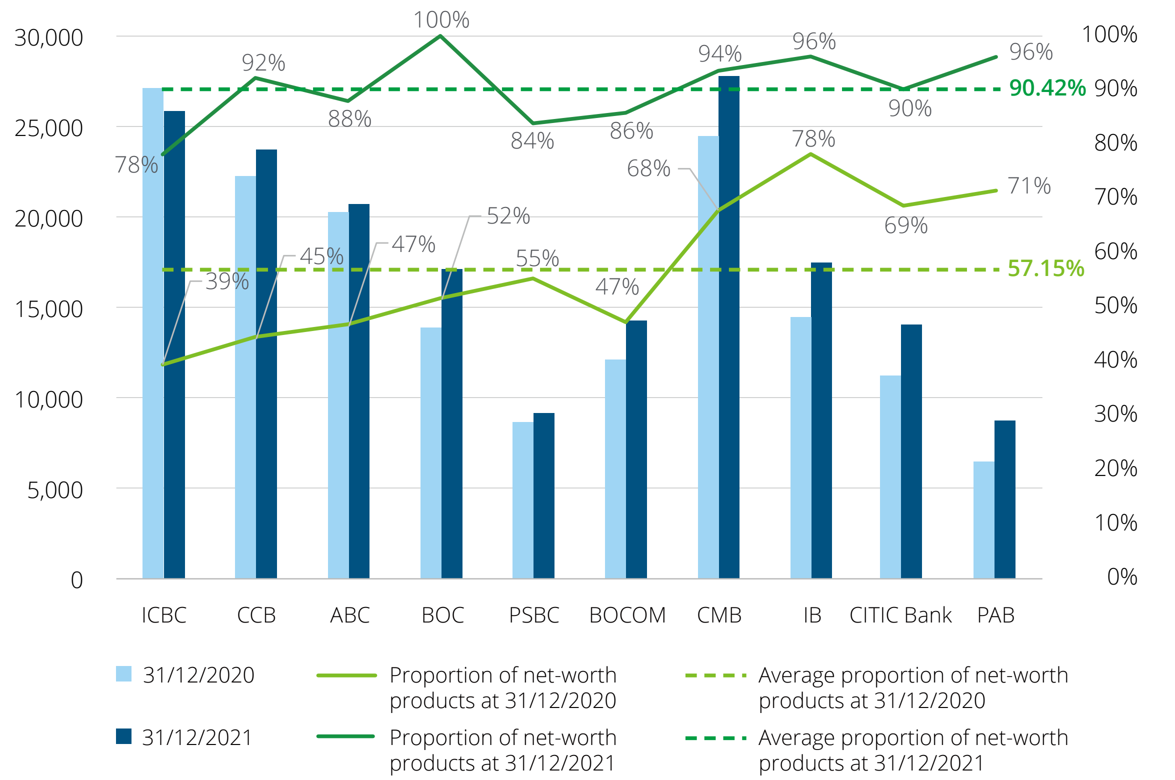
2021 was the start of the 14th Five-Year Plan period, which also marked the termination of the transition period of the new asset management regulation. Banks followed the regulatory requirements, and accelerated their net-worth product oriented transformation. Commercial banks rectified the wealth management business, gradually eliminating products with an expected yield and making net-worth products the main force in the market.

Commercial banks accelerated the rectification of wealth management business in various ways, and disclosed their progress and approach to net-worth product oriented transformation in the 2021 annual reports, mainly including recording wealth management assets on the balance sheet, market-oriented transfer, and introducing successive products.

By 2021, the ten domestic banks' wealth management products totaled RMB17.88 trillion, up 11%. The average proportion of net-worth products reached 90.42%, a significant increase from that (57.15%) at the end of 2020.

Figure 84: Wealth Management Products in 2021 and 2020

Unit: RMB100 million



Large state-owned banks' wealth management products grew steadily; joint-stock commercial banks valued wealth management products as a competitive weapon

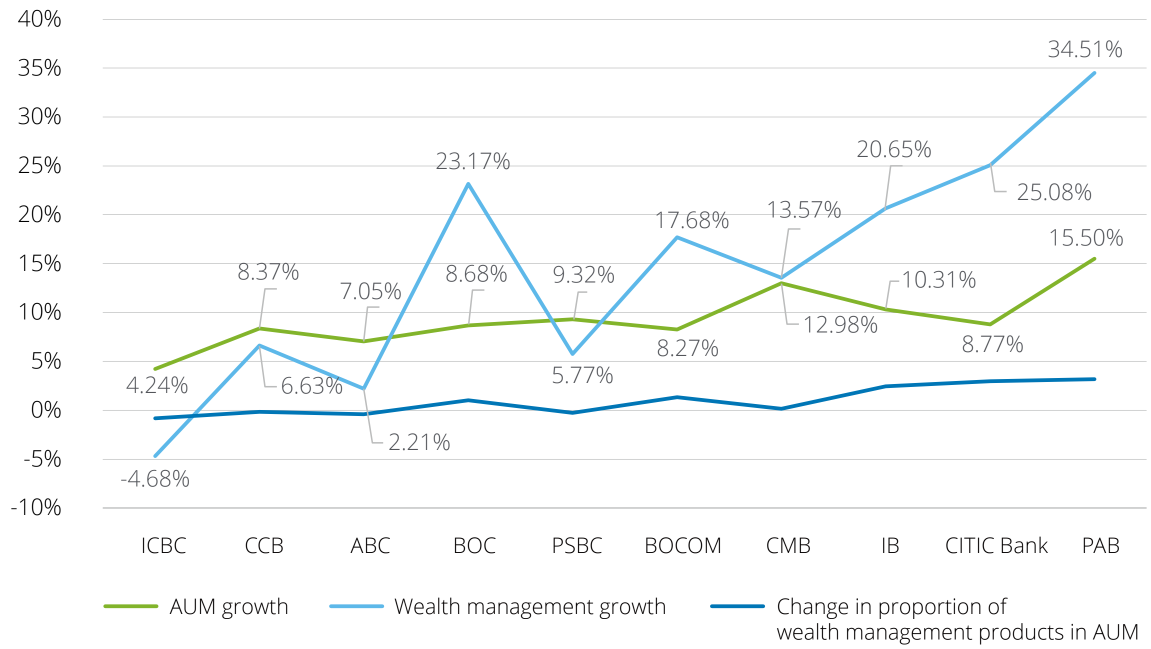
Banks' wealth management products enriched residents' investment channels, increased investors' sources of income, and satisfied the investors' requirement of maintaining and enhancing the value of assets. Thus, wealth management investors continued to increase. According to the *Annual Report on the Wealth Management Market of China's Banking Sector (2021)*, the wealth management market totaled RMB29 trillion as of 2021, up 12.14% year-on-year. The wealth management scale of the ten domestic commercial banks was RMB17.88 trillion, with a year-on-year growth of 11.11%.

For five of the six state-owned banks (excluding BOC), their growth of wealth management products was lower than that of deposits. The business philosophy of "deposits-supported bank" was not fundamentally changed. From the perspective of AUM structure, the average proportion of deposits in large state-owned banks was 89.99%, and the average proportion of wealth management products was 10.01%, indicating that deposits occupy an absolute dominant position. The wealth management business of large state-owned commercial banks accounted for a lower proportion, while that of all joint-stock banks averagely accounted for 26.05% of the AUM. Specifically, CMB's off-balance sheet wealth management business accounted for 30.31%.

In practice, joint-stock banks generally face less pressure in balancing deposits and wealth management business. Under the operation philosophy of broad wealth management, wealth management products have become an effective weapon for joint-stock banks to win in the capital-end competition. With intensifying industrial competition, the deposits-centered operation philosophy has wavered. The sales of wealth management products became an increasingly important factor in assessing the performance of grass-roots business personnel.

Figure 85: AUM, Off-Balance Sheet Wealth Management, Changes in Proportion of Wealth Management Products in AUM

Unit: RMB100 million



Note: the financial data were from the banks' FY2020 and FY2021 annual reports; AUM = Outstanding of deposits + total wealth management products

The AUM generally maintained a steady growth rate, while the wealth management growth varied greatly: at the end of 2021, the average AUM growth rate of the ten domestic banks was 9.35%; the average AUM growth rate of the six state-owned commercial banks was 7.66%, and that of the four joint-stock banks was 11.89%. The growth rate of customer deposits was slightly lower than the overall AUM growth, averaging 7.49%.

The ten domestic banks saw significantly different changes in wealth management: ICBC's wealth management scale decreased by 4.68%; PAB's wealth management scale increased significantly by 34.51%; CITIC Bank, BOC and IB recorded a growth rate of over 20%.

Advanced amid transformation; wealth management subsidiaries faced opportunities and challenges

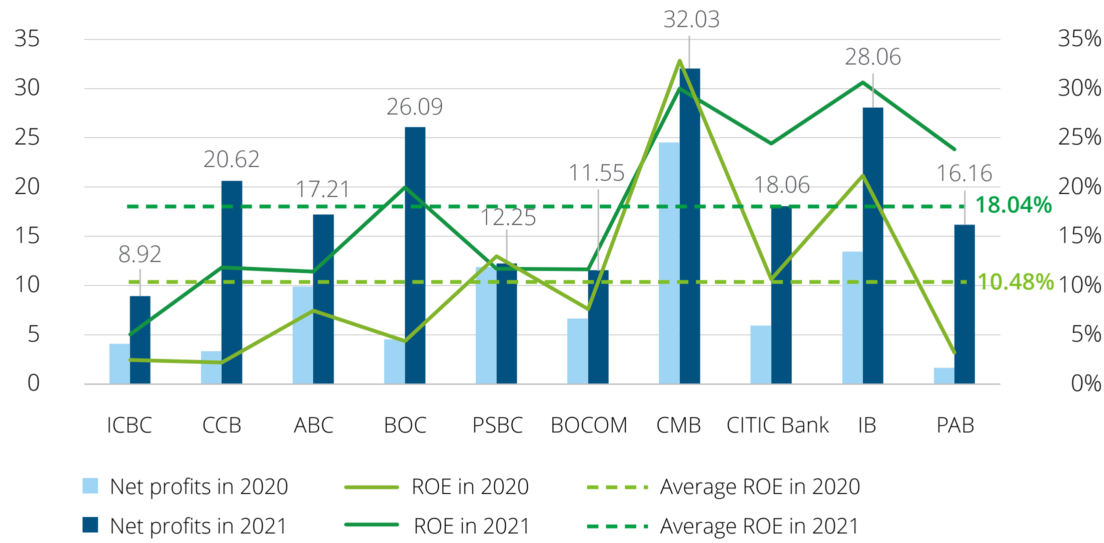
Since the founding of the first wealth management subsidiary in the banking sector in June 2019, 29 wealth management companies had been established by the end of 2021, of which 24 had been approved to start business. Financial management subsidiaries issue and manage net-worth products. By the end of 2021, the subsidiaries' products accounted for 88.66% of the total wealth management products, a big increase compared with that (49.88%) at the end of 2020.

In 2021, wealth management subsidiaries continued to develop after going through transformation, and their net profits increased compared with 2020. However, the ROE of those subsidiaries increased or decreased at varying degrees.

The net profit growth of the wealth management subsidiaries was mainly reflected in product hierarchy, resulting from the increase of product "quantity". The rapid growth of quantity was primarily because that the subsidiaries took over products from the parent bank and leveraged the distribution channels of the parent bank. However, the ROE growth of some subsidiaries slowed. To sustain profitability and ROE growth, wealth management subsidiaries need to re-examine their business philosophy, internal structure, operations, and risk management to gradually balance the "credit culture" and "investment culture".

Figure 86: Net Profits and ROE of Wealth Management Subsidiaries in 2021 and 2020

Unit: RMB trillion



Note: the financial data were from the banks' FY2021 annual reports.

The regulatory system continues to improve; cash management products face "2nd round of rectification"

Following the requirements of the new asset management regulation, regulators have introduced a series of policies to regulate wealth management subsidiaries, wealth management products and wealth management asset allocation based on the wealth management characteristics of the banking sector. Thus, a multi-dimensional regulatory system has been gradually built, spanning from product mix, sales management, investment operation, and risk management to corporate management, forming a sound regulatory map.

In December 2020, the CBIRC issued the *Measures for the Evaluation of Systemically Important Banks*, which improved the regulatory framework for systemically important financial institutions in China and established a mechanism for assessing and identifying systemically important banks. According to the Measures, the balance of non-principal-guaranteed wealth management products is included in the evaluation system when assessing the complexity of the banks.

In June 2021, the *Circular of the People's Bank of China on Matters Related to Regulating the Management of Cash Management Products* was released, which will be officially implemented on January 1, 2023. It proposed requirements for liquidity control of cash management products in terms of investment scope, concentration management, liquidity management, leverage ratio, and duration management, to avoid disordered growth of cash management products and prevent liquidity risks. Cash management products, a main wealth management product of commercial banks, will face a second round of rectification in 2022, and banks will focus on the non-compliant stock assets. In addition, the introduction of new regulations on cash management products further challenges the customer stickiness and development resilience of banks, which will also affect the investment research system of the wealth management subsidiaries.

Table 26: Wealth Management Related Regulations Introduced between 2018 and 2021

Time	Issued by	Policy
Apr 2018	PBC, CBIRC, CSRC, SAFE	*Guideline on Regulating the Asset Management Business of Financial Institutions*
Jul 2018	PBC, CBIRC, CSRC	*Circular on Matters Relating to Further Clarifying the Guideline on Regulating the Asset Management Business of Financial Institutions*
Sept 2018	CBIRC	*Measures for Supervision and Administration of Commercial Banks' Wealth Management Business*
Dec 2018	CBIRC	*Measures for Administration of the Financial Management Subsidiaries of Commercial Banks*
Oct 2019	CBIRC	*Circular on Further Regulating the Structured Deposit Business of Commercial Banks*
Nov 2019	CBIRC	*Measures for Management of the Net Capital of Wealth Management Subsidiaries of Commercial Banks (For Trial Implementation)*

Time	Issued by	Policy
Jun 2020	PBC, CBIRC, CSRC, SAFE	*Rules for Identification of Standardized Creditor's Assets*
Dec 2020	CBIRC	*Measures for the Evaluation of Systemically Important Banks*
Dec 2020	Ministry of Finance, CBIRC	*Circular on Further Implementing the Accounting Standards Related to New Financial Instruments*
May 2021	CBIRC	*Interim Measures for Management of Wealth Management Companies' Sales of Financial Products*
Jun 2021	CBIRC, PBC	*Circular of the People's Bank of China on Matters Related to Regulating the Management of Cash Management Products*
Sept 2021	CBIRC	*Circular on Piloting Pension Financial Products*
Sept 2021	Ministry of Finance	*Provisions on Asset Management Products Related Accounting Treatment (Draft for soliciting public opinions)*
Dec 2021	CBIRC	*Measures for Managing Liquidity Risks of Financial Products of Wealth Management Companies*

The assets under custody maintained a high growth rate; custody service platforms released greater value

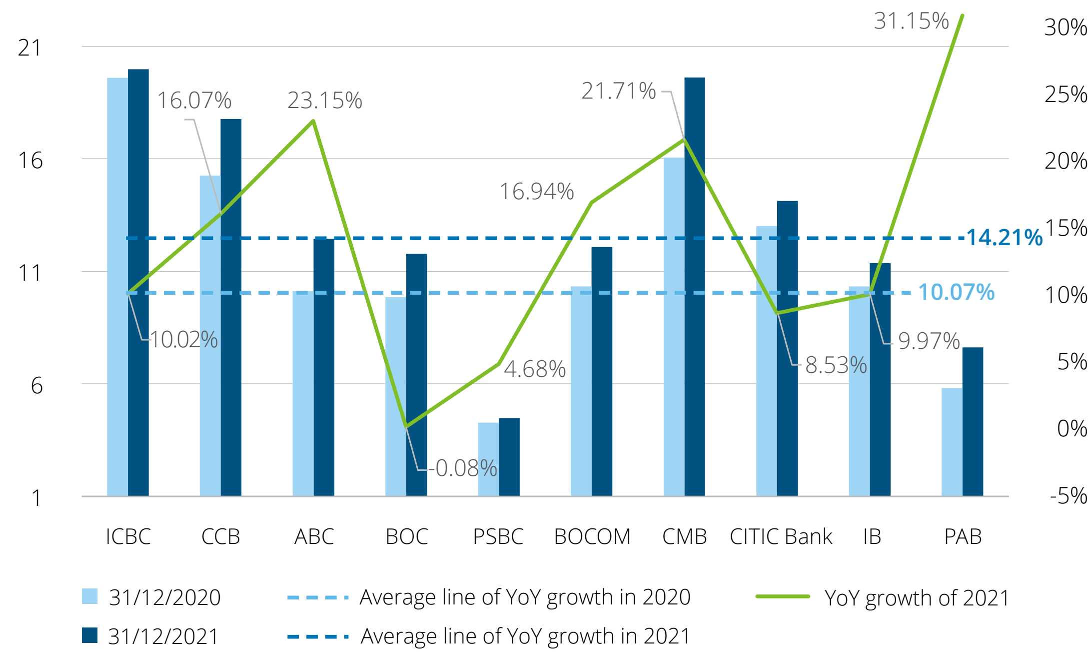
Benefiting from the rapid development of the asset management business, banks' assets under custody maintained rapid growth. As an important part of the wealth management value chain, the custody business has become the focus of commercial banks to transform into a light bank.

At the end of December 2021, the total assets under custody of the ten domestic banks reached RMB131.25 trillion, up RMB16.64 trillion or 14.21%. The assets under custody of the six state-owned commercial banks totaled RMB78.53 trillion, accounting for 59.83% and increasing by 13.14%. The assets under custody of the four joint-stock banks totaled RMB52.72 trillion, accounting for 40.17%, an increase of 16.64%.

Among the ten domestic banks, the top three in terms of assets under custody are ICBC, CMB and CCB. In terms of the development speed of custody business, the top three are PAB, ABC and CMB, growing respectively by 31.15%, 23.15% and 21.71%.

Figure 87: Assets under Custody in 2021 and 2020

Unit: RMB trillion



Note: The data were from the banks' FY2021 and FY2020 annual reports; there is no growth data of PAB, because it did not disclose the information of assets under custody at the end of 2019.

Banks' wealth management and asset management businesses are promising during the "14th Five-year plan" period

The 14th Five-year Plan proposed accelerating the building of a modern economic system and fostering a double development dynamic, with the domestic economy and international engagement reinforcing each other, and the former as the mainstay. The banking wealth management business, an important part of the asset management industry, supported the real economy totaling about RMB25 trillion in 2021, equivalent to about 8% of the aggregate social financing in the same period (the data were from the *Annual Report on the Wealth Management Market of China's Banking Sector (2021)*). The government also encourages to grow residents' wealth through multiple channels.

Commercial banks presented their point of view on asset management and wealth management business in their FY2021 annual reports: focusing on serving the real economy, building a sound product system, empowering through technology, and preventing compliance risks, to achieve sustainable growth amid new challenges in the new development paradigm.

Table 27:

Bank	Asset management business and wealth management viewpoint
ICBC	Promoted asset management business and product transformation in a compliant way, comprehensively improved investment management and research capabilities, and built an asset management business system that allocates capital across the market and creates value throughout the business chain.
CCB	Stepped up effort in key areas such as investment research, channel sales, asset allocation, internal risk control, investment operation, and asset management technology; strictly followed regulatory policies to carry out operation and rectification of existing wealth management products in a smooth and orderly manner and completed the rectification of outstanding wealth management business in the transition period.
ABC	Implemented the development strategy of one main body with two wings (namely, with customer construction as the main body, promoting broad wealth management and digital transformation as the two wings); strengthened broad wealth management and digital transformation; served rural revitalization and supported common prosperity, through which the capabilities of retail banking operation, business innovation and value creation were comprehensively improved.
BOC	Giving full play to the advantages arising from its globalised operations and comprehensive business platform, the bank seized the market opportunities brought by the continuous increase of residents' wealth and accelerated the establishment of a first-class asset management business.
PSBC	Adhered to the business objectives of "stabilizing growth, highlighting transformation, controlling risks, strengthening marketing, and enhancing capabilities"; continued to improve its investment analysis capabilities; facilitated the transformation and upgrading of the retail business as well as the building of the wealth management system with diversified product categories and professional asset allocation.
BOCOM	Continuously deepened reform and innovation with four major features formed including "inclusive finance, trade finance, technology finance, and wealth finance" and five professional capabilities to be enhanced, including "customer operations, technology support, risk management, cooperative operation and resource allocation", thus making financial services more adaptable, competitive and inclusive.
CMB	Highlighted the strategic vision of "building the best value creation bank with innovation-driven development, leading model and distinguished features", put forward the China Merchants Bank 3.0 model of "extensive wealth management, digital operation and openness & integration".
IB	Continued to advance the transformation of asset management business, strengthened the sales capability of wealth products, and accelerated the construction of a "wealth management ecosystem".
CITIC Bank	Relying on the financial license advantage of CITIC Wealth Management and its ability to allocate assets, the bank gave full play to the advantages of synergy across the Group and between parent and subsidiary banks, to build an all-round asset management bank with core competitiveness, full range of products, wide customer coverage and leading comprehensive strength.
PAB	Strengthen technological empowerment and professional leadership to build a "warm and world-leading wealth management host bank".

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4. Hot Topics Insights

4.1 Observation and analysis of the banking sector's strategic deployment in 2021

Macro-environmental changes and implications

In 2021, China continued to consolidate the achievements of epidemic control and economic recovery, giving priority to ensuring stable economic development. At the start of the 14th Five-Year Plan period, China implemented key national strategies, and strengthened efforts in advancing the high-tech and green industries and boosting domestic demand and consumption.

2021 is the beginning of the 14th Five-Year Plan. China's banking sector advanced with a focus on the digital economy, IT application innovative industry, green finance, and rural revitalization.

Digital economy: Digital economy saw steady progress, with proper top-level plans. In 2020, the added value of China's core digital economy industries accounted for 7.8%[1] of its GDP. The release of the *Plan to Facilitate the Development of Digital Economy in the 14th Five-year Plan Period and the Fintech Development Plan (2022-2025)* in 2022 pointed out a clear development path for the digital economy. It crystallized the goal of "exerting the multiplication effect of data as a factor of production and incorporating digital elements into the whole process of financial services". It is expected that by 2025, the digital economy will enter a comprehensively-expanding stage, and the proportion of the added value of the core digital economy industries in GDP will rise to 10%. Data value will be fully realized on the consumption and production sides. Data have become the core element of the digital economy era, and the priority in the next stage will be dealing with the right-to-use, ownership, and privacy protection of data to truly transform data from a means of production into a factor of production.

