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Executive Summary

China's economy and financial system has been confronted with mounting external pressures since 2019, as the global political and economic landscape has become more complex and graver. Nevertheless, guided by the principle of seeking progress while maintaining stability and the philosophy of new development, the financial system, focusing on the three major tasks of serving the real economy, mitigating financial risks and deepening financial reforms, implemented a sound monetary policy, took decisive measures to prevent and dissolve major financial risks, continued to deepen supply side structural reforms of the financial sector, and improved financial management and services, with a view to promoting high quality economic development by creating favorable monetary and financial conditions. In 2019, China's GDP grew by 6.1 percent y-o-y, 3.2 percentage points higher than the world average, and making China one of the top performers among the major economies. The employment remained stable, the balance of payments was in general equilibrium, and the foreign exchange reserves increased slightly. Such achievements are hard won, in particular against the backdrop of tepid global economic growth.

In 2020, the outbreak of the COVID-19 pandemic has exerted unprecedented impact on China and the world at large, triggering a severe recession of the world economy, disrupting the global supply chain, reducing global trade and investment flows and causing turbulences in the commodity market. China's economy contracted by 6.8 percent in the first quarter. Consumption, investment and exports fell, weighing heavily on the employment. Enterprises, in particular small and medium sized enterprises (SMEs) and micro businesses, have experienced acute difficulties. Risks, including in the financial system, have intensified. Xi Jinping, General Secretary of the CPC Central Committee, attaching great importance to coordinating pandemic prevention and economic and social development, spoke on this important topic for several times and deployed policy responses in person. In line with the overall arrangements by the CPC Central Committee and the State

Council, the financial regulatory agencies have made all-out efforts to mitigate the impact of the COVID-19 pandemic. The measures include maintaining reasonably adequate liquidity in the financial system, guiding market interest rates to go down, increasing quotas on central bank lending and discounting, launching the uncollateralized lending scheme and the loans repayment deferral scheme for SMEs and micro businesses. Such policy responses have yielded positive results. The GDP achieved positive growth in the first three quarters, and the national economy continued to recover steadily, which fully demonstrated the strong resilience and the huge room for maneuver of China's economy.

Notwithstanding the achievements, we are fully aware of the difficulties ahead of us. Internationally, the world economy is still undergoing profound changes since the global financial crisis, with intertwining long-term and short-term problems, interacting structural and cyclical factors and entangling economic and political issues. In addition, affected by adverse factors such as concerning evolvement of the COVID-19 pandemic elsewhere in the world, and rising protectionism and unilateralism in some countries, China will have to seek development in a less stable world with more uncertainties. Domestically, China is making strenuous efforts to transform the development paradigm, optimize the economic structure and shift the growth dynamics. As structural, institutional and cyclical problems interact with one another, there are still some weaknesses in achieving high-quality development. Impacted by the COVID-19 pandemic, debt default risk of some corporates has been on the rise, which might spread onto the financial system. As a result, the financial system will face more difficulties and risks going forward.

In line with the overall arrangements of the CPC Central Committee and the State Council as well as the specific requirements of the Financial Stability and Development Committee, the People’s Bank of China (PBC) worked with other related government authorities to resolutely prevent and dissolve major financial risks, and important progress has been made. First, the rapid growth momentum of the macro leverage ratio has been contained. Efforts have been made to control aggregate money supply and advance structural deleveraging. The excessively fast growth of the macro leverage ratio has therefore been put under effective control, which has created room for adopting countercyclical measures in response to COVID-19 pandemic. Second, risks of high-risk financial institutions have been dealt with in an orderly manner. The PBC adopted tailored measures to address the major risks stemming from Baoshang Bank, Hengfeng Bank and Bank of Jinzhou, which also helped strengthen market disciplines. Third, corporate default risk has been properly handled. Banking institutions have been encouraged to intensify the efforts to deal with non-performing loans (NPLs) and to improve the mechanism to settle defaulted bonds. Fourth, risks of Internet finance and illicit fund-raising have been comprehensively addressed. The number and size of Internet-based P2P lending platforms have been reduced sharply, illicit fund-raising activities have been severely clamped down and the rectification of various trading exchanges has been steadily and orderly promoted. Fifth, institutional arrangements have been improved to mitigate financial risks. The stipulation and smooth implementation of the *Guidelines on Regulating Asset Management Business of Financial Institutions* and its complementary rules has helped contain the disorderly development of shadow banking. An integrated regulatory framework for systemically important financial institutions, financial holding companies and financial infrastructures has taken shape, and the comprehensive statistics for the financial sector have been advanced steadily. The new *Securities Law* has come into effect as the reforms of the capital market have been deepened. In general, the new risks in the key areas of the financial system have been effectively controlled, while the existing risks have been gradually dissolved. The financial risks are generally controllable, and the bottom line of preventing systemic financial risks has been preserved.

Despite the complex economic and financial situation at home and abroad, the fundamental features of China's economy such as huge potential, strong resilience, large room for maneuver and a large number of available policy instruments remain unchanged, and our resolution to deepen reform and opening up remains unchanged. We will look at the current difficulties, risks and challenges through a comprehensive, dialectic and long-term perspective, use reforms to champion changes and to better serve the economy and society. We will stick to the overall principle of seeking progress amidst stability, and support the formation of a new development pattern with domestic circulation as the mainstay and domestic and international circulations reinforcing each other. Efforts should be made to ensure stability on six fronts and security in six areas, improve macroeconomic management throughout the entire economic cycle, intensify support of monetary and financial policies to the real economy in particular SMEs and micro businesses, encourage financial institutions to give in part of their profits, and promote a virtuous cycle between the economy and financial system. Efforts are also needed to effectively prevent and dissolve major financial risks, address risks in the key areas in a well-targeted manner, shore up regulatory shortcomings and hold all parties concerned accountable, in order to preserve the bottom line of preventing systemic risks, achieve a long-term balance between stable growth and risk prevention, and create a favorable financial environment for successfully completing the objectives under the 13th Five-Year Plan, poverty alleviation and building a moderately prosperous society.

Glossary

ACH	Automated Clearing House
AI	Artificial Intelligence
AML	Anti-Money Laundering
API	Application Programming Interface
AT1	Additional Tier 1
AUM	Assets under Management
BCBS	Basel Committee on Banking Supervision
BEPS	Bulk Electronic Payment System
BoE	Bank of England
CAR	Capital Adequacy Ratio
CARES Act	Coronavirus Aid, Relief and Economy Security Act
CBDC	Central Bank Digital Currency
CBIRC	China Banking and Insurance Regulatory Commission
CBOE	Chicago Board Options Exchange
CBRC	China Banking Regulatory Commission
CBS	Central Bank Bills Swap
CCAR	Comprehensive Capital Analysis and Review
CCC	Creditor’s Committee on Coordination
CCP	Central Counterparty
CCyB	Countercyclical Capital Buffer
CDB	China Development Bank
CET1	Common Equity Tier 1
CFT	Combating the Financing of Terrorism
CFTC	Commodity Futures Trading Commission
CFXPS	China Foreign Exchange Payment System
CIPS	China International Payment System
ComFrame	Common Framework for the Supervision of IAIGs
CPC	Communist Party of China
CPI	Consumer Price Index

CPMI	Committee on Payments and Market Infrastructures
CSDC	China Securities Depository and Clearing Corporation Limited
CSRC	China Securities Regulatory Commission
DC/EP	Digital Currency/Electronic Payment
DLT	Distributed Ledger Technology
DSTI	Debt service-to-income
ECB	European Central Bank
ESRB	European Systemic Risk Board
ETFs	Exchange-traded Funds
FCA	Financial Conduct Authority
FDIC	Federal Deposit Insurance Corporation
FHC	Financial Holding Company
FMI	Financial Market Infrastructure
FPC	Financial Policy Committee
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSDC	Financial Stability and Development Committee
FSOC	Financial Stability Oversight Council
GDP	Gross Domestic Product
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Insurer
HICP	Harmonised Index of Consumer Prices
HVPS	High-value Real-time Payment System
IADI	International Association of Deposit Insurers
IAIG	Internationally Active Insurance Group
IAIS	International Association of Insurance Supervisors
IBPS	Internet Banking Payment System
ICP	Insurance Core Principle
IEO	Initial Exchange Offering
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IPO	Initial Public Offering
LCR	Liquidity Coverage Ratio
LEI	Legal Entity Identifier
LIBOR	London Interbank Offered Rate
LPR	Loan Prime Rate
LTV	Loan-to-value

MOF	Ministry of Finance
MSE	Micro and Small-sized Enterprise
NBS	National Bureau of Statistics
NDRC	National Development and Reform Commission
NEEQ	National Equities Exchange and Quotations
NPA	Non-performing Asset
NPL	Non-performing Loan
NSFR	Net Stable Funding Ratio
OBIE	Open Banking Implementation Entity
OCC	Office of the Comptroller of the Currency
OFR	Office of Financial Research
P/B ratio	Price-to-book ratio
P/E ratio	Price-to-earnings ratio
PBC	People’s Bank of China
PCA	Prompt Corrective Action
PFMI	Principles for Financial Market Infrastructures
RCAP	Regulatory Consistency Assessment Programme
RegTech	Regulatory Technology
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
RWA	Risk-weighted Asset
SAFE	State Administration of Foreign Exchange
SEC	Securities and Exchange Commission
Shibor	Shanghai Interbank Offered Rate
SIFI	Systemically Important Financial Institution
SME	Small and Medium-sized Enterprise
SPV	Special Purpose Vehicle
SSBs	Standard Setting Bodies
SSE	Shanghai Stock Exchange
STAR Market	Sci-Tech Innovation Board
SyRB	Systemic Risk Buffer
TLAC	Total Loss Absorbing Capacity
VIX	Volatility Index
WGBI	World Government Bond Index
WMP	Wealth Management Product

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Chapter I

Macroeconomic Performance

In 2019, China's economic performance was stable in general amid optimizing economic structure and regional layout, strengthening new growth drivers, and major progress in reform and opening-up. The pandemic-hit global economy has fallen into deep recession since the outbreak of COVID-19 in early 2020.The industrial and supply chains have been disrupted, global trade and investment have contracted, and commodity market has become volatile. On domestic front, consumption has dropped, employment pressure has increased, and SMEs and micro businesses have run into difficulties. Going forward, efforts need to closely target the goal of building a moderately prosperous society in all respects and strike a balance between pandemic containment and economic and social development. Work should follow the general principle of pursuing progress while ensuring stability and the new development philosophy. Supply-side structural reform should be pursued as a main task. Efforts need to be stepped up to maintain stability in six fronts and security in six areas, and to safeguard sound and sustainable economic development and sound financial market performance.

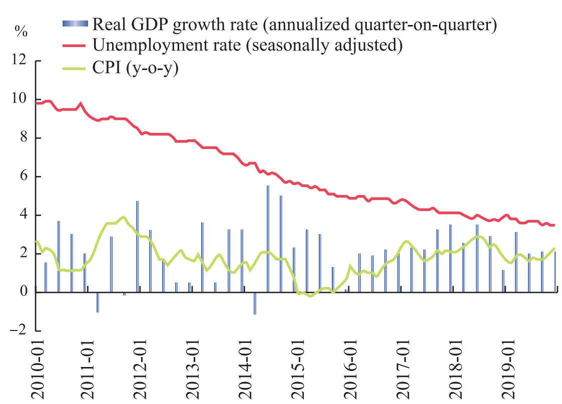
I. International Macroeconomic Developments

1. Economic Developments in Major Economies

In 2019, global economic growth remained sluggish as growth momentum was weak. The economic growth was strong in the U.S., continued to moderate in the euro area, was on the verge of recession in Japan, and further diverged in emerging market economies.

The U.S. economy was robust in general. In 2019，the annualized quarter-on-quarter GDP growth posted 3.1 percent, 2.0 percent, 2.1 percent, and 2.1 percent in the four quarters respectively, resulting in 2.3 percent for the entire year. Inflation remained subdued, as the consumer price index (CPI) was in the range of 1.5 percent to 2.3 percent. The core CPI which excludes highly volatile energy and food prices stayed slightly above 2 percent. The labor market continued to improve, as the unemployment rate remained low and dropped further, posting 3.5 percent in September, the lowest level in the past 50 years (Figure 1.1).

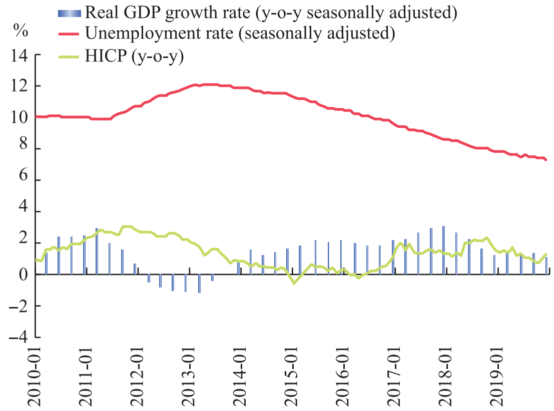
Figure 1.1 Major Economic and Financial Indicators in the U.S.



Source: The U.S. Bureau of Economic Analysis, the U.S. Bureau of Labor Statistics, the U.S. Federal Reserve, and the Reuters.

Growth in the euro area continued to moderate amid anemic momentum. In 2019, the y-o-y seasonally-adjusted GDP growth was 1.3 percent, 1.2 percent, 1.7 percent, and 0.9 percent respectively in the four quarters, and posted 1.3 percent for the full year, lower than the 1.9 percent growth in 2018. Inflation moved downwards, falling to a low of 0.7 percent in October from a high of 1.7 percent in April. It went up a bit at the end of the year, but still lower than the beginning of the year. The unemployment rate remained low, dropping from 7.8 percent at the start of the year to 7.3 percent in October and lasting till the end of the year, the lowest level since May 2008 (Figure 1.2).

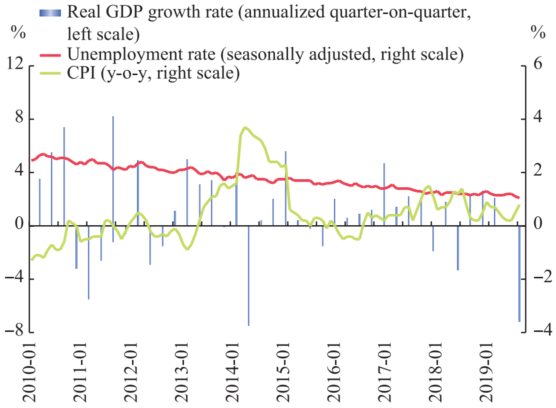
Figure 1.2 Major Economic and Financial Indicators in the Euro Area



Sources: The Eurostat, the ECB, and the Reuters.

The Japanese economy was on the brink of recession. The annualized quarter-on-quarter GDP growth registered 2.6 percent, 2.1 percent, and 0 percent respectively in the first three quarters of 2019, plunged to –7.2 percent in the last quarter, the biggest decline since the second quarter of 2014, and grew merely 0.7 percent in 2019. Inflation was mired at low levels, as the y-o-y CPI growth was between 0.2 percent and 0.9 percent, way below the 2 percent target. The labor market was close to full employment, and the unemployment rate fluctuated between 2.1 percent and 2.6 percent (Figure 1.3).

Figure 1.3 Major Economic and Financial Indicators in Japan



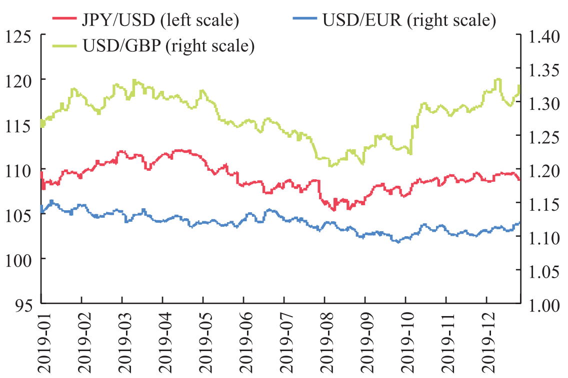
Source: The Cabinet Office of Japan, the Statistics Bureau of Japan, the Bank of Japan, and the Reuters.

Growth in emerging market economies continued to diverge. Economy in Brazil rebounded, as the GDP grew 0.6 percent, 1.1 percent, 1.2 percent, and 1.7 percent y-o-y respectively in the four quarters, and added 1.1 percent in 2019. The Russian economy picked up, growing by 0.4 percent, 1.0 percent, 1.5 percent, and 2.1 percent y-o-y respectively in the four quarters, and 1.3 percent in 2019. Growth in India moderated compared with previous years, posting a y-o-y growth of 5.7 percent, 5.2 percent, 4.4 percent, and 4.1 percent respectively in each quarter, and 4.2 percent for the whole year. South Africa hovered around zero growth, gaining 0.2 percent in 2019. Recession continued in Argentina, as the y-o-y GDP growth posted –5.9 percent, 0.4 percent, –1.8 percent, and –1.1 percent respectively in the four quarters, and shrank 2.2 percent in 2019.

2. International Financial Market Performance

The U.S. dollar index increased slightly, and some emerging market currencies weakened against the greenback. As of end-2019, the U.S. dollar index closed at 96.5, up by 0.5 percent compared with end-2018. The euro closed at 1.1217 dollars per euro, depreciating by 2.3 percent from end-2018. The British pound closed at 1.3252 dollars per pound, strengthening by 3.9 percent over end-2018. The Japanese yen closed at 108.66 yens per dollar, appreciating by 0.9 percent over end-2018 (Figure 1.4). Among emerging market currencies, the Argentine peso, Brazilian real, and Indian rupee depreciated by 37.2 percent, 3.5 percent, and 2.5 percent against the U.S. dollar respectively compared with end-2018, while the Russian ruble and South African rand appreciated by 12.5 percent and 2.5 percent respectively against the U.S. dollar.

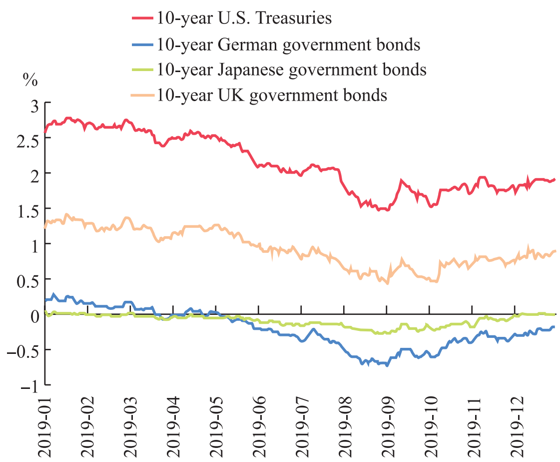
Figure 1.4 Exchange Rate Movements of the Major Currencies



Source: The Reuters.

The yield of government bonds dropped broadly in major economies. As of end-2019, the yield of 10-year U.S. Treasuries was 1.92 percent, down by 77 basis points (bps) from end-2018. The yields of 10-year UK, German, and Japanese government bonds sank by 44 bps, 43 bps, and 2 bps respectively from end-2018 (Figure 1.5). Among emerging market economies, the yields of 10-year government bonds in Russia, Brazil, India, and South Africa dropped by 250 bps, 247 bps, 82 bps, and 63 bps respectively from a year ago.

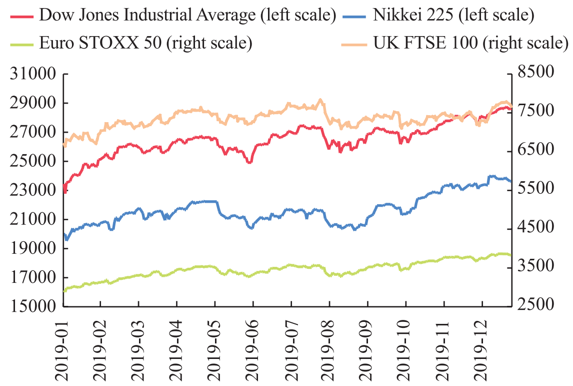
Figure 1.5 Yields of Government Bonds in the Major Economies



Source: The Reuters.

Stock markets in major economies rose sharply. As of end-2019, the U.S. Dow Jones Industrial Average, the S&P 500, and the NASDAQ surged by 22.3 percent, 28.9 percent, and 35.2 percent respectively over end-2018. The Japan's Nikkei 225, the German DAX, Euro STOXX 50, and the UK FTSE 100 jumped by 18.2 percent, 25.5 percent, 24.8 percent, and 12.1 percent respectively from the prior year (Figure 1.6). Among emerging market economies, the Russian RTS, Argentine BUSE MERVAL, Brazilian IBOVESPA, Indian SENSEX, and South African JALSH gained 44.9 percent, 37.6 percent, 31.6 percent, 14.4 percent, and 8.2 percent respectively in 2019.

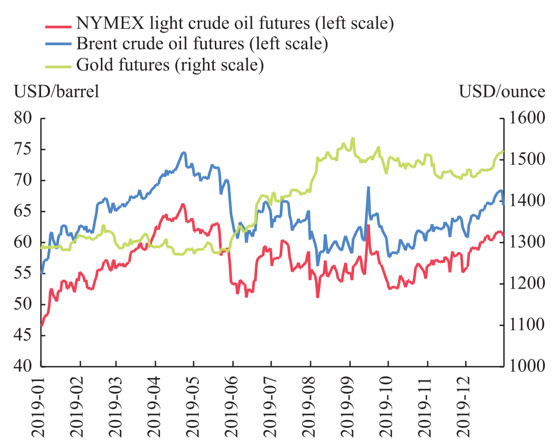
Figure 1.6 Major Stock Indexes



Source: The Reuters.

Crude oil and gold prices rallied substantially. As of end-2019, the London Brent crude oil futures and NYMEX light crude oil futures closed at USD 66 and USD 61 per barrel, up by 22.7 percent and 34.46 percent respectively from the end of the previous year. The gold futures price closed at USD 1523 per ounce, surging by 19.2 percent from a year earlier (Figure 1.7). The LME copper cash price went up by 2.8 percent, aluminum cash price shed 4.8 percent, the CBOT soybean price added 6.9 percent, and corn price increased by 3.4 percent.

Figure 1.7 Gold and Crude Oil Prices in the International Markets



Source: The Reuters.

3. Risks and Challenges

The outbreak and rapid spread of COVID-19 has taken a toll on global economy since January 2020, with a cliff-like decline in growth. In the first quarter of 2020, the GDP growth was –5.0 percent in the U.S., –2.9 percent in the euro area, –1.9 percent in Germany, –4.7 percent in France, –4.1 percent in Spain, –5.6 percent in Italy, –1.7 percent in the UK, –1.7 percent in Japan, –1.4 percent in South Korea, and –0.25 percent in Brazil. The decline of GDP growth in major economies further expanded in the second quarter of 2020.

In October 2020, the International Monetary Fund (IMF) projected the global economy to shrink by 4.4 percent in 2020, 7.7 percentage points lower than the January forecast. In particular, 2020 growth forecasts for advanced economies, emerging market economies, and developing countries were revised down significantly. Looking forward, global economy may face the following risks.

The global economy is fraught with uncertainties, as pandemic evolvement is unclear and the level of response varies from country to country. Although countries around the world have rolled out measures to contain the pandemic, policy size and effectiveness differ. Coupled with the lack of strong international coordination, this may result in the relapse of COVID-19 pandemic and weigh on economic recovery. Any successful design and implementation of policy mix by one country to buffer sharp economic slowdown would invariably fail to ward off negative impact of inadequate policy response in the rest of the world. The pandemic development, policy response by each country, shock absorption by the real economy, and reaction of financial market are all highly uncertain and directly affect the path of global economy.

Some rapidly growing financial risks warrant attention. The credit and market risks are rising in the corporate sector and financial institutions amid economic woes induced by the COVID-19 pandemic, which has increased financial system vulnerability. Risk aversion may once again trigger liquidity crunch. The advanced economies may see renewed financial market fluctuations, as the recovery from earlier sharp fluctuations are not supported by economic fundamentals. The emerging market economies are still faced with risk of large capital outflows and sharp currency depreciation. The interconnectedness of global financial markets has increased the possibility of cross-market risk contagion.

Being under both economic and financial distress, the emerging market economies face mounting debt servicing pressure. The easing in global financial conditions over the years have contributed to higher external debts in some emerging market economies. The COVID-19 pandemic has hit export-oriented and trade-reliant emerging market economies hard, in particular crude oil and other commodities exporters, as revenues fell sharply due to weakening external demand and plunging oil price. Their currencies may depreciate significantly, heightening debt servicing pressure.

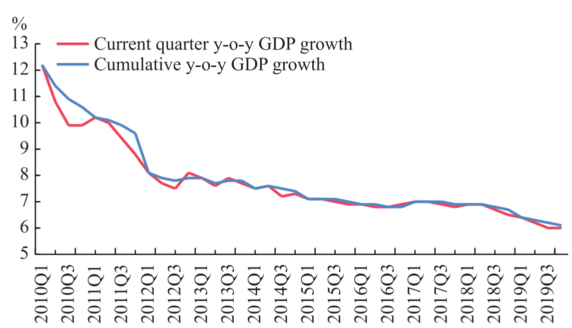
II. Domestic Macroeconomic Performance

In 2019, the Chinese economy and society maintained sound development despite rising risks and challenges at home and abroad. The three critical battles saw breakthroughs, financial risks were under control, reform and opening-up achieved major progress, supply-side structural reform continued to deepen. The progress in implementing major tasks of the 13th Five-Year Plan was in line with expectation. The task of building a moderately prosperous society in all respects witnessed new major progress.

1. Economic Development was Smooth and Progress was Made with Industrial Structure Optimizing Continuously

In 2019, China's GDP posted RMB 99.09 trillion, growing by 6.1 percent y-o-y in comparable terms. The quarterly y-o-y growth rate was 6.4 percent, 6.2 percent, 6.0 percent, and 6.0 percent respectively, keeping steady growth momentum (Figure 1.8). Broken down by industry, the added value of the primary, secondary, and tertiary industries registered RMB 7.05 trillion, RMB 38.62 trillion, and RMB 53.42 trillion, up by 3.1 percent, 5.7 percent, and 6.9 percent respectively y-o-y. The added value as a share of GDP for the primary and tertiary industries increased by 0.1 percentage point and 0.6 percentage point from a year earlier to 7.1 percent and 53.9 percent respectively, while that for the secondary industry dropped by 0.7 percentage point to 39.0 percent.

Figure 1.8 China's Economic Growth

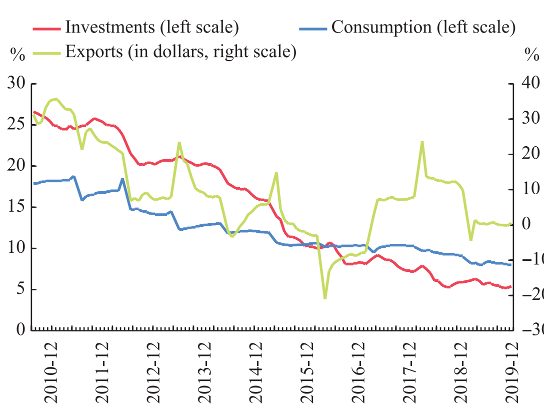


Source: The NBS.

2. Consumption Remained the Main Driver of Growth and the Balance of Payments Stayed Generally in Equilibrium

In 2019, the fixed-asset investment (excluding those by rural households) amounted to RMB 55.15 trillion, jumping by 5.4 percent y-o-y, 0.5 percentage point lower than the growth rate of 2018. Social retail sales stood at RMB 41.16 trillion, gaining 8.0 percent y-o-y, down by 1 percentage point from 2018. Exports and imports of goods posted RMB 31.55 trillion, 3.4 percent up y-o-y. By breakdown, exports rose by 5.0 percent to RMB 17.23 trillion, while imports added 1.6 percent to RMB 14.32 trillion, resulting in a trade surplus of RMB 2.92 trillion (Figure 1.9). Domestic demand remained the main driver of growth. Final consumption expenditures contributed 57.8 percent to GDP growth in 2019, down by 8.1 percentage points from 2018. Gross capital formation contributed 31.2 percent to GDP growth, falling by 10.3 percentage points, while net export of goods and services contributed 11.0 percent, jumping by 18.4 percentage points from the previous year.

Figure 1.9 Growth of Consumption, Investment, and Export



Sources: The NBS and the General Administration of Customs.

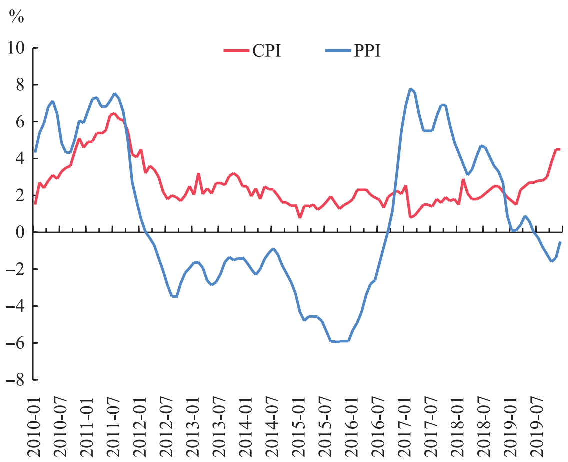
In 2019, China's current account surplus posted USD 141.3 billion or 1.0 percent of GDP, up by 0.8 percentage point from 2018. The capital and financial account ran a surplus of USD 56.7 billion, including a surplus of USD 37.8 billion under the non-reserve financial account. Reserve assets dwindled USD 19.3 billion. As of end-2019, China's foreign exchange reserves stood at USD 3.11 trillion, adding USD 35.2 billion or 1.1 percent compared with end-2018.

3. The CPI Saw a Structural Increase, while the PPI Declined Slightly

In 2019, the CPI rose by 2.9 percent y-o-y, 0.8 percentage point higher than 2018. The quarterly y-o-y growth was 1.8 percent, 2.6 percent, 2.9 percent, and 4.3 percent respectively. By breakdown, food prices grew by 9.2 percent, up by 7.4 percentage points than 2018, while non-food prices went up by 1.4 percent, down by 0.8 percentage point from 2018. Consumer goods prices gained 3.6 percent, adding 1.7 percentage points compared with 2018, while service prices advanced by 1.7 percent, shedding 0.8 percentage point from 2018.

The Producer Price Index (PPI) edged down by 0.3 percent y-o-y in 2019, retreating 3.8 percentage points compared with the growth in 2018. The quarterly y-o-y growth was 0.2 percent, 0.5 percent, −0.8 percent, and −1.2 percent respectively. By breakdown, prices of consumer goods went up slightly by 0.9 percent, 0.4 percentage point higher than 2018, while that of capital goods declined moderately by 0.8 percent, 5.3 percentage points lower than 2018. The Purchasing Price Index of Raw Materials, Fuel and Power (PPIRM) sank by 0.7 percent, losing 4.8 percentage points compared with 2018. The PPIRM quarterly y-o-y growth recorded 0.1 percent, 0.1 percent, −1.2 percent, and −1.9 percent respectively (Figure 1.10).

Figure 1.10 Monthly Y-o-Y Growth of Major Price Indexes



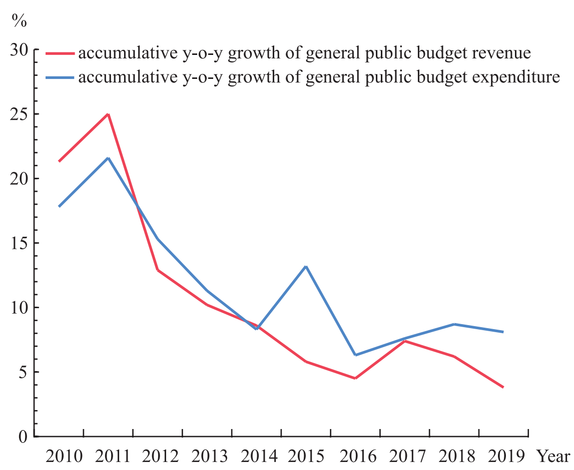
Source: The NBS.

4. Growth of Fiscal Revenue Continued to Moderate, while that of Fiscal Expenditure was Generally Stable

The national general public budget revenue posted RMB 19.04 trillion in 2019, rising by 3.8 percent y-o-y, a deceleration of 2.4 percentage points from 2018. By breakdown, the central government general public budget revenue was RMB 8.93 trillion, representing 46.9 percent of the national total, a y-o-y increase of 4.5 percent. The local government general public budget revenue was RMB 10.11 trillion, accounting for 53.1 percent of the national total, 3.2 percent up y-o-y. Breakdown by revenue structure showed that tax revenues stood at RMB 15.80 trillion, adding 1 percent compared with a year earlier and representing 83.0 percent of the national general public budget revenue, while non-tax revenues jumped by 20.2 percent from 2018 to RMB 3.24 trillion, comprising 17.0 percent of the national total.

The national general public budget expenditure registered RMB 23.89 trillion in 2019, 8.1 percent up y-o-y, 0.6 percentage point lower than the growth in 2018. By breakdown, the general public budget expenditure of the central and local governments climbed by 6.0 percent and 8.5 percent y-o-y respectively to RMB 3.51 trillion and RMB 20.38 trillion (Figure 1.11).

Figure 1.11 Growth of Fiscal Revenue and Expenditure



Source: The MOF.

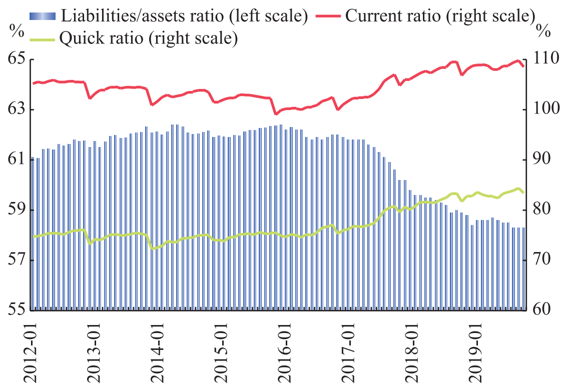
5. Profits of Industrial Enterprises Fell Moderately

The main business revenues of statistically large industrial firms increased by 3.8 percent y-o-y to RMB 105.8 trillion in 2019, while the main business costs went up by 4.1 percent y-o-y to RMB 88.9 trillion, achieving a total profit of RMB 6.2 trillion, 3.3 percent down y-o-y. The main business profit margin dipped by 0.43

percentage point to 5.86 percent①. Among the 41 industrial categories, 28 earned more profits than in the previous year, and 13 industries witnessed declines in gross profits.