[1] *Plan to Facilitate the Development of Digital Economy in the 14th Five-year Plan Period*

Green Finance: China introduced unified and executable standards, incentives, and regulations, which were aligned with international standards, to ensure the orderly and healthy development of the green industries. In the meantime, PBC rolled out a carbon reduction supporting tool to provide preferential interest rates for enterprises and financial institutions.

Rural revitalization: Rural revitalization has recently been a priority for the banking industry. A number of policies and laws were introduced to promote financial services to benefit rural revitalization. Diversified inclusive financial products and services have been quickly introduced, effectively expanding the coverage of financial services to rural areas, farmers, and agricultural enterprises. Banks also constantly explored new ways to reduce the costs of rural financial services. In addition, they continued to upgrade their risk management capability in the "Sannong" area to more effectively and intensively control and address relevant financial risks.

Financial IT application innovative industry[2]: Finance has higher data, hardware, and software security requirements and is one of the key innovative IT application areas. The financial IT application innovative industry achieved rapid progress in 2020 and 2021 and efficiently drove the development of the digital economy.

Banking regulatory environment changes and implications

To stabilize economic development and maintain long-term sustainable progress of the banking sector, the industrial regulatory system has been significantly improved, with increasingly broader coverage and better clarity of regulatory requirements and standards. Rules are properly set in place concerning the founding, operation, management and other matters of banking institutions, and relevant systems have been quickly established.

Improved regulatory framework for systemically important financial institutions. In October 2021, the *Additional Regulatory Provisions on Systemically Important Banks (for Trial Implementation)* was issued, specifying additional regulatory requirements as well as the requirements for the recovery plan, resolution plan and macro-prudential regulation for 19 domestic systemically important banks. It provides an institutional guarantee for China's systemically important financial institutions and their prevention and control of systemic financial risks from the aspects of capital, leverage ratio, liquidity, and large risk position.

[2] *Rise of Core Technologies: 2021 Report on the Development of China's Financial IT Application Innovation Industry*

Corporate governance regulation saw remarkable results. In June 2021, a series of basic systems were introduced, including the *Guidelines for the Corporate Governance of Banks and Insurance Institutions,* the *Measures for Regulation of the Behaviors of Major Shareholders of Banks and Insurance Institutions (for Trial Implementation),* and the *Measures for Evaluating the Performance of Duties by Directors and Supervisors of Banks and Insurance Institutions (for Trial Implementation),* to fully promote the regulation and evaluation of corporate governance. By combining the evaluation results with market access, on-site inspection, as well as the restructuring and risk response of high-risk institutions, the regulation of corporate governance in the banking sector was tremendously enhanced. In addition, by strengthening corporate governance, improving the operation efficiency of banks and insurance institutions, and preventing financial risks, the banking sector was more capable of serving the real economy.

Continued financing support for the small and micro enterprises, with further reduced financing costs. With perpetual COVID-19 impact, structural monetary policies focused on supporting the survival of micro, small and medium-sized enterprises. According to data from PBC, at the end of 2021, the balance of inclusive loans increased 27.3% year-on-year, benefiting over 44 million small and micro enterprises. The re-lending policies and instruments, raising the line of rediscounting, and other means played a crucial role in supporting the small and micro enterprises. In August 2021, PBC held a symposium to analyze the monetary and credit situations of financial institutions, lowered the re-lending rate for agricultural and small enterprises by 0.25 percentage points, and guided the one-year LPR to decrease by five basis points. In 2021, PBC cut the RRR by 0.5 percentage points twice in July and December, releasing a total of RMB2.2 trillion in long-term funds. Accurate measures were implemented to more efficiently support the small and micro enterprises, such as converting the supporting tool that defers principal and interest repayments on loans into the inclusive loan supporting tool for small and micro enterprises, and incorporating the credit loan support plan into managing re-lending for agricultural and small enterprises. In addition, regional and targeted policies were introduced to improve the effectiveness of regulation. With various policies implemented, "inclusive loans increased markedly, covering more small and micro enterprises and maintaining low financing costs".

Steady progress was made in opening up the financial market. In 2021, CBIRC decided to exempt foreign-funded banks from the regulatory requirements on large risk exposures of their parent bank groups, further optimizing the business environment for foreign banks. The *Implementing Rules for the Cross-boundary Wealth Management Connect Pilot Scheme in the Guangdong-Hong Kong-Macao Greater Bay Area* were released; in the meantime, the southbound trading under the Bond Connect program between the Chinese mainland and Hong Kong was launched, which facilitated the institutional investors in the domestic bond market to properly allocate their bonds, steadily promoting the high-level, two-way opening up of China's bond market.

Banks' strategy adjustment

The strategic development ideas of different banks show different characteristics that reflect their respective positioning and development stages.

Large state-owned banks and major domestic joint-stock banks play a leading role in the key strategic areas of the country, providing a solid guarantee for significant strategic investment and industrial development. For example, the banks innovated financial services, and refined business and management models of supply chain finance and trade finance to improve service efficiency and seek breakthroughs; The G-end (government) business model has become an important approach for banks to expand businesses and optimize asset and liability structure, and the connection of the government, enterprises and banks effectively enhanced the efficiency of financial support to the real economy; the banks' elderly financial business focused on customers' diversified needs to lay out products and establish a sound elderly's financial service ecosystem covering the B-end and C-end; the banks deepened their retail business transformation centering on extensive wealth management: facing stricter regulatory requirements and turbulent economic environment, the banks strove to preserve individual wealth, with Fintech application, online and offline integration, and comprehensive services deeply embedded into their business models, processes and management mechanisms; digital RMB application expanded from individual consumption to insurance, industries and other scenarios, further broadening the cooperation between enterprises and banks; the large banks have played an exemplary role in facilitating "carbon neutrality" and "beautiful countryside", and their experience will be important reference for small and medium-sized banks to participate in green finance and rural revitalization.

Small and medium-sized regional banks continued to optimize asset quality, reduce credit costs, maintain asset and liability growth momentum, and stabilize credit spreads. In the meantime, they enhanced their "customer-centered" service and management capabilities and continuously promoted multidimensional innovation in "light banking", "open banking", "agile organization" etc. Under the general trend of nurturing specialized and sophisticated enterprises in niche sectors, many small and medium-sized banks actively thought about the suitable way for their development. They furthered customer experience optimization, industrial finance exploration, corporate business upgrading, and digital transformation.

Banking institutions have significantly adjusted their strategic focus. The merger and reorganization of small regional banks accelerated to fill a gap in the mid-sized bank market; a number of provincial city commercial banks were established, and the transformation of rural credit cooperatives sped up; professional organizations increased in the banking sector; the second direct bank—the PSBC-UBank, was opened; banks slowed the pace of establishing wealth management and consumer finance subsidiaries, but the application for founding of various legal entities in the banking sector was still on the rise.

Transformation in key business areas

Industrial finance

Entering the 14th Five-Year Plan period, China's economic growth driver shift and industrial structure adjustment accelerated, and the industrial economy saw two significant trends. First, in the context of downward economic pressure and global capital crunch, the internet industry is under strict regulation and facing immense pressure to maintain sustainable development. The internet industry needs to shift from a virtual economy to a real economy, make technological improvements, and build ecosystems to achieve end-to-end output and transformation of the industrial and value chains of the vertical industries. Second, with the advancement of "supply-side reform," traditional enterprises have insufficient endogenous impetus and face fierce external competition during their transformation and innovative development. Therefore, they urgently need the support of industrial policies and innovative finance.

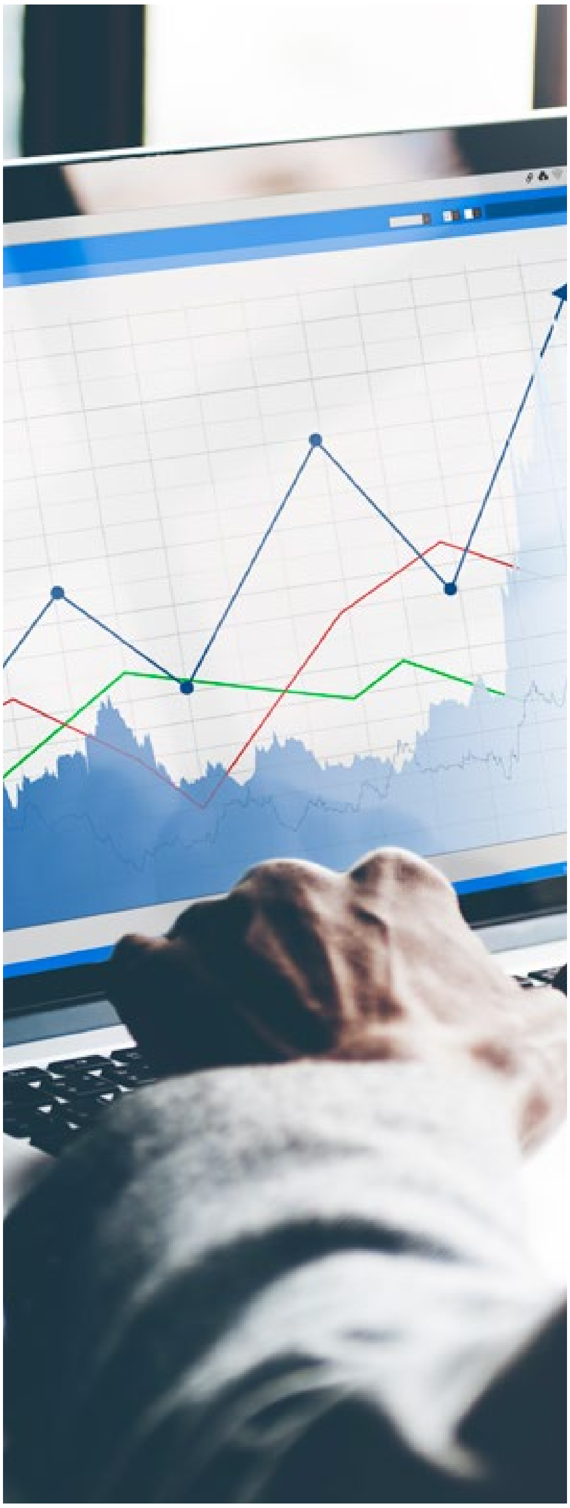
Commercial banks have recently changed their corporate business strategy, centering on industrial finance. They increased resource input and gradually implemented new business development models. In the context of industrial structure adjustment, the financial needs of corporate customers constantly change, requiring financial institutions to provide customized products and services for the vertical industries. However, financial institutions face major difficulties while trying to accommodate industrial needs. First, financial institutions generally lack industrial operation experience; besides, they are unfamiliar with specific industrial business scenarios and have no accurate understanding of the industrial customers' needs. Second, data acquisition is complex, inaccurate, and incomplete in the vertical industrial supply chain. Suppose financial institutions do not closely connect with core enterprises or invest in industrial data infrastructure renovation. In that case, it will be difficult for them to control risks by leveraging big data effectively. Third, the systems and mechanisms of financial institutions are not flexible enough to accommodate the rapid development of the industrial chain. Besides, financial institutions' pressure on performance makes it difficult for them to continue with resource investment as well as product and service innovation on the industrial chain.

Considering the above opportunities and challenges, commercial banks may develop industrial, financial services from the following aspects:

1. Build an industrial finance "toolkit" around specific industries to facilitate the efficient operation of the industrial chain and supply chain. The core of industrial finance lies in the industries. Financial services cover all links of the end-to-end transactions, forming a closed loop of capital and transaction, which achieves real-time monitoring of multiple data streams to reduce risks. Commercial banks can combine the demands of large, small, and medium-sized industrial chain customers and integrate financing, insurance, wealth management, cash management, and other corporate financial services into a "toolkit," connecting cash flow, information flow, and logistics, to provide the upstream and downstream enterprises of the industrial chains with payment & settlement, financing & capital management, and other customized, comprehensive services, facilitating the goals of transaction protection, efficiency improvement, and risk control.

Through the establishment and continuous operation of the industrial chain "toolkit," commercial banks can access more vertical industrial chains, enhance data accumulation, and polish data models to constantly upgrade the "toolkit"—upgrading transaction methods, enrichment of product lines, and iteration of business functions.

2. Build an industrial financial ecosystem and create a "catalyst" for industrial development. To solve the problem of information fragmentation among all links of the supply chain networks and enterprises, commercial banks should cooperate with all relevant parties to integrate industries, the government, and financial data, explore an industrial finance digitalization model, and find financial solutions that accurately meet the supply and transaction demands in different industries. Apart from enhancing the basic financial service capabilities for the vertical industries, commercial banks should attach importance to the industrial financial service ecosystem. They should cooperate with financial institutions, professional service organizations, and technology solution providers, and provide comprehensive services, such as special investment and financing services, financial policy advice, and funds management, to industry participants, thus empowering the industrial participants with their primary financial service capabilities and building industrial financial service infrastructure to achieve resource sharing and win-win cooperation.



3. Explore the experimental field for industrial financial innovation and build an industrial financial service platform. Commercial banks should consider their capabilities and project opportunities to select a specific vertical industry as the innovation field of industrial finance. They should work with the industrial entities to build financial service platforms integrating R&D, financial services of the ecosystem, financial data, and risk information, apply to the government and regulators for special policies to address the common problems of industrial finance, innovate financial services by leveraging innovation sandboxes, and provide innovation incubation services and mechanism output.

Financial services for the elderly

Current situation

With an aging population, services for the elderly is a rigid demand with an expanding customer base in China. Data[3] shows that by 2030, the total consumption of China's elderly population is expected to reach RMB18.3 trillion. However, the Chinese market saw an imbalanced supply and demand of financial services for the elderly and inadequate high-quality financial products. By the end of 2020, China's pension balance exceeded RMB12 trillion, accounting for only 11.8% of its GDP, while the United States' pension balance was USD35.37 trillion, accounting for 165.0% of its GDP[4].

Significant problems exist in the market of financial services for the elderly, such as payment, financing, and integration difficulties:

Payment — **The cost of high-quality elderly's financial services is relatively high; there are few elderly's financial products apart from the basic old-age insurance**

Problems with the elderly's financial services include a large pension gap and slow progress of the third-pillar pension plan, among others, which to some extent affect individual service payment willingness

- There is a large pension gap, and pension spending will further increase with the aging population
- The pilot individual commercial insurances saw slow progress, with a few people enrolled

- State-owned enterprises and welfare institutions can only guarantee basic pension needs, and private institutions mainly provide special pension needs
- State-run institutions account for 88.43% of the elderly care service institutions that charge RMB500-1,000 per month; private institutions account for 73.72% of the elderly service institutions that charge RMB2,001-2,500 per month (statistics from Guardian Index, as of the first half of 2019)

Financing — **The elderly's service operators mainly take the asset-light business model, lacking collateral, thus featuring difficult and expensive financing**

The elderly care service industry is developing rapidly, which requires financial institutions to provide differentiated financial services to advance the development of the real economy

- Most enterprises engaging in elderly care services are small private enterprises with few assets, so it is often difficult for them to apply for loans
- The enterprises mainly adopt the asset-light business model and lack qualified collateral

- "The elderly care service operators are mostly asset-light and capital-light enterprises. They are not the traditional target customers of banks. Even projects with stable occupancy rate and cash flow are difficult to obtain long-term loans from banks, which somewhat hinders the rapid development of standardized services."

— Remarked by an elderly care service enterprise

Integration — **As a public service product, services for the elderly urgently need to be empowered by digital means in resource allocation and regulation.**

As a public service product, the elderly care services reflect the governance of the government

- The elderly care services, as a public product purchased by the government, require regular analysis and evaluation of the service effectiveness through statistical and data analysis tools
- The government has no proper tools and methods to measure the service quality and results in regulating the elderly care services

- "Building a platform for the individual pension system is the key task. The third-pillar platform is a basic public service platform provided by the central government to deal with the aging population and improve the pension system; thus, the platform should be open to individuals, the government and institutions."

— China Ageing Finance Forum 50

[3] Deloitte forecast
[4] Data from the Ministry of Human Resources and Social Security, ICI, the United States Social Security Administration

Future development of the elderly's financial services

Enhance strategic layout and innovation of the elderly's financial products.

Financial institutions should re-examine the positioning of the elderly's financial services in their overall strategy. Chinese residents have diversified elderly care service demands. Financial institutions should identify existing and potential core customer groups, innovate the elderly's financial products according to the needs of different customer groups, fully consider the online, offline, and third-party channels, and build an elderly's financial service system satisfying the diverse needs of different customer groups and regions.

Financial institutions should take the initiative to help elderly care service operators address the financing difficulties. They should leverage their unique data and channel resources to explore the elderly's real estate, smart services, and other innovative products and enhance risk management while providing financial support. The government should encourage and support financial institutions to provide comprehensive financial services for the enterprises engaging in the elderly care service industry to reduce their financing, marketing, and operating costs.

Integrate internal and external resources to build an elderly's financial service ecosystem

First, financial institutions can actively use their resources to build a public service platform for the elderly. They can strengthen cooperation with other institutions, establish an open platform, and integrate the elderly's financial products from the insurance, funds, banking, and trust industries to provide customers with one-stop services to comprehensively allocate their pension funds.

Second, financial institutions should intensify cooperation with large elderly care service organizations, fully roll out the "extensive elderly care, comprehensive health" strategy, and build the "elderly's financial services + nonfinancial services" integrated service system; they should actively explore the collaborative institutions' Group resources, promote cross-selling within the insurance, banking, and other channel resources, and vertically integrate the relevant resources within the group to provide multi-platform solutions for the elderly.

Figure 88: Financial Institutions' Elderly Financial Service Layout Strategies

High capability requirement / Low capability requirement
High synergy value / Low synergy value

Increase input

Customer insight & product development
- Consider recruiting or building a team to investigate and analyze the demands of existing customers
- Provide product feedback and customization suggestions to financial institutions based on customers' demands

Data connection
- Seek data connection between the elderly service institutions and the government, establish the elderly service data system, and explore potential cross-selling and customer migration opportunities

Pay constant attention

Innovative mode
- Study REITs products, explore well-operated held-type elderly service projects, cooperate with operators to tap into the "M&A/equity participation/investment -operation-capitalization" rolling development mode, promote the launch of project REITs, and cultivate relevant capabilities

Industry funds
- Cooperate with large elderly service institutions to set up "health industry fund", giving full play to their industrial insight and customer management abilities
- Quickly enhance the value of the target enterprises on the industrial chain through industry funds investment, M&A and integration of quality target enterprises, internal resource integration, and resource grafting

Take quick action

Building sales channels
- Strengthen sales team building to efficiently improve production capacity
- Establish a reward system for customer referrals
- Establish a customer maintenance mechanism to ensure unified customer experience

Profit distribution mechanism
- Establish a regular connection mechanism with the elderly service operators and other financial institutions, develop a profit distribution scheme, and solve the various sales problems

Seize opportunities

Value-added services
- Develop service bundles to include elderly care, rehabilitation, nursing, culture, travel and other services according to the needs of the banking and insurance customers, forming a rich equity product line to meet the needs of customers at all levels

Source: Deloitte's consolidation and analysis

Asset management

Asset management: vigorously expand the asset management business and create new growth engine

As residents' wealth steadily increases, there is a growing demand for diversified allocation of funds. The net worth-oriented transformation of banks' financial services has sped up, and wealth management subsidiaries have become an important part of commercial banks' asset and wealth management transformation. Financial subsidiaries focus more on professional, specialized and ecological transformation and development, thus intensifying the differentiation of banks' asset management capabilities. Asset management business is at the center of banks' transformation, and will soon enter the development stage of "improving quality and efficiency". Flexible and open customer acquisition strategy, professional service capability and diversified product structure are the core factors affecting the development of asset management business.

For assets: create the "extensive wealth management value ecological chain." First, intensify internal collaboration and external cooperation to build an industrial financial ecosystem for asset management business: strengthen collaboration with the internal wealth management subsidiaries, financial marketing department, and investment banking department to practice the "integrated" operation philosophy; expand cooperation with external financial subsidiaries, funds, securities, trust, and insurance companies to actualize the platform-based development mode. **Second, make good use of all resources and advantages and strengthening the "active outsourcing" mode:** commercial banks' biggest advantage is the ability to touch their most extensive customer groups directly; however, currently, commercial banks' investment capacity cannot fully accommodate the demands of customers of different risk preferences; thus, they need to take the "active outsourcing" mode to entrust private equity or other institutions to manage part of their high-risk products or investment, i.e., adopting the FOF or MOM mode to explore complementary new business forms by the comparative advantage strategy. In addition, in response to the national strategies of green finance, rural revitalization, and making the country thrive through science and technology, **banks' asset management business needs to increase the strategic "height."** They need to practice the ESG investment concept, enrich specialized asset management product line, add ESG-related asset management products and increase appropriate asset allocation. They should enhance sustainable development power while seeking to increase investment income. In the long run, integrating the ESG investment concept into the investment research framework, establishing ESG indexes, and strengthening the construction of the ESG risk control system will help improve banks' core competitiveness in the asset management business. ESG investment can effectively reflect investors' business performance and management level and help banks mitigate risks and discover value. Moreover, by actively creating ESG-related wealth management products, banks can enhance their brand image while achieving differentiated asset management business development.

For capital: reshape a "preferred bank for asset management" for customers. First, break the fixed pattern and promote transformation with new business forms: change the traditional sales model, select excellent products in the market, constantly enrich the product line based on the diversified wealth management needs of customers, and accelerate the transformation from "single product marketing" to "regular asset allocation", to provide customers with asset allocation services covering all products and the whole life cycle. **Second, explore the "blue ocean" market, and expand the "second curve".** According to public data, at the end of 2020, China's high net worth individuals totaled 2.62 million, with the scale of investable assets reaching

RMB84 trillion. The booming high net worth individuals will be the new "blue ocean" customers in the capital market. Banks keep gaining a deeper understanding of customers and upgrading the existing customers to provide high-quality services for private and high-net-worth customers. Therefore, they need to enhance the brand building for private banking businesses and explore potential customer groups. More importantly, they need to convert the potential customer group meeting the private banking conditions into recipients of private banking services and help customers grow and increase stock assets through the wealth management system.

For operation: adhere to the business strategy of "being market-oriented, specialized and refined". First, improve "internal skills": build a comprehensive investment research system covering macro research, strategy research, industry research and individual investment target research to facilitate investment decisions and the two-way transmission of investment research capability to the sales and product ends. For sales, the research conclusions should be transmitted to the investment consultant team to provide professional, information-based, and timely investment advice and strengthen information communication with customers. For products, investment research plays a key role and is the "last mile" wind vane before portfolio management. **Second, skillfully leverage "external power":** introducing excellent asset management institutions as strategic investors will positively affect product layout, investment research system, organizational structure, and personnel incentives of asset management business.