According to the Survey of 5000 Industrial Enterprises conducted by the PBC, the business operation of industrial enterprises remained stable in general. In terms of profits, the main business revenue of sample enterprises increased slightly, but at a slower pace. Gross profits fell moderately. The main business revenue of 5000 industrial enterprises added 1.7 percent y-o-y in 2019, 6.2 percentage points lower than 2018②. Gross profits declined by 6.2 percent y-o-y, 15.9 percentage points lower than growth in 2018. In terms of asset turnover, the inventory turnover ratio and the total asset turnover ratio of the 5000 industrial enterprises were almost on a par with that in 2018, posting 5.6 times and 0.8 time respectively. The operating cycle was shortened by 0.8 day compared with the previous year to 125 days. The liabilities/assets ratio of 5000 industrial enterprises dropped slightly to 58.3 percent at end-2019, down by 0.6 percentage point from end-2018, and the long-term solvency improved. The current ratio added 1.6 percentage points from end-2018 to 108.5 percent, and the quick ratio was 83.4 percent, gaining 1.6 percentage points y-o-y (Figure 1.12). The interest coverage multiplier was 5.9 times, down by 0.2 times from the previous year.

Figure 1.12 Liabilities/Assets Ratio, Current Ratio, and Quick Ratio of 5000 Industrial Enterprises



Source: The PBC.

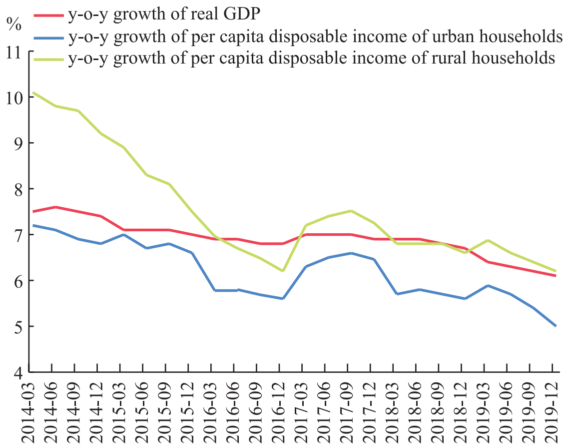
6. Employment Remained Stable and Income Gap between Rural and Urban Residents Further Narrowed

In 2019, 13.52 million new jobs were created in urban areas, 90 thousand less than the prior year. The national urban surveyed unemployment rate was 5.2 percent at end-2019, 0.3 percentage point higher than end-2018. The per capita disposal income nationwide was RMB 30733, growing by 5.8 percent y-o-y after being adjusted for inflation, 0.7 percentage point lower than 2018. By breakdown, the per capita disposal income of urban households was RMB 42359, an increase of 5.0 percent in real terms, while the per capita disposal income of rural households was RMB 16021, a gain of 6.2 percent in real terms (Figure 1.13). The urban-to-rural per capital disposal income ratio was 2.64, narrowing by 0.04 compared with 2018.

① According to the NBS, the above data are calculated on a comparable basis, taking into consideration adjustment in statistical coverage, improved statistical survey, deletion of overlapped data, divestitures from corporate restructuring, and other factors.

② Due to adjustment of the sample enterprises, updating of financial data, and other reasons, the above data are calculated on a comparable basis.

Figure 1.13 Growth of Per Capita Income of Urban and Rural Households and GDP



Source: The NBS.

7. Real Estate Sales Decelerated and Growth of Loans to the Real Estate Sector Continued to Slow Down

Real estate sales decelerated and housing price was stable in general. In 2019, the total floor area of sold units posted 1.716 billion square meters, 0.1 percent down y-o-y, which was 1.4 percentage points lower than the growth rate in 2018. By breakdown, the floor area of residential housing sold was 1.501 billion square meters, 1.5 percent up y-o-y, which was 0.7 percentage point lower than the growth rate in 2018, continuing the moderation since 2017. The value of housing sales in 2019 totaled RMB 15.97 trillion, jumping by 6.5 percent y-o-y, losing 5.7 percentage points from 2018. According to statistics of the NBS, the prices of newly-built and second-hand housing in 70 large and medium-sized cities rose by 6.8 percent and 3.7 percent y-o-y in December 2019, dropping 3.7 and 4 percentage points respectively compared with the growth in the same period of 2018.

Growth of loans to the real estate sector continued to moderate. As of end-2019, outstanding real estate loans surged by 14.8 percent y-o-y to RMB 44.41 trillion, sliding by 5.2 percentage points from 2018. By breakdown, outstanding real estate development loans climbed by 10.1 percent y-o-y to RMB 11.22 trillion, losing 12.5 percentage points from 2018, while outstanding personal mortgage loans amounted to RMB 30.16 trillion, gaining 16.7 percent y-o-y, 1.1 percentage points lower than 2018.

III. Outlook

In 2020, decisive achievements will be made in building a moderately prosperous society in all respects and implementing the 13th Five-Year Plan. Against the background of complicated economic and financial conditions and grim challenges at home and abroad, efforts should follow the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, fully implement the guiding principles of the 19th National Congress of the CPC and the second, third, fourth and fifth plenary sessions of the 19th CPC Central Committee, fully focus on the task of building a moderately prosperous society in all respects, and support the overall promotion of pandemic containment as well as social and economic development. As pandemic containment has become an on-going practice, work should follow the general principle of pursuing progress while ensuring stability and the new development philosophy. Supply-side structural reform should be pursued as a main task. Efforts need to be stepped up to ensure stability on the six fronts and security in the six areas by persistently relying on reform and opening-up as the driving force. Three critical battles against poverty, pollution, and major risks should be pushed forward and high-quality economic development should be pursued.

Macro policy adjustment should be stepped up. The fiscal policy will be more proactive and impactful by appropriately increasing the fiscal deficit-to-GDP ratio, significantly expanding treasury bond and local government special bond issuance, further cutting taxes and fees, and actively optimizing fiscal expenditure structure with focus on priority areas. The sound monetary policy should be more flexible, appropriate, and well-targeted by maintaining reasonable growth of money supply and total social financing. Cross-cycle design and adjustment should be optimized, and a longer-term balance between stabilizing growth and preventing risk should be pursued.

Reform of financial institutions should continue. The plan to reform development and policy financial institutions should be implemented fully by improving governance structure, respecting the operation rules of financial institutions, and giving play to development and policy financial institutions. The reform of commercial banks and other financial companies should be deepened through improving corporate governance. The relations among shareholders' meeting, board of directors, board of supervisors, and the management should be clearly spelt out, and business authorization system should be improved to foster effective decision-making, implementation, and checks and balances. The capacity for business management and risk control should be enhanced. The reform of rural credit cooperatives should be deepened, and insurance companies should return to the essential function of providing insurance.

The efforts to prevent and defuse major financial risks should be continued. Built on important achievements of the critical battle against major financial risks, the work to address risks should be holistic and forward-looking, with targeted efforts in defusing risks arising from high-risk institutions in key areas. Duties of all parties should be clearly identified, with financial institutions and local governments fully accountable for risk prevention and resolution in line with their respective roles. Financial regulators should seriously exercise supervision, while the PBC should act as the lender of last resort, with moral hazard kept at bay. Focus should be put on developing a long-term mechanism for preventing and mitigating financial risks. Efforts should be made to seek high-quality development of financial sector through reforms and firmly safeguarding the bottom line of no systemic risks.

The development of a high-standard market system should speed up along with higher level of opening-up. Efforts should be made to expedite the reform of state-owned enterprises and promote the optimization of state-owned asset allocation. Property rights systems and mechanisms for market-based allocation of the factors of production, law-based environment for private economy, and the policy system for the development of SMEs should be improved. Fundamental institutional arrangements for capital market should be further developed to improve the quality of listed companies and market exit mechanisms. The opening-up should expand in both depth and width by strengthening foreign investment promotion and protection. The joint development under the Belt and Road Initiative should give priority to quality and allow enterprises to play a leading role in forging mutually beneficial cooperation. Guidance should be offered in pursuing healthy overseas investment and promoting trade and investment liberalization and facilitation.

Special Topic 1 Fiscal and Financial Policies of Major Economies in Response to the COVID-19 Pandemic

Since March 2020, with COVID-19 spreading across the globe, major economies have launched large-scale fiscal and financial policies and continue to strengthen policy support[①] to cope with the impact of COVID-19 pandemic. On the whole, these policy responses are swift, large-scale and wide-ranging, which have mitigated the impact of the economic "sudden stop" caused by the pandemic, played an important role in ensuring people's livelihood and alleviated the cash flow pressure of enterprises and residents. These policies have helped to alleviate the downward trend of the economy and stabilize the financial market. However, certain potential effects cannot be neglected.

I. Fiscal Policies Focus on Economic Rescue Efforts and Livelihood Protection

Major economies have all introduced large-scale fiscal policies to cope with the impact of COVID-19 pandemic, and strengthened support in corporate relief and livelihood protection.

1. Preferential Public Sector Lending

Some economies have allocated special lending schemes or additional funds to existing projects to grant preferential loans from the public sector through institutions such as export promotion agencies or development banks. For example, the European Council agreed on the Next Generation EU (NGEU) recovery fund. It will provide EUR 750 billion in total, with EUR 360 billion in the form of loans to support economic recovery of member states. The European Commission allowed the European Stability Mechanism (ESM) to provide Pandemic Crisis Support (PCS) of up to EUR 240 billion in total for euro area countries (up to 2 percent of 2019 GDP for each country) to finance health related spending, and created a temporary loan-based instrument which was called Support to mitigate Unemployment Risks in an Emergency (SURE) of up to EUR 100 billion to protect workers and jobs.

2. Government Guarantees on Loans

Most economies have introduced public guarantees for corporate loans to support and encourage banks to continue lending. The guarantees vary in amount and proportion, with full loan guarantees usually for small enterprises. For example, the CARES Act of the U.S. includes USD 349 billion of the Paycheck Protection Program (PPP) in forgivable Small Business Administration loans and guarantees to help small businesses with less than 500 employees.

① The information presented in this special topic is as of the end of July 2020.

3. Capital Injection by Governments

Some economies provided direct assistance in the form of government capital injections to industries that have been hit hard. For example, EUR 100 billion was allocated within the Economic Stabilization Fund (WSF) of Germany to directly acquire equity of larger affected companies and strengthen their capital position. The French government has invested in or nationalized some of the enterprises in trouble.

4. Direct Subsidies

Some economies subsidized businesses and individuals in distress. Member states of the European Union will be able to set up schemes to grant up to EUR 800000 to a company to address its urgent liquidity needs. Individuals earning a gross adjusted income up to USD 75000 a year will be eligible to receive a USD 1200 check in the U.S.. The British government paid 80 percent of the earnings of self-employed workers and furloughed employees (to a maximum of GBP 2500 per employee per month) for the period of March-October 2020.

5. Deferral or Reduction in Taxes and Fees

Major economies have generally introduced policies of deferral or reduction in the payment of taxes, social security contributions, rents and utilities, for enterprises, families or individuals affected by COVID-19 pandemic. In Korea, 30 percent of the income tax was reduced for medium-sized enterprises and 60 percent for small enterprises in areas with severe pandemic hit, up to KRW 200 million. In Russia, registered self-employed groups were refunded their taxes for 2019 and got a partial refund on their 2020 taxes.

II. Monetary Policies Focus on Liquidity Provision and Financing Support for Real Economy

Central banks of major economies have provided large-scale liquidity and financing support for real economy through monetary policy tools such as interest rate and reserve rate reduction, quantitative easing and targeted financing support.

1. Reduction of Interest Rate and Reserve Requirement

The federal funds rate was lowered by 150 bps to 0-0.25 percent, and the deposit reserve ratio was reduced to 0. The BoE reduced Bank Rate by 65 bps to 0.1 percent. The Bank of Canada reduced the overnight policy rate by 150 bps to 0.25 percent. Monetary authorities of other major economies lowered interest rate by 25 bps to 275 bps.

2. Re-activation or Introduction of Quantitative Easing

On March 15, 2020, the Federal Reserve introduced a USD 700 billion quantitative easing program, and announced on March 23 that it would buy unlimited treasury bonds and corporate bonds if needed. The ECB provided monetary policy support through additional asset purchases of EUR 120 billion under the existing program, and introduced an EUR 1.35 trillion Pandemic Emergency Purchase Program (PEPP), through at least June 2021. The BoE expanded the central bank's holding of UK government bonds and non-financial corporate bonds by GBP 300 billion, raising the scale of asset purchase to GBP 745 billion. The Bank of Japan decided to purchase a necessary amount of Japanese government bond (JGB) without setting an upper limit, increased the annual purchase of ETFs to JPY 12 trillion, and lifted the upper limit of commercial paper and corporate bond holdings to JPY 20 trillion in total.

3. Targeted Financing Support and Liquidity Facilities

Central banks of major economies have launched a variety of financing tools and liquidity facilities, and increased fund supply by expanding the scope of eligible counterparties and collaterals. Among them, the tools introduced by the Federal Reserve are the most comprehensive, including Commercial Paper Funding Facility (CPFF), Primary Dealer Credit Facility (PDCF), Money Market Mutual Fund Liquidity Facility (MMLF), Primary Market Corporate Credit Facility (PMCCF), Secondary Market Corporate Credit Facility (SMCCF), Term Asset-Backed Securities Loan Facility (TALF), Paycheck Protection Program Liquidity Facility (PPPLF) , Main Street Lending Program, and Municipal Liquidity Facility (MLF), etc., which provide a far-ranging extensive financing support to financial institutions, enterprises, residents and local governments. In addition, to lessen strains in global U.S. dollar funding markets, the Federal Reserve reduced existing cost of standing swap arrangements with five major central banks[①], and temporarily broadened U.S. dollar swap lines to nine central banks[②]. Meanwhile, the ECB introduced a new liquidity facility "PELTRO", which consists of a series of non-targeted Pandemic Emergency Longer-Term Refinancing Operations. The BoE has introduced a new Term Funding Scheme to reinforce the transmission of the rate cut, with additional incentives for lending to the real economy, especially SMEs, agreed with the HM Treasury to extend temporarily the use of the government's overdraft account at the BoE to provide a short-term source of additional liquidity to the government if needed, and activated a Contingent Term Repo Facility to complement existing sterling liquidity facilities. The special funds-supplying operations of the Bank of Japan provided loans to financial institutions to facilitate financing of corporates. To augment available funding for SMEs, the Bank of Korea increased the ceiling of the Bank Intermediated Lending Support Facility by a total of KRW 10 trillion. The Bank of Russia introduced a new RUB 500 billion facility for SME lending to support employment, and temporarily introduced a long-term refinancing instrument.

III. Regulatory Forbearance and Flexibility Have Been Increased

In response to the impact of COVID-19 pandemic, international SSBs have postponed the implementation of some international regulatory standards or allowed relevant economies to make full use of the flexibility in implementing international regulatory standards. The financial regulatory authorities of major economies have adopted a series of measures which, in

① Including the ECB, the BoE, the Bank of Japan, the Bank of Canada and Swiss National Bank.

② Including the central banks/monetary authorities of New Zealand, Australia, Brazil, Denmark, Korea, Norway, Singapore, Sweden and Mexico.

combination with fiscal and monetary policies, have helped improve the capacity of financial institutions to issue more loans and absorb losses, so as to support the real economy.

1. Release of Capital and Liquidity Buffers

All FSB member economies that have implemented CCyB have lowered their requirements by half or even to zero. Economies such as the European Union and Japan have drawn down their capital conservation and systemically important bank buffers, temporarily reduced the liquidity coverage ratio requirement, and encouraged depository institutions to use their capital and liquidity buffers to support lending. In addition, in order to ensure that banks preserve the capital needed to support lending, several authorities have either issued recommendations or called on institutions to suspend dividends, bonuses and share buybacks.

2. Modification of Leverage Ratio Rule

A number of authorities have temporarily modified the leverage ratio rule. For example, holdings of U.S. Treasury Securities and deposits at the Federal Reserve Banks could be temporarily excluded from the calculation of the supplementary leverage ratio for holding companies, and the community bank leverage ratio was lowered to 8 percent. Canada has excluded sovereign-issued securities from the leverage ratio calculation on a temporary basis (until 30 April 2021).

3. Deferred Implementation of Regulatory Reform Measures

The BCBS deferred the implementation timeline of the outstanding Basel III standards, such as the revised leverage ratio framework and G-SIB buffer, by one year to January 2023. The BCBS and IOSCO have agreed to extend the deadline for completing the final two implementation phases of the margin requirements for non-centrally cleared derivatives by one year to September 2022. Meanwhile, several authorities suspended the implementation of some regulatory reform measures, such as the NSFR and TLAC requirements, etc.

4. Asset Classification Guidance

SSBs and authorities have provided guidance on the asset classification and application of accounting rules in respect of loans affected by COVID-19 pandemic. The ECB for example has decided to exercise flexibility in the classification requirements on a temporary basis, and indicated that, in order to avoid excessive procyclicality of regulatory capital and published financial statements, it will take steps to tackle excessive volatility of loan loss provisioning. A law approved in Russia guarantees the possibility for affected citizens and SMEs to receive deferrals of loan payments for up to six months, and banks are allowed not to classify such loans as restructured for loss provisioning purposes until September 30, 2020.

5. Flexibility in the Application of Prudential Requirements

SSBs and a few authorities have provided some flexibility in the application of prudential requirements. For example, the U.S. loosened specific requirements in support of the smooth operation of emergency facilities, and revised the capital rule in conjunction with the MMLF and

PPPLF. Korea eased the FX market stabilization rule to enhance foreign currency funding conditions. In addition, supervisory authorities in major economies have generally refocused their supervisory activities, through measures such as reducing the operational burden of financial institutions, extending deadlines for some regulatory reporting and information disclosure, adjusting, reducing or suspending certain on-site inspections and stress tests.

6. Supports for Market Functioning

IOSCO has issued statement to stress the importance of markets being open and continuing to function in an orderly manner. To this end, authorities have in particular focused on the operational and financial resilience of financial market infrastructures. A variety of volatility control mechanisms are in operation. Several economies such as France and Korea imposed a temporary ban on stock short-selling.

IV. Features and Impact of the Policy Responses

1. Policy Features

Firstly, the scale of measures is unprecedented, with scale of fiscal and monetary policy responses of several economies much higher than that during the global financial crisis in 2008. For example, four Acts were approved in the U.S., such as the CARES Act, with a total scale of about USD 3 trillion. The government of Japan adopted the Emergency Economic Package against COVID-19 of JPY 117.1 trillion (21.1 percent of 2019 GDP). Secondly, more innovations could be found in policy responses. While supporting market liquidity, the monetary policies of major economies extended to the end of capital chains such as enterprises and households by expanding the scope of targeted financing facilities. Thirdly, greater synergy is forged among policy responses. With focuses on livelihood protection and liquidity support respectively, fiscal policies and monetary policies helped to get through the difficulties such as sharp income decrease and liquidity tension of residents and enterprises affected by COVID-19 pandemic. The fiscal policies of several authorities provided capital or guarantee for the credit facilities launched by the central banks, as the first line of defense to absorb losses, which reflected the coordination of monetary policy and fiscal policy. Fourthly, the support for SMEs has been strengthened. SMEs are taken as the priority of policy responses in major economies, and supports for SMEs are usually specifically listed in various measures such as subsidies, loan guarantees, tax reductions, and targeted financing supports, with the upper limit for individual entities set to ensure the universality of the support. Fifthly, key industries and enterprises have been fully supported. Additional funding was provided to the public health system to support virus testing expansion, development of vaccine and medical supplies, etc.. At the same time, measures were taken to support sectors greatly affected by COVID-19 pandemic such as aviation. For instance, a key industry stabilization fund was announced to be established for KRW 40 trillion and operated by Korea Development Bank to support seven key industries: airlines, shipping, shipbuilding, autos, general machinery, electric power and communications, through loans, payment guarantees and investments.

2. In the Short Run, the Above Policies Have Achieved Positive Results

Firstly, the policies have played an effective role in helping maintain the income level of residents, reduce the operating costs of enterprises and ease the downward pressure on the economy. Secondly, the financing condition of the real economy has been improved, the liquidity tension has been alleviated, and the macroeconomic and financial condition has been stabilized. Thirdly, the policies have played an important role in stabilizing the financial market and shoring up confidence. The market became less volatile than at the beginning of the COVID-19 pandemic outbreak. The CBOE Volatility Index (VIX) dropped from a peak of 85.47 on March 18, 2020 to a period nadir of 23.54 on June 5.

3. In the Long Run, the Potential Effects of Relevant Policies Cannot Be Neglected

Firstly, the government deficits and debts have risen sharply, with many economies moving away from fiscal consolidation, which boosted the global debt ratio and increased financial vulnerability. Secondly, the introduction of unconventional policy tools on a large-scale may weaken the marginal effect of future policies. Thirdly, the stock market rebounded strongly without fundamentals and may result in financial market bubble. Fourthly, the spillover effect is obvious. Although the unlimited quantitative easing can alleviate the liquidity crisis, it will be of limited benefit in solving the deep-rooted economic and financial problems. There will be obvious spillover effect on the global financial system, and also challenges in policy exit.

Special Topic 2 Steadily Push Forward the Critical Battle against Major Financial Risks

The prevention and mitigation of major risks is one of the three critical battles designated by the 19th CPC National Congress, and a critical move towards building a well-off society in all aspects. In accordance with the decisions and arrangements made by the CPC Central Committee and the State Council, relevant authorities, under the leadership of the Financial Stability and Development Committee of the State Council (hereinafter referred to as the FSDC), have followed the general principle of making steady progress while ensuring stability, and reinforced bottom-line thinking and risk awareness in pushing forward the critical battle against major financial risks.

I. Significant Progress Has Been Made in the Critical Battle against Major Financial Risks

Since 2019, in line with the fundamental principle and policy of the CPC Central Committee and the State Council, the financial system has conscientiously carried out the agenda of the critical battle against major financial risks, and important progress has been made.

1.The Fast-rising Trend of the Macro Leverage Ratio is Subdued

First, calibrating monetary supply at macro level through sound monetary policy and enhanced counter-cyclical adjustments. As of end 2019, outstanding M_2 has grown by 8.5 percent y-o-y, and total social financing has increased by 10.7 percent y-o-y which is broadly in line with and slightly higher than the growth of nominal GDP. This helped to create a friendly monetary and financial environment for risk prevention and for economic growth in a stable and healthy manner. Second, promoting enterprises to de-leverage. Over RMB 1.4 trillion was invested in the market-based debt-to-equity swap program, helping to reduce the asset-liability ratio of state-owned enterprises. Third, keeping the household leverage from rising too fast. The PBC enhanced the prudential management of the real estate finance, urged commercial banks to keep the growth of personal mortgage loans at a reasonable pace, and cracked down on irregularities such as the “down payment loan”. As of end 2019, the outstanding personal mortgages stood at RMB 30.16 trillion, representing a y-o-y growth of 16.7 percent, a drop of about 21 percentage points from its peak in 2016. Fourth, supporting efforts to deal with the implicit debts of local governments. The PBC supported efforts by relevant authorities to develop rules for local government financing activities so as to further regulate debt financing activities of local government financing platforms, and supported the issuance of local government bonds and the structural improvement for local government debt. As a result, the macro-leverage ratio has generally maintained stable, which was 249.4 percents at end-2018 and about 5 percentage points higher at end-2019. There is a marked fall from the average growth of about 10 percentage points in the period from 2008 to 2016, indicating that the excessive growth of the macro-leverage ratio has been checked, and thus saving enough policy room for greater counter-cyclical adjustments in response to the impacts of the COVID-19 pandemic.

2. Resolution of High Risk Financial Institutions Has Been Carried Out in an Orderly Manner

First, the successful takeover of Baoshang Bank. Authorities took over Baoshang Bank according to relevant laws in May 2019 as it posed serious credit risks. The takeover and subsequent custody went well since then thanks to concerted efforts by relevant parties. In April 2020, the newly-established Mengshang Bank received approval to start business operation, while businesses, assets and liabilities of the former Baoshang Bank were transferred to the Mengshang Bank and Huishang Bank respectively. The Deposit Insurance Fund, in accordance with Article XVIII of the *Deposit Insurance Regulations*, provided some funding support to the Mengshang Bank and Huishang Bank to facilitate their purchase and assumption of Baoshang Bank's business and their subsequent operation. Overall, the takeover of Baoshang Bank, conducted in a law-based and resolute manner, served the purpose of protecting the legitimate rights and interests of depositors and other clients, addressing implicit guarantees, preventing moral hazards and enhancing market disciplines. Second, the primary completion of the reform and restructuring of Hengfeng Bank. Under the guidance of the local government and financial regulatory authorities, Hengfeng Bank developed reform plan following the principle of market-orientation and rule of law. After the disposal of NPLs and the recapitalization by strategic investors, the completion of shareholding structure reform and book-building in December 2019 marked the finalization of its restructuring in a market-based manner. Third, proceeding with the reform and restructuring of Bank of Jinzhou. Since June 2019, the PBC and CBIRC, in collaboration with the provincial government of Liaoning, have been pushing forward the reform and restructuring of Bank of Jinzhou, which helps boost market confidence in the bank, improve market expectations on the resilience of small and medium-sized financial institutions as a whole, and prevent risk contagion to other small and medium-sized financial institutions. In July 2020, with the completion of financial restructuring and recapitalization, Bank of Jinzhou showed fundamental improvements in key regulatory indicators and resumed normal business operation, marking the end of the risk resolution and restructuring work of Bank of Jinzhou at current stage. Fourth, smooth takeover of nine financial institutions. In July 2020, regulators took over a total of nine financial institutions, including Tianan Property Insurance, Huaxia Life Insurance, Tianan Life Insurance, Yian Property Insurance, New Times Trust, New China Trust, New Times Securities, Guosheng Securities and Guosheng Futures. The authorities would take a differentiated approach to risk resolution based on their respective risk profiles.

3. Corporate Bond Defaults are Properly Dealt with

Banks are encouraged to take stronger actions to dispose of their NPLs, and NPLs with a book value of RMB 5.8 trillion have been disposed of in the last three years, which are larger than the total resolution volume of the last eight years. Other efforts include reducing perception of implicit guarantees in the bond market in an orderly fashion, improving the mechanism to deal with bond defaults, introducing the transfer of defaulted bonds, offering more options on disposal tools, and mitigating default risks of large-scale enterprises.

4. Risks Relating to Internet Finance and Illegal Fund-raising Activities are Mitigated

Risks in the Internet finance sector, such as P2P lending, have been overhauled fundamentally. As of June 2020, the number of operating P2P lending platforms nationwide has been reduced to 29 from 5000 at peak, and both lending scale and number of participants dropped for 24 consecutive months. Moreover, overhaul of other Internet-based financial activities, including asset management, equity crowd-funding, insurance, cryptocurrency trading and foreign exchange trading, is basically completed. The crackdown on illegal fund-raising activities addressed risks posed by the long-standing and unresolved challenges of illegal fund-raising activities. Coordination between the central and local governments and among relevant agencies has been strengthened to forge ahead with the cleanup of various trading platforms.

5. Institutional Arrangements on Financial Risk Prevention and Mitigation are being Put in Place

A comprehensive set of measures has been taken to address irregularities in the financial market, and sound implementation of the *Guidelines on Regulating Asset Management Business of Financial Institutions* and its complementary rules has been promoted in order to curb the disorder expansion of the shadow banking sector. The consolidated framework to bring systemically important financial institutions, financial holding companies and financial infrastructures under regulation has taken shape, the comprehensive statistics of the financial sector are in steady progress, and the macroprudential policy toolkit has been broadened. Major breakthroughs have been made in improving the capital market institutional architecture, including the implementation of the newly-issued *Securities Law*, the launch of the SSE STAR Market with pilot arrangement for registration-based IPO, the Chinext reform with pilot arrangement for registration-based IPO, the listing of the first batch of enterprises on the new National Equities Exchange and Quotations (NEEQ) Select Tier, the introduction of a mechanism that allows the transfer of NEEQ-listed companies to relist on other boards, and the publication of the overall plan for deepening capital market reform. The *Guiding Opinions on Promoting the High-quality Development of the Banking and Insurance Sectors* was issued, and corporate governance of financial institutions has been improved significantly.

6. Progress in Opening up the Financial Sector at a Higher Level is Achieved

Shareholding limits on foreign ownership of banks, securities firms, fund managers, futures firms and life insurers are removed, and requirements on the qualification of foreign shareholders are relaxed. National treatment is applied in areas such as credit reporting, credit rating and payment. Interconnectivity between capital markets is improved, the Shanghai-London stock connect has been launched, and necessary accounting, taxation and trading rules are put in place. FTSE Russell is set to add Chinese government debt to its World Government Bond Index (WGBI). In 2019, an accumulated net foreign investment of USD 351.7 trillion in the A shares through the Shanghai and Shenzhen Stock Connects was witnessed, showing an increased interest in investing in A shares. The financial market has been further opened up. For example, MasterCard has gained regulatory approval to conduct bank card clearing business in China; Fitch Ratings has become the second foreign rating agency to gain access to the Chinese rating market after Standard & Poor's; Goldman Sachs and Morgan Stanley are allowed to hold a controlling share in a China-based joint-venture securities firm; financial institutions such as BlackRock and NeuBerger Berman's applications to operate in China are being reviewed. In the meantime, authorities are strengthening macroprudential management of the financial sector and balancing regulation and opening up in a coordinated and harmonized manner, in order to maintain overall stability of the financial market.

7. The Financial Sector Continues to Serve the Real Economy with Improved Capability and Efficiency

Efforts have been made to urge financial institutions to re-focus on and specialize in their main businesses, and continue to support the economic growth. First, foster an appropriate monetary and financial environment. A set of monetary policy tools have been employed to keep liquidity at a reasonably adequate level. Efforts have also been made to facilitate monetary policy transmission by introducing reforms such as the application of the Loan Prime Rate (LPR). The top 5 commercial banks[①] in China have played a leading role in realizing larger volume, wider coverage and lower costs of financing. The combined size of inclusive loans issued to MSEs by the top 5 banks in 2019 grew by 53.1 percent y-o-y, while the consolidated cost of credit provided to MSEs was lowered by over 1 percentage point. Second, the capital markets have provided stronger support to the real economy. In 2019, 201 enterprises went public through IPO on A-share market, with a total public funding of RMB 248.98 billion, representing a y-o-y increase by 91.4 percent in the number of new IPOs and 80.7 percent in the funding scale respectively. Refinancing by A-share listed enterprises reached over RMB 1 trillion in 2019. Under the initiative of the "full circulation" reform of H-shares to facilitate utilization of overseas capital funding by enterprises, a total of 32 enterprises have been reviewed and approved by the CSRC for listing on the overseas market, with a funding volume of USD 13.58 billion. The volume of issued corporate credit bonds in 2019 reached RMB 10.7 trillion, a y-o-y increase of 37.5 percent. Third, in response to the COVID-19 pandemic, authorities have activated stronger counter-cyclical adjustment measures of monetary policy, and released short-term liquidity in an amount that exceeds market expectation. Relevant authorities have published 30 financial measures in support of the COVID-19 control, introduced

① ICBC, ABC, BOC, CCB and BOCOM.

simplified procedures for a range of financial services, and set aside special batches of low-cost central bank lending in support of funding for the production of much-needed medical supplies and daily necessities. Efforts have also been made to support the phased resumption of work and production by SMEs and micro businesses through quota increases of central bank lending and discount as well as policy bank special credit support. Fourth, ensure that financial support policies can directly reach the needed. Authorities have introduced policy measures to increase credit loans to MSEs, temporarily allow deferred repayment of principal and interests on loans to SMEs and micro businesses, and further improve financial services to SMEs and micro businesses, in an effort to provide more tailored financial services to different kinds of market participants. Fifth, promote the establishment of local credit reporting platform. Best practices in this regard include the "Taizhou Model", featuring a leading role by local government in providing MSE credit reporting services to market participants, and the "Suzhou Model", featuring a leading role by market players and a facilitating role by local government in providing MSE credit reporting services. Efforts were made to realize the "three increases and two decreases" of MSE loans, i.e. increase in credit availability, percentage of MSEs to be granted a loan for the first time and credit loan ratio and decrease in interest rates and NPL ratios.

II. Financial Risks are Generally under Control, but with Tough and Complex Challenges Ahead

Overall, the focused rectification in the last two years has helped to resolve a number of major risks in key areas in an orderly manner, curb the elevated systemic risks, and bring financial risks under control. The financial sector is now experiencing a sound and steady growth, though not without challenging difficulties ahead for further economic and financial development. From the global perspective, due to the persistent impacts of the COVID-19 pandemic, disruptions to the global industrial chain and supply chain have led to contracted global trade and investment activities; markets for the trading of risky assets such as equity, bond and commodity have been more volatile; and there are more uncertainties on international economic and trading tensions and geopolitical evolvement. From the domestic perspective, impacted by the COVID-19 pandemic, financial stability is faced with new challenges. First, some enterprises, in particular private enterprises and MSEs are more difficult to operate under the shock of the pandemic, leading to a potential rise of credit defaults. Second, financial risks caused by the pandemic might be delayed. The NPLs might increase in the later stage. It is necessary to keep an eye on certain small and medium-sized financial institutions against deterioration of risks. Third, there are large uncertainties on the development of pandemic and its impacts. Attention should be paid to the stock market, bond market and foreign exchange market.

III. Continue to Fight the Critical Battle against Major Financial Risks

At present, the trend for economic growth to remain positive in the long term stays unchanged; financial institutions generally deliver a sound performance; a variety of macro policy tools are available; regulatory framework is in good shape; and experience in dealing with financial risks has been learnt. The financial system has the ability, confidence and means to weather challenges ahead. Going forward, building on progress achieved in the previous phase of the critical battle, relevant authorities will follow the policy agenda unwaveringly, strike a proper balance among pandemic response, economic recovery and risk control, put in place stronger macro policy adjustment measures, and carry out all the tasks of risk resolution, in order to ensure that risks are broadly under control and on the decline.

First, enhance and improve macro adjustments, and deepen the supply-side structural reform in the financial sector. Adopt a sound monetary policy that is more flexible and appropriate, use a variety of monetary policy tools to guide M_2 money supply and aggregate financing to grow at notably higher rates than those of last year. Unwaveringly stick to the New Development philosophy, deepen the supply-side structural reform in the financial sector, and optimize the structure of the financial system in an effort to improve its adaptability, competitiveness and inclusion. Fulfill the tasks of ensuring stability on six fronts, i.e. employment, the financial sector, foreign trade, foreign investment and market expectations, and of maintaining security in six areas, i.e. employment, the people's basic livelihood, market entities, food and energy security, stability of industrial and supply chains, and the smooth functioning of grassroot administration, in order to foster a favorable environment for building the well-off society in all aspects.

Second, improve quality of financial services to better support the real economy. In face of the downside risks posed by shocks from the pandemic, it is important to facilitate transmission of monetary policy to ensure that financial resources go through the "last mile" to reach the real economy. Adhere to and improve the structural financial policies that are effective in response to the pandemic and ensure enterprises have easy access to credit. Improve financial services provided for the private sector and MSEs in greater availability and significantly lower consolidated cost of loans.

Third, defuse risks in major areas in a targeted manner and strengthen market disciplines. Continue the current work in the resolution of problem institutions in an orderly manner. Support the efforts by small and medium-sized financial institutions to replenish capital, improve corporate governance, dispose of NPLs, so as to enhance the resilience of financial institutions. Mitigate risks related to stock pledge financing in a steady and orderly manner. Finalize the special rectification of the Internet finance including P2P lending, improve risk monitoring and warning of the sector, and foster a long acting mechanism of regulation. Maintain the tough stance on all kinds of unauthorized financial activities though crackdowns.

Fourth, division of responsibilities and strong accountability should be enhanced to take concerted action in the risk resolution. Financial institutions are responsible for taking the main responsibility in resolution through bail-in, which forms the first defense line of financial risk prevention and mitigation. Local governments, who are responsible for the risk resolution of local financial institutions and stability of local financial system, should act forcefully in risk resolution and take good stock of local financial risks. Financial management authorities, whose regulatory mandates should be enhanced, should improve coordination and information-sharing and enhance regulatory effectiveness. The PBC, as the leading agency in the surveillance, prevention, mitigation and resolution of systemic risks, is mandated to maintaining financial stability through its role as lender of last resort.

Fifth, fill in the gaps in regulatory framework in an effort to strengthen regulation. The development of complementary rules of the regulations on financial holding companies is accelerated, and operationalised rules of the regulations on systemically important financial institutions are under development. Regulatory arrangements on financial infrastructures need to be improved, and the revision of fundamental financial laws such as the *Law on the People's Bank of China* and the *Law on Commercial Banks* will be pushed forward. Priority should also be given to legislation against unauthorized and illegal financial activities, etc. Explore the use of the deposit insurance as a platform to facilitate a market- and rule-based exit mechanism for financial institutions.

Sixth, continue the financial market reforms to improve its inherent stability. Deepen the reform of the RMB exchange rate formation mechanism, maintain the stability of the RMB exchange rate at a reasonable and equilibrium level, and promote the role of exchange rate as the stabilizer in the macro adjustment of macroeconomy and balance of payments. Push forward reforms of the institutional arrangements of the capital market, effectively guide market expectations, and foster a regulated, open, transparent, vigorous and resilient capital market. Strengthen the consolidated regulation of the bond markets, and unify rules governing similar products in areas such as the issuance, information disclosure, default resolution and rating standards of corporate credit bonds.

Seventh, deepen the opening up of the financial sector to increase global competitiveness. Open up the financial sector to both domestic and foreign participants in a proactive and steady manner. It is essential to ensure that announced opening-up initiatives are properly carried out and that new reform and opening-up measures are underway. Promote the full implementation of the pre-establishment national treatment and negative list management system, and set unified criterion for entry, to ensure that the opening up is both in a systemic and institutional sense. Efforts should be made to create a more favourable environment to do business in China, treat market entities on an equal footing regardless of their ownership types, and let the rule of competition play a fundamental role. A wider opening up and strengthened regulation should go hand in hand to effectively guard against and mitigate potential financial risks.

Special Topic 3 Monitoring Risks of Large Enterprises

The business operation of large enterprises has important implications on economic growth, industrial structure, financial environment, employment and taxation. Enhancing risk monitoring of large enterprises and strictly preventing risks from spreading to the financial system plays a pivotal role in maintaining regional financial stability. The PBC has established the large enterprise risk monitoring mechanism in 2013, in an effort to improve the financial risk prevention and early warning system, monitor risks in a more systemic and forward-looking approach, and to reduce the likelihood of regional and systemic financial risks.

I. Risk Monitoring and Analysis of Large Enterprises

According to the fourth national economic census, there were 18.11 million business entities at end-2018, including about 30 thousand large business entities[①]. The combined assets of large enterprises totaled RMB 119.6 trillion, accounting for 22.9 percent of the total enterprise assets. The annual per capita operating revenues stood at RMB 1.457 million. The operating revenue to total asset ratio of large enterprises was 73.41 percent, outperforming that of medium-sized, small and micro enterprises, by 31.3 percentage points, 32.5 percentage points and 61.6 percentage points respectively. Large enterprises generally feature bigger market shares, a larger number of employees and longer supply chains, playing a key role in the real economy.

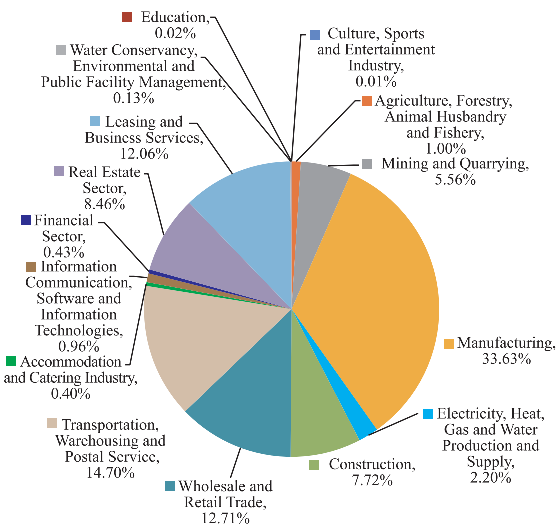
Some large enterprises, however, have complicated shareholding structure, a large number of connected enterprises, and a large financing scale involving several financial institutions, holding significant implications for regional financial stability. The PBC started to monitor the risks of large enterprises in 2013, and enhanced early warning and assessment accordingly. As of end 2019, risk events had occurred in 575 large enterprises nationwide. Among them, 460 enterprises reported severe liquidity strains, 120 enterprises defaulted on bonds, 27 enterprises' equity was frozen, and 67 enterprises filed for bankruptcy restructuring. The total financing by these 575 enterprises amounted to RMB 3.88 trillion, among which RMB 646.2 billion were identified as non-performing assets.

By sector, the distressed enterprises are mostly from the manufacturing sector (241), wholesale and retail sector (87), and transportation, warehousing and postal service sector (51), with their respective size of financing at RMB

① Large business entities are calculated in line with the *Statistical Typology of Micro, Small, Medium, and Large Enterprises (2017)*, excluding entities in the following industries: railway transportation, finance, real estate leasing, education, health, public management, social security and social organizations, and international organizations.

1.3 trillion, RMB 493.2 billion and RMB 570.4 billion (Figure 1.14). By business operation, 272 distressed enterprises had an asset-liability ratio of more than 70 percent, a level indicating high leverage, and their financing reached RMB 2.6 trillion. Among these 272 enterprises, 97 have become deeply insolvent. By guarantee, outstanding guarantee of these 575 distressed enterprises added up to RMB 1.6 trillion, and their total contingent debts were equivalent to 40 percent of their total financing.

Figure 1.14 Distressed Enterprises Breakdown by Sector (in terms of financing size)



Large enterprises become distressed usually due to a confluence of factors. First, blind expansion and accumulation of debt risks. Enterprises aggressively expand into other sectors and engage in overseas operations in good times, and borrow more than they could repay. In one case, a group invested nearly RMB 100 billion in a construction project, but suffered unexpected low revenues and net losses for three consecutive years due to rising raw material costs and inadequate technology. It faced mounting debt servicing pressure, as the interest-bearing liabilities stood at over RMB 30 billion. Second, problematic corporate governance and internal management. Misuse of company funds for shareholders' personal purposes, debt confusion within the group, disguised connected trading, untruthful information disclosure are common problems among the distressed enterprises. In one case, due to mingled property management, personnel crossover and cross guarantees, 90 percent of a group's external liabilities were assumed by some of its key subsidiaries, whose debt defaults approximate RMB 20 billion. Third, high equity pledge risk. Shareholders repeatedly pledged their equity holdings. Once default on pledged financing occurs, the enterprise will face the risk of forced transfer of equity and change of actual controlling shareholders. Fourth, loan abuse, such as borrowing for the purpose of repaying earlier loans and interests. During the economic downturn, enterprises usually face cash flow pressures and rely on loan rollovers as the source of repayment rather than operating revenues. There was a case in which 95 percent of a group's total financing was loans. As the construction project failed to generate cash inflows on schedule, the company had difficulty in repaying their loans. When banks stopped lending, its capital chain was broken.

II. Proactively Mitigating Risks of Large Enterprises

As of end 2019, 70 percent of the distressed enterprises had established the Creditor's Committee on Coordination (CCC). To better mitigate large enterprise risks, the following aspects should be strengthened.

Continue to deepen enterprise reform. Enterprises should clearly identify business growth goals and directions, enhance corporate governance, strictly prevent misuse of corporate funds by big shareholders, regulate related trading and solidify the foundation for sound development.

Adopt a case-by-case approach to risk mitigation. Enterprises that expand blindly and feature extensive business operation should streamline their business activities and focus on main line of business. Cash-strapped enterprises need to adjust debt structure in time and step up asset disposal efforts to speed up cash flows. Viable enterprises with temporary difficulties may defuse debt risks by introducing strategic investors, reform and restructuring, and market-based debt-to-equity swaps. Enterprises in industries with excess capacity need to integrate resources through enhanced mergers and acquisitions to reduce homogeneous and disorderly competition and waste of resources. Non-viable zombie enterprises should be allowed to go bankrupt and be liquidated in line with judiciary procedures to exit the market.

Expand the channels and means of non-performing asset resolution. Efforts should be made to push forward the financial asset management company reform to improve their capacity in purchasing non-performing assets. The market for non-performing assets resolution should be developed along with non-performing assets trading and auction platforms.

Put in place and improve the diversified bond default resolution mechanism. Efforts should be made to actively implement the *Notice on Issues Regarding Resolution of Corporate Bond Default*, safeguard the financing function of the bond market, and guarantee the legal rights and interests of bond holders by improving investor protection. Market-based bond default resolution mechanism should be diversified to allow all types of bond market participants to transfer defaulted bonds through qualified trading platforms.

Give full play to the CCC. More binding institutional documents should be developed and released to specify respective mandates of the CCC, local governments, regulatory authorities, financial institutions and enterprises, and to enhance the binding power of the CCC on its members.

Improve the legal system for enterprise bankruptcy. The role of the bankruptcy courts should be made use of to make case trials more professional and convenient. Enterprise reorganization and liquidation process should be shortened to avoid asset depreciation caused by the excessively long resolution cycle.

Chapter II

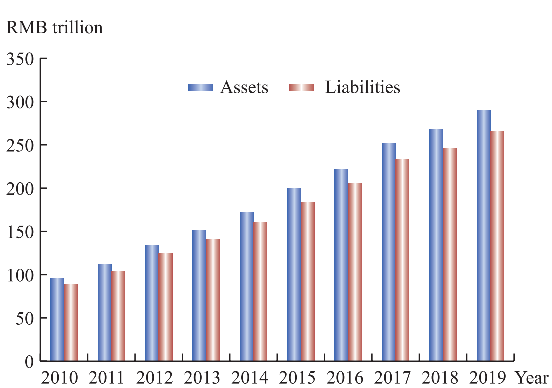
Soundness Assessment of the Financial Sector

In 2019, China's financial sector maintained sound performance amid increasingly complicated economic and financial environment both at home and abroad. Financial institutions expanded steadily in assets and liabilities while their profitability remained generally stable and their risk preparedness continued to improve. Financial market was generally stable and the risks associated with stock pledge financing moderated. Nonetheless, it warranted attention that the banking sector faced with increasing pressure on deteriorating asset quality and financial fraud cases by listed companies occurred occasionally.

I. Soundness Assessment of the Banking Sector

Assets and liabilities grew steadily. At end-2019, total assets of banking institutions registered RMB 290.00 trillion, up by 8.14 percent y-o-y, an acceleration of 1.86 percentage points from the previous year; total liabilities registered RMB 265.54 trillion, up by 7.71 percent y-o-y, an acceleration of 1.83 percentage points from the previous year (Figure 2.1).

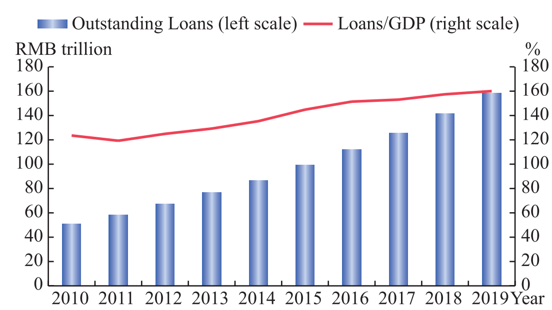
Figure 2.1 Assets and Liabilities of Banking Institutions



Source: The CBIRC.

Deposits and loans continued to expand steadily. At end-2019, total deposits denominated in both domestic and foreign currencies in financial institutions stood at RMB 198.16 trillion, an increase of 8.57 percent y-o-y and an acceleration of 0.78 percentage point from the previous year; outstanding loans denominated in both domestic and foreign currencies by financial institutions stood at RMB 158.60 trillion, an increase of 11.89 percent y-o-y and a deceleration of 0.95 percentage point from the previous year (Figure 2.2).

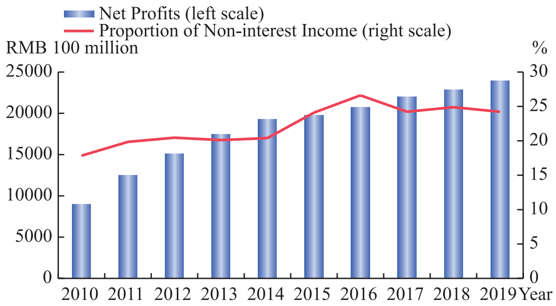
Figure 2.2 RMB Loans by Banking Institutions



Source: The PBC and the NBS.

Profits continued to grow while profitability weakened. In 2019, banking institutions gained net profits of RMB 2.40 trillion, an increase of 4.88 percent y-o-y and an acceleration of 1.06 percentage points from 2018. The net interest margin of banking institutions reached 2.07 percent, which was the same as the previous year. Non-interest income accounted for 24.23 percent of total income, a decrease of 0.66 percentage point y-o-y (Figure 2.3). At end-2019, the ROA of banking institutions reached 0.86 percent, down by 0.02 percentage point y-o-y; the ROE registered 10.39 percent, down by 0.70 percentage point y-o-y. The overall profitability of banking institutions declined in 2019 compared with the previous year.

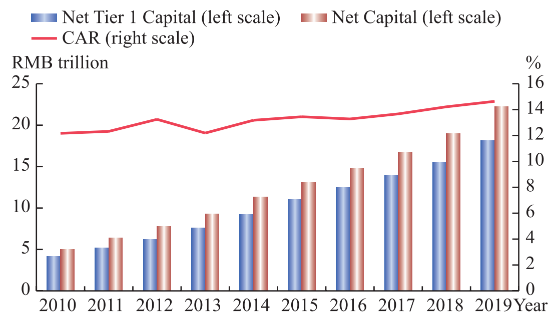
Figure 2.3 Net Profits and Proportion of Non-interest Income of Banking Institutions



Source: The CBIRC.

Capital adequacy stabilized with an upward bias. At end-2019, the CET1 ratio of commercial banks reached 10.92 percent, down by 0.11 percentage point y-o-y; the Tier 1 ratio registered 11.95 percent, up by 0.36 percentage point y-o-y; the CAR increased by 0.45 percentage point to 14.64 percent, indicating that the banking sector was well capitalized (Figure 2.4).

Figure 2.4 CAR and Capital Structure of Commercial Banks[①]



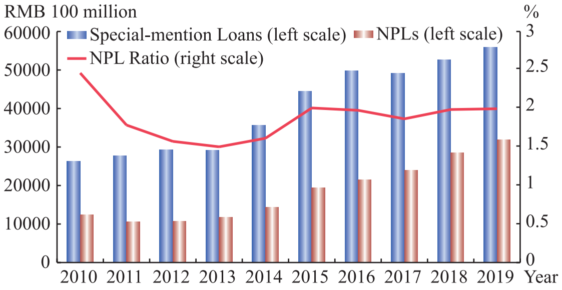
Source: The CBIRC.

Liquidity was reasonably sufficient. At end-2019, the liquidity ratio of commercial banks registered 58.46 percent, an increase of 3.15 percentage points y-o-y; the ratio of liquidity gap was 4.07 percent, up by 3.46 percentage points y-o-y; the liquidity coverage ratio (LCR) of commercial banks with assets over RMB 200 billion reached 146.63 percent, rising by 8.62 percentage points y-o-y; and the net stable funding ratio (NSFR) stood at 122.33 percent, growing by 0.88 percentage point y-o-y.

Non-performing loans (NPLs) increased slightly and the downward pressure on asset quality increased. At end-2019, NPLs of banking institutions totaled RMB 3.19 trillion, an increase of RMB 349.8 billion y-o-y; the NPL ratio reached 1.98 percent, up by 0.01 percentage point y-o-y. In particular, NPLs of commercial banks increased by RMB 388.1 billion y-o-y to RMB 2.41 trillion; the NPL ratio of commercial banks was 1.86 percent, up by 0.03 percentage point y-o-y. Special-mention loans of banking institutions stood at RMB 5.59 trillion, up by RMB 320.7 billion or 6.09 percent y-o-y, indicating increasing downward pressure on asset quality (Figure 2.5). In addition, loans overdue for over 90 days increased by RMB 108.4 billion or 4.37 percent y-o-y to RMB 2.59 trillion, which accounted for 81.18 percent of total NPLs, down by 6.18 percentage points y-o-y. Banking institutions were more prudent in identifying NPLs.

① As of 2013, CAR was calculated according to the *Capital Rules for Commercial Banks (Provisional)*.

Figure 2.5 Special-mention Loans and NPLs of Banking Institutions



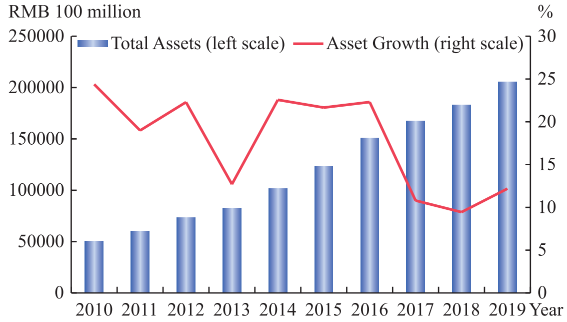
Source: The CBIRC.

Risk coverage of the banking sector was strong. At end-2019, loan loss provisions of banking institutions stood at RMB 5.84 trillion, up by RMB 674.8 billion y-o-y or 13.08 percent; the provision coverage ratio reached 182.82 percent, up by 1.24 percentage points y-o-y; the provision to loan ratio registered 3.61 percent, up by 0.04 percentage point y-o-y.

II. Soundness Assessment of the Insurance Sector

Assets grew steadily, and insurance density and penetration improved. At end-2019, total assets in the insurance sector reached RMB 20.56 trillion, an increase of 12.18 percent y-o-y and an acceleration of 2.73 percentage points from end-2018 (Figure 2.6). Among these, the assets of personal insurance companies registered RMB 16.96 trillion, up by 16.08 percent y-o-y; the assets of property insurance companies registered RMB 2.29 trillion, down by 2.32 percent y-o-y; the assets of reinsurance companies registered RMB 426.1 billion, up by 16.75 percent y-o-y. The insurance density increased by RMB 321 y-o-y to RMB 3046 and the insurance penetration increased by 0.08 percentage point to 4.30 percent. Both were much lower than international levels.

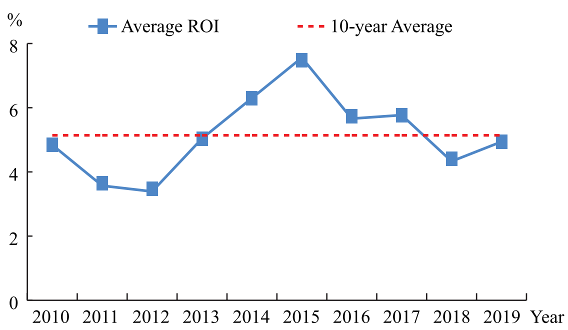
Figure 2.6 Total Assets and Asset Growth of the Insurance Sector



Source: The CBIRC.

Fund allocation was generally stable and investment returns increased. At end-2019, funds utilized by the insurance sector stood at RMB 18.53 trillion, an increase of 12.91 percent from end-2018 and an acceleration of 3.46 percentage points y-o-y. In particular, the share of bank deposits and other investments in the total investments declined whereas the share of bonds, stocks and securities investment funds went up (Table 2.1). Benefited from the rebound of stock market throughout the year, investment returns of the insurance sector grew by 28.65 percent to RMB 882.4 billion. The average ROI of insurance funds increased by 0.61 percentage point to 4.94 percent, which was still below the 10-year average of 5.14 percent (Figure 2.7).

Figure 2.7 Average ROI of Insurance Funds



Source: The CBIRC.

Table 2.1 Utilization of Insurance Funds (as of end-2019)

Investment Structure	Bank Deposits	Bonds	Stocks and Securities Investment Funds	Other Investments
Size (RMB trillion)	2.5227	6.4032	2.4365	7.1647
Proportion (%)	13.62	34.56	13.15	38.67
Y-o-y Change (Percentage Point)	–1.23	0.20	1.44	–0.41

Source: The CBIRC.

Market concentration was generally stable and the profitability of insurance companies improved. In 2019, the market share of the top five personal insurance companies[①] in terms of premium was 53.93 percent, down by 1.91 percentage points y-o-y. The Herfindahl-Hirschman Index (HHI)[②] for the personal insurance sector was 0.085, which was generally the same as the previous year. In the property insurance sector, the market share of the top five companies[③] and the HHI were 73.78 percent and 0.1722 respectively, approximately the same as the previous year. Against the backdrop of significant profit growth across the entire insurance industry, fewer insurance companies incurred loss in 2019. In property and personal insurance companies, companies that incurred loss accounted for 32.94 percent and 31.71 percent respectively, down by 8.04 and 9.41 percentage points y-o-y.

Personal insurance companies made progress in business model transition and upgrading while the growth of premium income rebounded. In the context of regulation tightening in 2018, personal insurance companies actively initiated business transition. In 2019, ordinary life insurance resumed growth with premium income growing notably by 14.83 percent y-o-y, an increase of 44.32 percentage points compared with the previous year. In 2019, the premium income of personal insurance companies grew by 12.82 percent y-o-y, up by 11.97 percentage points from 2018 (Figure 2.8). Throughout 2019, the surrender rate of personal insurance companies reached 4.97 percent, down by 1.86 percentage points y-o-y.

The pre-tax profits of personal insurance companies continued to grow and net profits jumped. Due to a large increase in investment returns and a decline in policy surrenders as well as claims and payments, personal insurance companies realized pre-tax profits of RMB 239.626 billion, an increase of 41.15 percent y-o-y (Figure 2.8). Benefited from the policy of pre-tax deduction for fees and commission charges[④], net profits of personal insurance

① The top five personal insurance companies include China Life, Ping An Life Insurance, China Pacific Life Insurance, Huaxia Life Insurance and Taiping Life Insurance.

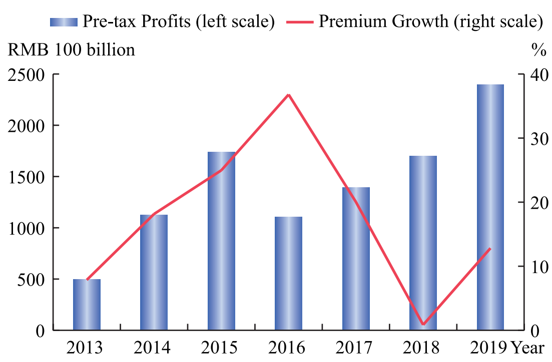
② HHI is the sum of squares of every institution's market share in the sector. The higher the HHI goes, the more concentrated the market is.

③ The top five property insurance companies include PICC Property & Casualty, Ping An Property & Casualty Insurance, China Pacific Property Insurance, China Life Property & Casualty Insurance, and China United Property Insurance.

④ According to the *Announcement on Policies Regarding Pre-tax Deduction of Fees and Commission Charges Incurred by Insurance Companies* jointly issued by the Ministry of Finance (MOF) and the State Taxation Administration (STA) in May 2019 (Document No. 72〔2019〕of MOF and STA), the fees and commission charges incurred by an insurance company in operation, no more than 18 percent of the balance of the total premium income of the current year after deducting surrender, can be deducted from the taxable income, and the excess is allowed to be carried forward to the subsequent years for deduction. Previously, the part that was allowed to deduct was no more than 15 percent and 10 percent for property insurance and personal insurance respectively, and the excess could not be deducted. This policy is applicable to the settlement and payment of 2018 income tax.

companies reached RMB 242.919 billion, up by 108.40 percent y-o-y.

Figure 2.8 Pre-tax Profits and Premium Growth of Personal Insurance Companies

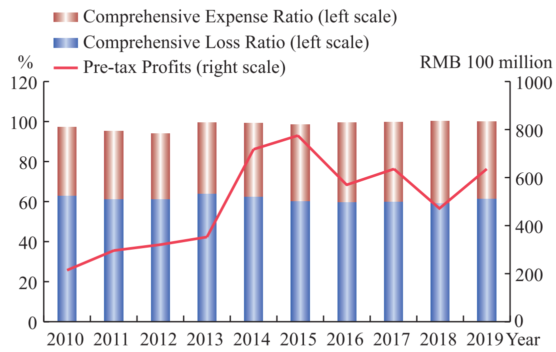


Source: The CBIRC.

The premium of property insurance companies grew steadily and non-auto insurance grew rapidly. In 2019, the premium income of property insurance companies reached RMB 1.30 trillion, an increase of 10.72 percent y-o-y and a deceleration of 0.80 percentage point from the previous year. Due to the continuous sluggishness in auto sales, auto insurance grew slowly with premium merely growing by 4.52 percent, which was lower than the entire property insurance sector. The share of auto insurance premium in total property insurance premium declined by 3.73 percentage points y-o-y to 62.91 percent. As the demand for non-auto insurance[①] was gradually released and the insurance sector strengthened the cultivation of new growth pillars, non-auto insurance scored a remarkable growth rate of 23.11 percent. In particular, the health insurance grew by 47.68 percent, and its share in total property insurance premium increased by 1.62 percentage points y-o-y to 6.46 percent.

The comprehensive cost ratio of property insurance companies dropped slightly while profits grew significantly. In 2019, the comprehensive cost ratio of property insurance companies reached 99.98 percent, down by 0.15 percentage point and reversing the previous underwriting loss. The comprehensive cost ratio of non-auto insurance was 102.92 percent with an underwriting loss of RMB 10.144 billion. Specifically, due to a large increase in claims and payments, credit insurance, guarantee insurance and health insurance incurred big loss. Driven by investment returns, property insurance companies realized pre-tax profits of RMB 63.458 billion in 2019, an increase of 34.11 percent y-o-y (Figure 2.9). Benefited from the policy of pre-tax deduction for fees and commission charges, net profits of property insurance companies registered RMB 61.951 billion, up by 147.24 percent y-o-y.

Figure 2.9 Underwriting Performance and Pre-tax Profits of Property Insurance Companies



Source: The CBIRC.

① Non-auto insurance includes corporate property insurance, household property insurance, engineering insurance, liability insurance, guarantee insurance, agricultural insurance, health insurance, accident insurance, etc.

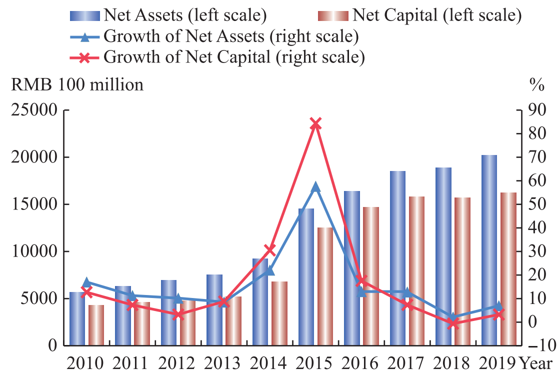
The overall solvency of the insurance sector was adequate while the corporate governance remained to be improved. At end-2019, the comprehensive solvency adequacy ratio and the core solvency adequacy ratio of insurance companies were 247.7 percent and 236.8 percent respectively, which were far above the minimum regulatory level of 100 percent and 50 percent. In terms of comprehensive risk rating, there were 103 companies rated A and 69 rated B in the fourth quarter of 2019, which were of low risk; there were only four companies rated C and one rated D, which either failed to meet the standard for solvency adequacy ratio or met the standard but carried high risk. In some insurance companies, corporate governance problems were prominent where shareholders intervened in company operation unrestrainedly and there were improper related transactions. Also, the ownership structure and senior managers of some insurance companies changed frequently, causing big impact on operation. In addition, a few insurance companies had complicated shareholding structure and hided the relations of shareholders.

III. Soundness Assessment of the Securities Sector

1. Profits of Securities Companies Increased Y-o-y While Risk Associated with Stock Pledging Moderated

At end-2019, there were 133 securities companies, an increase of 2 from the end of the previous year. Among them, 35 securities companies were listed, up by 2 y-o-y. Securities companies had total assets of RMB 7.26 trillion, an increase of 15.97 percent y-o-y. Net assets registered RMB 2.02 trillion, an increase of 6.88 percent y-o-y. Net capital climbed by 3.18 percent y-o-y to RMB 1.62 trillion, resuming growth after a decline in the previous year (Figure 2.10).

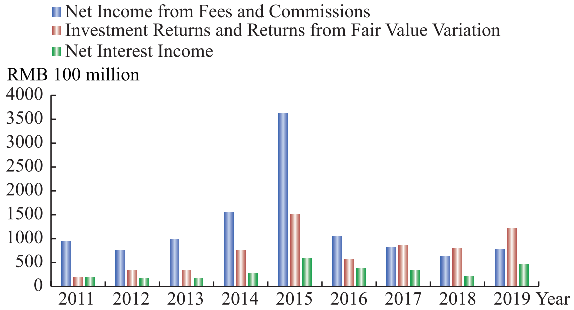
Figure 2.10 Net Assets and Net Capital of Securities Companies, 2010-2019



Source: The CSRC.

The profitability of securities companies improved. In 2019, the operating revenue of the entire securities sector grew notably by 35.37 percent y-o-y to RMB 360.483 billion. In particular, securities investment returns (including fair value variation) registered RMB 122.160 billion, up by 52.65 percent y-o-y; net income from the agency business (including seat leases) registered RMB 78.763 billion, up by 26.34 percent y-o-y; net interest income registered RMB 46.366 billion, up by 115.81 percent y-o-y; net income from securities underwriting and sponsoring registered RMB 37.744 billion, up by 46.03 percent y-o-y; net income from asset management registered RMB 27.516 billion, up by 0.06 percent y-o-y; income from investment consultancy registered RMB 3.784 billion, up by 20.05 percent y-o-y; net income from financial consultancy registered RMB 10.521 billion, down by 5.64 percent y-o-y. The entire securities sector gained net profits of RMB 123.095 billion, up by 84.77 percent y-o-y (Figure 2.11).

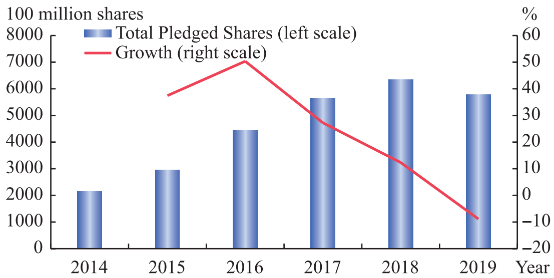
Figure 2.11 Securities Companies' Revenue Structure, 2011-2019



Source: The CSRC.

Risks associated with stock pledge financing moderated. Benefited from multiple means of the prevention and mitigation of stock pledging risks as well as the good performance of the A-share market throughout 2019, the size of pledged A-shares declined by 8.76 percent y-o-y to 579 billion shares at end-2019, marking the first decline in a decade (Figure 2.12). The margin call risk of stock pledging decreased accordingly.

Figure 2.12 Size and Y-o-y Growth of Stock Pledging by Shareholders of Listed Companies



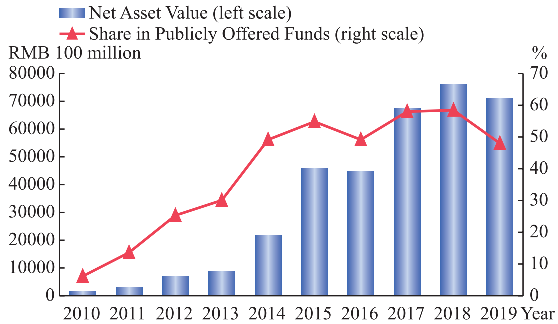
Source: The CSDC.

2. AUM of Fund Management Companies Continued to Grow While the Overall Risk of Money Market Funds Remained under Control

At end-2019, there were 128 fund management companies across the country, up by 8 from the end of the previous year. Among these, 44 companies were Sino-foreign joint ventures and 84 were domestic companies. Together, these companies managed RMB 14.77 trillion of publicly offered funds, an increase of 13.35 percent y-o-y. Of the publicly offered funds, equity funds accounted for 8.80 percent, up by 2.47 percentage points y-o-y; hybrid funds accounted for 12.79 percent, up by 2.35 percentage points y-o-y; fixed income funds accounted for 18.73 percent, up by 1.37 percentage points y-o-y; money market funds accounted for 48.19 percent, down by 10.25 percentage points y-o-y. By 2019, 24471 private equity fund managers have registered, managing 81739 private equity funds. And RMB 13.74 trillion of these funds have been paid-in, up by 7.51 percent y-o-y.

The share of money market funds in total publicly offered funds declined. As risk-free interest rate came down and stock market went up, the share of money market funds in total publicly offered funds was reined in, and the size of money market funds with systemic importance decreased (Figure 2.13).

Figure 2.13 Net Asset Value of Money Market Funds and Its Share in Publicly Offered Funds, 2010-2019



Source: The CSRC.

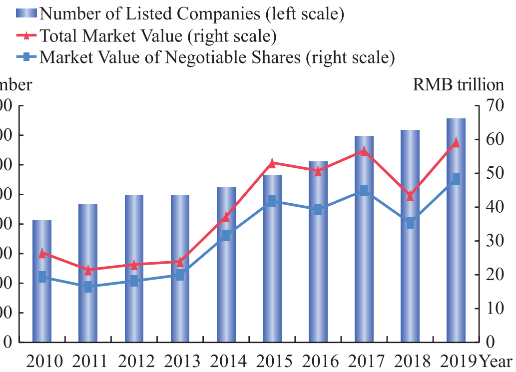
3. Futures Companies Grew Steadily with New Products Coming to Market at an Accelerated Pace

At end-2019, there were 149 futures companies in China, under which there were 86 risk management subsidiaries. Total assets of the futures industry, including those of clients, amounted to about RMB 645 billion. Altogether, 78 futures and options were listed. Among these, there were 58 commodity futures, 6 financial futures, 10 commodity options and 4 financial options. In 2019, China's futures market launched 7 commodity futures including Chinese jujube, urea, TSR 20, polished round-grained rice, stainless steel, styrene and soda ash, 7 commodity options including corn, cotton, natural rubber, iron ore, PTA, methanol and gold, CSI 300 Index option and 2 CSI 300 ETF options, breaking historical record in terms of newly listed products.