To sum up, facing the broad asset management market, commercial banks should grasp asset management business development trends. Banks' asset management system will change to be a new ecosystem with wealth management subsidiaries at the core and banks, securities, funds, trust, insurance, and other financial institutions collaborating with each other in products, channels and many other aspects. In the meantime, commercial banks will establish a comprehensive and hierarchical product system, strengthen product innovation, and gradually increase the proportion of equity investment to achieve differentiated development and stand out in the homogeneous competition. Moreover, commercial banks should always put customers' interests and concerns first, explore high-net-worth customers, and make asset allocation plans based on customers' personalized needs and risk preferences to realize wealth appreciation for customers.

Digitalization

Digital transformation has entered the "deep water zone": regulators have issued clear guidelines on banks' digital transformation; large banks are accelerating ecological and intelligent transformation; small and medium-sized banks are striving to build their digital base and have made breakthroughs in specific fields.

Regulators issued guidelines on banks' digital transformation, putting forward clear requirements from the aspects of digital products and services, digital risk control, digital operation, data and technology, and demanding significant results to be achieved in the digital transformation of the banking industry by 2025

In January 2022, the CBIRC issued the *Guiding Opinions on the Digital Transformation in Banking and Insurance Sectors,* which put forward specific requirements for the digital transformation of the banking sector from the aspects of overall goal, strategic planning to organization processes and construction, business management digitization, data capacity building, technological capacity building, risk prevention, and organization guarantee & supervision. CBIRC required that the banking sector's digital transformation shall achieve remarkable results by 2025, digital financial products and services shall be widely applied, data assets and digital technology-based financial innovation shall be conducted in an orderly manner, the ability to develop individualized, differentiated and customized products and services shall be tremendously enhanced, and the financial service quality and efficiency shall be significantly improved; besides, digital operation and management systems shall be built, and data governance, technological capabilities, cyber security, data security, and risk management shall be materially improved.

Large banks have upgraded their data and technology capabilities and achieved initial results in digital products and services, digital risk control, and digital operation. In the future, they will focus on in-depth ecological and intelligent transformation, create new digital business models such as open banks, and optimize the digital operation and risk control systems to improve digital management capabilities

Large banks have upgraded their data and technology capabilities and achieved initial results in digital products and services, digital risk control, and digital operation. Regarding data capability, the banks have established sound data governance systems, enterprise-level data standards, and enterprise-level big data platforms. They have realized multidimensional big data accumulation and multi-scenario data application. For technological capability, the large banks strive to transform the IT architecture to distributed and cloud-native systems, build multi-site data center architecture and set up basic enterprise-level AI, blockchain, biometrics, IoT, and other Fintech platforms. In terms of digital business applications, the banks have developed digital credit, digital wealth management, and other online products. Based on the customer profiling and labeling system, they conducted comprehensive operations for the whole life cycle of customers and built modeling and intelligent risk control systems covering the whole life-cycle of the credit business. In addition, large banks attached importance to developing a Fintech innovation system, building an agile organization, and cultivating digital talent.

In the future, large banks will further accelerate and deepen digital transformation, with focus on ecological and intelligent transformation, create new digital business models such as open banks, and optimize the digital operation and risk control systems to improve digital management capabilities. In terms of innovative business models, open banks will establish digital ecosystems and create new platform-based business models; they may cooperate with partners to provide financial + nonfinancial digital ecological services, thus promoting massive customer acquisition, ecological data-based business innovation and digital risk control. Regarding digital operation, the banks will improve the digital operation index system to enable more refined and real-time profit analysis, performance assessment, and risk monitoring.

With data and technology capability deficiencies, small and medium-sized banks need to give priority to building a digital base and conduct digital transformation in the key areas that meet their regional development needs

Small and medium-sized banks generally have old system architecture, poor data quality, and insufficient technological personnel, leading to a weak digital transformation foundation. Therefore, they must first construct a new generation of information systems to build a solid digital base.
The construction of the new generation information system can focus on core systems, credit systems, mobile banking systems, and big data platforms, which will enhance the banks' data management, basic architecture, and infrastructure capabilities as well as their overall business ability. To improve technological capability, the banks will build an enterprise-level big data platform, set the foundation for multidimensional big data application, promote the transformation of core application architecture to distributed micro-services, and promote the construction of active-active data centers to enable elastic supply and high availability of basic resources. To enhance business ability, the banks should create enterprise-level accounting engines, flexibly configure product parameters and business processes, improve the management ability for unified credit granting, credit line and collateral of credit business, and build big data-based intelligent risk control systems to enable customers and employees' flexible online, mobile services anytime and anywhere, creating an excellent customer journey.

For digital business application, due to limited businesses and resources, small and medium-sized banks' digital transformation cannot be "massive and comprehensive". Their digital transformation should be first conducted in the key areas that will boost their regional development. For instance, many small and medium-sized banks prioritize the key areas such as retail credit transformation, individual customer profiling and labeling system construction, digital marketing for individual customers, and shifting to mobile/paperless/online business processes.

Customer operation

With the development of the internet in China and the popularity of smart mobile devices, the behaviors and habits of banks' customers have changed significantly, which drives the banks to change their customer service concept. Banks reconsidered the customer operation concept in the new business mode. They generally adopt online, digital, and ecological operations to enhance business value. As banks deepen customer operation, they face new challenges, such as effectively converting users into customers, acquiring valuable customers through ecological scenarios, and improving businesses through scenario and channel construction. Long-term huge investment in customer operation may not result in a significant customer and business increase, which invariably confuse the banks. Major problems have been identified when analyzing banks' current scenario customer acquisition: (1) banks are not able to provide a good user experience in the ecological scenarios; (2) the scenarios are homogeneous; (3) banks' specialized financial + nonfinancial services cannot be fully integrated; (4) banks are not agile enough to address users' issues in the scenarios. The following section elaborates on how to build a new paradigm for banks' customer operation from four aspects.

Intelligent customer operation ability refers to the system that converts visitors/passers-by to users and then to customers through online channels. Banks should pay attention not only to the customer transaction data of their own channels but also to visitors' behavior and preferences to their WeChat official account and mini-programs. They should change the traditional customer operation to a community or internet-based customer operation, explore the behavior of community customers, improve data efficiency, conduct accurate user profiling, identify user needs, continue with information push and marketing, and constantly refine the scenario granularity to meet the actual needs of customers in the scenarios. Banks should enrich the front-office data collection of contact points and buried points; in the meantime, they should build a back-office closed-loop quantitative analysis model as well as a quantitative and refined model for analyzing user behavior data, to comprehensively understand customer preference and enhance their customer analysis and mining capability; they should tap into the potential demands of users through big data analysis, and use external legal data to analyze users' product, service, channel, and interaction preferences, thus discovering potential business opportunities. Therefore, the internal driving forces such as digital business processes, digital operations, and big data risk control will help banks constantly improve efficiency and strengthen risk control from the inside out.

Omnichannel operation ability is the core of customer operation. Channels connect the external ecological demands and the internal supply. Banks must consider how to effectively deliver the products, services, and brand to customers through the customer-contacting channels. Leading domestic banks have started building an integrated omnichannel customer operation ability. Fully considering the ability in customer contact, operation, services, products, risk control, Fintech tools, data, and platforms, the banks should focus on customer expansion, acquisition, activation, stickiness, and retention; they should break the traditional customer operation model, pay more attention to customer interaction, product activities, content, across-channel collaboration, brand promotion, customer satisfaction survey, and customer feedback insight, establish the "financial" + "nonfinancial" integrated omnichannel operation system, and develop the ability to provide collaborative services for corporate and individual customers. With the support of omnichannel digital platforms, the symbiotic and interdependent relationships between banks and customers will continuously strengthen; banks will convert "users" into "customers," improve customer operation and value and establish an online platform position based on the customer journey, customer profiling stratification and scenario services.

Unified customer growth system: the ultimate goal of customer operation is to increase the online MAUs, expand AUM, develop omnichannel ability to continuously explore customers' potential value, and promote effective customers to grow from potential users to high net worth customers. Banks should gradually start constructing a unified customer growth system and design multistep growth paths for users. They should transform from the traditional KYC to KYCV (Know Your Customer Value). Banks may borrow the customer operation concept of internet and game companies: develop customer upgrading, monster fighting, and equipment buying rules, and design a complete user growth system covering user credits, grades, path planning, incentive system, and task benefits. In addition, banks should promote people-oriented customer interaction, enrich financial service scenarios, and provide a personalized customer experience. A proper interaction feedback mechanism is particularly important for bringing good customer experience. It requires banks to establish a whole-process customer experience management system based on the customer journey, design a regular customer experience evaluation mechanism, create a mode to achieve active communication between customers and the platforms, and respond agilely to customers' demands and pain points, thus forming a closed loop of customer services to optimize scenario user experience.

Application of digital tools: traditionally, banks' customer operation mainly depended on the employees' customer service experience—they look for sales leads, make sales plans, and explore customer demands to render services. The traditional way of contacting customers can no longer meet the rapidly changing customer demands. Thus, more and more banks have equipped their front-line employees with digital marketing tools covering marketing planning, marketing product, and service matching, marketing clues, marketing suggestions, and marketing calendar, which forms a set of compliant, standard, and differentiated tools to facilitate the banks' marketing and services of customer operation. In the meantime, digital tools help front-line employees achieve online, paperless, and intelligent daily services. It also visualizes customer information for the account managers, providing a clear view for employees to understand customers' demands, preferences and pain points and allowing them to see through the whole process of the customer service chain. Moreover, it provides employees' performance information and displays various employee rankings to create a healthy internal competition atmosphere.

Focus of the banking sector in 2022

In 2022, China's banking sector still sets "stability first" and "pursuing progress while ensuring stability" as the leading tone, and helping sustain stable macroeconomic performance as the core goal.

The banking sector underpins national strategic development

- The financing demand in key national fields and significant projects will increase. The banking sector will provide innovative support for the major national scientific and technological tasks and better serve the enterprises striving to make technological breakthroughs as well as the "specialized and sophisticated enterprises in niche sectors". The banking sector will increase loans, expand the coverage and reduce the loan cost for small, medium, and micro enterprises;
- Help advance carbon peak and carbon neutrality in an orderly manner, innovate green financial products and services, and support the energy industry to maintain stable production and supply;
- Financial services for rural vitalization will improve quality and efficiency to help "new citizens" settle down and start businesses in cities and towns.

Risk management and regulation

- The banking sector will more strictly control the risks in all areas. There will be clear requirements for establishing and regulating banking institutions, focusing on major shareholder governance, related party transactions, data security, and personal information protection. The banking sector will fully implement the new asset management regulations and continue to dismantle high-risk shadow banks;
- M&A and reorganization of small and medium-sized financial institutions will continue, and the reform of rural credit cooperatives will be deepened; small and medium-sized banks and insurance institutions are encouraged to replenish their capital through multiple channels lawfully.

Talent & technology

- Talent is the most decisive asset for banking institutions to have good management and services, and technology is the key to empowering and maximizing talent value. From front-office customer experience to back-office operation to top-level decision making, technology application and digital transformation redefine the positioning and value of banking talent;
- How to deepen digital transformation in organizational structure, management mechanism, assessment and incentive mechanism, and other areas is an important topic for the banking institutions' next-stage transformation, which determines transformation efficiency and cost-effectiveness.

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4.2 Understanding the new rules on corporate governance and their implications

Good corporate governance is the foundation for the healthy development of financial institutions. In recent years, CBIRC attached great importance to the reform and regulation of banks and insurance institutions' corporate governance, insisting on improving corporate governance as an important way to drive intensified risk control and high-quality development of banks and insurance institutions. In 2021, CBIRC introduced the *Guidelines for the Corporate Governance of Banks and Insurance Institutions* and the *Measures for Evaluating the Performance of Duties by Directors and Supervisors of Banks and Insurance Institutions (for Trial Implementation)* to further promote the scientific and effective corporate governance of financial institutions.

Corporate governance development course of China banking sector

Since the beginning of China's reform and opening up, corporate governance has continuously improved along with the evolution of banks. In the 21st century, large state-owned commercial banks were re-organized according to the modern corporate system to list on the stock exchanges. Soon after, China's financial institutions gradually established corporate governance structures and mechanisms recognized by international capital markets, laying a solid foundation to ensure shareholder returns, create corporate value, and fulfill social responsibilities.

Figure 89: Evolution of Corporate Governance System in China Banking Sector

2002
PBC formulated the *Guidelines for Corporate Governance of Joint-stock Commercial Banks and the Guidelines for the Independent Director and External Supervisor System of Joint-stock Commercial Banks*

2004
Guidance of China Banking Regulatory (CBRC) *Commission on the Corporation Governance Reform and Supervision of Bank of China and China Construction Bank*

2005
CBIRC issued the *Due Diligence Guideline for Board of Directors in Joint-stock Commercial Banks (for Trial Implementation)*

2006
CBRC issued the *Guidelines on Corporate Governance and Relevant Supervision of State - controlled Commercial Banks*

2013
CBIRC issued the *Guidelines for Corporate Governance of Commercial Banks*

2016
Xi, general secretary of the Communist Party of China, stressed that "adhering to the Party's unwavering leadership in state-owned enterprises and opening up a new situation of Party building in state-owned enterprises"

2018
PBC issued the modern financial system planning for the 13th Five-Year Plan period—improving the corporate governance mechanism of financial institutions is an intrinsic requirement

2020
CBIRC's *Three-year Action Plan for Improving Corporate Governance in the Banking and Insurance Sectors (2020-2022)*

2021
CBIRC issue the *Guidelines for the Corporate Governance of Banks and Insurance Institutions* and the *Measures for Evaluating the Performance of Duties by Directors and Supervisors of Banks and Insurance Institutions (for Trial Implementation)*

Interpretation of the guidelines for corporate governance of banks and insurance institutions

In June 2021, CBIRC issued the *Guidelines for the Corporate Governance of Banks and Insurance Institutions* (hereinafter referred to as the "Guidelines"), which drew on the financial institutions' good corporate governance practices and relevant regulatory experience, and introduced the good practices advocated in the *G20/OECD Principles of Corporate Governance*, to establish basic norms for corporate governance in the banking and insurance sectors.

Corporate governance structure and basic principles

The *Guidelines*, focusing on the core structure of corporate governance, specify basic principles and requirements for corporate governance; in the meantime, it allows banks and insurance institutions to have a certain autonomy in setting up their corporate governance structure. It contains main changes of four aspects.

1. Party leadership

CBIRC put forward general requirements for promoting the **organic integration of Party leadership and corporate governance** in state-owned financial institutions for the first time. The Guidelines emphasized improving the **democratic management system** (in the form of workers' congress) under the leadership of Party committees and **made it clear that major issues should be discussed by the Party committees before being submitted to the board of directors for final decision.**

2. Shareholders and shareholders' meetings

The Guidelines contain **ten** shareholder obligations, including legal sources of funds and the obligation to inform. For the first time, it put forward regulations on the shareholder consultation and communication mechanism that encourages negotiating and communicating about the interests between major and minority shareholders to guarantee the right-to-know of minority shareholders. It has also added provisions on who to convene extraordinary shareholders' meetings and matters requiring special voting, and encourages using the **cumulative voting system.**

3. Directors, independent directors, and the board of directors

Clarify the duties and obligations of directors

To facilitate directors' performance of duties and strengthen their responsibilities, the *Guidelines* specified the following **duties and obligations for directors:**

Table 28: Directors' Obligations Specified in the *Guidelines*

Type	No.	Directors' duties and obligations
Duty of diligence	1	**Pay close attention to the company's operation and management, and have the right to request the senior management to timely provide materials that comprehensively and accurately reflect the company's operation and management and explain relevant issues (newly added)**
	2	Attend board meetings, examine the matters reviewed by the board of directors, express opinions independently, professionally, and objectively, and vote independently based on prudent judgment
	3	**Take responsibilities for board decisions (newly added)**
	4	**Supervise the senior management's implementation of the resolutions of the shareholders' meetings and the board of directors (newly added)**
	5	Actively participate in the training organized by the company and regulators, understand directors' rights and obligations, know relevant laws and regulations, and continue to have professional knowledge and ability to perform their duties
Duty of loyalty	6	**Be responsible to the company and all shareholders in performing their duties, and treat all shareholders fairly (newly added)**
	7	**Strictly follow the code of professional ethics, and consider the legitimate rights and interests of stakeholders (newly added)**
	8	Be diligent and loyal to the company, perform duties prudently, and ensure sufficient time and energy to perform the duties
	9	Abide by laws, regulations, and the articles of association

Regulate the authority and authorization arrangement of the board of directors

In addition to the "legitimate authority" of the board of directors as stipulated in *the Company Law*, the Guidelines increased the number of "supervisory authority" from **8** to **15**, and required that, **in principle, the "legitimate authority" should not be delegated to the chairman, directors, other institutions, or individuals.** If such delegation is actually needed for specific decision-making, it should be conducted lawfully and follow the board resolution. In addition, the *Guidelines* emphasized that authorization should be conducted on a case-by-case basis, and the board of directors' authority should not be generally or permanently delegated to other institutions or individuals.

Table 29: Supervisory Authority of the Board of Directors

Type	No.	Supervisory Authority
Newly Added	1	**Formulate company plans for increasing or reducing capital, issuing bonds or other securities, and going public**
	2	Formulate company **plans for** major acquisition, acquisition of the company's shares, **merger, division, dissolution and change of the company's form**
	3	**Appoint or dismiss senior management personnel and determine their compensation, reward and punishment in accordance with regulatory provisions; supervise the senior management in performing their duties** (note)
	4	Abide by laws, regulations and the articles of association to review and approve the company's foreign investment, asset purchase, asset disposal and write-off, asset mortgage, related-party transactions, and data governance, among others
	5	Formulate plans for amending the articles of association, formulate rules of procedure for shareholders' meetings and the board of directors, examine and approve the working rules for the special committee of the board of directors
	6	Propose to appoint or dismiss an accounting firm that regularly audit the company's financial reports
	7	Assume the management responsibility of shareholders' affairs
Original	8	Develop the company's development strategies and supervise the implementation of the strategies
	9	Develop the company's capital plans and assume the ultimate responsibility of capital or solvency management
	10	Formulate corporate risk tolerance, risk management and internal control policies, and assume the ultimate responsibility of overall risk management
	11	Be responsible for disclosing corporate information, and assume the ultimate responsibility for the authenticity, accuracy, completeness and timeliness of the accounting and financial reports
	12	Safeguard the legitimate rights and interests of financial consumers and other stakeholders
	13	Establish a mechanism for identifying, reviewing and managing conflicts of interest between banks/insurance institutions and shareholders, especially major shareholders
	14	Regularly evaluate and improve the corporate governance of the banks and insurance institutions
	15	Other authority stipulated in the articles of association

Note: "supervise the senior management in performing their duties" is also mentioned in the *Governance Guidelines.*

Regulate the setting of independent directors and their performance of duties

There is a separate "independent director" section in the *Guidelines*, which puts forward requirements for better stimulating independent directors to play their role from **five aspects:**

- It stipulates that "banks and insurance institutions should establish their independent director system, and the number of independent directors shall not be less than **one-third** of the total number of board members in principle," which is to keep consistent with CSRC's (China Securities Regulatory Commission) requirements for the number of independent directors in listed companies;
- It revised the provision in the Governance Guidelines that independent directors **shall not hold a post in more than two commercial banks at the same time t**o be: one natural person can serve as an independent director in up to five domestic and foreign enterprises at the same time; it also added the provision that the independent directors' **right-to-know** should be safeguarded;
- It emphasized that independent directors should express objective, impartial and independent opinions on the matters reviewed by the shareholders' meetings or the board of directors, and more attention should be paid to the **nomination, appointment, and removal of directors; compensation of directors, and senior managers;**
- It enhanced the mandatory requirements for the performance of duties. An independent director who **has not attended the board meetings for three successive times** shall be deemed as failing to perform their duties;
- It learned from international corporate governance practices and added that "independent directors of banks and insurance institutions may elect an independent director to convene special meetings for independent directors to examine the issues related to the performance of duties."

Lead Independent Director System

- The "Lead Independent Director" system is practiced in the US, UK, Singapore, Hong Kong and other markets. American companies take the lead in setting up the independent director system.
- Setting a lead independent director to assume the "bellwether" duty to coordinate the actions of independent directors is conducive to improving independent directors' professionalism and efficiency in performing their duties.
- The lead independent director system has unique governance value for commercial banks where major shareholders and the management have strong control or influence on the board of directors and independent directors account for a relatively higher proportion.
- Listed banks intending to implement this system need to specify the responsibilities, authority and working mechanism of the lead independent director in their articles of association and the board's rules of procedure.
- In addition, procedures for selecting and appointing the lead independent director need to be established to ensure that this position will be assumed by a highly respected, authoritative and competent independent director.

Source: *Enhance the Professionalism and Diversification of Independent Directors in Listed Banks, Wu Weijun, Chen Bo; China Banking,* Issue No. 6, 2021

Encourage the setting of employee directors

Introducing employee directors to the board of directors in China can be traced back to the 2005 revision of the *Company Law*. The *Guidelines* learned from the corporate governance practices of Germany and other European countries to strengthen the protection of employees' rights and interests. They added the regulation that encourages setting employee directors. According to German laws, one-third of the board of supervisors members shall be employees' representatives (the board of supervisors in Germany makes major decisions and supervise the management). The deployment of employee directors in China's financial institutions should be determined per their actual situations, for example, taking into consideration how complicated the board of directors will be when adding employee directors and if the employee directors will not effectively play their role due to the subordinate relationship between them and the executive directors.

Table 30: Central Enterprises with Employee Directors

• CHINA TELECOM	• SINOSTEEL
• CNNC	• CNCEC
• NORINCO GROUP	• China National Salt Industry Group
• CETC	• CNBM
• CNPC	• BGRIMM Technology Group
• STATE GRID	• China Academy of Building Research
• China Datang Corporation	• China Railway Construction Corporation
• China Mobile	• China Communication Construction Company
• CEC	• SINOPHARM
• FAW GROUP	• China Construction Technology Consulting Co., Ltd
• SINOMACH	• Xinxing Cathay International Group
• AIR CHINA	• China National Aviation Fuel Group
• CHINA EASTERN	• China National Gold Group
• CECEP	• Nam Kwong Group
• CIECC	• China General Nuclear Power Corporation
• China Chengtong Holdings Group	• China Reform Holdings Corporation

4. Supervisors and the board of supervisors

The *Guidelines* reflected the financial regulators' corporate governance supervision philosophy of "actualizing" the function of the board of supervisors, specified **seven obligations** of the supervisors and **six priorities** of the board of supervisors, and strengthened the supervision function of the board of supervisors from **three aspects** to "actualize" the function of the board of supervisors. It's worth mentioning that the *Guidelines* strengthened the board of supervisors' authority to supervise directors and the board and emphasized its function of overseeing the board's strategic decision-making process and results.