4. Performance of Listed Companies Improved albeit Some Cases of Financial Frauds

At end-2019, there were 3777 companies listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange altogether, an increase of 193 from end-2018. 18 companies were de-listed during the year, of which 9 were de-listed mandatorily. Total market value and that of negotiable shares reached RMB 59.29 trillion and 48.35 trillion respectively, up by 36.33 percent and 36.66 percent y-o-y (Figure 2.14). The market value of negotiable shares accounted for 81.55 percent of total market value, up by 0.20 percentage point y-o-y.

Figure 2.14 Number and Market Value of Listed Companies, 2010-2019



Source: The CSRC.

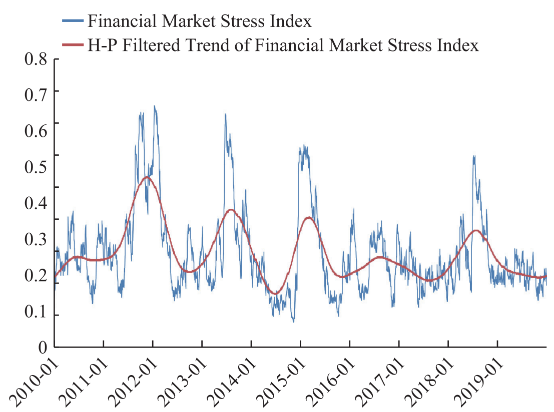
Performance of listed companies improved in 2019. As of the end of April 2020, 3727 listed companies had disclosed their 2019 annual reports; 117 companies delayed their disclosure of annual reports due to the COVID-19 pandemic, but disclosed their main operating performance as required. Of these, 3382 companies (88 percent of total) posted profits; 462 companies (12 percent of total) registered losses. Total operating revenue in 2019 of listed companies that had disclosed annual reports or main operating performance reached RMB 50.6 trillion, up by 8.7 percent y-o-y; net profits increased by 6.4 percent y-o-y to RMB 3.8 trillion.

Efforts were made to crack down hard on financial frauds by listed companies. In recent years, the cases of information disclosure that violated the regulation by listed companies had increased rapidly, some of which were involved in financial frauds. Financial frauds represented the features of long cycle, large amount of money, more systemic and in large size. The asset quality of related listed companies was usually inferior, which could easily lead to risk contagion among pledge squeeze, bond default and other risks. To address these problems, regulators enhanced regulation and law enforcement, strengthened the investigation of information disclosure cases, resolved a batch of major grave cases that were highly concerned by market participants and caused severe impact, and improved market environment continuously.

IV. Soundness Assessment of Financial Market

China's financial market was generally stable. In 2019, stress in stock market, bond market and foreign exchange market eased while money market stress remained stable. The overall financial market stress index stayed at a moderately low level (Figure 2.15).

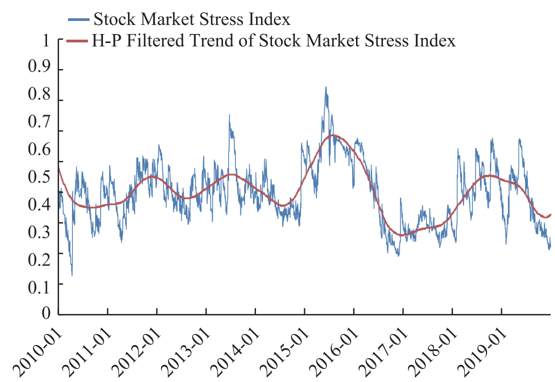
Figure 2.15 Financial Market Stress Index, 2010-2019



Source: The PBC.

Stock market rose amid lower stress. Throughout 2019, the Shanghai Stock Exchange Composite Index and the Shenzhen Stock Exchange Component Index went up by 22.30 percent and 44.08 percent respectively. In general, the A-share market stress index declined in 2019, and reached a low level by the end of the year (Figure 2.16). In particular, the volatility risk of the A-share market eased and reached a low level at end-2019; the valuation risk rose slightly at the beginning of 2019 and remained stable throughout the year. At end-2019, the rolling P/E ratios of all AB shares, SME board, ChiNext and STAR Market registered 17.5, 43.47, 122.47 and 56.83 times respectively, and the P/B ratios registered 1.59, 2.67, 3.96 and 5.15 times respectively.

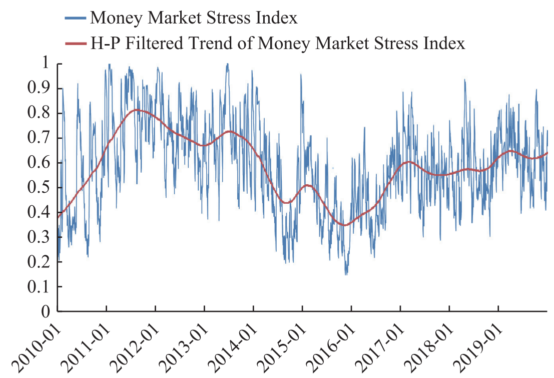
Figure 2.16 Stock Market Stress Index, 2010-2019



Source: The PBC.

Money market rates came down while market stress was generally the same as the previous year. In 2019, liquidity in the money market was reasonably sufficient, and interest rates were largely stable with a slight decline. In general, the stress in money market was moderately high, which was generally the same as that at the end of the previous year (Figure 2.17). On December 31, 2019, the weighted average of overnight pledged repo rate by depository institutions declined by 80 basis points from the end of the previous year to 1.20 percent; the weighted average of 7-day pledge repo rate rose by 45 basis points to 2.65 percent. The Shanghai Interbank Offered Rates (Shibors) decreased. In particular, the overnight Shibor dropped by 86 basis points to 1.69 percent, the 7-day Shibor fell by 17 basis points to 2.74 percent, and the 3-month Shibor decreased by 33 basis points to 3.02 percent.

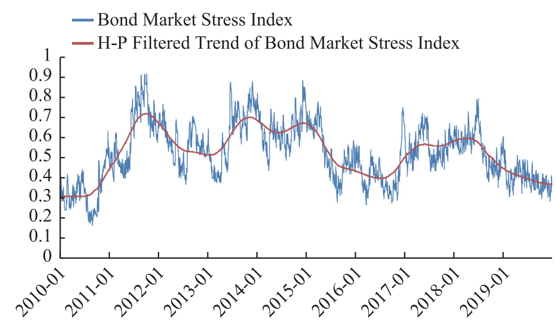
Figure 2.17 Money Market Stress Index, 2010-2019



Source: The PBC.

Credit risk in bond market eased and market stress continued to moderate. In 2019, the overall bond market stress declined (Figure 2.18). Among the three components of bond market stress index, both pessimistic expectation of institutional investors and credit risk moderated whereas fluctuation risk remain stable. Specifically, the daily average term spread between 1-year and 10-year government bonds expanded by 1.37 basis points from the previous year to 61.16 basis points, though its fluctuation lessened. A total of 182 corporate credit bonds defaulted, involving an issuing amount of RMB 147.604 billion, which was an increase of 22.03 percent y-o-y. The daily average spread between 1-year AA-rated medium-term notes and 1-year government bonds was 99 basis points, down by 75 basis points y-o-y; the daily average spread between 5-year AA-rated medium-term notes and 5-year government bonds was 175 basis points, down by 27 basis points y-o-y. The credit risk premium narrowed in general.

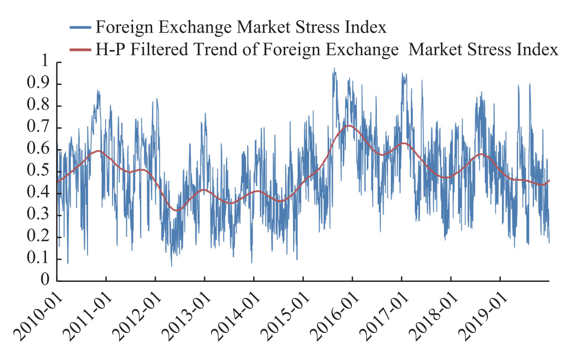
Figure 2.18 Bond Market Stress Index, 2010-2019



Source: The PBC.

The RMB depreciated against the USD slightly while foreign exchange market stress was stable with a slight decline. In 2019, the RMB depreciated slightly against the USD and the RMB exchange rate against a basket of currencies was generally stable with a wider range of two-side fluctuation. Throughout the year, the foreign exchange market stress index was generally stable with a slight decline (Figure 2.19). At end-2019, the exchange rate of RMB/USD closed at 6.9662 yuan per dollar in the onshore market, depreciating by 1004 basis points or 1.44 percent y-o-y; the exchange rate of RMB/ USD closed at 6.9617 yuan per dollar in the offshore market, depreciating by 915 basis points or 1.31 percent y-o-y.

Figure 2.19 Foreign Exchange Market Stress Index, 2010-2019



Source: The PBC.

Special Topic 4 The Banking Sector Stress Test

The COVID-19 pandemic has put downside pressure on domestic economic growth in 2020, resulting in elevated credit risk of the banking sector. Taking this adverse impact of the pandemic into consideration, the PBC stress tested 1550 banking institutions during an extended testing window of three years, and included extremely adverse scenarios and shocks from areas that are more affected by the pandemic in the test, to fully assess resilience of the banking system against various "extreme but plausible" adverse shocks.

I. General Description of the Stress Test

Sample banks. 1550 banks participated in the stress test, the combined assets of which accounted for 78 percent of that of all the banking institutions[①]. The testing pool consists of 6 large commercial banks, 12 joint-stock commercial banks, 98 city commercial banks, 534 rural commercial banks, 268 rural credit cooperatives, 8 rural cooperative banks, 573 village and township banks, 12 private banks and 39 foreign banks.

Test approaches. The stress test includes the solvency test based on macroeconomic scenarios, solvency test based on sensitivity analysis and liquidity stress test. The solvency test based on macroeconomic scenarios targeted 30 large and medium-sized commercial banks with an asset scale above RMB 800 billion, whose capital adequacy levels at the end of 2020, 2021 and 2022 were tested under adverse macroeconomic shocks from both credit and market risks in stress scenarios. Based on the data of tested banks, the PBC developed a transmission model on the linkages between the macro economy and bank credit asset quality, and measured banks' credit impairment losses, gains or losses in net interest income, in bond valuation and in foreign exchange exposures in stress scenarios. Then the impact on banks' capital adequacy level was assessed. The solvency test based on sensitivity analysis assesses the instantaneous adverse impact of the deterioration in the overall and key sector risk profiles on the banks' capital adequacy level. The liquidity stress test assesses the impact of various liquidity stresses, including policy changes, macroeconomic dynamics and emergent shocks, on banks' cash flow gaps for each maturity period.

Stress scenarios[②]. Three scenarios were designed for the solvency stress test based on macroeconomic scenarios—a mildly adverse scenario, an adverse scenario and an extremely adverse scenario. The scenarios were calibrated on macroeconomic factors including GDP growth

① Data as of end-Q1 of 2020.

② The stress scenarios were based on projections of macro econometric models, and should not be interpreted as the PBC's judgments on the macroeconomy.

rate y-o-y, CPI growth rate, short-term and long-term market interest rate, RMB/USD exchange rate, etc. (Table 2.2). The solvency stress test based on sensitivity analysis tested the impact of a set of indicators, including NPL ratio in the whole credit portfolio, NPL ratio in specific industries, NPA ratio, loss given default, changes in the bond yield curve, etc. (Table 2.3). Liquidity stress test used a mildly adverse scenario and a severely adverse scenario to set different roll-off rates of assets and run-off rates of funding sources or contingent liabilities of the banks. In each scenario, a maturity ladder analysis was adopted to calculate the net funding gaps.

Underlying assumptions. The solvency stress test assumes that the bank's asset-liability structure remains unchanged, its provision coverage ratio meets 100 percent, the income tax rate stays at 25 percent, and that its dividend rate is 30 percent as long as its net profit remain positive and its capital adequacy ratios meet regulatory requirements. During the test period, macro policy support, resolution of NPLs and external capital replenishment were not taken into consideration. The liquidity stress test assumes that the bank remains as a going-concern, i.e. its relationship with important clients would be undamaged and no major business disruptions would occur.

Pass-fail criteria. For the solvency test based on macroeconomic scenarios, a bank would fail the test if the post-stress CET1 ratio falls below 7.5 percent, or if Tier1 ratio falls below 8.5 percent, or if total CAR falls below 10.5 percent (the 2.5 percent capital conservation buffer requirement included). For the solvency test based on sensitivity analysis, a bank would fail the test if its CAR falls below 10.5 percent after the shock. For the liquidity test, banks should counterbalance their negative funding gaps (where cash outflows exceed cash inflows) by liquidating eligible high-quality liquid assets or by using the eligible high-quality liquid assets as collaterals to obtain liquidity assistance from the PBC. A bank would fail the test if funding gaps remain after it has exhausted all of its eligible high-quality liquid assets.

Table 2.2 GDP Growth Rates in the Solvency Test Based on Macroeconomic Scenarios

Year	Mildly Adverse Scenario	Adverse Scenario	Extremely Adverse Scenario
2020	1.59%	–0.24%	–2.89%
2021	7.80%	6.81%	4.75%
2022	5.91%	5.36%	4.26%

Note: Other macro indicators were calibrated by the macro econometric model.

Table 2.3 Scenarios for the Solvency Test Based on Sensitivity Analysis

Risk Exposure	Stress Scenarios
Overall Credit Assets	Shock 1: NPL ratio up by 100 percent[①] Shock 2: NPL ratio up by 200 percent Shock 3: NPL ratio up by 400 percent Shock 4: 50 percent of special-mention loans converted to NPLs Shock 5: 100 percent of special-mention loans converted to NPLs

(Cont)

Risk Exposure	Stress Scenarios
Real Estate Loans	Shock 1: NPL ratios of real estate development loans② and housing purchase loans③ both up by 5 percentage points④ Shock 2: NPL ratio of real estate development loans up by 10 percentage points, and NPL ratio of housing purchase loans up by 7 percentage points Shock 3: NPL ratio of real estate development loans up by 15 percentage points, and NPL ratio of housing purchase loans up by 10 percentage points
Loans to Industries Most Affected by the Pandemic	Shock 1: 50 percent of normal loans to SMEs and micro businesses⑤ in the wholesale and retail industry, accommodation and catering industry, culture, sports and entertainment industry deteriorated to NPLs Shock 2: 50 percent of normal loans to importers and exporters⑥ deteriorated to NPLs Shock 3: NPL ratio of loans to SMEs and micro businesses up by 400 percent
Local Government Debt⑦	Shock 1: NPA ratio up by 5 percentage points Shock 2: NPA ratio up by 10 percentage points Shock 3: NPA ratio up by 15 percentage points
Concentration Risk	Shock 1: The largest group client defaults, with a loss given default rate of 60 percent Shock 2: The three largest group clients default, with a loss given default rate of 60 percent Shock 3: The five largest group clients default, with a loss given default rate of 60 percent
Investment Losses	Shock 1: 250 bps parallel upward shift in the yield curves of Treasury bonds and policy financial bonds Shock 2: 400 bps parallel upward shift in the non-policy financial bond yield curve Shock 3: 400 bps parallel upward shift in the non-financial corporate bond yield curve Shock 4: 10 percent loss in other investments' book value
Credit Risk of the Off-balance Sheet Exposures⑧	Shock 1: 5 percent loss in the sponsored off-balance sheet exposures with a margin rate of 50 percent Shock 2: 10 percent loss in the sponsored off-balance sheet exposures with a margin rate of 50 percent Shock 3: 15 percent loss in the sponsored off-balance sheet exposures with a margin rate of 50 percent

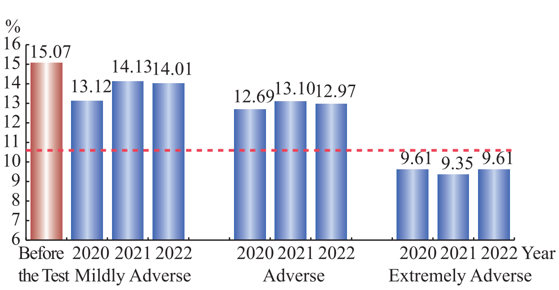
Note: ① Assuming that the initial NPL ratio is X%, up by n% means that the NPL ratio becomes X% (1+n%).
② Real estate development loans include land development loans and housing development loans. Land development loans include land reserve loans to government agencies. Housing development loans include residential housing development loans (including indemnificatory housing), commercial housing development loans and other real estate development loans.
③ Housing purchase loans could be extended to enterprises, governmental organizations and individuals. The enterprise housing purchase loans include commercial housing loans and operating loans for the purpose of property management, while housing purchase loans extended to individuals could be used either for commercial or residential purpose.
④ Assuming that the initial NPL ratio is X%, up by n percentage points means that NPL ratio becomes (X+n) %.
⑤ The standards for the classification of SMEs and micro businesses refer to the provisions in the *Notice on Issuing the Provisions on the Classification Standards for Small and Medium-sized Enterprises* published by the Ministry of Industry and Information Technology in 2011.
⑥ An importer or exporter refers to a foreign trade enterprise in China that has been licensed by the competent authority of foreign economic and trading activities.
⑦ Including investments in local government bonds, loans to government-invested projects, funding to local governments through SPVs (e.g. wealth management products, trust investment schemes, etc.) and other fund raisings that take the local government fiscal revenue as the source of repayment.
⑧ According to the calibration of Sheet G4B-2 in the regulatory reporting system, off-balance sheet exposures include loan facilities equivalent to loans, transaction-related contingent exposures, short-term contingent exposures related to trades, commitments, sales and purchase agreements of which banks retain credit risks, forward asset purchases, forward time deposits, partially-paid stocks and securities, securities lent out or collateralized by banks, other off-balance sheet items, and securitization-related off-balance sheet exposures. Banks are assumed to hold margins as much as 50 percent of the off-balance sheet exposures; once there are losses, banks would pay the amount that is beyond the margins.

II. Results of the Solvency Stress Test

1. Solvency Test based on Macroeconomic Scenarios

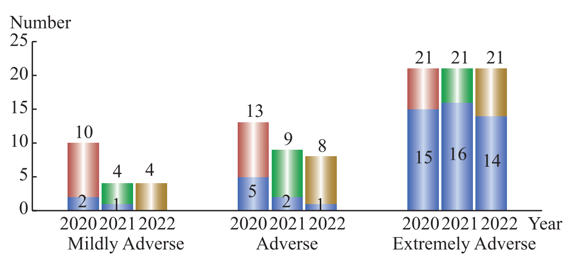
The 30 tested banks remain resilient to external shocks as a whole. According to the result of solvency test based on macroeconomic scenarios, the 30 tested banks are of relatively strong capital adequacy and sound performance. As of the end of the first quarter of 2020, the CAR of the 30 tested banks as a whole was 15.07 percent. In the mildly adverse scenario, their CAR would fall to 13.12 percent at the end of 2020 and rebound to 14.01 percent at the end of 2022. In the adverse scenario, their CAR would fall to 12.69 percent at the end of 2020 and rebound to 12.97 percent at the end of 2022. In both cases, the CAR of 30 banks could meet the regulatory requirement of 10.5 percent, which indicates that they are generally resilient to macroeconomic shocks. In the extremely adverse scenario, the CAR of 30 tested banks would fall dramatically to 9.61 percent at the end of 2020, lower than the regulatory requirement without considering external capital replenishment (Figure 2.20).

Figure 2.20 Overall CAR Results of the Solvency Test Based on Macroeconomic Scenarios



There is a difference in the resilience of individual tested banks. Under mildly adverse, adverse and extremely adverse scenarios, 10 banks, 13 banks and 21 banks have failed the test respectively as of end 2020. After replenishing capital with profit retention in two years, the number of banks that would fail the test at the end of 2022 falls to 4 and 8 under mildly adverse and adverse scenarios respectively. Under extremely adverse scenario, banks failing the test could not meet the regulatory requirement on CAR only by profit retention. If we do not consider the 2.5 percent capital conservation buffer requirement, the number of banks that failed the test at the end of 2020 would fall to 2, 5 and 15 under mildly adverse, adverse and extremely adverse scenarios respectively (Figure 2.21).

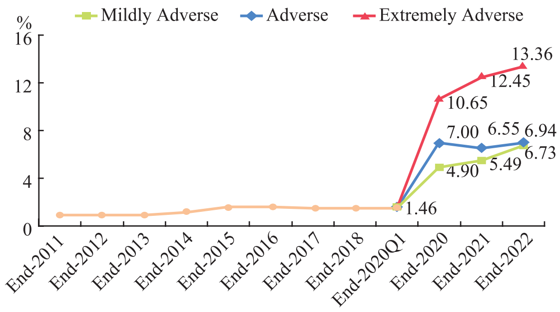
Figure 2.21 Number of Banks that Failed the Solvency Test Based on Macroeconomic Scenarios



Note: The blue column refers to the number of banks that failed the test without considering the capital conservation buffer requirement.

Credit risk is the main factor affecting the capital adequacy level of the tested banks. In the mildly adverse, adverse and extremely adverse scenarios, the tested banks would be faced with a deterioration of loan quality and a significant increase of the NPL ratio. Without considering the resolution of NPLs, the NPL ratio would increase to 4.90 percent, 5.49 percent and 6.73 percent at the end of 2020, 2021 and 2022 respectively in the mildly adverse scenario; and to 10.65 percent, 12.45 percent and 13.36 percent in the upcoming three years in the extremely adverse scenario. Banks will need to increase loan loss provisioning, significantly affecting their capital adequacy level (Figure 2.22).

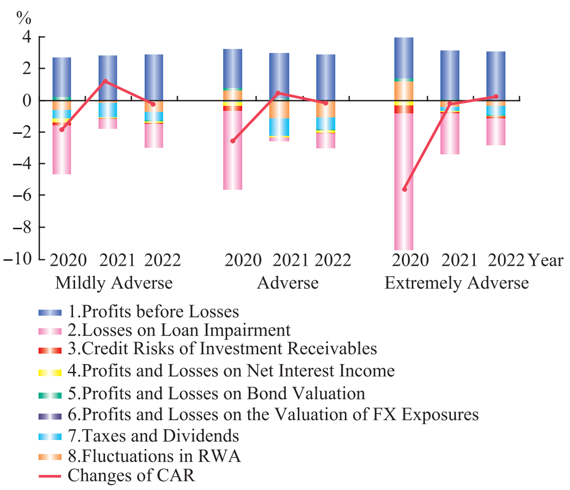
Figure 2.22 NPL Ratio Results of the Solvency Test Based on Macroeconomic Scenarios



The impact of market risk to capital adequacy level of the tested banks is limited. In the extremely adverse scenario, as a result of the decline of short-term market interest rate, the deposit interest rate in 2020 would decline by 43 bps, interest rates on other interest-bearing liabilities and interest-earning assets would fall by 145 bps, and the overall net interest margin of tested banks would fall from 2.05 percent at the end of the first quarter of 2020 to 1.67 percent at the end of 2020, leading to a decrease of 0.32 percentage point in the overall CAR; the increase in the valuation of bonds held by tested banks would lift the overall CAR by 0.19 percentage point. Changes in foreign exchange rates have little influence on the CAR of tested banks (Figure 2.23).

Adequate provisioning and stable profitability could effectively alleviate the downside pressure on capital adequacy. The overall provision coverage ratio of the 30 tested banks was 224.4 percent at the end of the first quarter of 2020, far above the minimum regulatory requirement. The average ROA of the 30 tested banks stood at 1.01 percent at the end of the first quarter of 2020, higher than the average level of the banking sector. In the mildly adverse and adverse scenarios, 6 and 5 banks respectively, though failed the test in 2020, are able to keep their capital adequacy levels above the regulatory requirement at end-2022 by replenishing capital using their own profits.

Figure 2.23 Contribution to Changes in the CAR



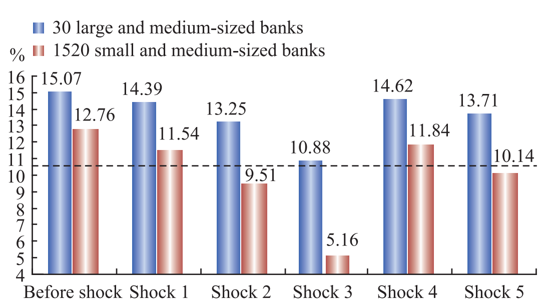
2. Solvency Test based on Sensitivity Analysis

As of the end of the first quarter of 2020, the total outstanding loans of the 1550 tested banks registered RMB 127.19 trillion, and their NPL ratio and CAR as a whole were 1.7 percent and 14.73 percent respectively. Among all the tested banks, the 30 large and medium-sized banks and 1520 small and medium-sized banks have an outstanding loan of RMB 107.24 trillion and RMB 19.95 trillion respectively, a NPL ratio of 1.46 percent and 2.99 percent respectively, and a CAR of 15.07 percent and 12.76 percent respectively.

The large and medium-sized banks are generally more resilient to credit deterioration, while small and medium-sized banks are

less resilient. In the stress test on the risk of overall credit assets, the 30 large and medium-sized banks could meet the 10.5 percent total CAR regulatory requirement, showing a strong resilience to credit risk. For the 1520 small and medium-sized banks, if their NPL ratio rises by 100 percent, 200 percent and 400 percent, their overall CAR would drop to 11.54 percent, 9.51 percent and 5.16 percent respectively, in which case 589, 786 and 977 banks would fail the test, accounting for 23.55 percent, 40.30 percent and 62.56 percent of the total assets of tested small- and medium-sized banks respectively. If 50 percent and 100 percent of the special-mention loans deteriorate to NPLs, their NPL ratio would rise to 5.53 percent and 8.06 percent respectively and CAR drop to 11.84 percent and 10.14 percent respectively, in which case 579 and 716 banks would fail the test, accounting for 20.87 percent and 34.61 percent of the total assets of the 1520 participants (See Figure 2.24, 2.25, 2.26). The test shows that the current provision and capital adequacy level of 1520 small and medium-sized banks could support them to stay resilient to NPL increases by 4.55 percentage points to 7.54 percent, keeping a 100 percent provision coverage ratio and 10.5 percent CAR.

Figure 2.24 Solvency Test on Risks of Overall Credit Assets Based on Sensitivity Analysis



(NPL ratio up by 100 percent, 200 percent and 400 percent. 50 percent and 100 percent of special-mention loans deteriorate to NPLs)

Figure 2.25 Number of Failing Banks among 30 Large and Medium-sized Banks

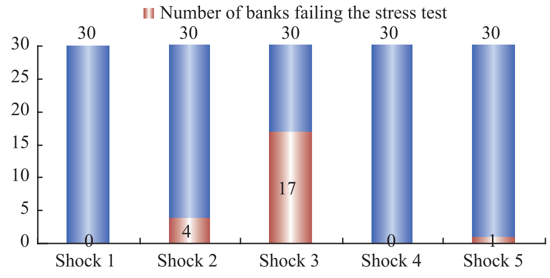
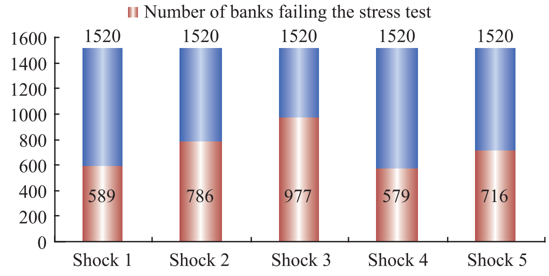


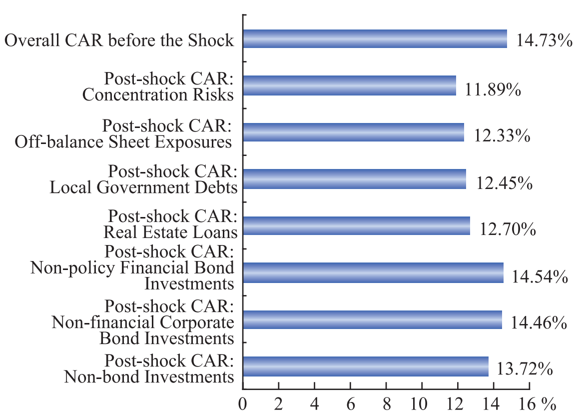
Figure 2.26 Number of Failing Banks among 1520 Small and Medium-sized Banks



The pandemic has a greater impact on some of the industries, and causes negative impact on the capital adequacy level of tested banks. If 50 percent of the normal loans to SMEs and micro businesses in the wholesale and retail industries, accommodation and catering industries, as well as culture, sports and entertainment industries become NPLs, the overall NPL ratio of the 1550 tested banks would rise to 4.44 percent, and their CAR would decline from 14.73 percent by 1.65 percentage points to 13.08 percent. If 50 percent of the normal loans of importers and exporters become NPLs, the overall NPL ratio of the tested banks would rise to 6.46 percent, and their CAR would decline by 3.22 percentage points to 11.51 percent. If the NPL ratio of all SMEs and micro businesses increases by 400 percent, the overall NPL ratio of the tested banks would rise to 5.28 percent, and the CAR would decline by 2.29 percentage points to 12.44 percent.

Attention should be paid to risk sources from client concentration, off-balance sheet exposures, local government debt and real estate loans. If the largest five non-bank group clients default with a loss given default rate of 60 percent, the overall CAR of tested banks would fall by 2.84 percentage points to 11.89 percent. If 15 percent of the sponsored off-balance sheet exposure is in the loss (with a margin rate of 50%), the overall CAR of tested banks would fall by 2.40 percentage points to 12.33 percent. If the NPA ratio related to local government debt rises by 15 percentage points, the overall CAR of tested banks would fall by 2.28 percentage points to 12.45 percent. If the NPL ratio of real estate development loans rises by 15 percentage points and the NPL ratio of housing purchase loans rises by 10 percentage points, the overall CAR of tested banks would fall by 2.03 percentage points to 12.7 percent (Figure 2.27).

Figure 2.27 Result of Solvency Test Based on Sensitivity Analysis in Key Areas (the most severe shocks)



III. Result of the Liquidity Stress Test

Tested banks are relatively resilient against liquidity shocks. The liquidity stress test was undertaken to assess the capacity of banks to withstand funding pressures within a 7-day, 30-day and 90-day period respectively. The test result shows that the overall liquidity of the tested banks was adequate. 94.90 percent and 91.87 percent of the 1550 tested banks passed the test in the mildly adverse and severely adverse scenario, up by 2.59 percentage points and 5.45 percentage points from 2019 respectively. Of the 30 large and medium-sized banks, all passed the test in the mildly adverse scenario, and 6 failed the test in the severely adverse scenario, which is a better performance than in 2019.

Banks with a heavy reliance on inter-bank funding are less resilient to liquidity shocks. The test applied a more prudent run-off rates of inter-bank funds than that of general deposits. According to the test result, banks that failed the test were highly dependent on inter-bank funding and faced greater liquidity pressures. Great attention should be paid to their asset-liability structures and liquidity risk management.

Special Topic 5 Utilization of Insurance Funds under New Circumstance: Challenges and Responses

Since the Reform and Opening-up, the insurance sector in China achieved great progress marked by increasing size and greater efficiency of insurance funds utilization, which has played an important role in promoting the healthy development of the insurance sector and supporting the real economy. However, problems also exist in the use of insurance funds including maturity mismatch, improper use of funds by major shareholders, etc. As China's economy transforms from high-speed growth to high-quality development and the supply-side structural reform of the financial sector enters a critical stage, factors such as the slowing economic growth and the transformation of the insurance sector present new challenges to the use of insurance funds.

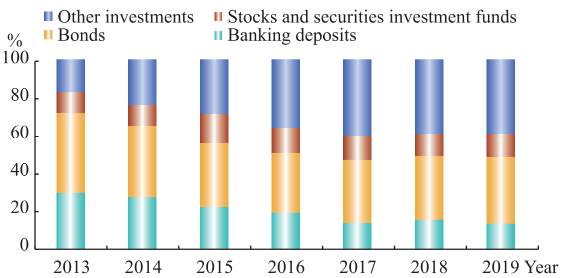
I. Status Quo of Use of Insurance Funds in China

First, the size of utilized insurance funds keeps growing. China has become the second largest insurance market in the world. As premium revenue increases rapidly, the size of utilized insurance funds keeps growing. By the end of 2019, the balance of utilized insurance funds reached RMB 18.53 trillion, with an average annual growth rate of 19.71 percent over the past five years.

Second, investment scope of insurance funds keeps expanding. Based on safety consideration, the investment and use of insurance funds were strictly restricted within rather limited investment scope. However, since 2012, a number of investment channels for insurance funds have emerged: trust plans, wealth management products (WMPs) provided by banks and stock index futures in 2012; preferred stocks, ChiNext stocks, venture capital, etc., in 2014; insurance private equity funds in 2015; Public and Private Partnership (PPP) programs and the Shanghai-Hong Kong Stock Connect pilot program in 2016; the pilot of Shenzhen-Hong Kong Stock Connect in 2017; apartments with longer lease in 2018; and Tier-2 capital bonds issued by banks and non-fixed-term capital bonds in 2019. At present, insurance funds in China can be invested in multiple assets including bonds, stocks (equity), financial derivatives, etc., and in cross-border investments, with an investment scope similar to that of overseas peers.

Third, structure of funds allocation has improved and starts to stabilize. With the expansion of investment channels, the structure of insurance funds allocation improved significantly from 2013 to 2016, as the portion of banking deposits and bonds declined gradually year by year. Other investments increased from a proportion of less than 20 percent to nearly 40 percent, becoming the largest investment destination. After 2016, shares of all kinds of allocated assets maintained stable. By end-2019, banking deposits and bonds accounted for 13.62 percent and 34.56 percent respectively; stocks and securities investment funds altogether took up 13.15 percent; and other investment products represented 38.67 percent, which were basically the same as those of the end of last year (Figure 2.28).

Figure 2.28 Utilization of Insurance Funds



Source: The CBIRC.

II. Challenges and Risks of Insurance Funds Utilization in China

At present, the international environment is both complicated and challenging. China's economy is faced with transitional challenges, and the downside pressure is increasing, coupled by shocks of the COVID-19 pandemic. The insurance funds utilization is challenged by dropping interest rate, more defaults in bond market and insufficient supply of long-duration assets, which lead to great pressure on asset allocation.

First, asset-liability mismatch and rising risk of spread loss. As the insurance sector returns to serve its fundamental purpose, the personal insurance sector is faced with longer duration of liabilities and a growing gap between duration of assets and that of liabilities. By the end of Q2 2019, the average duration of liabilities of personal insurance companies was 13.19 years, which is longer than that of end-2018 by 2.01 years. But the duration of assets only extended by 0.52 year and registered at 5.76 years, resulting in the duration gap rising by 2 years and reaching 7.43 years. In the current environment featuring downward interest rate, insurance companies are faced with greater risk of spread loss as a result of maturity mismatch, imposing negative impact on both long-term profitability and solvency. In addition, insurance companies sell a large amount of WMPs with high returns and engage in vicious competition, which lead to higher rigid costs of liabilities, return gap or even costs being higher than revenues, thus resulting in higher risk of spread loss.

Second, large impact of stock market volatility on investment returns and a need for greater balance between risks and returns. The annual rate of return on utilized insurance funds from 2015 to 2019 was 7.56 percent, 5.66 percent, 5.77 percent, 4.33 percent and 4.94 percent respectively. The return peaked in 2015 mainly because the SSE Composite Index rose by more than 60 percent in the first half of that year. The return reached bottom in 2018 as a result of a 65 percent drop of SSE Composite Index, resulting in huge losses of equity investment. The return climbed back to 4.94 percent in 2019 due to a booming stock market when returns of other major assets decreased. Generally, the insurance sector is lack of adequate development capability, sufficient investment experience or professionals, making investment returns highly influenced by fluctuations of the stock market. This is particularly obvious in some small and medium-sized insurance companies taking an aggressive investment approach in the stock market.

Third, rising credit risk of fixed-income assets. In recent years, there have been an increasing number of defaults in the bond market. Some bond issuers with high credit ratings and full disclosure at issuance also start to have tight liquidity or fail to repay principal and interests of bonds. Against such background, there is greater credit risk for insurance funds invested in fixed-income assets. In addition, insurance asset management companies have ambiguous qualifications of the registration rights of pledged immovable properties and the bond investment plans issued by them are lack of effective measures for risk buffer and mitigation, which intensify the credit risks of those products.

Fourth, difficulties in management of alternative investments because of low transparency and liquidity. As insurance funds being invested in larger areas and with greater scale, the size and proportion of alternative investment also rises. Alternative investment projects usually have problems such as inadequate disclosure of product information, low transparency and low liquidity. Meanwhile, some insurance companies have rather long chain of investment and transaction, making it hard to penetrate to underlying assets. Problems mentioned above exaggerate the investment risks faced by insurance companies, and intensify the cross-sector and cross-market risk contagion.

III. Policy Recommendations

Under the prerequisite of ensuring security, returns and liquidity, the insurance sector should make greater use of the merits of insurance funds in enabling long-term investment, meet the needs of economic development by providing long-term funds for the real economy, and serve as a stabilizer for the capital market.

First, enhance the management of asset-liability mismatch to serve the long-term development of the insurance sector. Insurance companies should adhere to the idea of asset-liability match, implement a mechanism for asset and liability management, set up an investment decision-making system and coordination mechanism that reconcile both product development and investment operation, break barriers among their investment, product and actuarial departments, and prevent risks of product pricing and spread loss. At the same time, insurance companies should introduce products not sensitive to interest rate and lower the rigid costs of liabilities.

Second, enhance management of alternative investments and serve real economy in a better manner. Faced with the downside economic pressure, the insurance sector should make full use of its merits in having long-term and stable funds by providing support of equity and credit financing for enterprises that have profitability but are in temporary difficulties, or by investing in infrastructures and immovable properties with good qualification and high credit ratings, or by investing in areas with promising market and huge potential such as old-age health care services, new urbanization and technologically innovative enterprises. At the same time, it is important to guard against legal risks, operational risks and profit tunneling, as alternative investments by insurance funds are usually featured with large amount, longer maturity, complex operation and hidden risks.

Third, strengthen risk management by technological empowerment and other methods. Insurance companies should make greater use of FinTech innovation. By using big data, blockchain, artificial intelligence and other technological tools, insurance companies can improve risk identification and quantitative analysis and establish effective risk control system. It is important to launch comprehensive stress tests, formulate response plans under extreme circumstances, make good control of investment volatility, accelerate the accumulation of technologies and professionals of relevant areas, and improve risk awareness and risk management comprehensively.

Fourth, enhance the regulation of insurance funds utilization to prevent financial risks. Based on the general idea of "opening up front end and control mid-and-back end", it is critical to strengthen hard regulatory constraints on asset and liability management of insurance companies, enhance strict requirements for internal control and information disclosure regarding use of funds, and promote the legal person regulation, classified regulation, product regulation and conduct regulation on asset management companies in accordance with the guidelines on regulating asset management business.

Fifth, promote development of bond market and increase supply of long-term bonds. As insurance funds make huge amount of investment in bonds, an efficient and regulated bond market will provide sound support for the use of insurance funds. To address the maturity mismatch of insurance companies, it is important to improve and optimize the structure of bond market and increase supply of long-term bonds. While developing basic products, measures should be taken to develop interest rate derivatives such as futures and options in an orderly manner, so as to provide insurance companies and other institutional investors with more choices and risk management tools.

Sixth, deepen the overall reform of the stock market and promote virtuous interaction between insurance funds and stock market. Based on the principle of market-orientation and rule of law, measures should be taken to systematically promote the basic institutional reform of the stock market, improve the quality of listed companies, enhance corporate governance and information disclosure of listed companies, strengthen the vitality and resilience of the market, improve transaction facilitation and efficiency, lower transaction costs and create a better investment environment for insurance funds and other long-term funds. Meanwhile, it is important that insurance funds provide long-term and stable funds for stock market by taking advantage of their large-scale and long-term funds.

Special Topic 6 Stress Test on Liquidity Risk of Publicly Offered Funds

In the first half of 2020, the PBC conducted its 2019 liquidity stress test on publicly offered funds to assess their liquidity risk management capacity under extreme redemption shocks.

I. Stress Test Profile

Sample funds. 5906 existing publicly offered funds as of end-2019 were selected for the test.

Test model. The test was designed to assess the capacity of sample publicly offered funds for meeting redemption needs by observing their liquidity gaps in times of redemption under different liquidity stress scenarios. Net redemption rate was selected as a proxy for liquidity shocks to publicly offered funds and a simulation was made on potential redemption needs under different stress scenarios by using historical subscription and redemption data. Assets held by publicly offered funds were classified into 13 types, each given a weight based on how liquid it is. The net liquidity-weighted assets were calculated for each fund by using their balance sheet data of total liquidity-weighted assets at end-2019 with deduction of liabilities occurring from pledged financing and fees charged in investment activities and daily operation. The fund will be considered to have passed the test if its net liquidity-weighted assets meet redemption needs in stress scenarios.

Stress scenarios. Depending on their investment assets and strategies, publicly offered funds are categorized into 20 types such as stock funds, passive index funds and medium to long-term bond funds, with varying historical net redemption rates for each fund. Calibrated to its specific subscription and redemption data, each type of funds is tested under two scenarios, i.e. mild and severe redemption shocks, to find out its net redemption rates of a 10 percent and 5 percent confidence level respectively[①] (Table 2.4).

Table 2.4 Redemption Shocks under Different Stress Scenarios

Type of Funds	Mild stress scenario	Severe stress scenario
	Net redemption rate (%) VaR (0.1)	Net redemption rate (%) VaR (0.05)
Stock funds	30.11	45.67
Passive index funds	31.24	46.10

① Due to the rolling sampling interval, the redemption shocks under various stress scenarios of the 2019 liquidity stress test are slightly different from those of 2018.

(Cont)

Type of Funds	Mild stress scenario	Severe stress scenario
	Net redemption rate (%) VaR (0.1)	Net redemption rate (%) VaR (0.05)
Enhanced index funds	33.44	55.24
Stock hybrid funds	25.70	38.46
Balanced hybrid funds	12.74	23.42
Bond hybrid funds	44.62	62.06
Flexible asset allocation funds	40.72	62.79
Medium to long-term bond funds	42.08	63.29
Short-term bond funds	60.43	74.00
Primary bond hybrid funds	39.38	53.79
Secondary bond hybrid funds	42.79	58.02
Passive index bond funds	44.36	66.37
Enhanced index bond funds	55.16	76.44
Money market funds	47.91	66.09
Equity long/short funds	43.00	58.97
Commodity funds	33.91	54.08
International (QDII) stock funds	28.23	44.11
International (QDII) hybrid funds	23.18	36.89
International (QDII) bond funds	30.98	45.76
International (QDII) alternative investment funds	22.90	32.33

Source: The PBC.

II. Test Results

Stress test results indicate overall strong resilience to liquidity risk in publicly offered funds in China, which are overall better than those of last year. All sample funds passed the test in the mild stress scenario, while 52 funds failed the test in the severe stress scenario, accounting for 0.88 percent of the total, down by 61 funds and 1.45 percentage points y-o-y.

By fund type, bond funds are relatively less resilient to liquidity shocks, and secondary bond hybrid funds are less resilient to liquidity shocks than the last year. In the severe stress scenario, the short-term bond funds have the highest proportion of failures at 10.24 percent; while secondary bond hybrid funds have the highest number of failures at 19, with the proportion of failed funds up by 2.03 percentage points y-o-y. (Table 2.5).

Table 2.5 Number and Proportion of Failed Funds

Types of funds	Number of sample funds	Number of failed funds		Failed funds as a percentage of its type (%)	
		Mild	Severe	Mild	Severe
Stock funds	323	0	0	0.00	0.00
Passive index funds	582	0	0	0.00	0.00
Enhanced index funds	100	0	0	0.00	0.00
Stock hybrid funds	790	0	0	0.00	0.00
Balanced hybrid funds	59	0	0	0.00	0.00
Bond hybrid funds	238	0	4	0.00	1.68
Flexible asset allocation funds	1387	0	4	0.00	0.29
Medium to long-term bond funds	1157	1	8	0.09	0.69
Short-term bond funds	127	0	13	0.00	10.24
Primary bond hybrid funds	96	0	0	0.00	0.00
Secondary bond hybrid funds	319	0	19	0.00	5.96
Passive index bond funds	83	0	2	0.00	2.41
Enhanced index bond funds	2	0	2	0.00	100.00
Money market funds	351	0	0	0.00	0.00
Equity long/short funds	17	0	0	0.00	0.00
Commodity funds	12	0	0	0.00	0.00
International (QDII) stock funds	116	0	0	0.00	0.00
International (QDII) hybrid funds	44	0	0	0.00	0.00
International (QDII) bond funds	64	0	0	0.00	0.00
International (QDII) alternative investment funds	39	0	0	0.00	0.00
Total	5906	1	52	0.02	0.88

Source: The PBC.

Special Topic 7 Improving the Multi-Tiered Capital Market: Reform of the SSE STAR Market, the ChiNext and the NEEQ

After years of development, a multi-tiered capital market comprised of the main board (the small and medium-sized enterprise board included), the ChiNext, the SSE STAR Market, the National Equities Exchange and Quotations (NEEQ), regional equity markets, and the bond and futures market has basically taken shape. Since the launch of the SSE STAR Market, the pilot of the registration-based IPO system has been implemented steadily. Key institutional innovation has withstood market tests and the market has operated soundly in general. The SSE STAR Market has played a constructive and leading role as a "pilot field" in the reform of the capital market, and the brand effect in supporting technological innovation has started to emerge. As of July 22, 2020, there has been an accumulative number of 140 companies listed on the SSE STAR Market, with a total market value of RMB 2.8 trillion. Together, they have attracted a financing scale of RMB 211 billion, an average of RMB 1.51 billion for each company. Since 2019, regulatory authorities promoted the reform of the ChiNext and the NEEQ to improve the institutional framework of the multi-tiered capital market and to enhance the capability of the capital market to serve the real economy.

I. Reform Measures of the ChiNext

Reform of the ChiNext, including the pilot of registration-based IPO system, focuses on information disclosure, accountability of stock issuers and intermediaries, and punishments on misconducts.

First, foster a market-based issuance and underwriting system. Develop a set of listing conditions that could inclusively meet diversified needs, impose no constraints on the pricing of new stocks at issuance, and let institutional investors play a major role in the inquiry, pricing and placement process.

Second, improve trading rules. No ceiling or floor is imposed on prices of newly issued shares for the first five trading days since issuance, after which there will be a daily ceiling/floor of 20 percent. For existing stocks, the daily floating band of prices is extended from 10 percent to 20 percent. Improve the practice of temporary trade suspension, and introduce the after-hour fixed price trading system. Improve the business of securities refinancing by way of, for example, agreed application.

Third, simultaneously promote the registration reform of refinancing and acquisition and reorganization on the ChiNext. Acquisition and reorganization of ChiNext-listed companies are subject to review of the Shenzhen Stock Exchange. The registration system applies if issuance of stocks or convertible corporate bonds is involved. Improve small-sized and quick issuance mechanism in the ChiNext.

Fourth, strengthen constraints of market exit. On one hand, market exit procedure is streamlined by abolishing listing suspension and resumption to condense the time needed to exit the market. On the other hand, market exit standards are optimized by abolishing the single indicator of consecutive losses, introducing a composite of financial indicators and adding one indicator where market value constantly fall below the required level.

Fifth, build up an ongoing regulatory rule-based system that is fit for the ChiNext. Enhance industry positioning and disclosure of risk factors, put more emphasis on the disclosure responsibility of controlling shareholders and actual controllers, properly extend the lock-in period of share-holding by important shareholders of non-profitable enterprises, and improve the flexibility of equity incentives mechanism.

II. Reform Measures of the NEEQ

The objective of NEEQ reform is to better serve SMEs. Reform measures, including improved market classification, introduction of tier-specific issuance and trading rules that are suited to the characteristics of SMEs, have been taken to provide differentiated and targeted services for listed enterprises.

First, set up the NEEQ Select Tier. On top of the Base and Innovation tiers, a new market tier, the NEEQ Select is introduced for high-quality enterprises that have finished IPOs. A set of differentiated regulatory requirements, including on information disclosure and corporate governance, for each tier are formulated, to concentrate regulatory resources to the Select Tier and other listed companies with high spillover risks.

Second, optimize the issuance process. On one hand, introduce public issuance mechanism and improve efficiency of investment and financing through open roadshow and enquiry. On the other hand, improve targeted issuance mechanism, abolish the requirement that the number of new shareholders in a single time of financing cannot exceed 35, and allow internal and small-sized financing to be conducted by companies themselves.

Third, establish the mechanism for trans-board listing. Companies that have been listed consecutively in the Select Tier for over a year after IPOs and that meet the transfer conditions may apply to the stock exchange for trans-board listing.

Fourth, diversify trading mechanisms. Increase the matching frequency of call auction in the Base and Innovative tiers, and apply continuous auction in the Select Tier to reasonably improve market liquidity.

Fifth, optimize investor structure. Differentiated investor eligibility criteria apply for each market tier to lower access threshold of investors properly. Encourage publicly-offered funds to invest in listed companies in the Select Tier in accordance with regulation, and facilitate investment by insurance funds, annuities and other institutional investors.

III. Thoughts on Relevant Institutional Arrangements and Policy Recommendations

To meet the demands for investment and

financing of market participants with various term structures and risk profiles, efforts should be made in building a multi-tiered capital market with well-established financing functions, sound institutional framework, effective market regulation and investor protection. Next, while further improving the specific trading rules of each segment of the capital market, emphasis should be given in cultivating an open, fair and equitable trading environment through legislation and punishments on misconducts, making use of the self-stabilizing mechanism of the market, and allowing the survival of the fittest, so as to fundamentally enhance the attraction of the capital market and its capability in serving the real economy. Some key considerations are as follows:

Continue to promote the registration-based IPO reform with enhanced information disclosure. Establish and improve the stock issuance and listing mechanism that focuses on information disclosure. Specify requirements on information disclosure that are oriented to investors' needs. Build up a stock issuance and registration mechanism that is public, transparent, efficient and convenient, and enhance the capability of the capital market in serving high-quality development of the real economy.

Further improve relevant laws and regulations, in order to bolster deterrence against misconducts in the securities market. The newly revised *Securities Law* has significantly increased punishments on violations such as fraudulent issuance, but the current *Criminal Law* still applies a rather light punishment on crimes in the securities and futures market, such as fraudulent issuance and violations of information disclosure, which does not fully follow the principle of "compatibility between crime and punishment". It is suggested that the *Criminal Law* should be revised and improved as soon as possible to increase punishments on criminal actions such as fraudulent issuance, violations of information disclosure and market manipulation. In the meantime, the establishment of China's first financial court in Shanghai presents a good opportunity to improve the efficiency of trial and execution of crimes in the securities sector and to strengthen deterrence against illegal actions by making use of the professionalism of the court and introducing responsibilities of criminal adjudication.

Enhance in-process and ex post regulation to better protect the legitimate rights and interests of investors. It is suggested to take the release of the new *Securities Law* as an opportunity to strengthen regulatory forces and optimize the allocation of regulatory resources, to enhance in-process and ex post regulation of the securities market, and to strengthen examination and punishment of illegal actions. It is important to make good use of the role of investor protection agency in class action and to establish a small and medium-investor protection mechanism with Chinese characteristics.

Special Topic 8 Risk Analysis and Policy Suggestions for the Trust Industry

In recent years, China's trust industry has developed rapidly and played an important role in broadening the investment and financing channels and serving the real economy. However, there are also problems that some trust companies go against the original intent of the trust business, and have weak compliance awareness and insufficient risk management and control. At present, as the downward pressure on the economy increases and the exposure of risks in the trust industry accelerates, a few trust companies have deteriorated into high-risk institutions, which calls for attention and requires multiple measures to prevent and mitigate relevant risks.

I. The History of China's Trust Industry

Trust was first introduced to China in the early 20th century. Shortly after the founding of the People's Republic of China, trust institutions quickly exited the market due to constraints of objective conditions such as the planned economic system. After the reform and opening up, the establishment of China International Trust and Investment Corporation in October 1979 marked the official restart of China's trust industry, which has since gone through the four stages of exploration and rectification, institutional standardization, rapid development, as well as transformation and adjustment.

Exploration and rectification (1979-2000). Due to strong demand for financing in the course of economic development and strict planned management of bank credits, the trust industry basically implemented a bank-like business model during this period. Although it provided a variety of financial services for social and economic development, the trust industry itself was developing in disorder due to lack of basic institutional system of laws and regulations and a regulatory vacuum, and therefore underwent five large-scale clean-ups and rectifications. **The first rectification** took place in 1982. In the absence of corresponding institutional norms, central government authorities, local governments and banks set up a large number of trust institutions for the purpose of economic development. Such disorganized expansion of the trust industry nationwide disrupted the state's planned management of financial services. For this reason, the State Council issued a notice in April 1982 to discontinue local trust business, and required that all trust businesses to be handled by banks so that the number of trust institutions came under control. **The second and third rectifications** took place in 1985 and 1988 respectively, mainly to cope with the reckless credit expansion caused by the overheating of the economy in the 1980s. Measures were taken to reduce the number of trust institutions and to clean up the trust business. **The fourth rectification** took place in 1993, mainly to solve the problem of illegal lending and investment by trust institutions in collusion with banks under the new round of reform and opening up. Trust institutions were required to operate with licenses and operate separately from banks, and controls over fund flows between trust institutions and banks were strengthened. **The fifth rectification** took place in 1999. After the previous rounds of rectifications, the sources of funds of trust institutions have been significantly reduced, and massive assets were held without the support of stable liabilities, putting some institutions under survival crisis. The rectification focused on separating the trust industry from the securities industry and clarified the main business of trust as entrusted wealth management; companies unable to remain operative were suspended for rectification, shut down or deregistered, while those capable of continued operations were allowed to reregister after solving legacies. After five rounds of rectifications, the number of trust institutions in China shrunk to 59 from more than 1000 at the peak.

Institutional standardization (2001-2006). The *Trust Law of the People's Republic of China* was promulgated for implementation in 2001. In 2002, the PBC issued the *Administrative Measures for Trust and Investment Companies* and the *Interim Measures for the Management of Pecuniary Trusts of Trust and Investment Companies*. The promulgation of the "*One Law and Two Measures*" established the legal basis for the trust industry in China, standardized the operating activities and core business of trust institutions, clarified the nature of trust institutions as non-deposit taking wealth management institutions, and facilitated the return of the trust industry to its intended purpose of offering wealth management services as is entrusted.

Rapid development (2007-2017). Due to the long-term accustomed operation of quasi-banking business in the past, trust institutions were slow in returning to their intended functions; in addition, as the institutional building lagged behind the evolution of business practices, some business extensively conducted by trust institutions lacked corresponding supervision and the limitations of the old "*Two Measures*" were gradually exposed. Against this backdrop, the CBRC issued the *Administrative Measures for Trust Companies* and the *Administrative Measures for the Collective Fund Trust Schemes of Trust Companies* in 2007. The two new *Measures* further clarified the regulatory requirements in terms of market access, bankruptcy and exit, cross-region business development, business scope and related transactions of trust institutions. In 2010, the CBRC issued the *Regulation on Net Capital of Trust Companies*, establishing a risk control indicator system with net capital at the core. Subsequently, the CBRC established the Trust Supervision Department, and China Trust Protection Fund Co., Ltd. and China Trust Registration Co., Ltd. were also established in succession, which, together with the China Trustee Association, formed a "one body, three wings" regulatory framework with the regulatory authority as the main "body" supplemented by the three "wings" of self-disciplinary, market constraint and security protection organizations. During this period, China's trust industry developed rapidly with a compound annual growth rate of 39.36 percent, and the industry size reached its peak in 2017.

Transformation and adjustment (2018 to present). In April 2018, the PBC, CBIRC, CSRC and SAFE issued the *Guidelines on Regulating Asset Management Business of Financial Institutions* (hereafter referred to as the *Guidelines*) to unify the regulatory standards for asset management products of same kind to prevent and control financial risks. Since then, the trust industry has begun to transform, reduce the size of conduit business and multi-layer embedding, and the industry scale has declined.

II. Status Quo of China's Trust Industry

The assets under management (AUM) of the trust industry declined steadily, and the operating performance remained stable. As of end-2019, the AUM of the 68 trust companies across China was RMB 21.60 trillion, a y-o-y decrease of 4.85 percent, which was significantly lower than the 13.50 percent decline in 2018. Shareholders' equity was RMB 631.627 billion, a y-o-y increase of 9.86 percent. The proprietary assets were RMB 767.712 billion, a y-o-y increase of 6.73 percent. The annual operating revenue was RMB 120.012 billion, a y-o-y increase of 5.22 percent, and the total profit was RMB 72.705 billion, basically the same as that in 2018.

Pecuniary trust still dominated, and the size of single pecuniary trust dropped significantly. As of end-2019, the AUM of collective pecuniary trust stood at RMB 9.92 trillion, accounting for 45.93 percent, a y-o-y increase of RMB 800 billion and 5.81 percentage points; the AUM of single pecuniary trust was RMB 8.01 trillion, accounting for 37.10 percent, a y-o-y decrease of RMB 1.82 trillion and 6.23 percentage points; the AUM of non-cash property trust was RMB 3.67 trillion, a y-o-y decrease of approximately RMB 88.4 billion, accounting for 16.98 percent, basically the same as the previous year. The size of collective pecuniary trust significantly exceeded that of single pecuniary trust and became the most important funding source of trust.

Conduit business declined significantly, but the proportion of financing business increased. As of end-2019, the balance of non-discretionary trust was RMB 10.65 trillion, accounting for 49.30 percent, a y-o-y decrease of RMB 2.6 trillion and 9.06 percent; the size of financing trust came in at RMB 5.83 trillion, accounting for 26.99 percent and increasing by RMB 1.49 trillion and 7.85 percentage points y-o-y; the size of investment trust was RMB 5.12 trillion, basically the same as that of the previous year and accounting for 23.71 percent, a modest increase of 1.21 percentage points y-o-y. The size of non-discretionary trust shrunk significantly, and the work of "removing conduit business" has made significant progress.

Risk exposure in the trust industry accelerated with a possibility of spillover. Strengthened supervision and tighter investigation on the trust industry resulted in more thorough risk exposures. As of end-2019, the risk ratio of trust assets registered 2.67 percent, a significant rise of 1.69 percentage points compared to that of the previous year. Specifically, the assets of actively-managed trust where trust companies assume risk management responsibilities came with a risk ratio of 3.04 percent, a y-o-y increase of 1.75 percentage points, and related risks may be contagious across industries, markets and regions. The assets of non-discretionary trust where trustors such as other financial institutions assume risk management responsibilities stood with a risk ratio of 2.29 percent, a y-o-y increase of 1.53 percentage points. With the deepening efforts to eliminate conduit business and asset embedding, the risks faced by trustors in the conduit business will become more explicit.

III. Causes of Risks in the Trust Industry

China's trust industry bears a strong resemblance to banks since its inception. Started with pecuniary trust, most trust companies earn interest spread income through a business model similar to that of bank credit intermediary. The trustee culture that serves to maximize the interests of the beneficiaries is lacking with ill-developed financing functions, making the trust business a fund-raising channel against its intended purposes. Specifically:

Radical operating style led to risk accumulation. Some trust companies excessively pursue profit goals and neglect risk prevention and control. The use of proprietary assets to aggressively engage in high-risk investments such as stocks and equities may incur great investment losses; engaging or participating in non-standard trust business featuring rollovers or collective operations may lead to mismatch in maturity and possibly trigger redemption risks.

Inadequate corporate governance tolerated evident shareholder violations. The qualifications of shareholders of some trust companies are not in compliance with regulations, and there are situations such as fake capital contributions, revolving capital injections, withdrawal of capital, equity proxy and illegal pledges of trust company equities. Some trust companies are dominated by one single largest shareholder where the shareholder may abuse shareholder rights to improperly interfere with the company's operations and transfer benefits to other shareholders, actual controllers and related parties through related transactions. In addition, the equity structure of some trust companies is complex and it is difficult to identify related parties, highlighting the problem of illegal related transactions.

Trust companies failed to properly "fulfill seller obligations", and rigid payment went against the principle of "buyers-bear-risks". Some trust companies breached the principle of integrity, credibility and prudence and failed to fulfill their sellers' obligations in due diligence, risk management and information disclosure, which prevented investors from thoroughly understanding the risks of the projects in a timely and precise manner. Owing to improper due diligence management or out of considerations such as gaining investors' trust and maintaining good reputation, some trust companies promised rigid payment by illegally issuing under-the-table agreements to provide implicit guarantees, or took over risk assets with proprietary assets, or guaranteed that risk assets be taken over by a third party. This not only reduced investors' risk awareness but also transferred off-balance sheet risks to on-balance sheet, which may potentially turn into non-performing assets.

Some trust companies abused institutional flexibility with repeated regulatory arbitrage activities. Some trust companies take advantage of their capacity to invest across sectors with fewer restrictions to facilitate regulatory arbitrage for other institutions, such as selling trust products to small and medium-sized investors by undertaking bank wealth management products or via P2P lending platforms, assisting clients in illegally channeling funds into real estate, local government financing platforms, overcapacity sectors and other restrictive or prohibited areas; assisting banks in account reconciliations or moving assets off balance sheet in violation of regulations or helping banks circumvent capital and provisioning requirements by packaging bank loans into trust investments; concealing non-performing assets through credit asset transfers; offering financial business conduits for third-party institutions without financial licenses to conduct financial business in disguised forms.

The external environment remains immature and it is difficult for the trust industry to return to its intended purposes. In the context of rapid development of China's economy, small and medium-sized enterprises and other high-risk areas are in great demand for funds. Traditional financial services of banks cannot accommodate these needs, which objectively leads to the rapid expansion of pecuniary trust. Additionally, the delay in promulgating relevant regulations on the registration and transfer of trust assets to support the *Trust Law* also constrained the trust system to play to its advantages.

IV. Policy Suggestions

Speeding up construction of the basic institutional system and creating a favorable development environment. Efforts should be made to promote the revision of the *Trust Law* and the promulgation of regulations on trust companies, and implement fundamental policies regarding bankruptcy remote structures and trust property registration. Development of administrative measures and detailed implementation rules governing service trust should be accelerated.

Promoting accelerated transformation of the industry and vigorously developing intended business. The trust industry should give full play to the advantages of the independence of trust property and the capacity of trust companies in cross-field investments, fulfill their functional positioning as trustees, steadily reduce the financing trust business and create new growth drivers: to meet the demand for pension and health care services, and vigorously develop service trust such as pension insurance and welfare plans; to address the development needs of charitable undertakings and actively develop charitable trust to achieve the preservation and appreciation of charitable assets; to satisfy the needs of high-net-worth clients for wealth management and wealth inheritance, and vigorously develop wealth management trust business.

Improving corporate governance mechanism and strengthening operational and management proficiency. Trust companies should be encouraged to strengthen the institutional arrangements of "the board of directors, the board of supervisors, the general meeting of stockholders and senior management" and put in place a governance structure where different organs perform their respective duties and achieve a balance of power so that a scientific and efficient decision-making, incentive and restraint mechanism can be built to improve professional investment capabilities and prevent major shareholders from interfering with the company's daily operations. Trust companies should disclose product information in a proactive, truthful, accurate, complete and timely manner, strengthen investor eligibility management and raise investors' risk awareness on the basis of fulfilling their own due diligence obligations.

Comprehensively strengthening external supervision and promoting operations in compliance with laws and regulations. A penetrating supervision mechanism can be put in place to oversee the shareholders and related parties of trust companies, strictly govern the qualifications of controlling shareholders of trust companies, and tighten control over improper related transactions. Capital regulatory standards should be improved to ensure that trust companies maintain a capital level that is proportional with their business development and risk control capabilities. The requirements of the *Guidelines* should be implemented stringently to eliminate multi-layer embedding structures, reduce conduit business, clean up non-standard pooled funds, and strictly control leveraged operations. Trust products should be sold to investors fully meeting the requirements of the *Trust Law* and applicable regulatory rules, and shall not be held or distributed on behalf of others.

Continue to strengthen risk monitoring and improve risk mitigation mechanisms. The normalized risk monitoring mechanism should be improved, with a focus on the risk profile of the assets of trust companies, equity relationships, information about the actual controllers and the true quality of proprietary assets, so that problems with initial signs, a bad tendency or likelihood of evolving into a trend issue can be identified and forewarned as early as possible, helping improve the proactivity and forward-looking capability of risk monitoring. Disposal of risks in the trust industry should be conducted under the principle of market-orientation and rule of law to eradicate the practice of rigid payment, and measures should be taken to consolidate the main responsibilities of trust companies and their shareholders, the territorial responsibilities of local governments, the supervisory responsibilities of financial management authorities, and the responsibilities of relevant departments to coordinate, so as to prevent risks from spreading within the financial system or from the financial system to the real economy.

Special Topic 9　Global Fintech Developments and Regulatory Practices

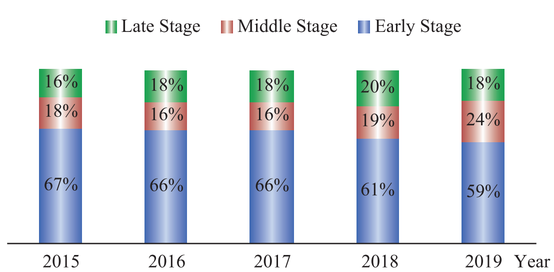
Further integration between financial services and technologies has been witnessed since 2019, with marked progress in areas including digital currency, open banking, etc. At the same time, national financial authorities have worked actively to explore possible enhancements to the Fintech regulation in terms of technical guidance, regulatory standards and tools. Drawing on international practices in this regard, China will, in an innovative regulatory tool-based, regulatory rule-centered and digitalization-enabled approach, step up its efforts to enhance the Fintech regulatory framework that fits with the domestic situations.

I. Global Fintech Developments

Rapid growth in global Fintech activities has continued into 2019. Application of technologies such as big data, artificial intelligence (AI) and distributed ledger in the financial sector becomes increasingly mature, giving birth to new Fintech business models, products and services. Among others, digital currency, open banking and digital banks are gaining momentum, with active applications in a wide group of economies.

Financing market served as a strong boost to Fintech application in the industry. Statistics show that in 2019 Fintech financing① came at USD 34.5 billion across 1913 deals globally, roughly twice the size of that in 2015. From 2015-2019, the share of mid-and-late stage Fintech financing deals② kept rising (Figure 2.29), indicating that quality startups with strong performance are beginning to operate at scale in a maturing market. From 2015-2019, Global Fintech Adoption Rate③ increased from 16 percent to 60 percent④, as Fintech-related research and development was put on the market in a shorter period and financial services became more intelligent amidst increased supply and demand for Fintech products and services.

Figure 2.29　Funding Deal Share by Stage to Global VC-backed Fintech Firms, 2015-2019



Source: CB Insights.

① Refers to venture capital to Fintech companies. Source: CB Insights.

② Funding in Seed, Angel and A rounds is commonly referred to as early stage, B and C rounds as middle stage, and D, E+ rounds and private equity as late stage. In later stages, there is a higher chance that firms put their products or services on the market, and even begin to make a profit.

③ Refers to the percentage of respondents who have experience of using at least two categories of Fintech services.

④ Ernst &Young (China) Advisory Limited, *Global Fintech Adoption Rate Index 2019*, August 2019.

Research and pilot arrangements on Central Bank Digital Currency (CBDC) quickened worldwide. According to a BIS paper *A Sequel to the Survey on CBDC* published in early 2020, some 80 percent of central banks surveyed engaged in some form of CBDC-related work, out of which some 40 percent had progressed from conceptual research to experiments or proofs-of-concept, and another 10 percent had developed pilot projects. For instance, the e-Krona project developed by Sweden's Riksbank in response to reduced cash use and its associated costs began pilot testing in February 2020. The European Central Bank has collaborated with the Bank of Japan to run a multi-phase wholesale CBDC project Stella, to examine how cross-border large-value payments and securities settlements can be improved by new technologies. The PBC has launched the Digital Currency/Electronic Payment (DC/EP) project to allow greater convenience, safety and anti-counterfeiting of retail payment, and the project is now in an orderly and closed pilot trial.

Private sector remained active in launching Stablecoins. Since the first Stablecoin[①] project Tether was launched by the U.S. private sector in 2015, Stablecoin projects on the market are on the rise worldwide. As of June 2019, 66 Stablecoin projects were live, and another 134 projects had been announced but not yet launched[②]. Among these, the U.S. company Facebook announced plans for a digital currency called Libra, aiming to facilitate cross-border digital payments for a global user base of billions. Libra attracted wide attention upon announcement, and financial regulators in the U.S. and Europe, among others, have expressed serious concerns over Libra, referring to major challenges it may pose to AML/CFT, data protection, cyber risk, etc. In April 2020, Facebook updated its plans to enhance safety of the Libra payment system with a sound compliance framework and tried to attain payment license. Despite this, however, authorities in some jurisdictions are still concerned that Libra might potentially undermine their monetary sovereignty.

Application of open banking accelerates. Open banking is the practice of giving, with customer consent, third-party providers access to financial institutions' customer data, including bank accounts, transaction data, etc., through the use of application programming interface (API)[③]. It allows the availability of all financial services in different third-party application scenarios. BBAV and Citi Bank are among the first to build their own open banking platforms; providers such as ICBC and SPD Bank also launched open banking services. In some jurisdictions, authorities have led industry-wide initiatives to provide open banking, in an effort to improve international competitiveness and increase innovation of the financial industry. For example, the UK authorities have required the nine largest domestic account providers to establish the Open Banking Implementation Entity (OBIE) to design open banking standards, such as API

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① Stablecoins are blockchain-encrypted digital assets, and are usually pegged to one or a combination of assets (such as fiat money) to maintain price stability.