Strengthened the incentive and restraint mechanism

The *Guidelines* value the core operating mechanism of corporate governance. It clarifies the responsibilities and authority of all governance bodies, and further emphasizes the standardized operation of the governance mechanism, and requires banks and insurance institutions to improve the incentive and restraint mechanism, establish a sound information disclosure system and mechanism, and strengthen risk management, internal control, and internal and external audit. The incentive and restrain mechanism is the core mechanism of corporate governance, and the Guidelines made three substantial revisions:

- Add compliant operation indicators to the performance assessment indexes, and require **the weighting of compliant operation and risk management indicators to be higher than other indicators** (such as economic benefit indicators);
- Intensified the system to delay paying, reclaim or deduct performance salary, deciding that besides the key senior executives, the performance salary of directors, senior managers, and personnel in key positions may be deferred, and **former employees (dismissed, resigned, retired personnel) are also subject to the performance salary reclaim and deduction system;**

The *Guidelines* require that the compensation of internal audit, internal control and compliance, and risk management personnel should be **independent from that of business personnel**, and their compensation should be guaranteed appropriately.

Improved the corporate governance regulation mechanism

The Guidelines integrated the regulatory requirements into the general and specific corporate governance provisions and added the differentiated regulation provisions. It emphasized the governance assessment mechanism and specified **eight** requirements for banks, insurance institutions, and governance bodies to report to the regulators in advance and cooperate in risk disposal and rectification afterward, which demonstrated CBIRC's regulation philosophy of improving the whole-process supervision capability, strengthening pre-warning and early intervention, enhancing in-process intervention, and refining the risk disposal mechanism.

The *Guidelines* specified **four reporting, two cooperation**, and **two notification obligations** of banks, insurance institutions, and governance bodies:

Table 31: Reporting, Cooperation and Notification Obligations of Banks, Insurance Institutions and Governance Bodies

Obligation	No.	Content
Reporting obligation	1	Report matters and reasons for not holding the annual shareholder's meeting or extraordinary shareholders' meeting in time as prescribed in the Company Law and the *Guidelines*
	2	Report significant risk events
	3	Timely submit external audit reports and the audit institution's audit opinions on the effectiveness of the company's internal controls
	4	Independent directors report major defects or failures in the corporate governance mechanism
Cooperation obligation	5	In the event of risk events or major violation of regulations, the banks/insurance institutions' shareholders shall cooperate with the regulators for investigation and addressing risks
	6	Directors of banks/insurance institutions that are dealing with significant risks must not resign without the regulators' approval
Notification obligation	7	Timely inform the directors, the board, supervisors and board of supervisors of the regulatory opinions and rectification details
	8	Timely inform the board, board of supervisors and senior management of the corporate governance assessment results, and make rectifications according to the regulatory requirements

Interpretation of the *Measures for Evaluating the Performance of Duties by Directors and Supervisors of Banks and Insurance Institutions (for Trial Implementation)*

To further strengthen the directors and supervisors' performance of their duties and consolidate their responsibilities through evaluation, CBIRC issued the *Measure for Evaluating the Performance of Duties by Directors and Supervisors of Banks and Insurance Institutions (for Trial Implementation)* (the "Measures") based on the framework and content of the *Measures for Evaluating the Performance of Duties by Directors of Commercial Banks*.

The *Measures* drew on the experience of good international and domestic practices. They extended the evaluation scope to cover all directors and supervisors of banks and insurance institutions to drive standardized and effective performance of the directors and supervisors and to enhance the operation quality and efficiency of the board of directors and board of supervisors.

Confirm the responsibility subjects

The *Measures* confirmed that the board of supervisors assumes the ultimate responsibility in evaluating the performance of directors and supervisors. To consolidate the directors and supervisors' duty-performing responsibilities, the Measures specified that the board and senior management should support the evaluation of the performance of duties. For the first time, the *Measures* added "external evaluation," extending the evaluation beyond the board of directors and the board of supervisors, which is more consistent with modern corporate governance.

Enrich the content of the evaluation

The *Measures* emphasize differentiated duty-performing evaluation requirements, including additional duties of the chairman of the board of directors/supervisors, as well as special duty-performing requirements for executive directors, independent directors/external supervisors, and employee directors/supervisors.

In general, the Measures require that duty-performing evaluation should include at least five dimensions: duty of loyalty, diligence, professionalism, independence & ethics, and compliance. The Measures summarized that banks should consider the types and characteristics of the directors and supervisors as well as their positions in the special committee of the board of directors/supervisors, and pay attention to their specific jobs to conduct duty-performing evaluation, which strengthened the system operability. The Measures pointed out **21 items of focus** for the evaluation of directors' performance of duties, which can be categorized into strategic decision-making, governance structure, nomination/authorization/incentive of directors and senior management, compliance/risk management/internal controls, information reporting and disclosure, and fulfillment of social responsibilities.

21 items of focus for the evaluation of directors' performance of duties

Strategic decision-making (5 items)

- Develop and promote the implementation of strategic plans and annual business plans
- Review major investment, financing and asset disposal, especially unplanned investment, leasing, asset sale and purchase, and guarantee, among others
- Promote the implementation of the resolutions adopted by the shareholders' (general) meeting and the board
- Enhance capital management and capital supplement
- Develop and promote the implementation of profit distribution plans

Governance structure (2 items)

- Improve the shareholding structure and internal governance structure, strengthen stock equity management, and enhance the effectiveness of corporate governance
- Promote legal and compliant related party transactions and standardized related party transaction management

Nomination, authorization and incentive of directors and senior management (4 items)

- Improve the standardization and transparency of the director nomination/election process
- Selection/supervision/replacement of/ communication with senior management
- Evaluate and improve the authorization principles, scope of authorization and management mechanism for senior management
- Promote consistency of directors' and senior management compensation with the long-term interests of banks, and insurance institutions and shareholders, as well as with regulatory requirements

Compliance, risk management and internal controls (5 items)

- Develop and promote the implementation of risk management strategies, as well as risk preference, risk limits and risk management systems
- Enhance the effectiveness of internal controls, compliance management and internal audit, and implement the anti-money laundering and anti-terrorist financing requirements
- Implement regulatory advice, and rectify relevant problems
- Pay attention to and deal with matters that may cause or have caused significant risks and losses, especially matters that significantly impact the legitimate rights and interests of stakeholders
- Perform other important duties required by laws, regulations and the articles of association

Information reporting and disclosure (3 items)

- Enhance the authenticity, accuracy and completeness of financial and accounting information
- Enhance the authenticity, accuracy, completeness and promptness of information disclosure
- Ensure the promptness, authenticity and completeness of data submitted to regulators

Fulfillment of social responsibilities (2 items)

- Strengthen communication with shareholders and other stakeholders to balance the interests of all parties
- Improve the consumer protection decision-making mechanism, plan and guide the protection of consumers' rights

Specify the classification of evaluation results

The *Measures* encourage engaging independent third-party institutions to assist with the evaluation process and propose more diversified evaluation methods. The *Measures* classify the duty-performing evaluation results into three categories: competent, basically competent, and incompetent, and specify the situations that "cannot be evaluated as competent" and "should be evaluated as incompetent."

10 situations that cannot be evaluated as competent

- **Absence from more than two-thirds** of the on-site meetings;
- **Directors voted in favor of** decisions and matters violating laws or seriously violating regulatory provisions and the articles of association, which the **supervisors knew or should know but did not question about or timely report to the board of supervisors for correction;**
- The board of directors violated the articles of association, rules of procedure and decision-making procedures to review major matters, and **the directors did not raise an objection, which the supervisors know or should know but did not question about or timely report to the board of supervisors for correction;**
- Inefficient operation of the board of directors / supervisors, and **failure to timely report the matters and promote correction;**
- Significant problems exist in equity and related party transaction management, operation strategies, risk management policies and internal control systems, but the directors did not timely provide advice or request for correction; the board of supervisors failed to **perform their supervisory duties** as required and the supervisors did not timely provide advice and promote effective rectification;
- **Major regulatory indicators** failed to meet the relevant requirements, the directors and supervisors did not timely provide advice and promote effective rectification;
- Knew or should know **what to avoid during performance of duties** but failed to act as regulated;
- Failure to promote effective rectification to the major violations of laws and regulations identified by regulators;
- Individual administrative **punishment or disciplinary punishment by regulators;**
- Other inappropriate performance of duties

8 situations that should be evaluated as incompetent

- Disclosure of confidential information **damaged the legitimate rights and interests of banks and insurance institutions;**
- Accepting **illegitimate interests** during performance of duties, or using their position as directors/supervisors for private gain;
- Participated in or helped shareholders to **improperly interfere** in the bank/insurance institution' affairs and resulted in significant risks and losses;
- Concealing important facts, providing false materials or participating in the bank/insurance institution's fabrication of false materials;
- **Concealing** major violations of laws, regulations and discipline by the bank/insurance institution and its personnel;
- The directors and supervisors **did not raise an objection** to the resolutions of the board of directors/supervisors that violated the laws, regulations, articles of association, resulting in significant risks and serious losses;
- **Refusal** to correct the serious problems identified during the duty-performing evaluation;
- Other serious misconduct confirmed by CBIRC.

Reflection and suggestions

The *Guidelines* and the *Measures* provide institutional norms and guidance for banks and insurance institutions to improve their corporate governance structure and mechanism.

Banks and insurance institutions should prioritize compliance when implementing the new corporate governance regulations. We suggest that banks and insurance institutions revise their articles of association according to the Guidelines and the Measures and formulate or revise the specific measures for evaluating the performance of directors and supervisors. Particular attention should be paid to the requirement that in principle the "legitimate authority" of the board should not be delegated to the chairman, directors, other institutions or individuals, the minimum time requirement for independent directors and external supervisors to work at the banks and insurance institutions each year, the ten situations where the performance of directors and supervisors cannot be evaluated as competent and the eight situations that should be evaluated as incompetent, and the requirement for directors and supervisors to participate in training.

Achieving regulatory compliance is only the bottom line and starting point for banks and insurance institutions' corporate governance. More importantly, they should continuously improve the governance system and establish a sound mechanism for upgrading the governance ability to guarantee effective operation of corporate governance. We suggest that banks and insurance institutions: cultivate advanced and solid corporate governance culture to support the effective operation and continuous improvement of the corporate governance mechanism; establish effective corporate governance evaluation mechanisms, including an evaluation mechanism for the operational effectiveness of the board of directors/ supervisors and an evaluation mechanism for directors and supervisors' performance of duties to continuously optimize their corporate governance; fully utilize information technology to support the directors, supervisors and senior management's effective performance of duties, and achieve automated and intelligent risk monitoring and decision support, to constantly improve the efficiency and effectiveness of corporate governance.

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4.3 Practice and suggestions on the reform and development of rural cooperative financial institutions

As the main force in the rural financial market, rural cooperative financial institutions[1] assume great responsibilities in supporting "Sannong" and small and micro enterprises, and play an important role in facilitating rural revitalization. In recent years, rural cooperative financial institutions have gone through several reforms on their property rights system and management system and built a complete corporate governance framework, significantly improving their financial service capabilities.

Challenge 1: financial institutions expanded their businesses in the rural areas, and they quickly created and developed their brands, thus taking up the market shares of rural cooperative financial institutions

Financial institutions expanded financial services to cover more small and micro enterprises and rural areas and developed their characteristics to enhance customer brand recognition. With intensified financial awareness and literacy, rural customers' recognition and acceptance of joint-stock commercial banks and leading city commercial banks improved. Specifically, large commercial banks have a capital advantage and strong Fintech capability, so they are competitive in serving high-quality customers; city commercial banks expanded their businesses to counties, "Sannong" services, and the small and micro-enterprise market, depending on cooperation with local governments; internet financial institutions acquired customers by leveraging e-commerce, social media, and other

[1] Rural commercial banks and rural credit cooperatives are collectively called rural cooperative financial institutions. Rural credit cooperatives are the predecessor of rural commercial banks. In 2011, CBIRC announced that eligible rural credit cooperatives are encouraged to be restructured into rural commercial banks.

tools, and innovated their rural financial service model to provide online remote services. With fierce market competition, rural cooperative financial institutions suffered declined customer loyalty, critical customer churn, and increasing operating pressure.

Type of financial institutions	Strategic positioning and key measures	Inspiration
Large commercial banks	• Strategic positioning: cooperate with local governments to support local economic development, focus on key areas of rural revitalization, and leverage their comprehensive advantages to develop "Sannong" and county financial businesses • Key measures – Optimize the county service system to form an extensive county network – Develop a closed-loop industry chain covering the production, supply, and sales of agricultural products, and provide comprehensive financial services – Strengthen the construction of inclusive finance outlets to connect the "last mile" of financial services for rural customers	• Build a brand image. Enhance brand awareness, credibility, and reputation • Strengthen internal and external synergy. Provide comprehensive financial services for customers and become the "major bank" for local customers to enhance customer loyalty
City commercial banks	• Strategic positioning: give full play to their role as the primary local supplier of financial services, expand their featured businesses, and provide integrated financial solutions through internal and external empowerment • Key measures – Implement the operation philosophy of providing affordable and convenient products and services to benefit people, and build a community bank brand – Further local development by leveraging the advantages of cooperation with the local governments to expand their penetration in the county markets – Provide comprehensive financial services through their holding subsidiaries and cooperation with peer financial institutions – Support the new type of agricultural economic entities, strengthen research on the development of the new rural market and innovation of rural financial products	• Strengthen "Head Office-headquarters" marketing to expand government customers and extend financial services to the upstream and downstream enterprises of large enterprises • Develop key products for targeted customers and provide distinctive, specialized, and refined services • Innovate the interbank cooperation model, and develop quality core "Sannong" customer groups with full consideration of the whole industrial chain

Type of financial institutions	Strategic positioning and key measures	Inspiration
Internet financial institutions	• Strategic positioning: leverage their platforms and technology advantages, and innovate the service models and products to explore the rural financial market deeply • Key measures – Leverage big data technology to enable automated credit for ordinary and small-sized farmers and college graduates, addressing the pain points of high financial cost, information gap, and income verification difficulty in the rural areas – Learn about the medium-sized farmers, production and business farmers, and rural small and micro enterprises through offline channels, and assess the repayment risk to reduce bad debts effectively – Focus on core enterprises and offer systematic financing arrangements by leveraging the core enterprises' deep understanding of the small and medium-sized suppliers, featuring shorter credit processes, low financing costs, and flexible financing terms.	• Establish an agricultural financial product system, focus on supply chain finance, agricultural production credit and consumer credit • Design innovative agricultural financing products by leveraging Fintech and customer demand insights

Challenge 2: narrowed deposit and loan spreads led to shrunk profit margins of traditional businesses; profit bottleneck remained due to the low proportion of intermediate businesses

As the market-based interest rate reform deepens, scale growth contributes less to profit increase. Rural cooperative financial institutions' deposit and loan spread gradually narrowed, thus reducing profits from traditional businesses. In the increasingly competitive market, product pricing fails to match the costs and targeted profits. Rural cooperative financial institutions can no longer develop merely relying on asset scale expansion and high-interest spreads, posing a significant challenge to their pricing ability and profitability. Meanwhile, the intermediate business development of most rural cooperative financial institutions is limited by their inadequate comprehensive service capability, information system, and business qualification. In addition, they do not offer diverse intermediate businesses with convenient services. They depend too much on interest income, with a small portion of the income from the intermediate businesses, making them less capable of warding off external risks.

Challenge 3: technological incapability and impeded digital business transformation

The rural cooperative financial institutions' technological capability is just enough to support business development, but they lack leading technologies. The old application systems of most rural cooperative financial institutions can no longer meet their current needs and urgently need to be upgraded. Moreover, they build systems according to the specific needs of business departments, thus lacking overall system planning. In terms of business demand management, they lack the talent to analyze the business needs when connecting business with technology; thus, they do not develop a cross-department perspective and are incapable of integrating bank-wide demands. They need to enhance their ability to coordinate cross-business line demands. In terms of data management, rural cooperative financial institutions lack the capabilities to collect the needed customer information due to insufficient technological support despite their long history and deep understanding of the local market; thus, they must improve their big data-based accurate marketing capability.

Improvement in the following five directions will bring new opportunities for local rural cooperative financial institutions.

Direction 1: focus on "restructuring towards rural commercial banks" and "reform to mitigate risks" and improve operation and development capabilities to stimulate independent operation vitality of rural cooperative financial institutions constantly

Provincial Cooperative unions should give full play to their advantages in capital, operation philosophy, talent, risk control, and financial technology to actively assist the government and regulators in promoting the strategic deployment and implementation of "rural credit cooperative restructuring."

- Pay attention to the reform direction of provincial rural commercial banks and study their functional positioning and business scope. Comprehensively examine the finance, equity, shareholding structure, non-performing assets, financial burdens, and interbank risks of the rural cooperative financial institutions under their supervision to promote the union's reform.
- Further, the structural reform of the rural commercial banks with incomplete restructuring and resurging risks. Improve their corporate governance structure, thoroughly change the internal mechanism, strengthen internal controls management, improve the risk prevention and control system, and enhance operation and development capabilities.
- Follow the "one cooperative, one policy" principle to steadily push rural credit cooperatives' reforms. Accelerate risk mitigation and restructuring through liquidating and replacing assets, clearing non-performing loans, introducing social capital, and obtaining policy support.

Direction 2: with the valuable experience in serving "Sannong," develop a digital agricultural service platform with partners to offer integrated information-based intelligent financial services

- Layout businesses in advantageous agricultural fields. Establish a whole-process supply chain financial service system covering planting, production, and terminal sales. Target the new agriculture business entities in the planting and production fields, and support large-scale, specialized. Intensive development of agricultural operations to improve regional agriculture's operation efficiency and risk mitigation capability.
- Establish a financial service system embedded with "smart agriculture" scenarios. Apply technological means to collect agricultural business entities' planting records, farming processes, farm resources use and management, actual farm operations, crop statistics, farmland statistics, dynamic meteorology, dynamic disasters, crop growth monitoring and dynamic GPS tracks of farm machinery, and other data, to provide customers with modern agricultural financial services featuring "integrated production, processing, and marketing; diverse models; green and intelligent development."
- Develop regional agricultural production and sales services in a coordinated way. Deepen cooperation with rural e-commerce platforms, and provide online financing services by collecting transaction information and building big data risk control models.

Direction 3: promote channel integration to reduce cost and improve efficiency; realize the key function of human resources through active marketing

Strengthen the integrated development of online and offline channels, enhance the complementation of advantages, and achieve a consistent response of contact points in different channels through collaborative deployment and seamless connection of all-channel products and services, to enhance customer acquisition, retention, and activation capabilities.

- Focus on key customer groups and create a mobile ecosystem. With the upgraded consumption of rural residents, their consumption scenarios diversified with increasing internet and mobile applications. Focus on the consumption scenarios of rural residents to create new growth points of customer acquisition through co-marketing, We-Media marketing, and social marketing, and strengthen digital customer acquisition and operation capabilities.
- Accelerate the transformation of outlets to improve their sales and service capabilities and profitability. Establish a convenient, functional, and sound self-service channel system, actively guide low-value, high-frequency transactions to move to self-service channels, reduce counter-service pressure, and transform counters' function from business processing to marketing.

Direction 4: Promote coordinated development of assets, liabilities, and intermediate businesses; focus on value creation to improve profitability

- Stabilize income sources. Enhance the differentiated risk pricing ability for credit assets, improve the capital business operation and profitability, and improve ROA while ensuring asset quality.
- Optimize income structure. Take intermediate businesses as a breakthrough point, steadily increase the proportion of intermediate business income, and change the income model of mainly depending on loan interest spread to attaching equal importance to interest income and non-interest income; develop high value-added intermediate businesses, strengthen cooperation with other banks and the agriculture, forestry, water, electricity and communication departments, and focus on developing high-starting point, high-tech and high-yield intermediate businesses while consolidating the agency collection & payment, and settlement services.
- Strengthen cost control. Adjust the deposit term structure, reasonably reduce the expenditure of deposit interests, establish stable, low-cost capital sources, and improve the ability to take in low-cost liabilities.

Direction 5: take a suitable digital transformation path based on their development stage and resource endowment

- Build a digital talent system. Introduce high-end technology talent to the management to lead Fintech development, enhance the digitalization awareness, and promote top-down Fintech development; increase Fintech talent through recruitment and internal cultivation.
- Choose a differentiated digital transformation and development path based on their development stage. Cooperate with leading technology companies to enhance their digital capabilities while ensuring autonomy to drive business development. Rural cooperative financial institutions with a high level of digitalization should emphasize technology-driven development and promote financial innovation and ecological empowerment through multi-industry, multi-area, and multi-business integration and synergy. Institutions with a lower degree of digitalization should transform the diversified and scattered outlets into the entrance of the digital ecosystem, explore customer potential and data value, smooth the operation of digital architecture through data analysis, and shore up the weak links of organizational management and technology architecture. Those at the beginning of digital transformation should confirm their strategies and build a technology-business synergy mechanism. In terms of business models, rural cooperative financial institutions should establish smart outlets, gradually move products and services online, and cooperate with technology companies to foster their digital capabilities.

Conclusion

In China, the agricultural industry transformation and upgrading and the comprehensive advancement of rural revitalization drove changes in the rural economy, bringing new opportunities for the development of rural cooperative financial institutions. Rural cooperative financial institutions should focus on agriculture, rural areas and farmers, and apply digital means to continuously consolidate their advantages, optimize product structure, expand the industrial chain and value chain, and stimulate the development momentum of the ecosystem. Meanwhile, they should expand the scale of low-cost capital, implement differentiated pricing for deposits and loans, and enhance intermediate businesses to promote the coordinated development of "scale, structure and efficiency".

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4.4 Strengthening the financial culture to support banks' development

The President of the European Central Bank, former Director of the IMF, Christine Largarde, pointed out that, for the financial sector to get back on track, investors and financial leaders should take values as seriously as valuation and culture as seriously as capital. Against the backdrop of strengthened financial regulation and unprecedented attention to corporate governance, internal controls (including compliance management), and risk management of financial institutions, financial culture, as a robust and soft power to guide financial behaviors and prevent financial risks, became the focus of financial leaders.