② Blockdata, *An Overview of the Current State of Stablecoins*, June 2019.

③ A set of functions and procedures allowing the developers to access application-based services without knowledge of the design or implementation of the services.

specifications and messaging standards. As of April 2020, 74 banks and 134 third-party service providers had enrolled in the OBIE. Elsewhere, jurisdictions such as the EU, Japan, South Korea, Singapore and Hong Kong SAR of China also launched their open banking programs.

More digital banks were granted. Digital banks, also referred to as virtual banks or direct banks, feature online-only operation, no physical outlets and remote banking services via mobile devices. Digital banking, which is supported by internet technology and different from the traditional banking through branches, is able to offer a range of services including making deposits/withdrawals, payments, transfers etc., that are linked to specific use cases, and has an advantage of reaching the financially underserved. The Hong Kong Monetary Authority approved 8 Virtual Bank Licenses in 2019. The Monetary Authority of Singapore plans to issue up to 5 Digital Bank Licenses in 2020. In other jurisdictions, digital banks are often granted in the form of traditional banking license or permit. Examples include the UK's Monzo Bank and N26 Bank, as well as China's AiBank, WeBank and MYBank.

II. Global Fintech Regulatory Updates

On the whole, national financial authorities have stepped up their Fintech regulatory efforts, with a focus on developing technical guidance, strengthening regulatory standards, and improving regulatory tools. To balance innovation and risk prevention, authorities on one hand support the entry of Fintech companies to fill gaps, and on the other, maintain a high bar for conducting financial activities.

Issue guidance and requirements on the use of underlying technologies. Over the years, the international community has formulated a set of common principles, mainly referring to technical security, ethics etc., on the general application of AI and other underlying technologies. Building on this understanding, financial authorities have further developed standards and guidance on the application of new technologies in the financial sector, covering aspects of general principles, technical requirements, risk control, and data security. For instance, the Netherlands Bank proposed in the *General Principles for the Use of Artificial Intelligence in the Financial Sector* in July 2019 a number of principles regarding the responsible use of AI, including soundness, accountability, fairness, ethics, skills, and transparency (or SAFEST). The Bank of Russia developed *Recommendations on Information Security of Biometric Identification* in February 2019, urging financial institutions to mitigate risks of data leakage and abuses of biometric technology. The European Banking Authority published in February 2019 the revised *Guidelines on Outsourcing Arrangements* to establish a framework for financial institutions to manage the outsourcing arrangements and oversee related risks, which applies to banks, payment providers and electronic money institutions.

Strengthen Fintech regulatory framework that prioritizes risk control. Financial authorities in most jurisdictions have adopted a Fintech regulatory approach that features regulating by function and conduct. First, enforce license-based entry. For instance, financial authorities in Singapore and Hong Kong SAR of China have set up a special licensing regime for digital banking services, which expects applicants to live up to a set of criteria for entry and risk-based capital requirements. Second, specify regulatory rules. The UK authorities, for example, have required open banking service providers to be subject to changes in the *Second Payment Services Directive (PSD2)*, in which banks are required to make available specific current accounts to authorized third parties to facilitate transaction, and third parties to seek authorization or registration. Third, issue alerts and crack down on unlawful trading. Most authorities take a cautious stance over those potentially risky activities such as crypto-currency trading. For instance, the U.S. Securities and Exchange Commission issued an alert in January 2020 to urge investors to be aware of fraudulent schemes before investing in IEOs[①], as they are often touted as an innovation on new technologies.

Facilitate Fintech regulation through regulatory sandbox. The concept of regulatory sandbox was first put forward by the UK's Financial Conduct Authority (FCA) in 2015, to provide Fintech firms with a safe environment in which to trial innovative Fintech solutions. As of May 2020, the FCA has accepted 118 businesses in 5 cohorts into the regulatory sandbox. After years of operation, the FCA sandbox is now a mature mechanism which provides a variety of tools including restricted authorization, individual guidance, waivers, no enforcement action letters, etc., to facilitate test. Meanwhile, the FCA is studying the possibility of launching a cross-sector sandbox involving multiple regulatory agencies. Under the proposal of the FCA, institutions including the World Bank, the IMF and the FCA launched in January 2019 a Global Financial Innovation Network, in order to provide cross-border test solution for innovative firms. In addition, jurisdictions such as Australia, Singapore, and South Korea also employed the sandbox tool to conduct tests for Fintech innovation.

Adopt Regulatory Technology (RegTech) solutions to enhance risk control capabilities. RegTech is the development and adoption of big data, machine learning and other new technologies by regulators to facilitate the collection, analytics and judgment of regulatory data. It applies to risk warning, surveillance and review throughout the whole supervisory process. Over the years, the improved functionality of RegTech has allowed it to play a bigger role than facilitator, empowering a smarter supervision in terms of policy decision-making and automatic analysis. For example, the Australian Securities and Investments Commission built up a market analysis and information system, and is therefore able to detect abnormal actions and release pre-alert at real-time by attaining real-time data from stock and derivatives transactions.

III. Efforts by the Chinese Authorities to Regulate Fintech

Build a Fintech regulatory mechanism that is inclusive and prudent. In recognition of the latest development of Fintech-enabled innovation in China, financial authorities, keen on improving regulatory efficiency and

① Initial Exchange Offerings (IEOs) are similar to Initial Coin Offerings (ICOs) in that they are initial offerings of digital assets (e.g. coins or tokens) to raise capital. One distinction is that IEOs are offered directly by online trading platforms on behalf of companies, while ICOs are more commonly offered by companies directly or through an online trading platform.

capabilities, are exploring a suitable path to Fintech regulation that is in harmony with the growth pattern of the emerging Fintech industry and fits with domestic situations. First, draw the hard lines. For Fintech innovation, existing laws, regulations, administrative rules and standards can serve as a yardstick for compliance, and the red line that cannot be crossed during innovation must be made explicit. Second, place flexible boundaries. In order to strike a proper balance between safety and efficiency, there is a need to involve the public in the governance of Fintech through disclosure and public scrutiny, and to create an innovation-friendly environment for Fintech. Third, reserve space for innovation. The mechanism should, under the precondition of safety, allow the provision of innovative activities within a reasonable limit by giving licensed financial institutions the opportunity to innovate on an equitable basis.

Pilot the regulatory program for Fintech-enabled innovative activities in an orderly manner. The pilot program was first launched in Beijing in December 2019, and since then the pilot has been expanded to Shanghai, Chengdu-Chongqing area, the Greater Bay area, Hebei Xiong’an New Area, Hangzhou and Suzhou. Applicants came from incumbent financial institutions like commercial banks and clearing houses, as well as tech firms like telecommunication service providers and Fintech firms. The 60 propositions approved till August 2020 are enabled by a combination of cutting-edge technologies, such as AI, big data, blockchain, Internet of Things and 5G, and set to empower a number of activities in areas including digital finance, inclusive finance and supply-chain finance, which seek to address key sticking points, such as difficulties in the access to and costs of funding faced by MSEs, and the last mile problem in the delivery of financial services.

Step up efforts to improve Fintech regulatory framework. Going forward, the financial regulatory authorities will continue to coordinate efforts in the top-level design and overall planning of Fintech regulation, in order to put in place a framework that fits in with China's situation. First, regulatory tool-based. Building on lessons learned from the pilot programs, the financial regulatory authorities will improve risk monitoring system, accelerate the introduction of regulatory tools that are both in line with international practices and adapted to China's situations and publish white papers in due time. Second, regulatory rule-centered. Issue regulatory rules in a targeted and timely manner, to ensure that Fintech activities are rule-based in terms of compliance, technical security and risk management, etc., and to address regulatory gaps and arbitrage as a result of policy lag. Third, digitalized. Establish a digital regulatery reporting platform that uses AI technologies to make regulatory rules available in a structured, digitalized and programmed form, and enhance digital regulatory capabilities with stronger enforcement of the look-through and professionalism principles.

Chapter III

Macroprudential Regulation

In 2019, the international community continuously improved the macroprudential policy framework, and the development of international regulations for the insurance sector achieved significant break-through. Based on international experiences, China continued to improve the macroprudential policy framework, further enhanced financial regulatory cooperation and policy coordination, strengthened monitoring and assessment of systemic risks, enriched and constantly calibrated the macroprudential policy tools.

I. International Developments on Macroprudential Regulation

1. Building More Resilient Financial Institutions

Improving the regulatory policy framework. In January 2019, the BCBS issued the revised *Minimum Capital Requirements for Market Risk*, which indicated that the core of the post-crisis international banking regulations was largely completed. The BCBS kept improving the Basel III regulatory framework, developed policy responses to the COVID-19 pandemic, clarified information disclosure requirements for frameworks such as market risk, explored to develop regulations on areas such as interest rate benchmark reform and crypto assets, and kept analysing the impact on banking capital regulations of risks of Fintech and climate change, etc.

Promoting the implementation of Basel III. Alongside with the finalisation of the Basel III reform, the focus of BCBS has shifted from policy development to standards implementation. In 2019, the BCBS conducted RCAPs on jurisdictions such as China, Canada, Australia, India, Brazil and Argentina to assess the consistency of their NSFR and large exposure frameworks with corresponding international standards. The BCBS plans to assess the implementation of *Basel III: Finalising the Post-crisis Reforms* and the revised *Minimum Capital Requirements for Market Risk* by its members from 2021 and the assessments are expected to finish in 2025.

2. Ending "Too Big to Fail"

Updating the list of G-SIBs. In November 2019, the FSB updated the list of G-SIBs based on the end-2018 data. 30 banks were designated as G-SIBs (Table 3.1) and the total number of G-SIBs was 1 more than that in 2018. Toronto Dominion was newly added to the list. Deutsche Bank moved from bucket 3 to bucket 2. The designated G-SIBs in the list updated in every November will be subject to higher capital buffer requirements 14 months later.

Table 3.1 The Updated List of G-SIBs

Bucket (Higher Capital Buffer Requirements)	G-SIBs in Alphabetical Order Within Each Bucket
5 (3.5%)	(Empty)
4 (2.5%)	JP Morgan Chase

(Cont)

Bucket (Higher Capital Buffer Requirements)	G-SIBs in Alphabetical Order Within Each Bucket
3 (2.0%)	Citigroup
	HSBC
2 (1.5%)	Bank of America
	Bank of China
	Barclays
	BNP Paribas
	Deutsche Bank
	Goldman Sachs
	Industrial and Commercial Bank of China
	Mitsubishi UFJ FG
	Wells Fargo
1 (1.0%)	**Agricultural Bank of China**
	Bank of New York Mellon
	China Construction Bank
	Credit Suisse
	Groupe BPCE
	Groupe Crédit Agricole
	ING Bank
	Mizuho FG
	Morgan Stanley
	Royal Bank of Canada
	Santander
	Société Générale
	Standard Chartered
	State Street
	Sumitomo Mitsui FG
	Toronto Dominion
	UBS
	UniCredit

Source: *2019 list of global systemically important banks* by the FSB, Nov.2019.

Developing the *Holistic Framework for Systemic Risk in the Insurance Sector*. In November 2019, the IAIS published the *Holistic Framework for Systemic Risk in the Insurance Sector* (hereafter referred to as *Holistic Framework*), which, on the basis of ICPs and

ComFrame for IAIGs, monitors and evaluates systemic risks in the insurance sector at both individual institution and sector-wide level, and continuously reviews the implementation of the *Holistic Framework* by member jurisdictions, so as to monitor the development trend of global insurance market and address systemic risks. After the promulgation of the *Holistic Framework*, the FSB has suspended the identification of G-SIIs and will decide whether to restart it based on the implementation of the *Holistic Framework*.

3. Promoting Effective Resolution Regime

Pushing forward the implementation of TLAC requirements steadily. All G-SIBs that should meet the TLAC requirements by January 2019 have already met or exceeded the standards of 16 percent of the RWA and 6 percent of the leverage ratio denominator, and two thirds of them have already met or exceeded the 2022 standards of 18 percent of the RWA and 6.75 percent of the leverage ratio denominator in advance. Only a few G-SIBs home jurisdictions have implemented the limits on cross holdings of TLAC and disclosure requirements. Much remains to be done to ensure the appropriate group-internal distribution of TLAC between home countries and host jurisdictions.

Promoting the implementation of the *Key Attributes of Effective Resolution Regimes for Financial Institutions*. The implementation status of the *Key Attributes of Effective Resolution Regimes for Financial Institutions* was uneven across sectors. As for the banking sector, all the home jurisdictions of G-SIBs have established their resolution planning frameworks. Further work would focus on ensuring the implementation of bail-in execution and operational continuity in resolution. As for the insurance sector, the FSB has suspended the identification of G-SIIs, but some jurisdictions have maintained their identification of systemically important insurers for the purposes of recovery and resolution planning. The main challenge in the resolution of insurers stems from internal interconnectedness of the insurance groups. As for CCPs, in order to facilitate the establishment of the CCP resolution regimes, the FSB published a public consultation report of *Guidance on Financial Resources to Support CCP Resolution and on the Treatment of CCP Equity in Resolution* in May 2020, in order to guide the CCP resolution authorities to assess the potential gaps of resources in CCP resolution and to allocate losses.

4. Keeping on Monitoring the Shadow Banking System

In January 2020, the FSB published the *Global Monitoring Report on Non-Bank Financial Intermediation 2019* based on the end-2018 data covering 29 jurisdictions. Based on the broad measure, Monitoring Universe of Non-bank Financial Intermediation (MUNFI) grew to USD 183.7 trillion by the end of 2018, accounting for about 48.5 percent of total financial assets in participating jurisdictions, down by 0.1 percent y-o-y, which was the first decrease since 2008. Based on the narrow measure, Non-bank Financial Intermediation amounted to USD 50.9 trillion, accounting for 13.6 percent of total financial assets in corresponding jurisdictions, up by 1.7 percent y-o-y, substantially lower than the average growth rate of 8.5 percent from 2012 to

2017. China had the third largest narrow measure of USD 7.8 trillion, following the U.S. with the largest narrow measure of USD 15.2 trillion and the Euro area with the second largest narrow measure of USD 12 trillion. 8 jurisdictions reported a decline in the narrow measure with the largest decline reported by China.

5. Promoting Reforms of OTC Derivatives Market

The OTC derivatives market reforms progressed slowly in 2019. By the end of September 2019, higher capital requirements for non-centrally cleared derivatives were in force in 23 of the 24 FSB member jurisdictions, unchanged during the reporting period. 23 jurisdictions had comprehensive trade reporting requirements in force, increased by one during the reporting period, with a steadily wider use of LEI in trade reporting. 18 jurisdictions had in force comprehensive standards/criteria for determining when standardised OTC derivatives should be centrally cleared, an unchanged number compared to last year. In the implementation of comprehensive margin requirements for non-centrally cleared derivatives, 16 jurisdictions had such requirements in force, unchanged during the reporting period. Implementation of the platform trading commitment was the least progressed. Only 13 jurisdictions had in force the policy framework, unchanged during the reporting period.

6. Others

The reform of interest rate benchmarks keeps progressing. Considering that LIBOR may cease at end-2021, FSB encourages using other interest rate benchmarks in financial contracts. Relevant authorities have made great efforts to develop alternative nearly risk-free rates as benchmarks and strengthen robustness of financial contracts when the benchmark rates change. The adoption of LEI is further expanded. By the end of 2019, 29 jurisdictions had been authorized to issue LEIs and over 1.54 million entities and natural persons had received their LEIs. LEIs are widely used in areas such as derivatives transactions, securities financing transactions, supervision on banks and insurers, resolution, payment services and credit registration, etc.

II. Major Jurisdictions' Progress in Macroprudential Policies

1. United States

Monitoring and assessing systemic risks. The FSOC published its annual report in December, 2019. The report indicated that in 2019, the U.S. economy remained robust, unemployment rates were at a fifty-year low, corporate and consumer default rates were low, and financial conditions were broadly stable. However, some uncertainty regarding future economic performance has emerged. This uncertainty prompted the Federal Reserve to shift to a more accommodative monetary policy stance. Potential threats to the U.S. financial system include: the leverage of nonfinancial businesses has increased amid prolonged economic expansion, and borrowers with low credit quality accounted for a relatively large share; reliance on technology, particularly internet platforms, has increased the cyber risk; CCPs and large financial institutions are highly interconnected, which may lead to risk contagion across institutions once financial services are disrupted; the process of transition from LIBOR to alternative interest rate benchmarks may cause legal, operational and economic risks; some investment funds may be faced with liquidity risk and leverage risk; there're gaps and deficiencies in the range and quality of financial data available to financial regulators, while the inconsistencies in reporting requirements increase the reporting burden on market participants; financial innovation fosters financial activities in areas that are not subject to appropriate regulation. The Federal Reserve indicated, in their *Financial Stability Report* published in May 2020, that the economic recession caused by COVID-19 pandemic has become the biggest threat to the U.S. financial system. Against this backdrop, asset prices have become more volatile, leverage of businesses and households has dramatically increased and liquidity strains have emerged in the financial system.

Conducting stress tests. 18 banks participated in the Dodd-Frank Act Stress Tests (DFAST) conducted by the Federal Reserve in 2019, whose assets accounting for approximately 70 percent of the total assets of its banking sector. In the severely adverse scenario, a severe global recession would occur, the real GDP of the U.S. is gradually stabilized after reaching a trough of a growth rate of –9.4 percent in the second quarter of 2019, the unemployment rate climbs to a peak of 10 percent, the stock price and house price falls by 50 percent and 25 percent respectively by the end of 2019, and the CPI, short-term interest rates and long-term Treasury yields drop significantly. In this scenario, major regulatory indicators of the 18 banks are still far above the regulatory requirements, where the aggregate CET1 capital ratio of 18 banks would fall from 12.3 percent in the fourth quarter of 2018 to its minimum of 9.2 percent, and the aggregate leverage ratio would fall from 8.6 percent to its minimum of 6.8 percent, the aggregate losses are projected to be USD 410 billion and the cumulative loss rate for all accrual loan portfolios is 5.7 percent. Besides, the Federal Reserve also conducted CCAR on 18 banks. In the severely adverse scenario, the aggregate CET1 capital ratio would fall from 12.3 percent to its minimum of 6.6 percent. In June 2020, the Federal Reserve conducted a sensitivity analysis on 34 banks to assess their resilience against COVID-19 pandemic. Three scenarios are used in the analysis, namely a rapid V-shaped recovery, a slower U-shaped recovery and a W-shaped double dip recession. The result shows that, in the three scenarios the aggregate CET1 capital ratio of 34 banks would fall from 12.0 percent at the end of 2019 to 9.9 percent, 8.2 percent and 7.7 percent respectively at the end of the first quarter of 2022, and the loan loss rate would fall to 8.2 percent, 10.3 percent and 9.9 percent, respectively. The analysis results indicated that COVID-19 pandemic would cause great shock to the U.S. banking sector but the banking sector would generally remain resilient.

Improving regulation on financial institutions. Firstly, adjusting supervision intensity according to different risk profiles of financial institutions. In September 2019, the SEC lowered barriers to entry for ETFs that satisfy certain conditions. In October 2019, the OCC, Federal Reserve and FDIC adopted a final rule that imposes simplified capital adequacy requirements on community banks with total assets less than USD 10 billion and satisfying certain conditions. In November 2019, the Federal Reserve and FDIC reduced the resolution plan requirements on smaller institutions. Secondly, improving the quantity and quality of data collected by regulatory authorities. The OFR commenced the collection of data on centrally cleared repurchase agreement transactions. The CFTC took steps to improve the accuracy of data collected by swap data repositories. Since March 2020, in response to the impact of COVID-19 pandemic, the Federal Reserve has adjusted some macroprudential policies, including encouraging financial institutions to use the capital buffer accumulated previously to issue loans, temporarily amending the supplementary leverage ratio rules, and temporarily amending the capital rules to cooperate with the emergency liquidity tools in response to the pandemic, etc.

2. EU

Monitoring and assessing systemic risks. The ECB published its *Financial Stability Review* in November 2019. The report indicated that due to factors like the ongoing weakness of global trade and the global policy uncertainties, the global and euro area economic outlook has deteriorated and is expected to remain subdued for a longer period. Against this backdrop, there're several major financial risks, including potential for future corrections of asset pricing, lingering concerns about private and public debt sustainability, growing challenges from cyclical headwinds to bank profitability, and increased risk-taking by non-banks. In May 2020, the ECB published its interim *Financial Stability Review*. The report indicated that, although the timely policy measures taken by authorities have mitigated short-term risks to financial stability, medium-term risks to financial stability in euro area have increased markedly due to the lost economic output and higher debt burden against the backdrop of COVID-19 spreading globally. There're four major risks to financial stability, namely tighter financial conditions and fragile functioning in some markets, large increase in debt burden (especially public debt), weaker bank intermediation potential and profitability, and market movements amplified by non-banks.

Improving the macroprudential policy framework. As for the policy framework, all the EU members except Italy have their macroprudential authorities in place as of end-2019. As for the policy tools, most actions in 2019 taken by EU members were of a tightening nature. Some member jurisdictions introduced or increased CCyB rates for the first time. Given the overheated housing market and vulnerable household sector, some jurisdictions adopted policies targeting borrowers, including caps on DSTI ratios, LTV ratios and loan maturities, etc. Some member economies initiated SyRB. Against the backdrop of COVID-19 pandemic, EU has adjusted some macroprudential policies and most members have released and/or cancelled upcoming increases in their buffers.

Monitoring the non-bank financial intermediation. The ESRB published its *EU Non-bank Financial Intermediation Risk Monitor* in September 2019. By the end of 2018, the EU non-bank financial intermediation monitoring totalled about EUR 41.9 trillion, accounting for 38.1 percent of the total EU financial assets, which was a slightly decline both in scale and proportion compared to that in 2017. This decline mainly reflected the falls in asset valuations during the fourth quarter of 2018. Risks and potential vulnerabilities in the non-bank financial system include: the ongoing low interest rate environment has incentivised some institutions to take on more risk; high leverage in some institutions may amplify shocks and increase default risk; non-bank financial institutions are closely connected to each other and with the banking sector, which may cause risk contagion; the repeated use of financial collateral in derivatives and securities financing transactions may spread liquidity shocks and cause risks of procyclicality and high leverage; data gaps prevent a more complete risk assessment of the non-bank financial sector.

3. United Kingdom

Making macroprudential policy. The FPC published its *Financial Stability Report* in December 2019, which claimed that the underlying global vulnerabilities remain material and there're risks of further deterioration; international investors' demand for UK assets has fallen against the backdrop of Brexit-related uncertainty while other domestic vulnerabilities remain at a moderate level. According to the above judgement, the FPC has increased the CCyB rate from 1 percent to 2 percent. The interim *Financial Stability Report* published in May 2020 claimed that market liquidity deteriorated materially and volatility of financial asset price was substantial due to the impact of COVID-19 pandemic. Thus, the FPC has cut the CCyB rate to zero, which can enable the UK banking sector to increase its lending capacity by GBP 190 billion.

Conducting stress tests on the banking sector. The 2019 stress test conducted by the BoE assumes that global GDP falls by 2.6 percent, UK GDP falls by 4.7 percent, unemployment rises to 9.2 percent, and the interest rate rises to 4 percent. The test result shows that the UK banking sector is resilient to deep simultaneous recessions in the UK and global economies that are more severe than the global financial crisis, and can still satisfy credit demand from UK households and businesses in the extremely negative scenario. Besides, UK conducted a sensitivity analysis in May 2020 to assess resilience of the banking sector to economic shocks from COVID-19 pandemic. The analysis considered a more severe macroeconomic shock, where UK GDP in the second quarter of 2020 falls by 30 percent than end-2019 and begins to recover along with the unwind of pandemic controlling measures in the third quarter. Meanwhile, effects of the package of macroeconomic stimulus policies implemented by the government are also considered in the scenario. In this scenario, the aggregate CET1 capital ratio of banks would fall from 14.8 percent at the end of 2019 to 11.0 percent at the end of 2021, and the aggregate leverage ratio would fall from 5.4 percent to 4.9 percent, both far above the regulatory requirements. The result shows that the UK banking sector is resilient to the negative impact of COVID-19 pandemic.

III. China's Practice in Macroprudential Regulation

In 2019, China continued to improve the macroprudential regulation regimes and policy framework, established the Macroprudential Policy Bureau within the PBC, enhanced financial regulatory cooperation, kept improving the risk monitoring and identification system, continuously improved the two-pillar framework of monetary policy and macroprudential policy, and properly adopted and calibrated a number of macroprudential policies.

Further enhancing financial regulatory cooperation. Since 2019, the FSDC strengthened overall coordination, analysed domestic and foreign economic and financial situations in a timely manner, assigned work priorities with focuses on finance serving the real economy, preventing and addressing financial risks, reform and opening up of the financial sector. Especially since the outbreak of COVID-19, the FSDC has held over 20 meetings in the first half of 2020 in order to assign tasks related to the financial support for pandemic containment and economic development. Firstly, the FSDC strengthened the countercyclical adjustments, improved the financial services for private firms, SMEs and micro businesses, and promoted financial support for pandemic containment and economic reopening, therefore facilitating a virtuous interaction between the economy and the financial sector. Secondly, the FSDC strengthened overall coordination to win the critical battle against major financial risks, oversaw the implementation of the action plan for the battle, made the pace of risk resolution more appropriate, so as to form a joint effort to address risks and maintain stability of the financial markets. Thirdly, the FSDC coordinated the reform and opening up of the financial sector, introduced 11 measures for financial opening up and 11 measures for financial reforms, accelerated the reform of banking sector and capital market, facilitated the construction of financial ecosystem, steadily promoted the opening-up of key financial areas, and supported the establishment of Shanghai international financial centre, so as to promote reform and development through opening up.

Strengthening the monitoring and assessment of systemic risks. Continuous efforts were made in promoting risk monitoring of banking, securities and insurance sectors as well as financial markets so that financial risks could be identified and appropriate policy responses could be adopted in a timely manner. Stress tests on 1550 banking financial institutions were conducted and the range of stress tests is continuously expanding, so as to make risk warnings to financial institutions and to guide them to operate prudently. Central bank rating of financial institutions was carried out on a quarterly basis in 2019, covering more than 4400 financial institutions, so as to evaluate their risk profiles and accurately identify high-risk institutions. A liquidity risk monitoring and reporting mechanism for key banks was established to monitor liquidity status on a daily basis, measure liquidity gaps, make risk warnings, and take early corrective measures to resolve risks. Stress tests and financial market stress index were used to monitor the risks in the stock, bond, money and foreign exchange markets. Off-site examinations and on-site inspections were actively conducted on insurers to closely monitor risk profiles of less solvent insurers with a focus on risks such as inappropriate related party transactions and embezzlement by major shareholders. Risk monitoring on large problem firms was continued and analysis of macroeconomic situation, regional financial risks and trends in specific sectors such as the real estate sector was enhanced.

Conducting the Macroprudential Assessment (MPA). The PBC continued to play MPA's guiding role in improving credit structure and promoting supply-side structural reforms in financial sector in 2019. In order to better support the funding of MSEs and private firms, special indicators related to the financing of manufacturing, MSEs and private firms are introduced into the MPA. To encourage financial institutions to fully utilize the funds released from targeted cuts of reserve requirement ratios to provide loans to and lower loan interest rates for MSEs and private firms, relevant indicators are taken into the MPA. In order to encourage a wider use of LPR by banks to lower the funding cost of the real economy, indicators on the use of LPR and competitive behaviors on loan interest rates were included in the pricing behavior item of MPA. In 2020, the weights of indicators on the funding of private firms, MSEs and manufacturing were further increased in the MPA. Indicators on the use of central bank lending was included in the MPA to guide small and medium-sized banks to better utilize the incremental quota of central bank lending and discount. The MPA also assesses the use of funds released from targeted reserve rate cut on joint-stock banks, requiring them to further increase inclusive loan supply.

Improving the regulations on financial holding companies. On September 13, 2020, the State Council published the *Decision on Implementing Access Management of Financial Holding Companies* to clearly authorize the PBC to implement the entry management and supervision of financial holding companies. The PBC simultaneously published the *Trial Measures for Regulation and Supervision on Financial Holding Companies*. The document, sticking to the principle of macroprudential regulation and sector-based operations in the financial sector, introduces comprehensive, continuous and penetrating requirements on a consolidated basis with focuses on key areas like the ownership structure, shareholders qualification, capital management, corporate governance, risk management and related party transactions of financial holding companies which developed from non-financial enterprises and control two or more kinds of financial institutions, so as to isolate the industrial business from financial business at the institutional level, fill up the regulatory gaps, regulate behaviors of financial holding companies, effectively prevent financial risks and facilitate the virtuous circle between the real economy and financial sector.

Improving the regulation on SIFIs. The PBC and CBIRC jointly published the *Assessment Methodology of Systemically Important Banks (Consultative Document)* (hereafter referred to as *Assessment Methodology*) in November 2019, which clarified the assessment approach, indicators, procedure and division of responsibilities to further improve the regulatory framework of systemically important banks in China. In the next step, after the finalization and publication of the *Assessment Methodology*, the PBC, together with the CBIRC, will carry out the identification of our domestic systemically important banks and propose an initial list, which will be released after approval of the FSDC. The PBC will also work together with the CBIRC to develop additional regulations on our domestic systemically important banks and clarify additional regulatory requirements on them.

Unifying the regulations on asset management activities. Related authorities have continued to improve the regulations on asset management activities and fill up regulatory gaps since 2019.

The *Administrative Measures for Net Capital of Commercial Banks' Wealth Management Subsidiaries (Provisional)*, the *Interim Rules on Insurance Asset Management Products*, and the *Notice on Issues Concerning Financial Asset Investment Companies Engaging in Asset Management Business* were successively published, so as to guide the healthy development of wealth management subsidiaries and to regulate the insurance asset management products and asset management activities of financial asset investment companies. In July 2020, the PBC, together with CBIRC, CSRC and SAFE, published the *Rules on Identification of Standardised Obligatory Assets*, clarifying the scope and criteria for identification of standardised obligatory assets.

Enhancing the macroprudential policies on cross-border capital flows. The macroprudential policy framework of the "major financial institutions and major businesses" in the cross-border RMB business has been established. As for major financial institutions, risk assessment of cross-border RMB business of 24 large financial institutions is taken account into the MPA. As for major businesses, activities such as the comprehensive measure of cross-border funding, oversea lending, cross-border RMB funds pool are covered in macroprudential regulation. Thus, the cross-border capital flows could be managed countercyclically by adjusting the macroprudential parameter. In March 2020, the macroprudential parameter of the comprehensive measure of cross-border funding was adjusted from 1 to 1.25, so as to further facilitate the oversea funding of domestic institutions and lower funding cost of the real economy.

Strengthening consolidated regulation of financial infrastructures. In February 2020, the PBC, together with NDRC, MOF, CBIRC, CSRC and SAFE, issued the *Work Plan for the Coordinated Regulation of Financial Infrastructures*, which covers six types of facilities, i.e. financial asset registration and depository systems, clearing and settlement systems (central counterparties engaged in centralized clearing businesses included), trade facilities, trade repositories, major payment systems and basic credit reporting systems, as well as their operators. The Plan also specifies uniform regulatory standards, enhanced market access administration, optimization of the layout of facilities and governance structure, so as to put in place an advanced, reliable and resilient financial infrastructure system featuring well-balanced layout and effective governance.

Special Topic 10 Establishing the Local Coordination Mechanism under the FSDC Office to Enhance Central-Local Coordination

A financial landscape suitable for and adapted to China's circumstances has gradually taken shape over years of development. Now micro, small, medium-sized, and large financial institutions could work together to support economic and social development, though each has its own role to play. In China, financial regulation mainly falls into the remit of central government agencies, but local authorities are also given the mandate to regulate financial issues as necessary to fully incentivize both central and local authorities. The 19th National Congress of the CPC laid down arrangements for deepening financial institutional reform and improving financial regulatory and supervisory system. The 5th National Financial Work Conference clarified the regulatory boundaries of central and local authorities, and proposed to build a modern financial regulatory framework to strengthen financial regulatory coordination and make up for regulatory gaps. Establishing local coordination mechanism under the Office of Financial Stability and Development Committee (FSDC Office) is a key measure to strengthen the coordination between central and local financial regulatory authorities and a key link in making up for financial regulatory gaps. The FSDC Office drafted the work plan for local coordination mechanism in line with the requirements of the CPC Central Committee and the State Council regarding establishing central-local coordination mechanism for financial regulation, information sharing, risk resolution and consumer protection. Upon approval by the State Council, the FSDC Office issued the *Opinions of the Office of State Council Financial Stability and Development Committee on Establishing Local Coordination Mechanism* on January 8, 2020. At present, the local coordination mechanism has been set up in provinces (autonomous regions and municipalities) across China and in Shenzhen.

I. Organizational Structure and Major Mandates of the Local Coordination Mechanism under the FSDC Office

The local coordination mechanism under the FSDC Office reports to and seeks guidance from the FSDC Office, with the provincial branches of the PBC taking care of daily business. Main-persons-in-charge from PBC provincial branches are the organizer of the local coordination mechanism, while members are main-persons-in-charge from provincial branches of the CBIRC, CSRC and SAFE, main-persons-in-charge from local financial regulatory authorities, and persons-in-charge from local development and reform as well as fiscal departments. Persons-in-charge from other provincial government departments, such as local judiciary authorities, municipal governments and financial institutions, can be invited to attend meetings when necessary.

The local coordination mechanism focuses on coordination without changing the mandate of each participating agencies or the work distribution of central and local authorities. Its major responsibilities are as follows:

First, implement decisions made at the central level. It carries out decisions on financial work by the CPC Central Committee and the State Council, pushes forward the implementation of local work arrangements of Financial Stability and Development Committee, and take the lead in completing the work assigned by the FSDC Office.

Second, strengthen financial regulatory coordination. It enhances the regulatory coordination and policy communication among local agencies representing central financial regulatory authorities as well as between these local agencies and local financial regulators. It strengthens the overall coordination on issues involving several departments and promotes full-coverage financial regulation and supervision.

Third, promote regional financial reform, development and stability. It oversees the local effort to promote financial support for the real economy, supports regional financial reform and innovation, analyzes local financial support for the real economy and financial conditions, monitors and assesses financial risks, and gives recommendations on how to provide financial support for the real economy and prevent financial risks.

Fourth, promote financial information sharing. It coordinates work on local comprehensive financial statistics and standardization of financial statistics, leads the effort to set up local financial data sharing mechanism, and promotes the timely and full sharing of information on financial institutions, sectoral basic data, market performance and risk profiles. It develops and improves timely communication arrangements for major and emergency events in local financial sector.

Fifth, coordinate work on financial consumer protection and development of financial ecosystem. It enhances medium-term planning and coordinates work on educating financial consumers, publicizing knowledge and protecting the legal rights and interests of financial consumers. It promotes the establishment of local credit environment, improves local financial ecosystem and facilitates sound regional economic and financial development.

According to the 5th National Financial Work Conference, provincial governments are required to spearhead the effort to build local government financial work deliberation and coordination mechanism, and are responsible for local financial regulation and financial risk prevention and resolution. The local coordination mechanism under the FSDC Office and local government financial work deliberation and coordination mechanism each has its own role to play but complement each other, which could forge synergy and create a favorable financial environment.

II. Major Achievements

The local coordination mechanism under the FSDC Office has adhered to a problem-oriented approach and fully availed itself of the advantage in overall coordination since its inception. It has begun to play a pivotal role in promoting financial support for the real economy and preventing and mitigating financial risks.

1. Focus on Recent Priorities to Support Pandemic Containment and Economic and Social Development

Since the outbreak of COVID-19, the local coordination mechanism has overseen the implementation of financial support for pandemic containment and economic and social development in line with the arrangements of the FSDC Office. It followed the principle of stabilizing expectations, expanding aggregate support, adopting a categorized approach, focusing on rollover, innovating tools and strictly implementing supporting policies.

First, swiftly deploy financial support for pandemic containment and economic reopening. It actively promoted the coordination among fiscal, financial, and industrial policies, oversaw financial support for ensuring industrial chain and supply chain to be uninterrupted, and gave priority to the financing needs of major companies that produce, sell, and transport key medical products and daily necessities. Full support was extended to foreign trade enterprises in their effort to safeguard market, market share and orders, and more locally incorporated banks were encouraged to provide low-cost inclusive financial support to SMEs and micro businesses that resumed production.

Second, guide financial institutions to step up financial support for market entities. It prompted relevant departments to thoroughly assess the operation of MSEs and the self-employed as well as the most urgent financing needs arising from economic reopening. It urged banking institutions to take stock of loan rollovers, guided them in adjusting principal and interest payments, front-loaded the refinancing communication, and improved the provision of new loans when loans are rolled over to ease enterprises' cash flow pressures.

Third, guide financial institutions to innovate financial products and services. It offered guidance to financial institutions in launching special credit facilities, such as lending for economic reopening, lending for easing distress, and lending for stabilizing the business operation. It provided well-targeted and efficient financial services to SMEs and micro businesses resuming production through adding central bank lending and discount to local comprehensive financial services platform and by providing special services such as green channel for financing pandemic-hit MSEs.

Fourth, enhance communication and coordination with local governments and promote the introduction of complementary polices. Support was extended to local governments with fiscal space in putting in place risk compensation fund pools to provide loan interest subsidy and reward as well as capital replenishment of government-supported financing guarantee agencies. Support was also given to SMEs, micro businesses and sectors hit hard by the pandemic. Local governments were prompted to build and improve enterprise credit information platform to provide enterprise credit risk assessment data and information, which was an effective complementary credit supporting policy.

Fifth, increase the intensity of policy outreach to benefit more businesses. It publicized special quota policy under the central bank lending and discount and local supporting policies through media, WeChat public accounts and pamphlets. It also took stock of good practices and cases among financial institutions to enable more businesses to benefit from preferential policies.

2. Facilitate the Implementation of Critical Battle against Major Financial Risks and Strike a Balance between Stabilizing Growth and Preventing Risks

The critical battle against major financial risks has seen significant progress since the battle began thanks to the guidance of the Financial Stability and Development Committee and the well-coordinated efforts by all central and local authorities. The local coordination mechanism under the FSDC Office took a tailored approach to overseeing the implementation of work arrangements for preventing and mitigating major financial risks in line with the Financial Stability and Development Committee. The local coordination mechanism under the FSDC Office actively cooperated with local governments while engaged with its own institutional set-up to propose local financial risk prevention and mitigation measures by taking into account local circumstances and focusing on key potential risks.

First, improve information sharing and strengthen financial risk monitoring and assessment. The regulatory coordination and information sharing was enhanced, the catalog of information sharing lists was made, and a multilateral and institutional framework was developed by leveraging on FinTech. The monitoring, tracing and stocktaking of regional financial risks and resolution was enhanced. Local financial risk maps were prepared based on risk assessments. A prompt corrective action mechanism that was coordinated across different departments and to be jointly implemented was put in place to early identify and report risks and facilitate early risk resolution.

Second, coordinate the risk mitigation of local financial institutions with legal entity. Efforts were made to cooperate in the resolution of local financial risks, continuously promote the risk resolution of Bank of Jinzhou and Hengfeng Bank, cooperate with local governments in steadily pushing forward the risk resolution of high-risk small and medium-sized financial institutions, and replenish the capital of small and medium-sized banks through multiple channels. Small and medium-sized financial institutions were urged to carry out reforms, return to original business purpose, stick to functional position, improve corporate governance, constrain large shareholders' behaviors and prevent moral hazards.

Third, promote the crackdown on public-related financial risks arising from local Internet finance. The local coordination mechanism under the FSDC Office assisted the work mechanism headed by the PBC and CBIRC by continuously promoting the crackdown on financial risks from Internet finance and illicit fund-raising that involve the public. Many local agencies innovated work methodologies, and actively explored ways to promote financial reform and mitigate risks in a coordinated way.

III. Future Priorities

As the local work platform for the FSDC Office, the local coordination mechanism will play a bigger role in coordinating and overseeing the implementation of priorities identified by the Financial Stability and Development Committee.

First, promote financial support for economic and social development in a coordinated manner and strengthen overall coordination on issues involving several authorities. It will address the choking points in implementing policies aimed at providing financial support for pandemic containment as well as social and economic development with focus on coordination among different policies so as to promote stable local economic performance. It should fully act as the platform for information sharing, communication and coordination, overseeing policy implementation and investigation and research. It should strengthen information sharing and coordination among governments, banks, and enterprises, so as to better support the initiative to stabilize businesses and protect employment.

Second, forge synergy in preventing and mitigating major financial risks. Responses to major emergency issues, regulatory coordination and risk information sharing should be improved to closely monitor regional financial risks. Cooperation with local government financial work deliberation and coordination mechanism should be enhanced and risk warnings should be issued to local governments if necessary. Professional risk prevention and resolution methodology should be developed and proposed, and financial risks should be dealt with in a categorized manner.

Third, support regional reform and development. Efforts should be made to step up assessment of regional economic and financial developments, support regional financial reform and innovation, and speed up reform and opening-up.

Special Topic 11 Results of the Central Bank Rating of Financial Institutions

In 2019, the PBC conducted the Central Bank Rating quarterly on over 4400 banking institutions, which helped find out their risk profiles and accurately identify high-risk institutions. The Central Bank Rating has played an important role in the critical battle against major financial risks.

I. The Overall Framework of the Central Bank Rating

Participants. All banks and four kinds of non-banking financial institutions, namely finance companies of corporate groups, financial leasing companies, auto financing companies and consumer finance companies, participated in the rating.

Rating framework. The rating indicator system combines mathematical models with professional judgment, and the final score equals to the weighted average of scores in the above two modules. Logistic approach is applied in the mathematical models to objectively evaluate operation status and risk profiles of financial institutions with focuses on capital adequacy, asset quality, coverage of expected losses, profitability, operational efficiency and size. Scorecard approach is applied in the professional judgement, which consists of both quantitative and qualitative indicators. Based on importance and characteristics of different institutions, five sets of scorecards are developed consisting of nine modules including corporate governance, internal control, asset quality, capital management, liquidity management, market risk, profitability, information system and financial ecosystem, as well as some specific redline indicators. The redline indicators refer to those risks which would cause significant negative impact on operations of financial institutions. Once a financial institution triggers redline indicators, the PBC could directly downgrade its rating result accordingly.

Rating frequency. The Central Bank Rating is conducted quarterly and the participants will be informed with their rating results. At least one on-site rating is conducted every year and the corresponding qualitative evaluation results remain unchanged for the whole year. The quarterly rating dynamically updates the quantitative evaluation results based on the latest data. Meanwhile, the PBC could conduct additional on-site rating according to daily risk monitoring.

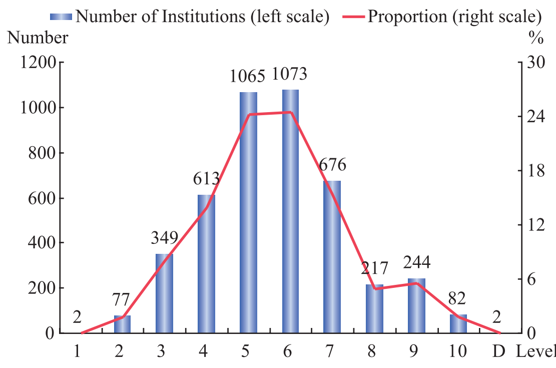
Rating level. The rating results span 11 levels, including level 1 to 10 and level D. The higher the level, the riskier the institution is. Level D refers to institutions that go bankrupt, are taken over or revoked. Financial institutions rated level 8-10 and level D are identified as high-risk institutions. Institutions that are established less than one year are directly rated level 4.

II. Results of the Fourth Quarter Central Bank Rating in 2019

The fourth quarter rating of 2019 covered 4400 banking institutions (Table 3.2), including 24 large banks, 4005 small and medium-sized banks and 371 non-banking financial institutions.

In general, the rating results are normally distributed, with 2106 institutions rated level 1-5, accounting for 47.9 percent; 1749 institutions rated level 6-7, accounting for 39.8 percent; 545 institutions rated level 8-D and were identified as high-risk financial institutions, accounting for 12.4 percent, which are mainly small and medium-sized rural financial institutions (Figure 3.1).

Figure 3.1 Distribution of the Fourth Quarter Rating Results in 2019



Source: The PBC.

Table 3.2 Distribution of Participants and Results of the Fourth Quarter Rating in 2019

Category	Institution Type	Institution Number	Result
Banks	Development and policy banks	3	1-7 level
	Large commercial banks	6	
	Joint-stock banks	12	
	City commercial banks	134	2-D level
	Rural commercial banks	1468	2-10 level
	Rural cooperative banks	28	6-10 level
	Rural credit cooperatives	687	2-10 level
	Village and township banks	1630	2-10 level
	Private banks and others	19	2-7 level
	Foreign banks	42	2-7 level
	Subtotal	**4029**	—
Non-banking Institutions	Finance companies of corporate groups	255	2-D level
	Auto financing companies	25	3-10 level
	Financial leasing companies	67	3-10 level
	Consumer finance companies	24	3-7 level
	Subtotal	**371**	—
Total		**4400**	—

By institution type, large banks were rated with comparatively good results, while rural cooperative institutions were relatively riskier. Among the large banks, 2 were rated level 1, 12 were rated level 2, 6 were rated level 3, 2 were rated level 4 and 2 were rated level 7. Among small and medium-sized banks, foreign banks and private banks were rated with comparatively good results, with 36 percent and 28 percent rated level 2-3, accounting for 1.39 percent and 0.58 percent of the total assets of small and medium-sized banks, respectively. City commercial banks and village and township banks followed, with 89 percent and 73 percent rated level 4-7, accounting for 2.11 percent and 27.65 percent of the total assets of small and medium-sized banks, respectively. Rural cooperative institutions (including rural commercial banks, rural credit cooperatives and rural cooperative banks) were rated worst, with 178, 189 and 11 institutions identified as high-risk institutions, accounting for 12.1 percent, 27.5 percent and 39.3 percent of the number of corresponding types, and 3.05 percent, 1.83 percent and 0.14 percent of total assets of small and medium-sized banks, respectively.

Broken down by region, risk levels vary a lot across regions. There's no or less high-risk institutions in regions such as Beijing, Shanghai, Shenzhen, Zhejiang, Jiangsu and Fujian, where over 70 percent of institutions were rated level 1-5.

In general, the overall operation of our banking institutions is sound and risks are generally controllable. In the fourth quarter of 2019, the number of high-risk financial institutions dropped by 104 quarter-on-quarter and 42 y-o-y, which indicates that risks have been mitigated and the critical battle against major financial risks has achieved primary outcomes.

III. Application of the Results of Central Bank Rating

The Central Bank Rating lays an important foundation for the PBC to monitor risk and maintain financial stability. In addition to applying the rating results to differentiated management, the PBC, relying on the local coordination mechanism under the FSDC Office, keeps strengthening the communication and collaboration with local governments and financial regulatory authorities to continuously expand application scenarios of rating results.

The application of rating results is enhanced to promote the effect of policy transmission. Currently, the rating results are fully utilized in the determination of the differentiated deposit insurance premium, the Macroprudential Assessment program, the approval of central bank credit lines and bond issuance by financial institutions, etc., so that the results could effectively promote financial institutions to operate prudentially. In 2020, the PBC stipulates that only local institutions rated level 1-5 could apply for the policy support for issuing unsecured inclusive loans to MSEs.

The application scope of the central bank rating is expanded and external application scenarios are enriched. In the second half of 2019, the PBC and the CSRC established a communication mechanism to provide reference opinions, based on the central bank rating, on major issues such as bank listing, capital increase and new share issuance. At the same time, the rating results also provide reference to the bidding for cash management of the state treasury and management of local fiscal funds.

Early corrective measures are taken to enhance the initiative of risk prevention. The PBC adopted various early corrective measures such as “one-on-one” notifications, inquiries with senior executives, issuing risk reminders and rating opinions, and promoted some provincial rural credit unions to incorporate the rating results into performance evaluation of local rural financial institutions, so as to enhance their consciousness and initiative of risk prevention. In 2019, 245 financial institutions were removed from the list of high-risk institutions through early corrective measures.

Regulatory cooperation is strengthened to improve the synergy of risk monitoring. Through measures such as data sharing, official documents exchange, telephone communication, etc., the PBC and regulatory authorities share risk profiles of both the whole industry and individual financial institutions that they have collected during the process of performing their duties, so as to conduct timely consultations and judgments, integrate supervisory resources and take earlier supervisory actions.

All stakeholders are kept accountable to promote the effectiveness of risk resolution. The PBC regularly informs local governments and financial regulatory authorities of the central bank rating results and specific conditions of high-risk financial institutions, combines the rating results with the goal of the critical battle against major risks, and urges local governments to take efforts to help high-risk financial institutions resolve risks and develop risk resolution plans, so as to make local governments accountable for resolving risks in their own territories.

Special Topic 12 Promoting Transform and Development of Asset Management Sector in a Prudent and Orderly Manner

Since the *Guidelines on Regulating Asset Management Business of Financial Institutions* (hereafter referred to as "the *Guidelines*") was implemented, the PBC, together with regulatory authorities, guided the healthy development of asset management sector by taking measures to eliminate conduit business, break implicit guarantee, limit maturity mismatch and lower leverage, and the disordered expansion of shadow banking was effectively contained. Impacted by the COVID-19 pandemic and the resulting increasing downward pressure on the economy, financial regulatory authorities will maintain a sound balance between risk prevention and stable growth, and promote transform and development of asset management sector in a prudent and orderly manner.

I. Promote Healthy Development of the Asset Management Sector

Improve regulations and rules constantly. Financial regulatory authorities continued to improve rules and standards regarding asset management business to fill regulatory gaps. First, the *Rules on Identification of Standardised Obligatory Assets* was released, which specified the scope and criteria to recognize standard debt-based assets. Second, the *Notice on Further Clarifying and Regulating Issues Concerning Asset Management Products of Financial Institutions to Invest in Venture Capital Funds and Government-funded Industrial Investment Funds* was published, which enhanced the capability of the financial sector to serve the real economy. Third, the *Administrative Measures for Net Capital of Commercial Banks' Wealth Management Subsidiaries (Provisional)* was released to guide wealth management subsidiaries to adopt the idea of prudent operation. Fourth, the *Interim Rules on Insurance Asset Management Products* was published, which served as a unitary regulation on insurance asset management products. Fifth, the *Notice on Issues Concerning Financial Asset Investment Companies Engaging in Asset Management Business* was formulated to regulate the asset management business of financial asset investment companies. In addition, efforts are being made to release rules to regulate asset management products featuring cash management, as well as pecuniary trusts.

Actively implement requirements put forward by the *Guidelines*. The CBIRC strengthened off-site monitoring, sorted out existing problems in banking wealth management, pecuniary trusts and insurance asset management businesses, and required relevant institutions to conduct self-examination of existing products, make rectification plans and report progress regularly. The CBIRC launched sectoral risk examination and screening for many times and paid special attention to key areas of rectification including non-standard capital pool and conduit business, so as to have a clear understanding of underlying risks and to keep sound risk control. The CSRC specified on requirements concerning the rectification of securities and futures companies, conducted quarterly monitoring and analysis, held institutions accountable, required institutions to make rectification plans and report progress, launched on-site thematic examinations and maintained strict supervisory enforcement.

Adjust relevant arrangements in a reasonable manner. The PBC, together with the NDRC, MOF, CBIRC, CSRC and SAFE, with full consideration of the impact of COVID-19 pandemic while adhering to the policy framework and regulatory requirements put forward by the *Guidelines*, made a prudent decision to extend the transition period of the *Guidelines* to end-2021 while improving incentive and constraint mechanism and optimizing complementary policies to promote the regulated development of asset management sector in a sound and orderly manner.

II. Significant Progress Made in Transition of Asset Management Sector

The asset management sector has formed a pattern in China consisting of financial institutions including commercial banks, wealth management subsidiaries of commercial banks, trust companies, securities and futures institutions, financial asset investment companies and insurance asset management companies. By end-2019, the balance of funds raised by existing asset management products of financial institutions was RMB 79.4 trillion[①]. The proportion went to the following: wealth management products of banks, 30.5 percent; privately-offered asset management products of securities and futures companies, 24.2 percent; asset management products of trust companies, 23.4 percent; publicly-offered funds, 18.6 percent; and asset management products of insurance companies, 3.3 percent. Asset management products of financial asset investment companies accounted for only RMB 23.5 billion, which was a very small portion.

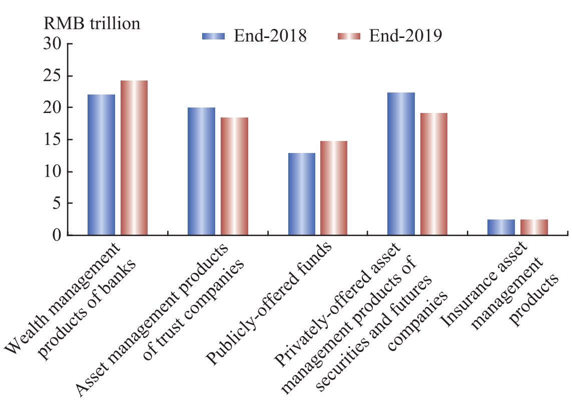
The asset management products gradually returned to its fundamental role. With the joint efforts of financial regulatory authorities and financial institutions, transformation of the asset management business proceeded gradually. First, the proportion of net value-based products increased gradually. By end-2019, the balance of funds raised by net value-based asset management products registered RMB 43.9 trillion, accounting for 55.2 percent of total balance raised by all asset management products and an increase of 8.8 percentage points y-o-y. Second, fund idling was contained effectively. By end-2019, the total size of asset management products with funds coming from other asset management products declined by RMB 5.4 trillion y-o-y. Third, risk remoteness was reinforced. Financial regulators promoted commercial banks to set up wealth management subsidiaries to conduct asset management businesses. By end-2019, 16 commercial banks were approved to establish wealth management

① Data in this Special Topic are from the PBC, if not otherwise stated.

subsidiaries in which 11 have started operation[①]. Fourth, continuous support was provided for the development of real economy. By end-2019, the balance of funds of asset management products directly allocated to the real economy registered RMB 37.1 trillion, taking up 43.0 percent of total assets of asset management products.

The structure of asset management businesses was further improved. First, wealth management products of banks witnessed rising balance with a larger proportion of net-value products. By end-2019, the balance of wealth management products of banks was RMB 24.2 trillion, a y-o-y increase of RMB 2.2 trillion and 9.9 percent, among which the proportion of net-value products rose by 17.6 percentage points y-o-y. The size reinvested in other Special Purpose Vehicles (SPVs) decreased by 9.4 percent y-o-y. Second, trust companies witnessed a drop in balance of asset management products and the size of incompliant products shrank gradually. By end-2019, the balance of asset management products of trust companies registered RMB 18.6 trillion, a y-o-y drop of RMB 1.5 trillion or 7.5 percent, and the size of conduit business within the same sector declined by 29.3 percent y-o-y[②]. Third, publicly-offered funds generally maintained high level of compliance with a constantly rising balance. By end-2019, publicly-offered funds registered a balance of RMB 14.8 trillion, a y-o-y increase of RMB 1.7 trillion or 13.3 percent[③]. Fourth, the balance of privately-offered asset management products of securities and futures institutions decreased and conduit business declined significantly. By end-2019, the balance of privately-offered asset management products of securities and futures institutions was RMB 19.2 trillion, a y-o-y drop of RMB 3.3 trillion or 14.7 percent, in which conduit business declined by 28.1 percent y-o-y[④]. Fifth, the balance of insurance asset management products maintained stable. By end-2019, the balance of insurance asset management products registered RMB 2.6 trillion which was basically the same as that of last year (Figure 3.2).

Figure 3.2 Changes of Asset Management Products by Sectors



Source: The PBC.

III. Promote Steady Transformation and Upgrading of the Asset Management Sector

Next, the PBC will continue to reinforce monitoring of operation of all types of asset management products as well as working with financial regulators to promote the rectification of the asset management business in a prudent

① Source: The CBIRC.
② Source: The CBIRC.
③ Source: The Asset Management Association of China.
④ Source: The Asset Management Association of China.

and orderly manner, cultivate long-term funds and expand opening-up so as to create a sound environment for the transformation and upgrading of the asset management sector.

Strengthen major responsibilities of involved institutions and complete rectification prudently. Financial institutions are required to make rectification plans and complete rectification tasks. Financial institutions are guided to accelerate business transformation and upgrading, improve the capacity of investment, research, active management and product innovation, so as to realize the healthy development in the long run.

Enhance regulatory coordination and strictly control emerging risks. Financial regulatory authorities will strengthen coordination, closely monitor the progress of rectification and operation of all types of asset management products, reinforce incentive and constraint mechanism, and guard against moral hazards of financial institutions while preventing risks incurred by business rectification.

Create sound environment to support real economy. Efforts will be made to cultivate long-term investors and qualified investors, guide financial institutions to sell proper products to proper investors and invest in appropriate assets, and promote issuance of long-term asset management products so as to provide stable funding source for the real economy.

Expand opening-up and learn from international experience. Continue to promote the opening-up of asset management sector in China, and encourage overseas financial institutions to engage in the establishment of and the equity investment in wealth management subsidiaries of commercial banks. Allow overseas asset management institutions to cooperate in joint venture with subsidiaries of Chinese banks or insurance companies to establish wealth management companies controlled by overseas institutions. Guide financial institutions to learn from international asset management practices in terms of advanced investment ideas, operational strategies, incentive mechanisms and compliance and risk control system so as to improve management capability, further enrich market participants and financial products, and promote transformation and upgrading of the asset management business.

Special Topic 13 Perpetual Bonds as an Instrument to Promote Capital Replenishment of Banks

Against the backdrop of increasing downward pressure on the economy, the PBC takes perpetual bonds as an instrument to mitigate the capital constraints faced by banks in their efforts to support the real economy. The PBC accepts qualified bank-issued perpetual bonds as collateral of central bank operations and creates Central Bank Bills Swap (CBS) to support the issuance of perpetual bonds by banks. Since the issuance of the China's first bank-issued perpetual bond in January 2019, perpetual bonds have gradually become an important instrument for banks to replenish Tier 1 capital. The financial sector is able to support the real economy in a more sustainable manner.

I. Identify Key Points to Promote Issuance of Perpetual Bonds to Relieve Constraints on Bank Capital

Bank capital is an important link for the interaction between the financial sector and the real economy as banks are the creator of credit and the key of transmission of monetary policy. Since 2018, against the backdrop of increasing downward pressure on our economy, banks were less able to underwrite loans due to capital constraints, which restrained economic and financial development. Because there were limited channels to replenish capital, bank capital replenishment was slow, and in particular the proportion of Additional Tier 1 (AT1) capital was relatively small. In such circumstance, it was urgent to find an effective way to replenish bank capital, so as to improve the capability of banks to support the real economy and prevent risks, reinforce the triangular supporting framework where "sound monetary policy is implemented, vitality of micro market participants is enhanced, and functions of capital market are played to the fullest", and promote the virtuous interaction between the economy and the financial sector.

Perpetual bonds are an effective way to replenish AT1 capital of banks. Being able to absorb losses to some extent, perpetual bonds can be accounted into AT1 capital of banks, making it a good choice to address the difficulty of bank capital replenishment. The merits of introducing bank-issued perpetual bonds in China are twofold: on the one hand, perpetual bonds broaden channels to replenish bank capital, optimize capital structure of banks, strengthen banks' resilience and credit providing capacity, and help banks to better support the real economy; on the other hand, perpetual bonds enrich bond products, provide investors with more investment choices, and promote market depth and development.

The PBC worked actively with relevant authorities to remove barriers to the issuance of perpetual bonds. First, set the maturity date of perpetual bonds as the end of bank's duration to solve the conflicts between the *Company Law* and regulatory requirements. The biggest barrier to the introduction of perpetual bonds is that according to the *Capital Rules for Commercial Banks (Provisional)*, perpetual bonds are accounted into AT1 capital and should not have fixed term, however the *Company Law* of China requires that principal and interests of corporate bonds should be repaid within a certain time. The PBC, after multiple rounds of discussions with the CBIRC, MOF and the Legislative Affairs Commission of the National People's Congress and asking for confirmation from the BCBS, managed to find a feasible solution that is internationally recognized and compatible with China's reality under the current legal, regulatory and accounting framework, namely setting the maturity date of perpetual bonds as the end of duration of the bank. Second, promote the confirmation that interests of perpetual bonds can be disbursed from pre-tax earnings by the issuers. Pre-tax disbursement of interests of perpetual bonds has a direct bearing on the issuance price, making it a critical factor to the willingness of banks to issue perpetual bonds and the attitude of the market toward perpetual bonds. The PBC, after actively coordinating with the MOF and regulatory authorities, specified that interests of perpetual bonds can be disbursed from pre-tax earnings by the issuers, which made banks more willing to issue perpetual bonds and the bonds more attractive.

II. Create CBS to Improve Environment for Banks to Issue Perpetual Bonds

As it takes time for the market to recognize and accept perpetual bonds, problems such as insufficient liquidity might occur in the early period of perpetual bonds issuance. To improve liquidity and support banks to make good use of this channel for capital replenishment, the PBC created CBS on the day when the first bank-issued perpetual bond was issued in January 2019. After paying necessary fees, institutions can swap the perpetual bonds they hold for central bank bills of equal value from the PBC. In the operation of CBS, the two parties swap only bond principal but not interests, which means that interests are still owned by perpetual bond holders. The maturity of CBS operations should not exceed 3 years in principle and the two parties should swap back the bonds at maturity. Central bank bills that are swapped cannot be used for spot bond transactions but can be used as collateral in scenarios such as central bank monetary policy operations.

CBS helps enrich high-quality collateral of bank-issued perpetual bond holders, increase the liquidity of bank-issued perpetual bonds, make market participants more willing to buy perpetual bonds, and therefore improve the environment for banks to issue perpetual bonds. CBS operation, the nature of which is "bond in exchange for bond", does not increase or decrease monetary base and therefore is neutral to liquidity in the banking system. CBS operation can effectively support banks to issue perpetual bonds to replenish capital, which is conducive to not only the enhancement of financial support to the real economy and financial risk prevention, but also the transmission of monetary policy and the provision of accessible and affordable financing to MSEs and private enterprises, making CBS a targeted and pragmatic policy design. Although volume of each operation is not large, CBS operation serves to lead and guide the market and promote the development of the primary and secondary market of bank-issued perpetual bonds. On the one hand, the introduction of CBS fully demonstrates the importance attached by the central bank to perpetual bonds as a new instrument to capital replenishment. It shows that the central bank is active and pragmatic in supporting banks to issue perpetual bonds for capital replenishment, which attracts more market attention to perpetual bonds and thus creating a favorable condition for the breakthrough of its issuance. On the other hand, the PBC has continuously conducted CBS operations since early 2019, swiftly improving the market liquidity of bank-issued perpetual bonds and substantially increasing the buying willingness of various types of market participants by policy support at the same time, so as to enhance market acceptance of bank-issued perpetual bonds.

By the end of May 2020, the PBC had conducted 12 CBS operations with a total volume of RMB 58 billion and a balance of RMB 17.5 billion. More institutions started to engage in CBS operations, including banking institutions such as large commercial banks, joint-stock banks, city commercial banks, rural commercial banks and non-banking financial institutions such as securities companies. The swapped perpetual bonds include not only those issued by large commercial banks and joint-stock banks but also those issued by small and medium-sized banks such as city commercial banks and rural commercial banks, which demonstrates the central bank's support to the issuance of perpetual bonds by small and medium-sized banks.

III. Bank-issued Perpetual Bond Market Has Developed Steadily, Enabling Banks to Support the Real Economy in a More Sustainable Way

Perpetual bonds have become an important channel for banks to replenish Tier 1 capital. Since the issuance of China's first bank-issued perpetual bond in January 2019, the issuance of bank-issued perpetual bonds in the primary market has accelerated and the number of issuers has increased. By the end of May 2020, a total of 30 perpetual bonds had been issued by 26 banks with a volume of RMB 852.5 billion. Issuers include various types of banks such as large commercial banks, joint-stock banks, city and rural commercial banks and private banks (Table 3.3). Subscribers include asset management products such as bank wealth management products and funds as well as various types of institutions such as securities companies, insurance companies and banks. Asset management products and non-banking institutions are the primary holders of bank-issued perpetual bonds, which ensure the sustainability of the issuance of bank-issued perpetual bonds.

Table 3.3 Issuance of Banking Perpetual Bonds (as of May 31, 2020)

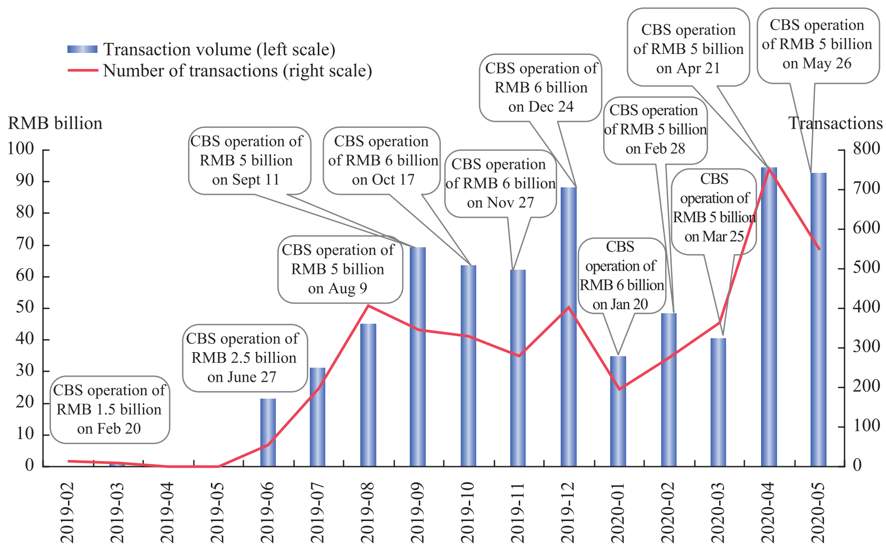
Name of Institution	Date of Issuance	Name of Bond (abbreviated)	Volume of Issuance (RMB billion)
Bank of China	Jan 29, 2019	19 BOC PB	40
China Minsheng Bank	June 4, 2019	19 CMBC PB	40
Huaxia Bank	June 26, 2019	19 HXB PB	40

(Cont)

Name of Institution	Date of Issuance	Name of Bond (abbreviated)	Volume of Issuance (RMB billion)
Shanghai Pudong Development Bank	July 12, 2019	19 SPDB PB	30
Industrial and Commercial Bank of China	July 30, 2019	19 ICBC PB	80
Agricultural Bank of China	Aug 20, 2019	19 ABC PB 01	85
Agricultural Bank of China	Sept 5, 2019	19 ABC PB 02	35
China Bohai Bank	Sept 17, 2019	19 CBHB PB	20
Bank of Communications	Sept 20, 2019	19 BANKCOMM PB	40
China Guangfa Bank	Sept 27, 2019	19 CGB PB	45
China Construction Bank	Nov 15, 2019	19 CCB PB	40
Bank of Taizhou	Nov 19, 2019	19 TZB PB 01	1.6
Weihai City Commercial Bank	Dec 2, 2019	19 WHCCB PB	3
Huishang Bank	Dec 3, 2019	19 HSB PB	10
China Citic Bank	Dec 11, 2019	19 CITIC PB	40
Ping An Bank	Dec 26, 2019	19 PINGAN PB 01	20
Bank of Hangzhou	Jan 17, 2020	20 HZB PB	7
Ping An Bank	Feb 25, 2020	20 PINGAN PB 01	30
Luzhou Bank	Mar 18, 2020	20 LZB PB 01	1
Postal Savings Bank of China	Mar 18, 2020	20 PSBC PB	80
Guilin Bank	Mar 31, 2020	20 GLB PB	3.2
Bank of Jiangsu	Apr 1, 2020	20 JSB PB	20
Shenzhen Rural Commercial Bank	Apr 10, 2020	20 SZRCB PB	2.5
Huarong Xiangjiang Bank	Apr 17, 2020	20 HRXJB PB	5.3
Bank of China	Apr 30, 2020	20 BOC PB 01	40
Agricultural Bank of China	May 12, 2020	20 ABC PB 01	85
Bank of Dongguan	May 22, 2020	20 DGB PB	2.2
Bank of Huzhou	May 26, 2020	20 HZB PB	1.2
Guangxi Beibu Gulf Bank	May 27, 2020	20 GBGB PB	3
Zhejiang Tailong Commercial Bank	May 29, 2020	20 TLB PB	2.5

The secondary market of bank-issued perpetual bonds keeps growing. Spot transactions of bonds have been increasingly active and the number of bonds repurchase transactions with bank-issued perpetual bonds as the underlying assets has also increased. The market depth and width keeps increasing. In the first five months of 2020, there were 2142 spot transactions of bank-issued perpetual bonds with a total value of RMB 311.8 billion, while the trading volume in April reached RMB 94.7 billion, the highest record since the issuance of bank-issued perpetual bonds. The average monthly trading volume was RMB 62.4 billion, which increased by 81 percent compared to that of 2019 (Figure 3.3).

Figure 3.3 CBS Operations and Transaction Volumes in the Secondary Market of Bank-issued Perpetual Bonds



Generally speaking, the current market of bank-issued perpetual bonds has entered a track of virtuous development. On the one hand, the investor base primarily composed of private demands that is formed spontaneously by the market provides a solid foundation for the continuous issuance of bank-issued perpetual bonds. On the other hand, the rising issuance volume and policy support have promoted the development of the secondary market of bank-issued perpetual bonds, which in turn facilitates issuance in the primary market, thus forming a virtuous interaction between the two markets. Based on the current development trend, bank-issued perpetual bonds will become an important component of China's bond market, which not only provides banks with an effective way to replenish capital but also offers more investment choices to domestic and overseas investors.