Financial culture and financial corporate governance

Necessary enlightenment from financial crises is that regulators shouldn't only focus on the financial institutions' solvency and liquidity but neglect the hidden risks in their behavior and culture. After the last global financial crisis, financial regulators in major economies generally believe that a "toxic" financial culture is the root cause of financial risks. In contrast, a healthy financial culture is influential in preventing and resolving financial risks. The De Nederlandsche Bank (DNB) sees financial institutions' behavior and cultural regulation as significant. It effectively complements traditional prudential supervision and has conducted multiple special inspections on the behavior and culture of banks, pension funds, and insurance companies. DNB's regulatory practice has stimulated global financial regulators to include financial behavior and culture in their regulation.

When financial institutions suffer a hefty fine or losses due to deficiencies in their corporate governance, internal controls, and risk management systems, or when key management personnel misconduct occurs, it can always assign guilt to their culture. Therefore, the importance of financial culture is highlighted when regulators try to build a strong defensive line against financial risks through improving corporate governance, internal controls, and risk management systems of financial institutions. For example:

- The CBRC's *Circular on Issuing the Guidelines for the Internal Control of Commercial Banks (Yin Jian Fa [2014] No. 40)* requires commercial banks to cultivate a good internal control culture, guide employees to foster compliance and risk awareness, improve employees' professional ethics, and regulate their behavior.
- The CBRC's *Circular on Issuing the Guidelines for Comprehensive Risk Management of Banking Financial Institutions (Yin Jian Fa [2016] No. 44)* proposed that banking financial institutions should promote a robust risk culture, implement suitable risk management ideas, value principles and professional ethics, and establish training, communication and supervision mechanisms to promote understanding and implementation among all staff.
- The CBIRC's *Circular on Issuing the Guidelines for Corporate Governance of Banks and Insurance Institutions (Yin Bao Jian Fa [2021] No.14)* requires banks and insurance institutions to establish a high-quality development vision, cultivate a corporate culture centering around honesty, trustworthiness, and innovation, foster a robust and compliant operation philosophy, and participate in the industrial competition in a fair, safe and orderly manner.

Financial culture can be easily neglected if no loss or crisis occurs because it is difficult to define, describe and quantify it clearly. It is also hard to implement effective financial culture management. Furthermore, a cultural shift is difficult as it involves changes in deep-rooted concepts, behavioral assumptions, or mindsets; thus, it cannot achieve notable results in a short time. Large financial institutions with a long history generally have a powerful culture, and most of the time, the culture changes people, not conversely changed by people.

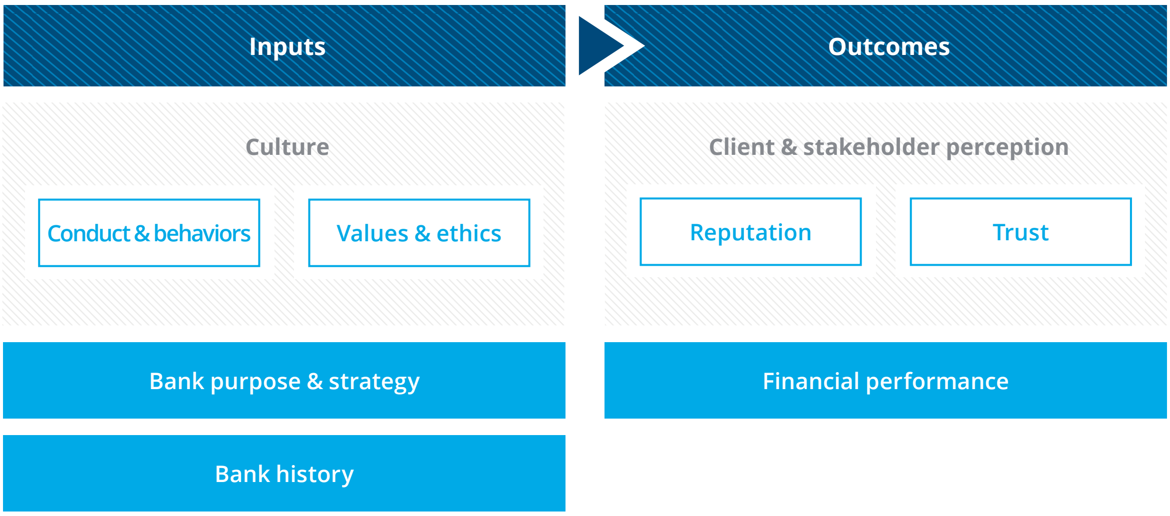
The Deloitte China Corporate Governance Center established a corporate governance system research framework for financial institutions, which is divided into the system, people, and culture levels, promoting the basic proposition of "implementing sound systems in five years, actualizing people's (financial entrepreneurs) ability and potential in ten years, and exerting the cultural influence in thirty years." Therefore, improving the Chinese financial institutions' governance system ultimately depends on cultivating a strong and advanced financial culture and making all staff identify with the concepts and requirements of corporate governance, internal controls, compliance, and risk management and take active actions.

What kind of financial culture to cultivate?

Financial culture analysis framework

Almost all of the "prescriptions" offered by financial regulators worldwide to prevent the next financial crisis include cultural and behavioral action plans. The Group of Thirty proposed an analysis framework for the cultural elements of the banking sector (Figure 90) in its banking behavior and culture research report to facilitate a consistent understanding of banking culture.

Figure 90: Framework and Elements of A Bank's Culture



Source: Group of Thirty: Banking Conduct and Culture: A Permanent Mindset Change. November, 2018.

According to the Group of Thirty frameworks, culture includes a code of conduct, values, and ethics. From the perspective of inputs, a good bank culture is rooted in the bank's history and traditions and supports its purpose and strategy; the bank's purpose and strategy should align with its culture. From the outcomes perspective, a good bank culture sends positive signals to clients and stakeholders to enhance their trust and improve the bank's reputation and brand value. In the long run, a good bank culture should contribute to better and sustainable financial performance.

The financial culture research group of Deloitte China Corporate Governance Center believes that the core of financial culture lies in values and code of conduct. A strong and healthy financial culture should be fostered, taking integrity, steadiness, innovation, and responsibility as the core values, and that is the basis for developing banks' code of conduct.

Values and code of conduct of financial culture

—Integrity

Integrity is a fundamental moral code to be followed by all sectors, including the financial industry. The basic requirements of integrity include honesty, honoring commitments, keeping promises, and consistent thinking and action, as detailed in Table 32.

Table 32: Basic Requirements of Integrity

Core value	Basic requirements	Content
Integrity	Being honest	Tell the truth/no lie/no cheat/no misleading; provide factual information to consumers and counterparties, and truthfully disclose relevant information to regulators or the public.
	Honoring commitments	Keep promises/suit the action to the word/act on what is promised, orally or in writing
	Keeping the promises	Abide by contracts: faithfully discharge the responsibilities and obligations agreed in the contracts even when suffering losses
	Consistent thinking and action	Consistency in thoughts, words and actions

Source: The financial culture research group of Deloitte China Corporate Governance Center

Integrity is essential in the financial service industry because the financial industry deals with currency and credit and features intrinsic vulnerability and high risks due to high leverage, maturity mismatch, liquidity mismatch, and other factors. The financial industry is underpinned by its credit, accumulated by the financial institutions when they honestly deliver each service, complete each transaction, and win the trust of customers and counterparties. It is hard to win but easy to lose the trust of customers and counterparties. Loss of trust could be catastrophic to the financial industry. Financial institutions and financial practitioners may have to honor credit and promise due to external pressure. However, such working mechanism of forced actions cannot fundamentally eradicate dishonest conducts. Trust and credit can be preserved only by voluntary and genuine actions.

—Steadiness

Steadiness refers to pursuing and achieving stable, healthy, and sustainable business growth. The core value of steadiness requires compliance, reverence for risks, balancing risk and return, safety, transparency, stability, and sustainability, which is detailed in Table 33.

Table 33: Basic Requirements of Steadiness

Core value	Basic requirements	Content
Steadiness	Compliance	Respect and comply with regulation, and establish sound corporate governance, internal control and risk management systems to ensure compliant business operation
	Reverence for risks	Stand in awe of risks, timely and accurately identify, measure and assess risks, properly address risks, and adhere to moderately conservative and prudent operation
	Balancing risk and return	Balance risk and return, pursue returns that match risk appetite, and never ignore its own risk capacity and risk tolerance to pursue high returns
	Safety	Attach great importance to the safety of capital, assets, data, information, network and systems
	Transparency	Adhere to robust accounting principles, form a fortress balance sheet, and achieve full transparency of information disclosure
	Stability and sustainability	Set realistic development goals, and maintain a proper growth rate and stable business performance to achieve healthy and sustainable growth

Source: The financial culture research group of Deloitte China Corporate Governance Center

The financial industry is a high-leverage and high-risk industry, where the operation activities have a current yield but lagging risks. Since financial businesses involve public interests, financial institutions are subject to the government's strict regulation. To achieve healthy and sustainable development, the financial industry must emphasize steady operation more than other industries. First, the financial industry should respect and comply with regulation, which is a requirement not only for licensed operations but also for avoiding regulatory penalties and gaining public trust. Second, financial institutions should stand in awe of risks, balance the risks and return, attach great importance to the safety of capital, assets, data, information, network and systems, maintain a moderate growth rate and stable business performance, never ignore their risk capacity and risk tolerance to seek high returns, and adhere to a moderately conservative and prudent operation style. Finally, financial institutions should stick to robust accounting principles and transparent information disclosure to form a fortress balance sheet.

—Innovation

Innovation means exploring, developing, and applying new products, services, business models, and management methods to access new markets, customer groups, and application scenarios and form differentiated competitive advantages. The core value of innovation requires seeking excellence, pursuing efficiency, encouraging innovation and experiment, supporting changes, advocating diversity, fault tolerance, and exemption of responsibility for those who have fulfilled their duties, which is detailed in Table 34.

Table 34: Basic Requirements of Innovation

Core value	Basic requirements	Content
Innovation	Seeking excellence	Strive to be faster, higher and stronger, becoming an undisputed leader
	Pursuing efficiency	Have zero tolerance for inefficiency, ineffectiveness and waste; always seek higher efficiency and effectiveness
	Encouraging innovation and experiment	Encourage and support all kinds of exploration, research, invention and creation, and be willing to offer experimental, trial and error opportunities for these activities
	Supporting changes	Support necessary development strategy, business model, organizational structure and management process changes; object to ideologism and conformism
	Advocating diversity	Hire people of different backgrounds, experiences and expertise, and embrace different views, perspectives and opinions
	Fault tolerance and exemption of responsibility	Exempt the relevant personnel from responsibilities or reduce their punishment for the errors and deviations during the exploration and innovation process if they have fulfilled their duties

Source: The financial culture research group of Deloitte China Corporate Governance Center

Facing complex and changing regulatory and market environments, financial institutions should emphasize innovation and change while maintaining steady operations. First, financial institutions must develop new financial products and services as well as more convenient ways of delivering products and services to accommodate the constantly changing customer needs and market. Otherwise, they will not survive the market competition. Second, financial institutions can meet strict and complicated regulatory requirements and achieve satisfying economic benefits and shareholder returns only by pursuing continuous innovation and changes. Finally, with the rapid progress and widespread application of Fintech, the competition from Fintech and BigTech companies will be the biggest challenge for the traditional financial service industry. Traditional financial institutions must remain aggressive in developing and applying Fintech to be invincible in the competition with Fintech and BigTech companies.

—Responsibility

Responsibility means actively assuming the responsibilities for customers, employees, society, and the next generation. The core value of responsibility requires financial institutions to continue to serve the real economy, treat customers and employees equally, actively practice inclusive finance, encourage and support charity and environmental protection, and protect consumers' rights, detailed in Table 35.

Table 35: Basic Requirements of Responsibility

Core value	Basic requirements	Content
Responsibility	Serving the real economy	Continuously provide financing support for the real economy, enable timely and low-cost financing for enterprises and residents to avoid interest-oriented circulation of capital within the financial system
	Equality	Ensure equality for customers and employees; eliminate country, gender, regional and ethnic discrimination.
	Inclusiveness	Improve financial inclusiveness; guarantee access to loans and other financial services for small and micro enterprises, low-income urban residents, farmers, etc.
	Thrift	Advocate thrift, and avoid inducing over-indebtedness and over-consumption
	Charity	Encourage, partake in, and provide financial support for charitable activities
	Environmental protection	Encourage and support environmental protection, contribute to carbon neutrality and actively develop green finance
	Protecting consumers' rights	Actively protect financial consumers' rights, including providing adequate information, ensuring the financial products customers purchased match their risk affordability, protecting customers' personal information, providing appropriate financial education, and timely handling consumers' complaints

Source: The financial culture research group of Deloitte China Corporate Governance Center

The enormous impact of financial activities on society and people requires financial institutions to have a high level of responsibility awareness. People entrust their savings to financial institutions because they believe they can assume social responsibilities. One institution's financial distress or bankruptcy will cause heavy losses to its depositors, creditors, and employees; the financial risks may spread to other financial institutions, even the whole financial system, or trigger a financial crisis. Large financial institutions are always "too big to fall," which may induce the moral hazard that the management ignores the excessive risks and blindly expand the financial institution. Taxpayers and the public ultimately bear the huge cost for saving a large financial institution. That is typical "negative externality," disrupting basic social fairness and damaging the basis for the long-term development of the financial industry.

"With great power comes great responsibility", this is the reason that financial institutions should actively take social responsibility. Gathering the majority of social capital and other financial wealth and having the power to distribute scarce capital, financial institutions can contribute more to maintaining equality, protecting the rights and interests of the disadvantaged, supporting environmental protection, and promoting sustainable development. Financial institutions having the ability but taking no action will lose the trust of the society and people and damage their credit and brand.

How to cultivate strong financial culture?

Establish a code of conduct system centering on the core values of integrity, steadiness, innovation, and responsibility

Values are the core of a cultural system. The soft power of financial culture is mainly reflected in the influence and appeal of values, as well as the degree of the conversion of the core values into the criteria for judging the financial practitioners' decision-making and behavior. We recommend that Chinese financial institutions establish a code of conduct system centering on the core values of integrity, steadiness, innovation, and responsibility, and include observation of the code of conduct in the management and employees' performance evaluation system, and accordingly decide their compensation, reward and punishment policies.

Regulators should guide and regulate financial culture

There is a close connection between financial culture and corporate governance. It is recommended that CBIRC consider the culture and conduct of banks and insurance institutions when developing corporate governance rules, rating banks, and financial institutions' corporate governance, and conducting regular inspections. Instead of developing a unified culture and conduct compliance standard for financial institutions, regulators' goal should be to encourage the institution's board and management to lead, monitor, evaluate and improve their culture and conduct.

Strengthen the board's guidance, supervision, and evaluation of the culture

Strengthening the board's guidance and supervision of the institution's culture requires the board to set and stick to a proper cultural tone and internalize it as an important standard for strategic decision-making. Frequent discussion about the corporate culture is not necessary. However, the board should initiate a self-assessment of corporate culture regularly (e.g., once every three years). When the board and the management have new members, the long-term impact on corporate culture should be considered. When there is poor business performance or a major loss/risk, financial institutions should examine and assess the corporate culture when analyzing the reasons and include corporate culture enhancement into the rectification plan. Professional service organizations can help the board diagnose, evaluate and improve corporate culture.

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4.5 An overview of Fintech subsidiaries of banks and the competition

In recent years, banks started establishing Fintech subsidiaries to respond to the complex domestic and overseas competition, break the constraints of the traditional system, enhance net profit growth, and improve net interest margin. As of December 31, 2021, except for the Shandong City Commercial Banks Alliance, which multiple city commercial banks launched, 17 domestic banks founded their Fintech subsidiaries. To meet the Group's internal demands, Fintech subsidiaries leveraged their parent bank' features and advantages to develop products and solutions and provide Fintech services, commencing a wave of new technology-oriented innovation among commercial banks.

This report clarified the general situation, positioning, and practical solutions of Fintech subsidiaries and provided development suggestions for Fintech companies considering the regulatory guidance on Fintech development planning and digital transformation.

Current situation

Overview of banks' Fintech subsidiaries

In 2008, the former CBRC approved establishing the first Fintech company—Shandong City Commercial Banks Alliance Co., Ltd., which provides financial solutions to multiple city commercial banks, creating a new business model of joint development for win-win results among domestic small and medium-sized banks. After IB's founding of the CIB Fintech in 2015, large state-owned and joint-stock banks (represented by PAB, CMB, and CEB) successively established their Fintech subsidiaries.

Table 36: Banks' Fintech Subsidiaries (Rankings are in no chronological order)

No.	Category of parent bank	Name of parent bank	Company Abbr.	Time of registration	Registered capital (RMB)
1	Large state-owned banks	CCB	CCB Fintech	Apr. 2018	1.6 billion
2		ICBC	ICBC Technology	Mar. 2019	600 million
3		BOC	BOC FINTECH	June. 2019	600 million
4		ABC	ABC Fintech	Jul. 2020	600 million
5		BOCOM	BOCOM Fintech	Aug. 2020	600 million
6	Joint-stock banks	IB	CIB Fintech	Nov. 2015	500 million
7		PAB	OneConnect	Dec. 2015	1.2 billion
8		CMB	CMB YunChuang	Feb. 2016	249 million
9		CEB	Everbright Technology	Dec. 2016	200 million
10		CMBC	Minsheng Fintech	Apr.2018	200 million
11		Hua Xia Bank	Longying Zhida Fintech	May. 2018	21 million
12		CZBank	Yiqiyin Fintech	Feb. 2020	20 million
13	City commercial banks	Bank Alliance Note	Shandong City Commercial Banks Alliance	Sep. 2008	500 million
14		Bank of Beijing	BOB Fintech	May. 2019	50 million
15		Xiamen International Bank	Jiyou Technology	Sep. 2020	10 million
16		Bank of Langfang	Langfang Yida Technology	Nov. 2020	2 million
17	Rural financial institutions	SRCB	Qianhai Golden Credit	May. 2016	10 million
18		Guangxi Rural Credit Union	Guisheng Fintech	Dec. 2020	1.2 billion

Source: public information, Deloitte analysis

Note: The Banks Alliance refers to an alliance made up of 15 city commercial banks.

By the end of 2021, the registered capital, number of insured employees, credentials, software copyright, and patents of banks' Fintech subsidiaries are sorted as follows:

- **Registered capital:** The five large state-owned banks' Fintech companies headed the list of registered capital, followed by joint-stock banks. The registered capital of CCB Fintech, OneConnect, and Guisheng Fintech was RMB1.6 billion, RMB1.2 billion, and RMB1.2 billion, respectively, making the top three of the list.
- **The number of insured employees:** Except for the companies that did not disclose the number of insured employees, the rest of the 18 Fintech subsidiaries had an average of about 500 people insured, with the top three being Longying Zhida Fintech (1,400), CCB Fintech (997) and Shandong Commercial City Banks Alliance (908).
- **Credentials:** Shandong Commercial City Banks Alliance topped the list with ten credentials, followed by CMB YunChuang and CIB Fintech with nine and eight credentials, respectively; BOC Financial Technology and CMB YunChuang obtained the CMMI5 certification.
- **Software copyright:** CCB Fintech had 629 software copyrights, more than the total of the rest 17 Fintech companies, followed by Shandong City Commercial Banks Alliance with 148 copyrights.
- **Patents:** CCB Fintech topped the list with over 1,400 patents, followed by ICBC Technology with 256 patents, Everbright Technology and CMB YunChuang respectively held 78 and 70 patents.

Strategic positioning of Fintech companies

The strategic vision and development positioning of Fintech companies of large state-owned banks, joint-stock banks, and city commercial banks vary.

- **Fintech companies of five large state-owned banks**
  - **CCB Fintech:** CCB Fintech leads the Fintech ecosystem development, drives the transformation of CCB, empowers traditional finance, and integrates group resources through financial technology.
  - **ICBC Technology:** ICBC Technology empowers ICBC's smart banking strategy, incubates and boosts Fintech innovation, empowers business innovation, and creates the new dynamic and pattern of "finance + industry" ecological construction.
  - **BOC Financial Technology:** BOC Financial Technology serves the domestic and international dual-circulation development strategy, supports significant projects, and bolsters development in key regions.
  - **ABC Fintech:** With the goal of value creation and technology innovation, ABC Fintech strives to incubate innovation, jointly build an ecosystem, serve the Group and achieve technological empowerment; it enhances efforts to establish a closed-loop service ecosystem and is committed to building the best digital eco-technology company in line with the international top-tier commercial banking groups.
  - **BOCOM Fintech:** Sticking to the principle of Group-based development and serving customers, BOCOM Fintech continues to improve the overall technological service capabilities of the Group, enhance the Group's core technology R&D, and facilitate deep integration of the Group with external ecosystems, becoming an export mechanism of the Group and constantly empowering the implementation of the Group's Fintech strategies.

- **Fintech companies of joint-stock banks**
  - **CIB Fintech:** As the pioneer of IB Group in deploying Fintech, CIB Fintech's primary goal is to serve the Group. It continuously empowers the development of the Group's various businesses. In the meantime, it vigorously develops the financial cloud and actively leverages it to empower other banking financial institutions, non-bank financial institutions, and SMEs.
  - **OneConnect:** OneConnect applies AI, blockchain, big data, and other technologies to develop Fintech products covering the channel, product, risk control, service, operation, and many other scenarios. Its diverse technology products can be widely applied to banking, insurance, investment, and other financial areas, helping small and medium-sized financial institutions quickly connect with Fintech.
  - **CMB YunChuang:** CMB YunChuang provides enterprise customers with digital solutions and services throughout the capital flow management chain to empower their digital transformation, drive financial value creation, and smooth industry-finance cooperation, striving to be the innovator of bank-enterprise connection and the builder of industry-finance trust. CMB YunChuang also helps enterprises obtain a panoramic view of the capital flow, enables enterprises' finance to truly, deeply understand the business and lead value creation, and facilitates the building of the industry-finance trust system through connected bank-enterprise scenarios, making industry to be smarter and finance better serve the industry.

- **Fintech companies of city commercial banks**
  - **Shandong City Commercial Banks Alliance:** It provides small and medium-sized banks with comprehensive information technology solutions covering core business system, internet financial system, external business platform, big data service & operation, and risk prevention support, as well as diverse services such as training, consultancy and cooperation innovation, creating a safe, open and sharing Fintech eco-platform for them.
  - **BOB Fintech:** With the mission of "pursuing innovation by practicing the spirit of BOB" and the principle of "making BOB market-oriented and serve the society", BOB Fintech provides integrated "consultancy + implementation" services within the Group to empower BOB's digital strategies, and offers full-chain end-to-end Fintech services to empower customers' business innovation and technological upgrading.

Deloitte observation

Fintech companies of the five large state-owned banks can support their parent banks while serving other banks. They provide technological services and solutions to financial institutions as well as the government, enterprises and individuals. Fintech companies of joint-stock banks give full play to their unique advantages to quickly respond to market demands, adapt to internet-based innovations, and support the Fintech development of small and medium-sized banks. City commercial banks allies with each other to accommodate the development needs of small and medium-sized banks, which improves resource utilization efficiency.

Major solutions

Fintech companies developed solutions for different industries and scenarios based on their positioning. The solutions of representative Fintech companies have been sorted out to serve as a reference for further discussing the development opportunities of Fintech companies.

Table 37: Major Solutions of Fintech Companies

Company	Major solutions
CCB Fintech	Established ten core capabilities, including smart city government affairs platform construction, financial institutions' core system construction, big data and intelligent risk control services, internet-based financial services, customer lifecycle management, physical channel planning and construction, intensive operation and management, inclusive financial services, data center operation and maintenance, process management service for corporate credit business.
ICBC Technology	Launched "finance + industry", "finance + technology" and "new financial ecosystem" products centering on system development service, custody service, ecological cloud, technological products, and equity investment of technological innovation enterprises.
BOC Financial Technology	Mainly provide technical platform products, and intelligent financial products and services.
ABC Fintech	Businesses covering e-commerce business, information service, IT hardware development and export, Group service and independent innovation; specific solutions covering smart city, smart government affairs, smart "Sannong", and Group service.
CIB Fintech	Launched the CIB Fintech cloud, providing four major solutions: banking cloud solution, foundation cloud solution, non-banking cloud solution, and open Banking + smart banking solution; and offering banking service, non-banking service, government and enterprise service, and disaster recovery service.
OneConnect	Provide four integrated products, including digital retail, digital corporate finance, digital insurance, and the Gamma platform (providing Fintech infrastructure services); provide technological services relating to the trading, credit, supply chain, data security and risk management of the government, regulators and enterprise customers; export "made in China" solutions to foreign financial institutions.
CMB YunChuang	Established financial public cloud through integrating its financial and technical resources and developed three digital product systems, including Group Enterprise Treasury (GET), Scenarized Cost Control System (SCO) and Multiple Analysis Platform (MAP).
Shandong City Commercial Banks	Provide comprehensive IaaS, PaaS and SaaS cloud services, as well as comprehensive IT solutions to fully support small and medium-sized banks.
BOB Fintech	Provide integrated "consultancy + implementation" services, and empower BOB's digital strategies, with products covering technical platform, data analysis, platform application, and service capabilities.

Source: public information, Deloitte analysis

Deloitte observation

The objective of Fintech companies' Fintech and scenario-based solutions is to serve the digital transformation and satisfy the financial service development needs of the parent bank, and to export Fintech services, for example; 1) besides the comprehensive technical and financial services, CCB Fintech and ICBC Technology launched a series of smart government affairs solutions; 2) CMB YunChuang focuses on the Group Enterprise Treasury, Scenarized Cost Control System and Multiple Analysis Platform; 3) apart from the four integrated products, OneConnect exports "made in China" solutions to foreign financial institutions; 4) CIB Fintech and Shandong City Commercial Banks Alliance provide comprehensive IT solutions to fully support small and medium-sized banks.

Strategies

On January 4, 2022, PBC issued the Fintech Development Plan (2022-2025) (hereinafter referred to as the "Development Plan"), which is an extended and deepened version of the *Three-year Fintech Development Plan (2019-2021)* issued in August 2019. The Development Plan is made to guide Fintech development in the new era with new domestic and overseas situations. It confirms the general idea, development goals, key tasks, and implementation guarantee for the digital transformation of China's financial industry. It is the top-level planning regulators made for banking institutions' technological development. It serves as the wind vane for the digital transformation of Chinese banks and non-banking financial institutions in the next three years, structuring a broader development space for China's Fintech industry.

On January 26, 2022, CBIRC issued *the Guiding Opinions on the Digital Transformation of Banking and Insurance Sectors* (hereinafter referred to as the "Guiding Opinions"), which requires banking and insurance institutions to promote the digital transformation of business operation and management vigorously, actively develop industrial digital finance, propel the digital transformation of individual financial services, strengthen digital business construction in the financial market, comprehensively deepen the construction of digital scenario operation system, build safe, efficient and win-win financial service ecosystems, and enhance the digital risk control capabilities.

Fintech companies are suggested to keep a close eye on the recent regulatory requirements and pay attention to the following business development opportunities.

Grasping the new opportunities arising during the centralized construction of digital financial infrastructure

According to the arrangement of the National Development and Reform Commission in February 2022, eight national computing hubs and ten national data center clusters were approved, indicating the completion of the overall layout for the national integrated big-data center system and that a strategy is in full swing to channel more computing resources from the eastern areas to the less developed western region. The regulator's Fintech development plan also proposed to build a new digital infrastructure. Fintech companies can leverage their experience and technologies in IT infrastructure, data center, cloud computing, and network security, and focus on data center engineering construction and operation & maintenance services to support the national computing network to synergize east and west.

Aiming for excellence—polish data governance technical solutions

Data governance is the foundation of enterprises' digital transformation. Regulators' Fintech development plan and guiding opinions on digital transformation require financial institutions to strengthen data governance. Generally, the data governance framework includes top-level design, data management, data application, and service—a multi-level, multi-dimension, and multi-perspective framework with top-down guidance and bottom-up implementation. Large commercial banks have good practices in data governance, but it is not the case with small and medium-sized banks. By leveraging the experience of the parent bank, Fintech companies can provide various technical solutions to help small and medium-sized banks implement data standards, sort out data asset catalogues, develop data management tools, ensure data security, and design data architecture.

Unleashing value—provide technical support for circulation and sharing of data elements

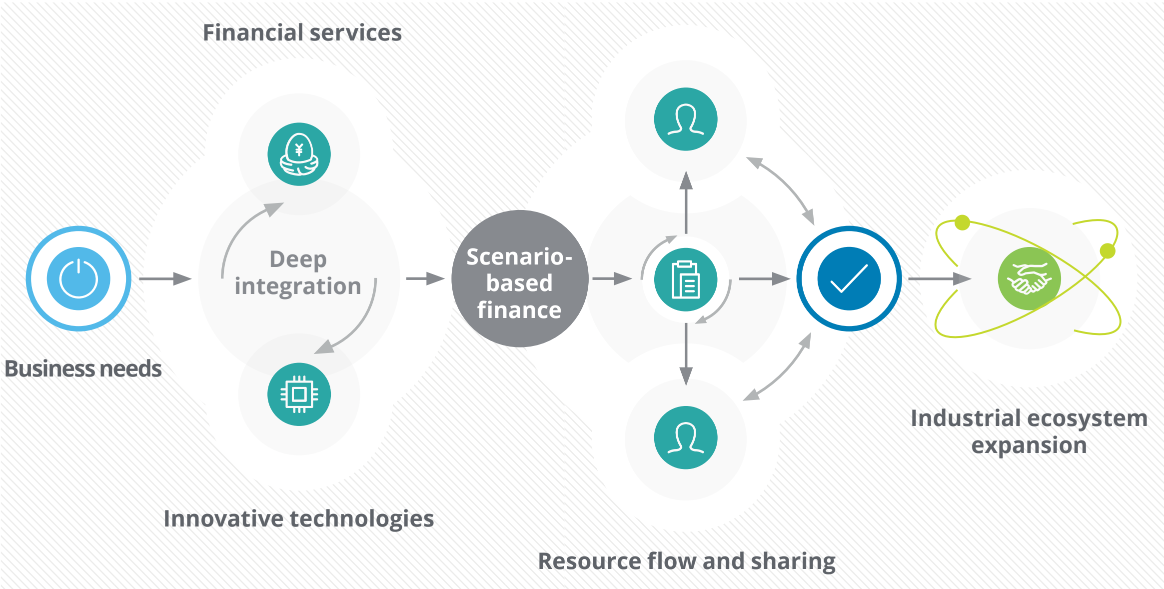
In November 2021, MIIT issued *the Development Plan for the Big Data Industry during the "14th Five-Year Plan" Period,* which focused on promoting high-quality industrial development, rebuilding the data value system, cementing the industry foundation, building a stable and strong industry chain, and creating good ecosystems, and proposed six major tasks and six special actions. In 2021, Beijing International Data Exchange, Shanghai Data Exchange, and Shenzhen Data Exchange were established.

The external environment for data elements circulation and sharing has improved. Data elements circulation still needs technical support, including data asset management, data integration, data storage, data exchange, and data security. Fintech companies may consider developing technical solutions for data elements trading to help financial institutions provide data-based technical and financial services while meeting regulatory and compliance requirements.

Leveraging the advantages of the parent bank to provide e-CNY technology development services and scenario-based solutions

According to PBC, by the end of 2021, e-CNY had been applied in over 8.0851 million pilot scenarios, with a total of 261 million personal wallets opened and the transaction amounting to RMB87.565 billion. An increasing number of banks, including city commercial banks, rural commercial banks, and other small and medium-sized banks, are preparing to launch e-CNY businesses, making e-CNY more inclusive.

The e-CYN technology and solution development will be a hot spot. From the technology perspective, the issuance, whole-process management, exchange, and circulation of e-CNY require system development or renovation, bringing incremental market space for Fintech companies. Fintech companies will take a preemptive opportunity to develop e-CNY-centered payment systems. They can build convenient, safe, and efficient payment and settlement systems, enrich their financial services and products and expand the ecological scenarios to provide better-integrated service solutions for the government, businesses, and individual customers.



Focusing on industrial development and providing financial solutions for non-financial enterprises

Taking treasury construction as an example, in January 2022, the State-owned Assets Supervision and administration Commission of the State Council (SASAC) issued *the Notice on Issuing the Opinions on Promoting Central Enterprises to Accelerate Treasury System Construction and Further Strengthen Funds Management* (hereinafter referred to as the "Opinions"). The Opinions emphasized the importance of digital treasury system construction again.

With quickly evolving digital and information technologies, constantly updated financial payment systems, accelerated enterprise transformation and innovative development, and the need for unified scheduling and management of global resources, it is inevitable for enterprises to transform the traditional funds management model into a treasury system. Fintech companies may take this opportunity to explore the customer resources of the parent bank and rapidly form treasury management solutions through independent research, cooperation, or procurement to meet the SASAC's requirements. In addition, Fintech companies may develop financial solutions for non-financial institutions.

Meeting regulatory requirements and providing technical solutions for data compliance

The Data Security Law of the People's Republic of China and the *Personal Information Protection Law of the People's Republic of China* took effect on September 1, and November 1, 2021, respectively, which further regulates the data compliance management during digital transformation and protect users' rights and interests. The financial sector has massive customer data, thus facing greater compliance pressure. Fintech companies are at the forefront of financial service innovation, and are more sensitive to national financial plans and development strategies. They should equip themselves with professional certification for data compliance and provide data compliance solutions, such as Secure Multi-party Computation (MPC), Federated Learning (FL), Homomorphic Encryption (HE) and other privacy computing tools to facilitate enterprises' digital transformation.

Deloitte observation

Banks' Fintech companies are facing the pressure of continued high upfront investment and short-term net deficiency. As the only listed Fintech company, OneConnect's FY2021 annual report showed that it achieved operating revenue of RMB4.13 billion, up 25% year-on-year, and net deficiency of RMB1.28 billion, with the net deficiency rate narrowed from the previous year's 41% to 31%.

The accelerated digital transformation and the new ecosystem driven by finance and technology integration will trigger more new models and scenarios. With the emergence of metaverse, immersive financial customer companionship and real-time creation of financial products may become a hot spot of financial services. Fintech companies should stick to innovative development, prevent financial risks, empower the traditional finance, and continue to support the real economy. They should further enhance the quality and efficiency of Fintech development from the aspects of financial product, operation models and business processes, and develop themselves by riding on a wave of digital development in the industry.

Fintech subsidiaries face intense industrial competition; in the meantime, they need to break their own bottlenecks. Therefore, they must confirm the operation details in product variety, pricing, collection, and incentive & assessment, among others. The accelerated digital transformation in wealth management, supply chain finance and RegTech has raised higher requirements for Fintech companies. With continuous breakthroughs in big data, AI and other technologies, Fintech companies need to further increase R&D investment and cooperate with other institutions to develop influential solutions. Fintech companies may also head towards another development road by leveraging the capital market, depending less on the parent bank, and giving back to the market.

Deloitte keeps a close watch on banking Fintech regulatory requirements and industry trends. As one of the world's largest professional service organizations, we provide efficient and excellent services and clear and suitable solutions for our partners, aiming to facilitate the healthy development of Fintech and make an impact together.

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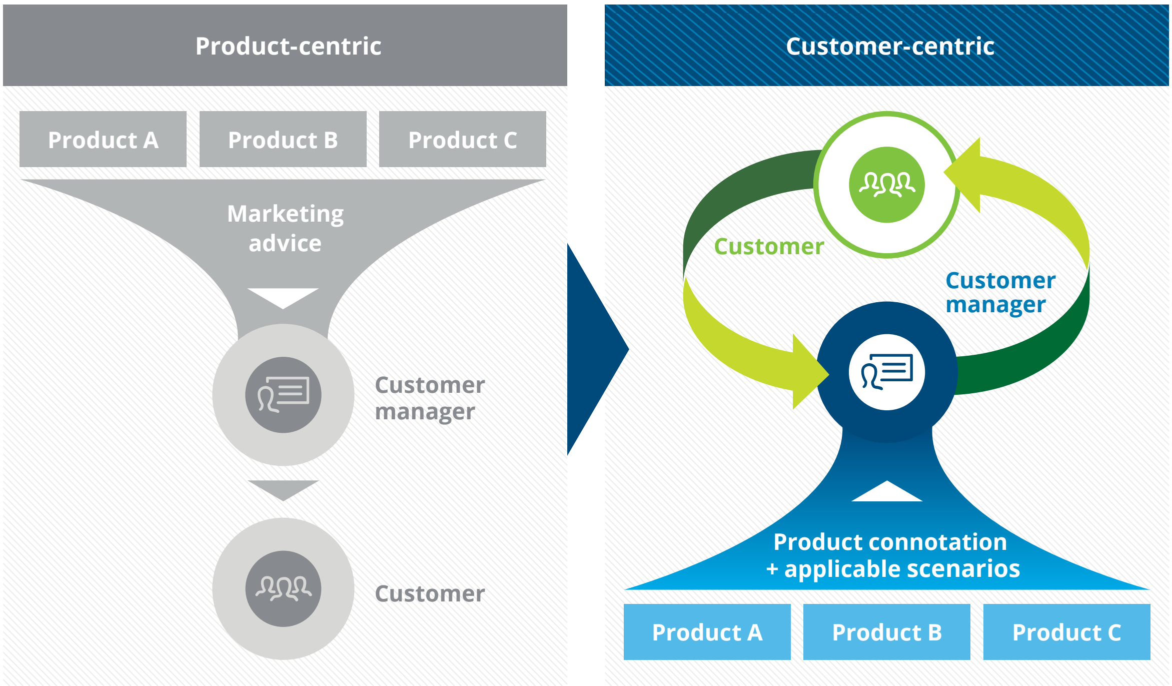
4.6 Customer-centric strategy drives the banking sector's organization and talent transformation in a digital era

Since 2020, the macroeconomy has been affected by COVID-19, continued trade disputes and shrank financial assets worldwide. Facing these unprecedented challenges, banks must adapt to and embrace the internal and external changes and uncertainties, and constantly renew their strategic plans. The domestic and overseas banks' practices show that **digital transformation not only requires technology input, but also synergy between task, organization, talent and culture.**

Organization management transformation in the banking sector

For banks, the major feature of digital transformation lies in being customer-centric—responsive to customer needs to optimize customer experience. Banks should not only innovate business models to reshape customer experience, but also be agile to respond to the ever-changing market and customer insights. When **shifting from "product-centric" to "customer-centric"**, all products and services are provided to meet customer needs, which requires banks to integrate business and product resources in a customer-centric way and break the barriers between processes, departments, products, etc. Therefore, **the agile organization model emerged.**

Figure 91: Transform from "Product-centric" to "Customer-centric"



Compared with banks' traditional functional organization model, the agile organization model weakens the hierarchical structure in traditional banks and reduces department barriers to enable employees from different fields to work on key projects and tasks collaboratively. It mobilizes teams and leverages resources to respond rapidly to customer needs.

Agile transformation: "customer-centric" promotes organizational agility

Featuring rapid response, flexible teaming-up, clear division of labor, and smooth collaboration, the agile organization model, has become a new paradigm and an important way for banks to explore digital transformation and enhance adaptability to changes.

Generally, the head offices of domestic banks lead the bank-wide digital transformation. They evolve towards an agile organization based on clear business scenarios and goals. For example, a bank divided the original business lines into several agile tribes. It established an agile organization structure considering customer groups, products, channels, and risks. It achieved technology and business integration, cross-functional group fusion, and end-to-end closed-loop business solution management.

The "agile tribes" are more suitable for banks with a less solidified organizational structure and a more mature operation model of business scenarios. For banks with fixed organizational structure or unsolidified business model, they can establish "temporary agile teams" and assemble human resources for innovative projects to reduce the assessment, reporting, responsibility boundary, and corporate culture obstacles may arise from a large-scale transformation, thus promoting agile transformation in a gradual and orderly manner.

Meanwhile, the agile organization model does not merely concentrate on the structural design. It also requires an **effective authorization mechanism,** transforming from the traditional order and command-based management to coordination and support-based empowering management.

Efficiency improvement for outlets: "customer-centric" promotes human resource fusion and optimization

As the basic operating unit for the banking business, outlets are still at the core of banking operations. Deloitte's Branch Transformation 3.0 Framework proposed that a critical "customer-centric" outlet transformation strategy is to enhance the marketing capability and service efficiency at banks' halls. Labor fusion is the key for outlets to optimize human resource allocation.

First, change from the single "customer manager service model" to the "customer service team cooperation model": customer managers work independently in the traditional model, where the response and discovery of customer needs rely more on the managers' capabilities, and the front-office marketing/ service capabilities are disconnected with the middle/back-office supporting capabilities and the head office's "brain" capability. Deloitte helps banks establish the "customer service team cooperation model". **Banks give play to the advantages of functional integration.** Centering on "customer-centric", banks fully consider customers, products, and risks to create a solid team collaboration model, forming a front-line joint action unit and leveraging the strengths of the customer service teams to accommodate customer needs. In the meantime, banks **capitalize on the service linkage with the head office,** such as building the **"1+N" investment advisory capability,** i.e., each customer has an exclusive financial manager and several comprehensive investment advisors—the outlets cooperate with the head office to achieve the "1+N" expert advisory service model, thus completely changing the way of customer service.

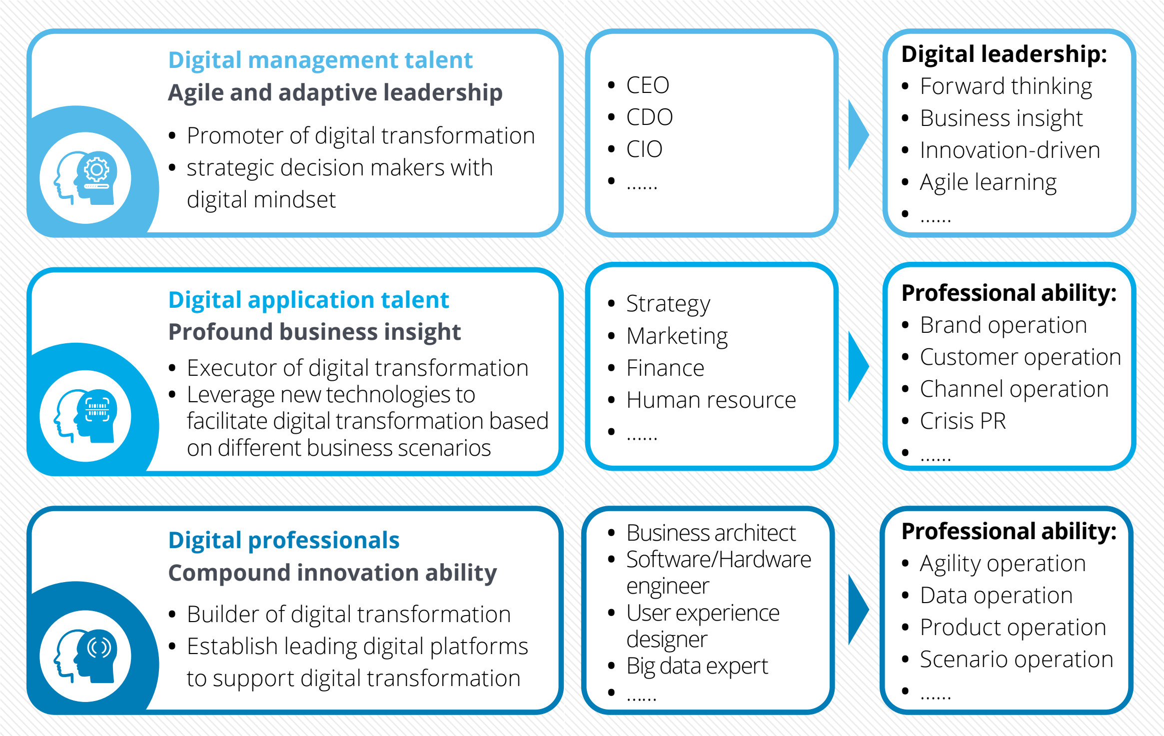
Second, shift from "one function for one position" to "integration of positions and functions." With the wide application of intelligent machines and online platforms, more than 90% of the counter services can be completed online or by customer service managers remotely, which allows the outlets to re-examine their human resource allocation and revitalize the existing human resources. Currently, some banks are merging the lobby manager and teller positions to be customer service managers, breaking the functional restrictions between positions inside and outside the counter. Banks are reconstructing an intelligent outlet position system by reasonably integrating the positions' operation, service, and marketing functions in the outlets.

Digital talent management and development

During the banking sector's digital transformation, many organizations have realized that **talent is the foundation of digital transformation.** To be adaptive and steadily advance digital transformation, banking organizations should attract, cultivate and manage digital talent differently.banking **organizations should attract, cultivate and manage digital talent differently.**

Figure 92: Digital Talent Requirements

Digital talent can be divided into digital management talent, digital application talent, and digital professionals.



Digital talent possesses interdisciplinary capabilities. Banks' businesses further expanded vertically with the constant integration of finance and technology. There is a rapidly growing demand for compound talent with digital technology, application, and management capabilities. Banks should introduce more digital talent to enhance their digital layout. They must explore diverse approaches to attract digital talent, establish sound talent cultivation and management mechanism, and facilitate leadership upgrades in the digital era.

Attracting digital talent

1. Customize recruitment strategies for key groups (such as internet financial product managers and data analysts), offer attractive compensation, and explore **innovative and flexible incentives**
2. With the beginning of the "gig economy," many foreign banks have adopted non-traditional methods such as hiring outsourced personnel, contract workers, freelancers, and temporary workers (pay by the task) to enrich their teams. Such flexible modes of employment are especially suitable for project-based work (such as risk management projects and data governance projects).

Forging digital leadership

A mature digital organization is often characterized by "continuous innovation, mobility, constant disruption, multi-model operation, and agility". Different digital characteristics raise cognitive, behavioral, and emotional transformation requirements for digital leaders.

Cognitive transformation—propose different ideas: making quick decisions, developing concept thinking, being visionary and willing to innovate;

Behavioral transformation—take different actions: outlining a common vision, identifying cultural differences, promoting pragmatic cooperation, and respecting others;

Emotional transformation—respond differently: have the ability to empathize with others and promote emotional synergy within the organization, and leverage the spirit of challenging and the fault tolerance mechanism to enhance digital talent cultivation.

Leadership transformation is one of the key drivers of organizational transformation. Currently, many banks face "soft power" challenges, such as lacking **digital transformation leaders, unclear vision, and no synergy within the organization.** Thus, the successful forging of digital leadership is crucial to achieving digital transformation goals.

Visualizing talent management

The goals of digital transformation also include visualization of talent data management. Although banks have acquired a large amount of talent data through various information technology means, the data are not connected. It often takes time to integrate and process the data when banks access and use them for decision-making. In the digital era, **visual talent management can help banks make forward-looking decisions efficiently and stay one step ahead of others to seize development opportunities.**

Take the key task performance management of customer managers as an example: customer managers can know customers' personal information and asset data through the **Customer Management Interface (individual angle of view),** record phone calls and gift giving, and manage personalized information of customers, such as recording customers' online and offline activities, special habits and needs, and exclusive marketing strategies.

Figure 93: Key Task Performance Management Application—Customer Management Interface

Management records of phone calls, gift giving, and other interactions with customers

Banks can collect information on customer managers' effective phone calls, the number of new customers, and performance using the **Indicator Interface (organization's angle of view)**, evaluate their performance, and develop specific incentives or improvement measures.

Figure 94: Key Task Performance Management Application—Indicator Interface

Statistics of customer managers' effective phone calls, number of new customers, and performance

Digital culture construction and transformation

Digital transformation is not merely a revolution of new technologies. More importantly, it is about the **change in people's thinking**. Corporate culture is the foundation of enterprises. Change of thinking model and the implementation of digital technologies and initiatives can only be realized when the overall corporate culture has been improved for better adaptability. Banks' corporate culture used to be conventional, with siloed departments, while leading digital corporate culture features **continuous innovation, changing decision-making power, constant disruption, mobility benefits,** etc. Deloitte summarized 23 features of a **mature digital organization**, i.e., the "Digital DNA," to provide a benchmark for enterprises to examine the achievements of their cultural transformation.

"Digital DNA"

- Continuous innovation
- Real-time and on-demand customization
- Changing decision-making power
- Adjusting risk and security boundaries
- Mobility
- Cross-region
- Changing team structure
- Deliberate collaboration
- Changing skill requirements
- Changing nature and types of work
- Constant disruption
- Increased customer participation
- Publicized information
- Multi-model operation
- Different development pace of digital and traditional businesses
- Mobility generating benefits
- Changing traditional and non-traditional stakeholder composition
- Delayering and evolving hierarchy
- Agility
- Continuous disruptive impact on the ecosystem
- Changing decision-making standards
- Fast learning from quick and early failure
- Iteration

Note: "Digital DNA" refers to the features of a mature digital organization

The cultivation of digital culture must be based on vision (as the guide), empathy (as the bond), trust (as the foundation), challenge (as the power), and mutual benefit (as the goal). Specifically, banks should build a shared vision and consensus. As one saying goes, "success comes to those who share in one purpose." Developing digital culture requires the entire organization to work toward its vision and mission. Each individual within the organization should understand the goal and how to contribute to the goal. This is also closely related to the organization's digital transformation strategies. Strategies are the precondition while culture supports strategies: they suit each other or constrain each other.

Second, each individual within the organization should take positive action. All employees—whether they are the management or the rank and file, work at the head office or the branches, and come from the front-office, middle-office, or back-office positions should actively participate in the construction of digital culture. Everyone should be a digital culture creator rather than a passive recipient. Meanwhile, leaders should set an example and establish a code of conduct.

Third, ensure internal empowerment while upholding the customer-oriented principle. Banks should encourage employees to interact with internal and external customers, set up cross-departmental user experience teams, and implement customer journey management to study and design omnichannel customer experience. Banks should delegate powers to employees, set guiding principles (instead of operating details for them), empower them, and encourage them to make judgments.

Fourth, encourage trial and error, and create an open and inclusive atmosphere. Improve the responsibility exemption mechanism, encourage "fast failure," and encourage employees to try new things and methods and learn from the failures; establish internal innovation centers with dedicated financial resources, regularly collect ideas from employees, and use VC funds to incubate feasible ideas; accept different opinions, and respect others' thoughts; encourage external exchange and cooperation, as well as cross-department and cross-function cooperation.

Conclusion

From the perspective of the development trends in the banking sector, "customer-centric" driven digital transformation is a top-down, long-term change process that requires coordinated actions and continuously builds new capabilities. It is actually an upward-spiraling process in which strategy, business, the organization, talent, culture, and system **complement each other**. Deloitte can sketch a "customer-centric" blueprint based our extensive experience to help banking customers comprehensively grasp the direction and requirements of organizational and talent management transformation in the digital era.

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4.7 Family offices in China – a trillion-dollar market

After 40 years of reform and opening-up, China's private economy has developed rapidly and entered a transformation and upgrading stage. Along with extraordinary economic growth, China's ultra-high net worth (UHNW) group is growing at the highest rate globally, becoming the world's second-largest group of billionaires. Therefore, there comes rising demand for UHNWs for family wealth management and inheritance. Family offices are gaining popularity in China as a core tool for private banking and family wealth management. However, as family offices start late in China and there are no complete laws and regulations, the development of family offices faces opportunities and challenges. Creating family offices with strong comprehensive asset allocation capabilities will be an important way for the industry to make breakthroughs.

The growth rate of China's UHNWs ranked first in the world; family offices gradually rose in China

The collective wealth of the 2021 Forbes list of China's 100 Richest increased to USD1.48 trillion from USD1.33 trillion in 2020. Surging wealth comes with increasing worries of the UHNWs, for example, how the aging first generation entrepreneurs entrust the business to the next generation; how the younger generation inherits the material and spiritual wealth; how to achieve more diversified asset allocation; how to separate the risks related to the business and the family property; how to continue to fulfill social responsibilities...Therefore, family offices rise.

The history of family offices can be traced back to as early as ancient Rome (the family manager "Domus"). In 1868, the New York banker Thomas Mellon founded the first family office to manage and protect his family's wealth. After approximately 100 years of development, the family office has become a mature business overseas and the choice of many western UHNWs. However, in China, "family office" has not been defined by laws/regulations or regulators. Family offices in China are often regarded as professional organizations that provide a full range of wealth management and family services for high net worth individuals (HNWIs) or families to meet their various financial and non-financial needs. Although the current family offices offer various customer-centered, targeted, and customized private wealth management services, they cannot fully meet the needs of ultra-wealthy families.

We found that some ultra-rich families had established special-purpose legal entities (e.g., consulting firms) as their family offices to control stock equity, manage family business and wealth, and plan the family's future. As private institutions, those "family offices" provide professional, customized private services for the family (including multi-families), family members, and family business, including family business governance, investment & wealth management, legal and tax advisor, family consulting, health, education, medical treatment, art, and charity. As a top-level design for the wealth management of ultra-high net worth families, family offices aim to help families maintain and enhance asset value, smooth intergenerational transmission of various wealth and professionally achieve long-term family goals.

Currently, except the single-family offices, family office services in China are mainly provided by two types of organizations: 1) traditional financial institutions/wealth management institutions such as banks, trust companies, and insurance companies (dominated by traditional financial institutions); 2) professional service institutions such as law firms, accounting firms, tax firms, and immigration firms. Those two types of organizations can provide services separately or cooperate as per customer demand to provide family office services. However, family offices are still a novelty in the Chinese market. With a high degree of privacy, the Chinese family office industry is still at an early stage of development. The number and scale of family offices in China are not comparable to that in Europe and the United States.

Chinese family offices start late, lack complete basic laws and regulations, and face various challenges

When analyzing the large number of HNWIs and UHNWs, we found less than 3,000 family offices in China, including some "pseudo-family offices" that ignore the original intention and sell financial products in the name of a family office. Therefore, family offices in China have a long way to go.

The third-party wealth management institutions in the Chinese market are gradually shifting to family office services. They are an intermediary, lack the capacity to make direct investments, and can serve like an investment bank or financial consultancy to provide a complete set of wealth management solutions for ultra-rich customers. However, that is contrary to the positioning of mature overseas family offices. Family offices in China mainly sell financial products to get commissions. Therefore, the industry focuses on making Chinese family offices return to the original intention, building core competence, and enhancing asset allocation capabilities.

First, the underlying mechanism is incomplete, which is a big challenge. Western family offices originated from a family trust and were the key to solving tax problems. However, family trust will generate higher costs without a mature mechanism in China.

Second, the first-generation entrepreneurs lack understanding and trust for family offices because they tend to do the job themselves and have not realized the benefit of employing a professional organization. Therefore, domestic family offices should retrieve their original intention, pay attention to building long-term intergenerational relationships with customers, and establish a customer-centric, service-oriented business model to enhance professionalism and service capabilities.

Third, family offices' asset allocation concept differs from the high-yield wealth management modes (e.g., private equity and venture capital). Family offices' core function is wealth inheritance, so the investment tends to be conservative. In terms of asset allocation, family offices emphasize the "systematic" apportion of risks through diversified asset allocation. In addition, family offices usually maintain long-term services and invest in various fields such as GP stakes, direct project investment, stocks, art collection, and fixed income products. The flexibility of the family office investment strategy is significantly improved under the diversified asset allocation model. Therefore, family offices must be equipped with compound talent with cross-asset investment capability, have a global vision and investment strength, and fully integrate internal and external resources to provide comprehensive customized services; they also need to exploit digital means to thoroughly sort out the families' wealth and track the wealth changes in real time.

Creating family offices with comprehensive asset allocation capabilities will be an important way for the industry to make breakthroughs

Even though domestic family offices still have a long way to go, we believe that the significance of family wealth management as well as the period and economic uncertainties, will drive a golden period of development for the family office industry. The market will gradually recognize the strategic value of family office industry.

As a one-stop service platform for family wealth management, a growing number of ultra-rich families regard family offices as a reliable partner that provides top-level architecture design for wealth inheritance, professional investment advice, and professional legal and tax services.

Moreover, family offices connect assets and capital to meet specialized and individualized needs. Family offices serve as a bridge for PE and VC organizations to exploit the funds of ultra-rich families and for professional organizations such as tax firms, law firms, and trusts to provide services for ultra-rich families.

Overseas family offices have become mature LP like pension funds and university endowments, which are important funders for venture capital institutions. In China, family offices are still in the exploration phase but have become a force to be reckoned with in the VC field. In general, about 30% of their investable capital for relatively mature Chinese family offices is used for equity investment; the equity investment of conservative family offices accounts for about 15%. Understanding customers' investment expectations and demands are the key to effectively allocating assets for them. Family offices with long-term viability will invest in more than one type of asset. Only family offices with comprehensive asset allocation capabilities can sustain success throughout the project cycle.

Conclusion

Family wealth management and inheritance is a systematic project. It requires forward-looking overall planning and comprehensive application of legal, tax, asset allocation, risk management, portfolio management, data integration, and other tools. Family office practitioners must plan and layout in advance to stay ahead of the industrial competition and achieve vigorous development of the family office.

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4.8 Practical considerations on integrating climate risk into the credit risk management system of commercial banks

According to PBC's 2021 *Statistical Report on Credit Structure of Financial Institutions*, the outstanding green loans in yuan and foreign currencies reached RMB15.9 trillion by the end of 2021; specifically, green loans for projects with direct or indirect carbon-reduction benefits stood at RMB7.3 trillion and RMB3.36 trillion respectively; together, they accounted for 67% of the total green loans. Financing for addressing climate change and accelerating the low-carbon transition is gaining increasingly more attention in the green financial market.

Commercial banks must understand climate risks and assess possible impacts to cope with climate change and accelerate the low-carbon transition.

Climate risks

Climate risks refer to the uncertainties in economic and financial activities caused by climate factors (such as extreme weather, natural disasters, and global warming) and socially sustainable development transformation.[1]

Climate-related risks can be divided into two categories: physical risks, which include rising sea levels and other extreme weather events resulting from climate change, and transition risks, which include stricter government policies to reduce emissions and the impact of clean technology development on replaceable technologies and industries. Enterprises affected by the transition and physical risks will eventually transmit the climate risks to the financial institutions they cooperate with.

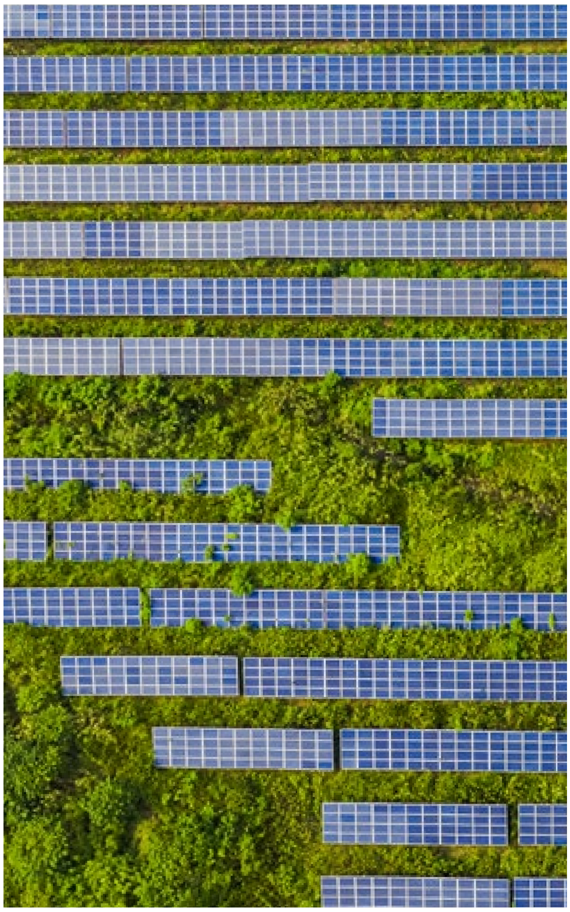
In the short run, the impact of physical risks, such as typhoons, floods, droughts, extremely hot weather, and forest fires, far exceeds the costs incurred by transition risks. Those extreme weather events are becoming unprecedentedly frequent, intense, and destructive.

However, in the long run, transition risks mean trillions of costs to commercial banks. Transition risks will cause lower potential income, higher operating costs due to higher coal prices, and stricter regulation. Overall, such risks will likely bring uncertainty to the financial system in the coming decades.

According to the Carbon Disclosure Project (CDP) report, although many commercial banks are aware of the impact of climate change on their operations, they have yet to measure the impact on their investment and financing portfolios, indicating that they may have underestimated the climate-related risks. However, this is also an opportunity for commercial banks to adjust to low-carbon operations.

Impact of climate risks on the lifecycle of credit business

Since the announcement of the 2030 and 30·60 carbon peak and neutrality goals, Chinese banks and institutions have made work plans to incorporate climate risks into the comprehensive risk management system. Commercial banks will lead in addressing climate changes through adjusting credit supply, differentiating financing costs and pricing, and other means. Commercial banks should reexamine their credit strategies to better respond to climate change and pay attention to the impact of climate risk factors throughout the lifecycle of the credit business.



[1] This definition was first proposed by the Task Force on Climate-related Financial Disclosures (TCFD); the Basel Committee on Banking Supervision, and other international organizations and regulators also proposed similar definitions.

Considerations in integrating climate risks into all links of credit business

Strategy and products
- Confirm risk preferences and quota
- Classify and assess climate risks
- Accelerate product innovation, promote low-carbon transition of investment and financing portfolios

Prospecting and origination
- Increase support for industries and institutions with lower climate risks
- Pay close attention to high-emission, high-polluting customers, and support their transition
- Improve relevant assessment model to better profile the risks

Underwriting and approval
- Review the customer's of energy-saving and emission-reduction progress, future production plans, and the ability to utilize renewable energy sources
- Recruit professionals for assessment

Collateral management and hedging
- Include climate risks into collateral management policies, and adjust borrowers' collateral equirements according to different climate risk credit ratings
- Climate risk hedging with counterparties and cooperation with external institutions to transfer climate risks

Portfolio monitoring and management
- Establish climate risk database to identify the transmission factors and paths of traditional short-/ medium-/long-term climate risks
- Monitor the performance of credit portfolios, manage contract terms, lending and quota, and risk concentration and defaults

Default management
- Incorporate the late and default payment data caused by climate change into the credit risk assessment system to assess the impact of climate risks on asset losses

Reporting and disclosure
- Establish a sound information disclosure mechanism, strengthen climate-related financial information disclosure (e.g., TCFD)
- Predict regulatory requirements (e.g., stress testing)

Strategy and products

Commercial banks should reassess their credit business strategies to address climate change issues: the markets, segments, and clients they serve; the products and services they offer; and the innovations they will bring to the market. The revised strategies may derive from the banks' sustainability commitments, including goals for reducing financed emissions or overall risk exposure.

Commercial banks should integrate major credit business strategies and key products into risk preference, credit risk management processes, and relevant policies.

In addition, banks should accelerate product innovation to account for climate risk and decarbonize their portfolios.

Prospecting and origination

Ideally, banks should begin to assess the impacts of physical and transition risks on clients' credit risks at the onset of new relationships. Prospecting and origination should be informed by the bank's business strategy for targeting sectors and clients.

The scope and extent of due diligence procedures will likely depend on a client's economic sector, size, and geographic location. Many large banks are scrutinizing businesses more closely during the know-your-customer documentation stage. They are asking clients to provide new types of data, such as energy usage attributed to new business activities, supply chain information, and data on emissions per unit of revenue.

Commercial banks also should require enhanced due diligence for transactions involving certain sectors, such as oil and gas, timber, palm oil, or soy. In some cases, they may be formalizing plans to halt financing to businesses specializing in Arctic drilling, mountaintop mining, or other practices that put biodiversity at risk.

Determining the appropriate information required during prospecting and origination without making it too onerous on clients could be a delicate task for bank leaders. And some customer managers may lack the expertise to communicate the bank's strategy to clients or find the right product for them. Banks will need to engage extensively with heavy-polluting clients, in particular, to offer guidance on how they can transition out of fossil fuels. In addition, credit risk departments should work with other units to prioritize deals that reduce climate risk or present new opportunities in green technology.

Underwriting and approval

Increasingly, banks are creating standalone borrower-specific climate risk scores. But they could also integrate climate risk assessments into the standard credit rating process.

These dynamic assessments should take the client's physical and transition risks into account, as well as its resiliency to climate change and the steps it is taking to mitigate climate-related threats to its business model. Banks should scrutinize the client's decarbonization progress, future production plans, and the availability of renewable energy technologies to power its operations. Since these evaluations tend to require technical knowledge of climate patterns and environmental trends, banks will likely need to hire specialists who have a scientific background.

Collateral management and risk hedging

Both physical risk, in the form of damages to physical assets, and transition risks, such as repricing stranded fossil fuel assets or changes in real estate values, could affect collateral values. But at present, banks have limited opportunities to transfer climate risks, since this market has yet to develop and market participants lack expertise and confidence in the underlying climate risk metrics and modeling. In addition, limited data on carbon intensity may make it difficult to develop hedging strategies. Another challenge could be modeling the indirect impacts of climate change, such as supply-chain disruptions, when developing new derivatives contracts or hedging instruments.

The New Financial Stability Board[2] encourages banks to infuse climate risk assessments into collateral policies in addition to credit policies. The outcome of stress tests can shape those guiding principles and indicate where firms should adjust collateral requirements for borrowers or begin to demand credit insurance and other sources of risk mitigation from counterparties.

One challenge banks have encountered when measuring transition risk is aligning climate change scenarios' long-term timelines with the much shorter duration of loan book commitments.

Portfolio monitoring and management

Ongoing monitoring and management of credit portfolios, including those of new and existing clients, will require commercial banks to develop new methodologies to quantify climate risk at the borrower and portfolio levels and conduct stress testing using different climate scenarios.

These complex exercises require a combination of statistical techniques and subjective judgment. The simulations should seek to make inferences on climate-related losses even if there may be limited historical data to draw from.

Top-down and bottom-up methodologies can then be deployed to assess the quantitative impact of climate risk on default probabilities and expected losses. The top-down module starts with a fundamental analysis of the impact of climate scenarios on balance sheets and income statements. It then calculates what those outcomes could mean for borrowers' probability of default (PD). The bottom-up module combines forecasts related to fuel costs, carbon prices, energy demands, and borrowers' characteristics to produce scenario-adjusted financial statements at the counterparty level. The borrower-specific data is then extrapolated to the portfolio level to measure the impact of climate risks on portfolios' expected losses. Banks can then apply macroeconomic and scientific expertise to calibrate top-down and bottom-up mechanisms and fine-tune the risk drivers that indicate how sectors could evolve under different climate scenarios.

To better assess the impact of climate risk on borrower creditworthiness, banks will need additional data, such as emissions, carbon intensity, strategies to manage transition risk/decarbonization, and supply-chain exposure. Multiple data sources can be used to better understand the global economic and market impacts of a climate shock, including those related to extreme weather events, crop-yield deficiencies, labor distortions, or adjustments to electricity generation. Scenario impacts can also test transition risk factors and different policy pathways, and the linkages between the two.

Common techniques for integrating climate risks into banks' portfolio management include negative screening, limiting exposure to certain risk sectors as a share of total financing, and installing automatic vetoes on credit granting if certain environmental protection issues are present.

[2] The New Financial Stability Board, also known as the G20 Financial Stability Board, is a global organization established after the G20 Summit in London.

Default management

Default management is another area that will likely require banks to make some changes due to climate risks. Managing the recovery process when the primary culprit is climate risk might also pose fresh challenges. These may translate into other decisions, such as selling loans in the secondary market and negotiating a workout agreement.

Data capture and storage could also be critical to default management. Banks should be aware of the root causes for defaults and assess whether the climate was a factor, even if it doesn't seem related to the loan losses. For example, a technology company may have failed to pay back the principal and/or interest due to supply-chain issues that link back to a devastating flood somewhere else in the world.

Commercial banks should also incorporate data on late and default payments that result from climate change into credit risk appraisals. If they fail to incorporate the root causes of climate, they will likely underestimate these risks in their credit models. They should also consider how defaults at other institutions may bring about second-round losses that impact their balance sheets due to interdependencies in the financial system.

Reporting and disclosure

In the past, investors cared more about earnings per share (EPS), but now they focus more on environmental, social, and governance (ESG) practices. Regulators, investors, and other stakeholders demand more detailed and timely disclosures of businesses' climate-related risks and opportunities. They are increasingly scrutinizing plans for resiliency against short-term, medium-term, and long-term climate scenarios.

In 2015, the Financial Stability Board established the Task Force on Climate-related Financial Disclosures (TCFD) to promote the assessment of climate risks in the financial sector and disclosures to stakeholders.

The TCFD recommendations provide a framework for measuring, managing, and reporting credit portfolio-related climate risks. Those recommendations are highly valued and widely recognized by international financial market players and publicly supported by over 2,000 organizations from 78 countries.

The TCFD framework requires reporting across four dimensions: governance, strategy, risk management, and metrics and targets. Many banks are building out their TCFDs as their climate risk protocols mature. They currently include risks and opportunities over different periods and the role of management and boards in managing both. Many of these analyses may be subjective as judgment calls will likely play a large part in risk evaluations.

ICBC, the first domestic financial institution to join the TCFD, has released the *Special Reports on Green Finance* for three times and *the 2021 Interim ESG Special Report of Industrial and Commercial Bank of China Limited* with reference to the TCFD framework. CCB, ABC and BOC joined the TCFD in 2021. The following section compares the climate risk disclosures between China's four large state-owned commercial banks and their international peers.

Comparison of the climate risk disclosures between China's four large state-owned banks and leading international commercial banks

Commercial bank	Information disclosure	Scenario analysis considerations	Risk management
ICBC	• Joined the TCFD in 2017, and has compiled the *Special Report on Green Finance for three times and the 2021 Interim ESG Special Report of Industrial and Commercial Bank of China Limited* with reference to the TCFD framework • High-climate risk industries: coal power, petrochemical, chemical (including coal chemical), iron and steel, non-ferrous metal smelting, building materials and other industries	• Long-term scenario analysis: set mild, moderate and severe stress scenarios within a time span of ten years, pay close attention to the carbon price changes in the domestic carbon emissions trading market, and refer to the carbon price scenarios of the Central Banks and Supervisors Network for Greening the Financial System (NGFS)	• Consider environmental factors during rating and monitoring, and conduct stress testing for the thermal power industry, cement industry, electrolytic aluminum industry, steel industry, climate, carbon trading, etc. • Implement classified management of customers from the high-polluting, high energy-consuming industries, as well as differentiated policies
CCB	• Joined the TCFD in 2021 • High-climate risk industries: thermal power, steel, cement, and aviation	• Set transition risk scenarios, take the impact of policy and market risks into consideration	• Conduct stress testing for the thermal power, chemical and other industries
ABC	• Joined the TCFD in 2021 • High-climate risk industries: thermal power, steel, and cement industries	• Long-term scenario analysis: within the time span of 30 years, refer to the carbon price scenarios of the NGFS and the carbon price changes in the domestic carbon emissions trading market, set the four stress scenarios of orderly transition, disorderly transition, greenhouse world, and policy planning, and comprehensively consider the changes in carbon price, coal power generation, electricity price, and energy structure in different emission reduction pathways	• Conduct stress testing for the coal power industry
BOC	• Joined the TCFD in 2021 • High-climate risk industries: thermal power, steel, and cement industries	• Set short-term, medium-term and long-term scenarios; consider the long-term trends of temperature, precipitation, and sea level as well as the short-term events such as floods, storms, droughts, and heat waves	• Conduct stress testing for the thermal power, steel and cement industries • No credit granting to projects that severely damage biodiversity • Apart from the already contracted projects, BOC no longer provided financing support for overseas new coal mining and coal power projects starting from the fourth quarter of 2021

Commercial bank	Information disclosure	Scenario analysis considerations	Risk management
HSBC	• Made five climate risk disclosures with reference to the TCFD standard • High-climate risk industries: automotive, construction, chemical, finance and mining, oil and gas, power and public utilities	• Scenario analysis: within a time span of 30 years, set the greenhouse world, orderly transition, and disorderly transition scenarios, and comprehensively consider policy, economic, and social factors	• HSBC is committed to net zero carbon emissions in its operations and supply chain by 2030, and making its financing activities neutral by 2050 • HSBC promised to stop financing new or expanded coal power projects and specific oil and gas extraction in 2016 • HSBC enhances fidelity investigation on corporates with high consumption of coal power, and is devoted to reducing 25% of coal power financing by 2025 and 50% by 2030 • HSBC conducts experimental climate risk stress testing on its facilities and six high-climate risk industries
Citi Bank	• Made three climate risk disclosures regarding the TCFD standard • High-climate risk industries: energy commodity, power, transportation, industrial engineering, mining, chemical, retail, real estate, finance, communications	• Long-term scenario analysis: long-term temperature rise scenarios • Short-term scenario analysis: short- and medium-term loan risk analysis based on carbon price changes	• Citi Bank promises to achieve net-zero carbon emissions from its operations by 2030, and carbon neutrality in its financing activities by 2050 • Citi Bank promised to stop financing new or expanded coal power projects and specific oil and gas extraction in 2015 • Citi Bank will stop financing coal power companies after 2025, and will not serve clients without a low-carbon transition plan • Citi Bank pledged to phase out by 2030 financing for companies deriving ≥25% of their revenue from thermal coal mining, and end financing clients in OECD countries that generate 5% or more of their electricity from coal by 2030 and such clients in the rest of the world by 2040
Deutsche Bank	• Made five climate risk disclosures regarding the TCFD standard • Deutsche Bank plans to disclose the Scope 3 emissions • High-climate risk industries: transportation, oil and gas, steel, metal and mining, power and gas, and chemical	• Long-term scenario analysis: within a time span of 15 years, including factors such as carbon price, transition cost, and energy demand changes • Climate risk component analysis: assess its climate risk level and guide loan granting based on the different climate risk types in different industries and regions	• Deutsche Bank pledged to achieve carbon neutrality in its financing activities by 2050 • Deutsche Bank promised to stop financing new or expanded coal power projects and specific oil and gas extraction in 2017, and will stop financing the coal mining industry starting from 2025 • Deutsche Bank tightens financing to energy companies highly dependent on coal • Deutsche Bank will phase out financing to companies without a transition plan

Source: the above data are from the banks' annual reports, ESG reports, special reports on green finance, and TCFD reports.

Deloitte suggestions:

Establish a climate risk database
Banks should gradually collect, integrate and measure the low-carbon transition data of corporate clients and form their corporate clients' climate risk data assets to support rational financing and decision-making as well as relevant financial instrument innovation.

Conduct portfolio analysis
Commercial banks should analyze their financing exposures in different industries and regions, and assess the sensitivity of the financing exposures to the transition and physical risks to lay the foundation for quantitative management of climate risks.

Accelerate quantitative research on climate risks
There is a lot of research on green finance, but it is still challenging to quantify the impacts of climate risks. Quantifying climate risk exposures, especially the impacts on specific credit asset PD and Loss Given Default (LGD), will be an important direction for future climate risk assessment. Quantifying climate risks in the internal credit rating model and the expected credit loss model will be an important breakthrough in climate risk management practices and credit asset provisions.

Strengthen external cooperation
Banks should proactively collaborate with external experts, enhance internal and external communication, seek cooperation with third-party research institutions, introduce analysis methodologies from professional fields, develop analysis models, and leverage experts' experience to expand the professional knowledge base of climate risks.

Enhance talent cultivation
Professional skills are a prerequisite for assessing climate risks, reviewing the low-carbon transition process, hedging and quantifying climate risk impacts. It is extremely urgent to accelerate internal talent cultivation and ensure a good reserve of professional talent.

Integrating climate risk considerations into the whole process of commercial banks' credit risk management is a long-lasting challenging task; however, it is an inevitable path for the banking sector to adjust to carbon neutral operation and facilitate the carbon neutrality goal of society at large.

*Part of this section is quoted from the report *Embedding climate risk into banks' credit risk management: Practical considerations*, released by Deloitte Center for Financial Services.

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5. 2022 Macroeconomic and Banking Outlook

Strive to maintain stable macroeconomic performance

China has set its 2022 GDP growth target at around 5.5%, slightly higher than market expectations. We feel confident about resident consumption resilience and foreign trade performance—together, the two can contribute at least four percentage points to GDP growth. Therefore, investment growth becomes essential. Despite the rising uncertainty due to the Russia-Ukraine conflict, ongoing COVID-19 resurgences, and other factors, macro policies will focus on "ensuring stability a top priority" to lead the domestic economy through this crucial stage. China's GDP grew 4.8% in the first quarter of 2022, and economic fundamentals that will sustain long-term growth remain unchanged.

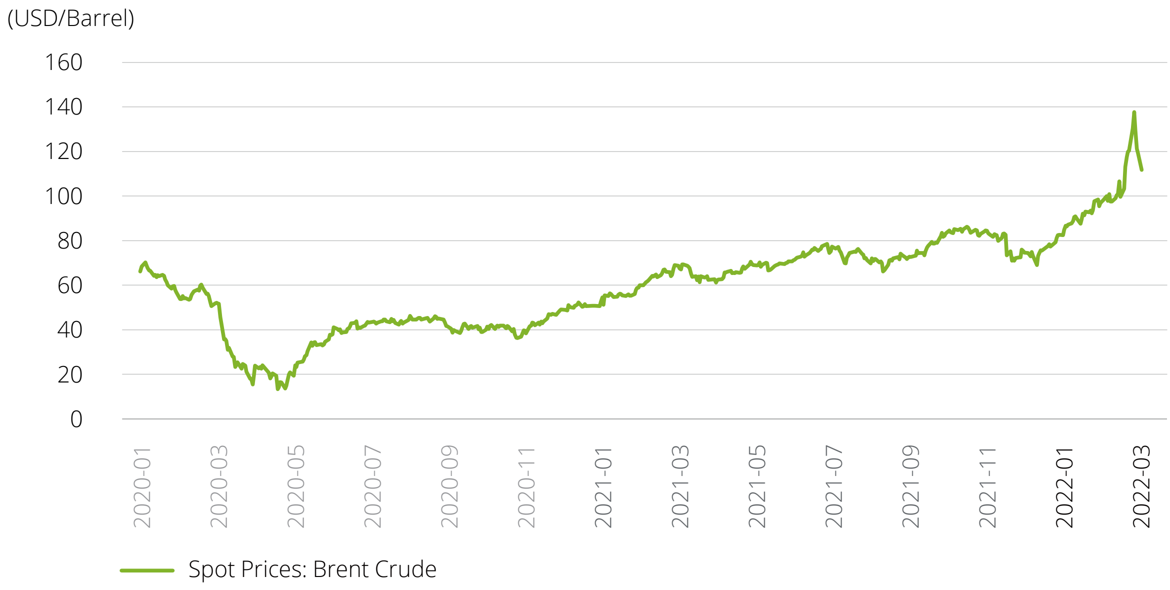
The Evergrande event and the spillover effect are under control. As the orderly integration of the real estate sector continues, consumers may be more confident to take on extra debt (which is a hidden policy goal—in January 2022, the Ministry of Housing and Urban-Rural Development stressed that we should "fully release residents' housing needs"). However, finding new growth points to bridge the real estate growth gap is gradual. The 2022 Report on the Work of the Government specifies that the Chinese government will make appropriate proactive investments in infrastructure. The central government transfer payments to local governments will come to close to RMB9.8 trillion, an increase of 18%, or around RMB1.5 trillion, to relieve the financial pressure on local governments with a land sales slump.

Pay close attention to the uncertainties brought by the Russia-Ukraine conflict

The Russia-Ukraine conflict in late February was the first "Black Swan Event" of 2022. It will also cause economic and geopolitical impacts and uncertainties for China, especially a worsening inflation outlook. Asian economies will suffer more severe inflation if the crude oil prices exceed USD100 per barrel since almost all of them are net importers of crude oil and natural gas. The fierce downstream competition of China's manufacturing industry will restrain consumer-side inflation. Thus, the profits of many enterprises will be further squeezed. It is expected that the Chinese government will apply more fiscal leverage to ease enterprises' burdens.

Rising energy prices will also prompt China to advance energy transition and progress towards the carbon peak and carbon neutrality goals. However, external uncertainties will also compel policymakers to reassess carbon reduction efforts over the short term. Unlike the 2021 Report on the Work of the Government, the government did not set a specific goal for "lowering energy consumption per unit of GDP" this year. Instead, it expects to assess energy consumption per unit of GDP within the framework of the 14th Five-Year Plan to avoid "one-size-fits-all" and campaign-style carbon reduction.

Figure 95: Rising Crude Oil Prices Worsen Inflation



Source: Wind

Intensify the implementation of monetary policies

During the Two Sessions, the 2022 Report on the Work of the Government proposed to "step up implementation of the prudent monetary policy" for the first time, indicating prudent and easing monetary measures in the year. China will refrain from adopting a deluge of strong stimulus policies, continue to satisfy the real economy's reasonable and effective financing needs, and enhance financial support for the key areas and weak links.

Table 38: Monetary Policy Descriptions in the 2021 and 2022 Report on the Work of the Government

	2022	2021
Policy orientation	Step up implementation of the prudent monetary policy	Keep prudent monetary policy flexible and targeted and at a reasonable and appropriate level
M2 and aggregate financing increase	expand the scale of new loans, see that increases in money supply and aggregate financing are generally in step with nominal economic growth	Make sure that increases in money supply and aggregate financing are generally in step with nominal economic growth
Macro leverage ratio	keep the macro leverage ratio generally stable	keep the macro leverage ratio generally stable
Inclusive finance lending to micro and small businesses	N/A	Inclusive loans to micro and small businesses by large commercial banks will increase by over 30%
Interest rates	Financial institutions will be encouraged to lower actual loan interest rates and cut fees to truly make it easier for market entities to access financing and achieve a considerable drop in overall financing costs	Further lower loan interest rates in absolute terms and continue to guide the financial sector in giving more to the real economy. This year, we must see that micro and small businesses have easier access to financing and that their overall financing costs steadily drop.

Source: Report on the Work of the Government, Deloitte Financial Research

Credit easing continues to stabilize growth

At the end of 2021, the Central Economic Work Conference set the policy orientation of "seeking progress while ensuring stability." Later, the PBC lowered the reserve ratio and interest rate. The aggregate financing to the real economy (AFRE) (flow) was RMB12.06 trillion cumulatively in Q1 2022, with the growth in March posting RMB4.65 trillion, far exceeding the market expectations. China's GDP grew 4.8% in Q1 2022. On April 25, PBC cut the RRR for financial institutions by 0.25 percentage points, guiding the financial institutions to use the funds released through the cut to support the industries and small/medium/micro enterprises severely impacted by the pandemic. After the cut, the weighted average RRR for financial institutions stood at 8.1%.

Compared to the Central Economic Work Conference's description of "enhancing steady growth of total credit," the 2022 Report on the Work of the Government proposed to "expand the scale of new loans" and "encourage financial institutions to lower real loan interest rates and cut fees," hinting a credit easing signal. With credit easing and low-cost financing, the scale of new loans in 2022 will significantly increase. Credit supply will still focus on inclusive finance, specialized and sophisticated enterprises, green finance, export finance, and other vital areas.

According to PBC's *Monetary Policy Report Q4 2021*, the market interest rate is the most intuitive, accurate and prompt indicator for liquidity. The LPR decline in January 2022 is expected to drive real lending rates down. To ensure stable economic growth, it is possible to see another policy-based interest rate adjustment if the real estate sector slows the economy.

Finance further supports market entities

The *2022* Report on the Work of the Government further expanded the key supported groups from "micro and small businesses" severely impacted by COVID-19 to "all market entities", making it easier and cheaper to access financing.

The financial support for the real economy has richer connotation: first, continue to support SMEs—the *Circular on Providing Good Financial Services for Pandemic Prevention and Control and Economic and Social Development*, released by PBC and the State Administration of Foreign Exchange on April 18, introduced 23 measures for financial services to support COVID-19 containment and socio-economic development; second, support rural revitalization—the *Opinions of the Central Committee of the Communist Party of China and the State Council on Effectively Carrying out the Key Tasks for Comprehensively Advancing Rural Revitalization in 2022* released in February 2022 emphasized the importance of financial services to rural revitalization; third, support financial needs of "new urban residents"—the *Circular on Strengthening Financial Services for New Urban Residents*, released by the CBIRC and PBC in March 2022, encourages banking and insurance institutions to provide more accessible and convenient financial services to new urban residents (new urban residents refer to those who are living in cities and towns but have not obtained city permanent residency or have just obtained city permanent residency within two or three years). Currently, there are around 300 million new urban residents. Regulators will introduce proper measures to enhance financial services for them to ease their employment & entrepreneurship, house leasing & purchasing, kids' education, and caring for the elderly. This belongs to broad "Sannong" services.

Set up a guarantee fund for financial stability

Preventing and mitigating financial risks has always been the core of the government's economic work and financial supervision.

First, stabilize the leverage ratio. In 2021, China's GDP grew 8.1%, and the macro leverage ratio was 272.5%, which decreased for five consecutive quarters. In 2022, the macro leverage ratio will keep stable with effective COVID-19 control measures, enhanced internal momentum, and productive macro policies. Second, dispose of high-risk financial institutions. With resurging COVID-19 cases, increasing international geopolitical conflicts, global inflation, economic recession, and other intensifying external uncertainties, small and medium-sized financial institutions face growing risks, especially non-performing asset pressure and capital gap. Third, mitigate real estate risks. Since February 2022, China Orient Asset Management Co., Ltd. and China Great Wall Management Co., Ltd. have issued RMB10 billion financial bonds to mitigate real estate risks. Financial institutions will accelerate the disposal of non-performing assets of real estate developers. As the long-term mechanism of "keep land prices, housing prices, and market expectations stable" continuously improves, the market will likely maintain stable performance.

The 2022 Report on the Work of the Government proposed setting up a guarantee fund for financial stability for the first time, giving full play to the functions of the deposit insurance system and the industrial guarantee fund, and defusing risks and potential dangers through market-oriented and law-based means. The financial stability guarantee fund is a common practice among overseas institutions to cope with troubled institutions and has succeeded in the US and Europe. Over the past years, regulators have accumulated practical experience in handling risk events of financial institutions, such as the Baoshang Bank and Anbang Insurance. The financial stability guarantee fund will enrich the capital sources for risk handling. It can be set up by local governments to help enterprises ease their difficulties, reducing the market dependence on PBC's role as a lender of last resort to prevent moral risks.

Accelerate digital financial transformation

On January 12, 2022, the State Council issued the *Development Plan for Digital Economy during the 14th Five-year Plan.* It puts forward the goal to raise the proportion of the added value of core digital economy industries in its GDP to 10% in 2025, up from 7.8% in 2020. It envisions that by 2035, a modernized market system for the digital economy, featuring uniformity and fairness, orderly competition, and maturity and completeness, will be established. The *Guiding Opinions of the General Office of the China Banking and Insurance Regulatory Commission on the Digital Transformation in Banking and Insurance Sectors* (hereinafter referred to as the "Opinions") was issued on January 17, which covers commercial banks, asset management companies, wealth management companies, insurance companies, and pension management companies, and sets the goal that by 2025, digital transformation in the banking and insurance sectors will achieve remarkable results. Regulators have officially included digital transformation top-level design in policies and regulations and specified requirements for strategic organization and processes, operation management, data capability, technological capability, and risk prevention, such as vigorously promoting the digitalization of individual financial services and striving to close the "digital divide." Combined with the *Fintech Development Plan*

(2022-2025), the digital financial transformation can advance along a clear route. Therefore, the digital transformation in the banking and insurance sectors will speed up.

Developing a digital economy requires the support of a modern digital financial system. Large banks continuously increase technological investment and set up Fintech companies to enhance their information technology capabilities. However, with limited technological applications and resources, small and medium-sized banks face various challenges in digital transformation. First, they need to solidify data, technology constantly, and relevant risk management capabilities as financial innovation bring new risks. Second, they must strengthen the construction of a digital talent team. According to the China Banking Association's survey of 54 listed banks, in 2020, the IT investment of large banks and listed joint-stock banks accounted for 3.19% of their operating income, and R&D personnel accounted for 5.60% of their total employees. Globally, leading banks generally invest 10% or more of their operating income in technology development. The Opinion requires introducing more professionals with technological background to the board or senior management, and gradually increasing the proportion of leading digital talents and core experts.

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Analysis of the domestic and overseas economic environment and situation, interpretation of national macro policies and the potential impact on the financial services industry; regular integration of the view of Deloitte's chief economists, such as Voice of Asia and Deloitte's monthly economic analysis.

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Hot topics

Keeping a close watch on the financial industry and market hotspots, such as the 14th Five-Year Plan formulation, corporate governance, green finance, elderly-care finance, digital inclusive finance, and reform of small and medium-sized banks; providing in-depth research and outlook based on Deloitte's experience and observation, and integrating the experts' insights of Deloitte's various business lines.

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Deloitte China provides integrated professional services, with our long-term commitment to be a leading contributor to China's reform, opening-up and economic development. We are a globally connected and deeply locally-rooted firm, owned by its partners in China. With over 20,000 professionals across 30 Chinese cities, we provide our clients with a one-stop shop offering world-leading audit & assurance, consulting, financial advisory, risk advisory, business advisory and tax services.

We serve with integrity, uphold quality and strive to innovate. With our professional excellence, insight across industries, and intelligent technology solutions, we help clients and partners from many sectors seize opportunities, tackle challenges and attain world-class, high-quality development goals.

The Deloitte brand originated in 1845, and its name in Chinese (德勤) denotes integrity, diligence and excellence. Deloitte's professional network of member firms now spans more than 150 countries and territories. Through our mission to make an impact that matters, we help reinforce public trust in capital markets, enable clients to transform and thrive, and lead the way toward a stronger economy, a more equitable society and a sustainable world.

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