Next, relevant authorities will continue to promote banks to issue perpetual bonds for capital replenishment and enhance the sustainability of banks' support to the real economy. Based on comprehensive consideration of market situation and reasonable demands of financial institutions, the PBC will continue to conduct prudent CBS operations in a market-oriented manner, support all kinds of banks (in particular small and medium-sized banks with sound operations) to issue perpetual bonds for capital replenishment, and strive to build a virtuous interaction between the real economy and the financial sector, in which bank capital is replenished in a market-oriented manner, banks' capability of credit expansion is recovered and the economy is stabilized and growing.

Special Topic 14 Establishing the Regulatory Framework of Financial Holding Companies in China

In recent years, with the economic and financial development and further opening-up of China, financial holding companies have developed rapidly, meeting the needs of various market participants for diversified financial services and enhancing the capability of finance to serve the real economy. However, in practice a small number of companies blindly expand into the financial sector without appropriate isolation mechanism, contributing to the accumulation of risks. In September 2020, the State Council issued the *Decision on Implementing Access Management of Financial Holding Companies* (hereafter referred to as the *Access Decision*), authorizing the PBC to conduct market access management and implement the supervision of financial holding companies. The PBC simultaneously issued the *Trial Measures for Regulation and Supervision on Financial Holding Companies* (hereafter referred to as the *FHC Measures*) to further refine relevant regulatory requirements. In the next step, the PBC will continue to improve the regulatory framework of financial holding companies, carry out access management and continuous supervision of financial holding companies in accordance with relevant laws, prevent systemic risks, promote the healthy and sustainable development of financial holding companies, and enhance their ability to serve high-quality economic development.

I. The Importance of Regulating Financial Holding Companies

The essential feature of a financial holding company is to have substantial control over two or more different types of financial institutions. Major advanced economies generally provide integrated financial services through financial holding companies, which play an active role in consolidating financial resources, conducting financial innovation, improving service efficiency and diversifying operational risks. Given the fact that financial holding companies are usually large in scale, diversified in business, highly interconnected, have strong risk spillover effects and occupy important positions in the domestic economic and financial system, countries such as the United States, Japan, South Korea have special legislation on implementation of market access management and regulation on financial holding companies. Since the global financial crisis in 2008, major jurisdictions have put more emphasis on comprehensive supervision, focused on preventing and mitigating systemic risks, reduced the complexity, contagiousness and concentration of risks, and improved the prudential regulations on financial holding companies in areas such as capital adequacy, corporate governance and risk isolation.

In recent years, some large financial institutions in China have carried out cross-sector investments and developed into financial groups; some non-financial enterprises have invested in and controlled many types of financial institutions, becoming a group of enterprises with characteristics of financial holding companies. Among them, some companies that are financially strong and operate in compliance with regulations have optimized resource allocation, reduced costs, enriched and improved financial services through this model, which helps meet the needs of various enterprises and consumers and improve the capability of finance to serve the real economy. But a small number of companies blindly expanded into the financial sector in practice and relevant risks and problems have accumulated. First, the absence of financial expertise, compliance awareness and risk isolation mechanism results in the cross transmission of financial risks and industrial risks. Second, a small number of companies use complex equity arrangements to conceal their ownership structures, leading to problems such as complex and opaque organizational structure, fraudulent or circular capital injections and unclear risk profiles. Third, a small number of companies take advantage of their holding positions to transfer profits through inappropriate related transactions, impairing legal rights and interests of the financial institutions and other investors. There has always been a gap in the comprehensive regulation of financial holding companies in China. It is urgent to formulate the regulations, bridge regulatory gaps and establish a regulatory framework of financial holding companies.

The CPC Central Committee and the State Council have repeatedly pointed out that it is necessary to coordinate regulation on financial holding companies and eliminate regulatory gaps, and that all financial businesses should be put under regulation. The Fifth National Financial Work Conference clarified that the PBC is responsible for developing regulatory rules, monitoring, analyzing and supervising financial holding companies and other financial groups on a consolidated basis. The *Access Decision* authorizes the PBC to conduct market access management and supervise financial holding companies. According to the *Access Decision*, the PBC developed and issued the *FHC Measures*. The implementation of the *Access Decision* and the *FHC Measures* will help to prevent cross-institution, cross-sector and cross-market risk contagion, promote the sustainable and healthy development of financial holding companies, and improve the quality and efficiency of serving the real economy.

II. The General Principle and Main Content of the *FHC Measures*

Following the principle of macro-prudential management and adhering to the principle of sector-based operations in the financial sector, the *FHC Measures* separates the industrial sector from the financial sector, establishes approval-based access for financial holding companies that are developed from non-financial enterprises investing in or holding equities of financial institutions, implements comprehensive, continuous and penetrating regulation on a consolidated basis, so as to keep financial holding companies operating in compliance with regulations.

Clarify regulatory scope and establish approval-based market access. Adhering to the principle that only licensed institutions can deliver financial services, the *Access Decision* and the *FHC Measures* clarify that enterprises shall apply for approval to establish financial holding companies if they meet the following criteria, so as to effectively separate the industrial business line from the financial business line: first, the controlling shareholders or actual controllers are domestic non-financial enterprises, natural persons or eligible legal entities; second, the enterprises substantially control two or more types of financial institutions; third, the total assets or the assets under management of the financial institutions that are actually controlled reach a certain threshold, or it is necessary to establish financial holding companies according to the requirements of macro-prudential management.

Establish the regulatory framework and strengthen inter-agency cooperation. From the perspective of macro-prudential management, the PBC conducts continuous supervision of financial holding companies. Financial authorities shall implement sector-based supervision of financial institutions controlled by financial holding companies in accordance with laws and the division of financial supervisory responsibilities. An inter-agency working mechanism would be established among relevant authorities to enhance supervisory cooperation and information sharing, and develop joint supervisory effort.

Specify qualifications of shareholders and regulate shareholders' behavior. Firstly, major shareholders, controlling shareholders or actual controllers of financial holding companies shall have well-focused core businesses, up-to-the-standard corporate governance, clear-cut ownership structures, transparent structures of shareholders and ultimate beneficiaries, effective risk management and internal control mechanisms, and sound financial performance. Secondly, differentiated requirements on continuous profitability of major shareholders, controlling shareholders and actual controllers are introduced. Thirdly, a negative list would be developed to explicitly prohibit specific behavior of controlling shareholders of financial holding companies, and to identify situation in which they cannot become major shareholders, controlling shareholders or actual controllers of financial holding companies, including once making mendacious investment in or circulated capital contribution to financial institutions,

Strengthen supervision on the compliance of funds and ensure capital adequacy. Firstly, the source of investment funds shall be real and reliable. Legal entities and natural persons shall use their own legitimate funds rather than non-proprietary funds, such as entrusted funds and investment funds, to invest in financial holding companies. Secondly, financial holding companies shall invest in and control financial institutions with their own legal funds. They are prohibited from mendacious or circulated capital injections, or illegal withdrawal of funds from financial institutions. Penetrating management of compliance of financial holding companies' capital would be implemented. Thirdly, a capital adequacy regulatory framework shall be established on a consolidated basis to ensure that the capital of financial holding companies, the controlled financial institutions and the whole groups is proportionate to their asset size and risk profiles.

Clarify ownership structure and optimize governance framework. Firstly, a financial holding company shall have a simple, clear and penetrable ownership structure and a reasonable legal entity hierarchy commensurate with its own capital scale, operation capabilities and risk management abilities. Reverse shareholding and cross shareholding of controlled institutions are prohibited. Secondly, financial institutions controlled by financial holding companies shall not become major shareholders of other types of financial institutions, except for controlling financial institutions conducting the same type of financial businesses or downstream businesses under the approval of financial regulatory authorities. Thirdly, enterprise groups with unqualified ownership structures that have been existed before the implementation of the *FHC Measures* should reduce the complexity of the organizational structures and simplify the hierarchy of legal entities during the transition period under the approval of financial regulatory authorities.

Improve corporate governance and regulate related transactions. Firstly, financial holding companies shall improve their corporate governance structures, participate in the corporate governance of controlled institutions in accordance with the law, and shall not interfere with their independent operations. Secondly, a record system for the appointment of directors, supervisors and senior managers of financial holding companies shall be established. Requirements on serving as senior managers in multiple institutions should be imposed. Thirdly, the related transactions of financial holding groups should comply with laws and regulations and follow market principles. Financial holding companies shall not conceal related transactions and true destination of funds, and must not transfer benefits or circumvent supervisions through related transactions.

Strengthen comprehensive risk management and improve the "firewall" system. Firstly, financial holding companies shall establish a unified comprehensive risk management system that is proportionate to their organization structures, business scales, complexity and reputational impacts. Secondly, the comprehensive risk management system should cover institutions controlled by financial holding companies and all types of risks, including institutions engaged in financial activities approved or supervised by local governments in accordance with the law. Thirdly, the risk "firewall" system shall be established to appropriately separate businesses activities and information sharing within the group, regulate synergies and put more emphasis on customer information protection.

Set a reasonable transition period and guide orderly adjustments. The *FHC Measures* set a reasonable transition period for existing enterprises to smooth the transition. Enterprise groups that have met the establishing criteria before the implementation of the *FHC Measures* but have not yet met the relevant regulatory requirements should develop a rectification plan based on their actual situations, and make adjustments within a certain period with the approval of financial regulatory authorities.

III. Actively and Steadily Implementing the *FHC Measures* to Promote the Regulated Development of FHCs

As the first comprehensive regulation on financial holding companies in China, the *FHC Measures* will take effects on November 1, 2020.

The issuance and implementation of the *FHC Measures* is a supplement and improvement to the current pattern of our financial industry, which is mainly characterized by sector-based operations and regulation. It will help integrate financial resources, promote diversification of financial supplies, and enhance the operational resilience and competitiveness of financial holding companies and controlled financial institutions. It will also help prevent risk contagion, maintain market disciplines and promote orderly competition and healthy development of various institutions. In the next step, the PBC will follow the principles of openness, fairness and justice, carry out the access management and continuous supervision of financial holding companies in accordance with laws and regulations in a sound and orderly manner, develop supplementary rules, improve the policy framework, prevent and address risks and promote a virtuous cycle between economy and finance.

Improve the policy framework and address regulatory gaps. Based on the *FHC Measures*, we will study and develop supplementary documents including rules for consolidated management, related transaction management and capital management, constantly improve the regulations on financial holding companies, and enhance pertinence and operability.

Introduce approval-based access management and improve eligibility. According to the requirements of the *FHC Measures*, we will accept and examine applications for establishment of financial holding companies by eligible market participants in accordance with the law, and make efforts to provide satisfying administrative licensing services. We will strictly control market access to ensure that financial holding companies introduce shareholders with good operating performance, up-to-the-standard corporate governance and appropriate leverage level. Moreover, we will regulate shareholders' behavior to ensure their legitimate participation in legal entity governance and decision-making on important matters, so as to safeguard the legal rights of small and medium shareholders, financial holding companies and financial institutions.

Adhere to prudential regulation and promote sound operation. Based on the principle of prudential management, we will promote the implementation of regulatory requirements, effectively identify, measure and monitor the comprehensive risk profiles and compliance of financial holding groups by means of information reporting, off-site monitoring, on-site inspections and supervisory talks. A risk assessment indicator system combined of qualitative and quantitative means will be established to implement differentiated supervision and guide financial holding companies to operate prudently and in accordance with laws and regulations.

Implement the adjustments appropriately and facilitate a smooth and orderly transition. As for some of the existing companies that have met the establishment criteria, if there is a need to adjust their ownership structures, we will take into account the market affordability and the actual situation of companies to appropriately set the transitional period, properly manage the pace and timing of policies, implement differentiated policy, guide relevant existing companies to adjust in an appropriate and well-paced manner, and promote the smooth implementation of the *FHC Measures*.

Special Topic 15 Resolving Risks of Three Troubled Small and Medium-sized Banks Successfully with Tailored Measures

The accurate resolution of troubled small and medium-sized banks has been one of the most challenging tasks among those of the critical battle against major financial risks. Under the comprehensive deployment by the CPC Central Committee and the State Council, and the frontline command of the FSDC, the PBC has worked closely with relevant agencies and local governments to successfully handle the risks of several troubled small and medium-sized banks by targeted resolution strategies, such as Baoshang Bank, Hengfeng Bank and Bank of Jinzhou, so that the bottom line of preventing systemic financial risks has been preserved.

I. Different Measures and Effects of the Resolution of Three Troubled Banks

1. The Purchase and Assumption Transaction of the Baoshang Bank

As a result of its large illegal exposure to the biggest shareholder, the Mingtian Group which had defaulted over a long time, the Baoshang Bank had been faced with severe credit risks. The Baoshang Bank was taken over by authorities on 24 May 2019 after meeting the takeover criteria stipulated by relevant laws and regulations. Before the takeover was initiated, a special joint team comprising of staff from the PBC and CBIRC had conducted the on-site validation of the bank, which showed that the bank had been insolvent as a matter of fact, and all the efforts of seeking market-oriented restructuring had failed. Meanwhile, the Baoshang Bank had carried out transactions with hundreds of financial counterparties, of which over 60 percent were small and medium-sized financial institutions. In light of its risk profile, the deposit insurance fund was utilized to provide partial funding support to facilitate the establishment of a new bank to purchase and assume the assets, liabilities and business of the Baoshang Bank.

With the concerted efforts of relevant parties, the resolution measures such as purchasing large creditors' claims and validating the assets and liabilities of the Baoshang Bank were completed in time and the restructuring went on well. It was announced on 30 April 2020 that the Mengshang Bank was established and the four branches of the Baoshang Bank located out of the Inner Mongolia Autonomous Region was transferred to the Huishang Bank. The Mengshang Bank and 4 branches purchased by the Huishang Bank started their operations on May 25, and the closing stage of risk resolution of Baoshang Bank also proceeded in an orderly manner as planned. The resolution of Baoshang Bank, on one hand, protected the legitimate rights of depositors and other clients to a maximum extent, maintained social stability, held the base line of no systemic financial risks, and on the other hand, respected market disciplines, removed the expectation of implicit guarantees, broke the rooted belief in sizes and financial licenses, and promoted reasonable market pricing of risks. The resolution contributed to the recovery of market order, and improvement of financial law system and institutional infrastructure for resolution.

2. Resolution of the Hengfeng Bank by Local Government Recapitalization and Introduction of Strategic Investors to Facilitate Restructuring

There existed a number of problems in the Hengfeng Bank including weak corporate governance as well as disorderly management and operation. Two chairmen of the board were investigated consecutively for violations of laws and disciplines, bank's risks were gradually revealed, reputation was severely impaired and a liquidity strain emerged. As the only national joint stock bank located in Shandong Province, Hengfeng Bank has been an important financial institution to promoting local social and economic development. In consideration of this factor, Shandong Provincial Government proactively took a leading role in resolving the local risks following the principle of market-orientation and rule of law, and in developing the restructuring plan of the Hengfeng Bank by means of local government recapitalization and introduction of strategic investors to further restructure the bank.

With the support of relevant agencies of central governments, the restructuring of Hengfeng Bank went on smoothly. Shandong Provincial Government had taken a couple of effective measures to promote the sustainable healthy development of the Hengfeng Bank, such as urging the old shareholders to absorb losses, initiating administration and legal accountability procedures regarding the illegal and unsound behavior by the former senior management, introducing new strategic investors such as Huijing Ltd., and enhancing corporate governance reform. By end-2019, the Hengfeng Bank has completed the disposal of non-performing assets and the introduction of strategic investor funds of RMB 100 billion, and finished shareholding reforms and book-building with the core regulatory indicators including capital adequacy ratio meeting the regulatory requirements. Currently the reform and restructuring of the bank have been largely completed.

3. The "Online Repairment" Resolution of the Bank of Jinzhou

There existed a number of problems in Bank of Jinzhou, such as a highly diversified shareholding structure, severe insider control, a large asset scale and high interconnectedness with other banks. In May 2019, a run by the interbank market counterparties on the bank occurred all of a sudden and put the bank into emergency. The PBC, together with the CBIRC and Liaoning Provincial Government, worked decisively to find strategic investors that were willing to provide credit enhancements for the Bank of Jinzhou, as well as adopting other measures to address the crisis of counterparties' run. All such efforts effectively improved the market expectation on the robustness of small and medium-sized financial institutions and cut off the potential risk contagion.

Considering the large amount of non-performing assets of the bank, financial restructuring measures were necessary to help repair the bank's balance sheet and restore its normal operation. Chengfang Huida Enterprise Management Co. Ltd. purchased RMB 150 billion of non-performing assets from the Bank of Jinzhou at market price, and together with Liaoning state-owned asset platform, purchased 6.2 billion newly issued shares by Bank of Jinzhou totalling RMB 12.1 billion. During the financial restructuring, relevant parties were held accountable with the bank and its old shareholders bearing historical losses so as to effectively facilitate the collection of non-performing assets. As shown in the subsequent event of Bank of Jinzhou's 2019 annual report, after above restructuring measures, the CET1, tier 1 and total capital adequacy ratios of the Bank of Jinzhou have been lifted to 8.85 percent, 10.38 percent and 12.56 percent respectively, and the NPL ratio has been reduced to 1.95 percent. The reform and restructuring of the bank have been completed. The Bank of Jinzhou has almost resumed its operation capacity and recovered its normal business to a preliminary extent. Its risks were addressed prudently without causing shocks to the financial market. The case of Bank of Jinzhou is a typical illustration of "online repairment" of listed banks.

II. Considerations about the Choice of Different Resolution Measures

Following the principle of market-orientation and rule of law during the resolution of financial risks, the resolution strategy should be made based on various practical conditions and external restrictions, such as the risk nature and systemic impact of the troubled financial institution as well as other external handicaps, so as to purse the balance between maintaining stability and preventing moral hazard and seek the optimized solution among multiple objectives. The resolution of three small and medium-sized banks depended on different strategies employed by authorities that could fit into each bank's unique risk characteristics to ensure the efficiency and effectiveness of the resolution process.

1. Solvency as the Precondition of Applying "Online Repairment" Resolution

According to the Bagehot's Dictum, to prevent the panic over financial risks from spreading, the central bank needs to provide its lender-of-last-resort facility to troubled financial institutions on the basis of eligible collateral, as a means to offer bailout to troubled financial institutions. Such facility has been regarded as one of the effective market-oriented means to address financial institutions' liquidity risks and to contain moral hazard at the same time. In practice, the authorities may judge whether the financial institution under resolution is illiquid or insolvent based on daily risk monitoring and targeted thematic investigation. For illiquid but solvent financial institutions, if eligible and adequate collateral can be provided, the "online repairment" resolution strategy can be applied as a preferred method, with the deposit insurance fund or the central bank offering liquidity support. For insolvent financial institutions, the market-exit mechanisms should be the preferred resolution method so as to strictly hold to market discipline. The deposit insurance fund can be used to fund the resolution after breaking rigid payment and holding shareholders accountable, so as to provide necessary protection for depositors and medium and small investors, etc.

2. Systemic Importance as an Important Consideration in Making Resolution Strategy

For a financial institution with systemic importance, even if it has been insolvent, the resolution should seek the balance between preventing systemic risks and containing moral hazard, and it could hardly simply go bankruptcy in practice. For the resolution of any specific financial institution, the resolution strategy should still be conducted on a case-by-case basis, fully considering factors such as its asset size, complexity, business coverage and interconnectedness with other financial institutions, as well as analyzing its systemic importance to choose the proper resolution strategy prudently. In addition, for those financial institutions with systemic importance, the resolution process should follow a step-by-step way and try to avoid negative spillovers and shocks resulted from the resolution.

3. Considering External Restrictions When Choosing Resolution Strategies

Considering the practical nature of resolution, a number of external restrictions should be considered in the resolution. Firstly, understanding of risk profile is important. Ideally, authorities should have a thorough assessment of the troubled financial institution's risk profile. However, this can be an extremely challenging task in practice especially in emergent situation. The institution under resolution usually tends to cover up risks, which could result in data distortion. Secondly, the market condition during the resolution process should be considered. The market condition has a critical influence on whether the resolution strategy could be successfully implemented. When the market is in panic, even financial institutions that can be handled in the "online repairment" resolution may encounter the difficulty of introducing strategic investors. In addition, spillovers of the same resolution strategy to similar institutions can be distinct under different market conditions. Thirdly, the role of the local government is a key factor. The local governments need to play a substantial role in financial risk resolution and be held responsible for resolution of local financial institutions. As shown by the practice, the more active role the local government plays and more responsibility the local government takes, the better the resolution process and the outcome will be.

III. Policy Recommendations

The financial sector is closely related to risks, and financial risk resolution is not only a tough battle but also a protracted war. The resolution cases of Baoshang Bank, Hengfeng Bank and Bank of Jinzhou are very typical from which it can be found that those small and medium-sized banks with aggressive operational strategies, extortionate risk appetites and weak corporate governance tend to have severe risks against the backdrop of bigger economic downside pressures and stricter regulations. As the next step, efforts should be delivered to further strengthen the institutional framework, consolidate the achievements that have been made during the ongoing critical battle against major financial risks and establish the long-term regimes of risk prevention and resolution, building on all the experiences and lessons of the resolution of three small and medium-sized banks, etc.

1. Improving the Effective Institutional Arrangement of Risk Resolution

Under leadership of the Central Committee of the CPC and the State Council, the FSDC takes a leading role in decision-making and coordinating in risk resolution. The FSDC assesses the risk profile and guides relevant authorities and local governments to develop the effective resolution strategies and implement them. Cooperation and coordination among relevant resolution authorities should be strengthened and the implementation of resolution should be enhanced and supervised. It's suggested that the FSDC enhance the coordination with the discipline inspection and supervision agencies and judiciary authorities to pursue strict enforcement against behaviors breaking the laws, regulations and disciplines.

2. Strengthening the PBC's Role in Systemic Risk Prevention

Since the PBC has been mandated with systemic financial risk prevention and resolution, according to the principle of equal rights and responsibilities, necessary tools for the PBC to fulfill its duties should be strengthened or authorized. For example, making systemic importance assessment on the financial institution under resolution, working with relevant agencies to facilitate the bail-in process, taking prompt corrective actions, imposing certain measures on shareholders and creditors, collaborating with the local governments to play their leading roles in resolving local risks, providing liquidity support, establishing SPV to facilitate the purchase, recapitalization or temporary holding of shares of troubled institutions.

3. Further Strengthening the Responsibilities of Relevant Parties in the Resolution to Prevent Moral Hazard

Financial institutions should take principal responsibilities in resolution. Local governments should strengthen their role in local supervision and resolution. Financial regulatory authorities should fulfill their regulatory and supervisory responsibilities, so as to hold sufficient determination and lever for supervision, and the PBC should fulfill its mandate as lender of last resort when necessary. Meanwhile, the incentive mechanisms should be well-designed to further incentivize all the parties, including financial institutions, local governments and regulatory authorities to have the endogenous incentives to address the risks and to act in a proactive way, so as to prevent moral hazard effectively.

4. Further Clarifying Source and Usage Hierarchy of Resolution Funding to Enhance the Supporting System of Resolution Funding

According to the experience of mature resolution practices, when the source and usage hierarchy of resolution funding are clear, relevant parties can be incentivized to strengthen supervision and surveillance on an ex ante and going-concern basis, so as to reduce the probability of accumulation and outbreak of financial risks and to achieve the least cost of resolution. Thus efforts should be delivered to further clarify the source and usage hierarchy of different resolution funding, under which the loss should be absorbed in the order of shareholders, unsecured creditors, local government funding and deposit insurance funds, and only under necessary circumstances will the PBC act as the lender of last resort. Meanwhile, contingent funding instruments should also be considered to supplement the resolution funds.

5. Further Enhancing the Deposit Insurance System in Fulfilling Its Prompt Corrective and Resolution Mandates

The deposit insurance system should be further enhanced as the effort to establish the long-term resolution regime for the banking sector. According to the principle of market-orientation and rule of law, the deposit insurance system should further play its role in the following ways, including increasing the utilization channels of deposit insurance fund, exploring to establish a relevant independent deposit insurance agency and professional team, conducting risk monitoring, warning and early intervention, pursing the early detection and resolution of risks. When necessary, the deposit insurer may participate in the resolution by purchasing the shares, having controlling shares, making purchase and assumption transactions and establishing the bridge bank during the resolution. In case of the systemic risk resolution, both the deposit insurer's resolution mandate and the PBC's lender-of-last-resort function should be utilized effectively.

Special Topic 16 Strengthening Deposit Insurer's Prompt Corrective Action Mandate to Prevent and Resolve Financial Risks Timely

As an important part of the financial safety net, the deposit insurance system contributes much in the early identification, intervention and resolution of financial risks through prompt corrective action (PCA), thus prevents the accumulation of risks. In practice, the PCA of deposit insurer has preliminarily fulfilled its role in early risk assessment as well as making relevant stakeholders accountable in resolution in an effective manner.

I. The PCA Mandate of the Deposit Insurer Helps to Lift Overall Regulatory Quality and Efficacy

1. The PCA Measures Help in Strengthening the Market Discipline on Insured Banks

As one of the biggest stakeholders in financial failure, deposit insurer has the endogenous incentives to restrict the risk-taking behavior of financial institutions. Authorizing the deposit insurer the right to take PCA measures, has been demonstrated to be useful in early risk identification, intervention and resolution. Also, the PCA mandate of the deposit insurer helps in preventing the rapid accumulation and contagion of risks in the problem banks on an ex ante basis, reducing the negative spillovers and avoiding increasing both the resolution challenges and costs.

According to the *Deposit Insurance Regulations of the People's Republic of China*, the PBC, the regulatory authority and the deposit insurer all have the PCA mandate respectively. According to the regulations, where the capital adequacy ratio of an insured financial institution drops sharply due to reasons such as a major asset loss, which seriously endangers the safety of deposits and the deposit insurance fund, in order to avoid the deterioration and contagion of risk, the insured financial institution should timely take measures such as replenishing capital, controlling asset growth, controlling credit granting in major transactions, and reducing leverage ratio according to the requirements of the PBC, the regulatory authority and the deposit insurer.

2. The PCA Function of Deposit Insurer Plays the Supplemental Role of Financial Risk Assessment and Resolution

There is a division of responsibilities between the deposit insurer and regulatory authority, where the deposit insurer's PCA function should focus more on the tail risk event of problem banks. According to the international experiences, since the deposit insurer has been mandated with repaying depositors and conducting the resolution in a financial failure, its PCA function should stress on identifying and reporting tail risk factors of insured banks, promoting early regulatory intervention and correction, so as to reduce bank failure probability and total resolution cost. In practice, the early risk identification and corrective functions by the deposit insurer have been demonstrated useful and helpful in lifting the overall regulatory efficiency. According to the 2013 IADI *General Guidance on Early Detection and Timely Intervention for Deposit Insurance Systems,* PCA function of the deposit insurer can contribute to improving the quality and effectiveness of bank supervision. In designing the deposit insurance system for China, it has been clear that a division of responsibility between the deposit insurer and regulatory authority will contribute to enhancing the functioning efficacy of the financial safety net, where the two systems have different focuses yet supplement and support each other. This arrangement has been effective in practice. Since the launch of the deposit insurance system in 2015, the deposit insurer and the regulator have established and strengthened the formal information-sharing and coordination mechanisms to better identify risks and facilitate the resolution.

II. The Deposit Insurer's PCA Practice

Since 2017, in addition to collecting premiums and accumulating the deposit insurance fund, as well as managing the risk-based premium system, the deposit insurer has strengthened risk monitoring, explored the establishment of its PCA framework and worked with local governments and other stakeholders to forge better synergies in resolution.

Firstly, the deposit insurer has strengthened risk monitoring to better identify risks and to have a thorough evaluation of risk profiles of insured banks. According to the *Deposit Insurance Regulations of the People's Republic of China*, in order to effectively assess the potential risks that may lead to major asset loss or sharply drop of capital adequacy ratio of the insured financial institutions, the deposit insurer strengthened risk monitoring through rating, verification and evaluation, and devoted much efforts to validating the authenticity of the core regulatory indicators of insured financial institutions, such as capital adequacy ratio and NPL ratio, as well as investigating the vulnerabilities of financial institutions in wholesale funding, off-balance-sheet business, related party transactions and corporate governance. For risky insured banks, the problem bank list has been made by the deposit insurer on a monthly basis, of which each problem bank will be monitored and analyzed with specific resolution plans in place.

Secondly, the deposit insurer has promoted the problem banks to fulfill their responsibilities in resolving risks and strengthened the constrains over the problem banks and their shareholders. For those insured banks that are critically undercapitalized, the PCA notice letters have been sent by the deposit insurer to require developing capital replenishment plans and replenishing capital within the specified timeframe. A number of PCA measures and instruments were developed and at the disposal of the deposit insurer, including requiring insured bank to increase internal profit retention, reduce operating expenses, limit compensation, dispose bad assets and introduce strategic investors;

requiring shareholders to fulfill its capital replenishing obligations through purchasing newly issued common shares, recapitalizing with cash or qualified assets; requiring the problem bank to replace its senior management, improve corporate governance and risk management so as to operate prudently. During the PCA process, the deposit insurer worked closely with the local governments and the supervisory authority to forge synergies.

Thirdly, the deposit insurer has closely monitored the risks of rural credit cooperatives and notified the provincial governments in a timely manner to promote them to better implement the management and resolution responsibilities. According to the division of responsibilities, the provincial governments are responsible for managing and resolving the risks of rural credit cooperatives, including the rural commercial banks and rural cooperative banks. In practice, the deposit insurer would notify the provincial governments with significant risks that have emerged in the rural credit cooperatives and put forward specific resolution advices and suggestions, which greatly helped to promote local governments to take the lead in formulating the disposal plan and address problem local financial institutions more efficiently. In some provinces, the relevant provincial governments attached great importance to the risks and resolution advices notified by deposit insurer and have urged the problem rural credit cooperatives to accelerating the reorganization of shareholder structure and improving corporate governance, so that potential risks can be most possibly managed without resorting to the public funds.

Fourthly, the deposit insurer actively promoted the founding bank of village banks to fulfill the major responsibilities in resolution. According to the relevant regulations, the founding bank of village banks shall take the leading role in resolution of such banks. For risky village banks, the deposit insurer actively promoted the founding bank to fulfill its responsibilities in managing the risks of village banks through risk warning and sending risk notification letter, requiring the founding bank to take measures such as increasing the capital position, replacing senior management, offering liquidity support and disposing non-performing assets so that capital levels of the village banks lifted to meet regulatory requirements and the internal management improved.

With the concerted efforts by the PBC, regulatory authority and deposit insurer, as of the end of 2019, PCA measures have been taken against 503 insured financial institutions, of which 437 were required to replenish capital, 219 required to control rapid asset growth, 138 required to limit significant credit exposure, as well as 41 required to reduce leverage. Risks of 206 problem banks have been well managed in a timely manner by the end of 2019. As the next step, the deposit insurer will continue its efforts in fulfilling the PCA mandate, through communicating and coordinating with the local governments and regulatory authority in facilitating the reform, restructuring and resolution of high risk financial institutions.

Special Topic 17 An Overview of the Research and Development of Central Bank Digital Currency

In the context of the evolving information revolution and booming digital economy in recent years, the research and development of central bank digital currency (CBDC) has become a focus for the international community and among major economies. Economies such as Sweden have piloted their CBDC projects, while others are engaged in conceptual research or feasibility study. The potential impacts of CBDC on the financial system vary among above economies, depending on country-specific circumstances, i.e. the motivations, intentions and design features of CBDCs.

I. CBDC: Concept and Taxonomy

It is one of the mandated responsibilities of the central bank to ensure safety, efficiency and inclusion of the payment system. The rapid development of the Internet and Fintech has enabled the wide accessibility of electronic payment methods such as online payment and mobile payment, which lead to increased payment efficiency and concentration of payment market shares. Other developments include the emergence of distributed ledger-based cryptoassets. Stablecoins, for example, featuring price stability and having the potential of being widely adopted as a means of payment and a store of value through network effects, also potentially pose a series of risks. In response to the digitalization of economic activities and to reduced cash use, central banks in some jurisdictions have started researches on CBDCs, in an effort to increasing market contestability, improving safety and efficiency in payments, and promoting financial inclusion.

A CBDC is, by definition, a digital form of central bank liabilities issued for payment and settlement purpose. Divided by payment types, CBDCs can include retail CBDC designing for the general public in daily transactions, and wholesale CBDC designing for designated institutions in large-value settlements respectively. Divided by management and operation system, CBDC can include the one-tier CBDC system and the two-tier CBDC system, with the former involving CBDC issued by the central bank to the general users directly, and the latter CBDC provided by the central bank to intermediating institutions, from which it is widely distributed to general users. Divided by design features, CBDC can include account-based CBDC and token-based CBDC, the former involving payments through the transfer of claims recorded on an account at the central bank or commercial banks, and the latter through the transfer of a digital token in a centralized or decentralized settlement system between digital wallets. Divided by interest bearing rules, CBDC can include non-interest bearing CBDC and interest bearing CBDC.

II. A Global Overview of CBDC Development

A Few economies have developed pilot projects for their CBDCs, some have begun researches and experiments on CBDC while others are actively exploring the feasibility of CBDC, with no specific plans for further research and development. By type of payments, piloted CBDC programs are invariably retail CBDCs with non-interest bearing features and two-tier system; current wholesale CBDC projects are still in the process of research or feasibility analysis.

1. A Few Central Banks Developed Pilot Projects for Their CBDCs

The Sveriges Riksbank started its CBDC project, the so-called e-krona, in 2017 and e-krona was put into pilot testing in February 2020. The continued decline in cash use in Sweden in the past decade has motivated this CBDC development. E-krona is designed as a complement to cash and a retail CBDC. It does not pay interests and features a two-tier model and limited anonymity[①] via distributed ledger technology (DLT). In addition, central banks of Uruguay, Ukraine, Cambodia and Bahamas are also engaged in CBDC pilot studies.

2. Some Central Banks Have Begun Researches and Experiments on CBDCs

The ECB and the Bank of Japan (BoJ) announced a collaborative research project entitled “Stella”, a wholesale CBDC project in 2016. The project has conducted a series of experiments at various dimensions, including cross-border interbank settlements, delivery versus payment method and payment versus payment method, and the balance between confidentiality and auditability, and has achieved the predetermined goals. In a report issued in December 2019, the ECB introduced a new retail CBDC solution namely EURO chain project. This retail CBDC is based on design features including a complement to cash, a two-tier model and limited anonymity and the work is still ongoing. In July 2020, the BoJ issued a report exploring the two properties of CBDC, i.e. universal access and resilience, and planned to check the feasibility of CBDC via practical experimentation.

The BoE launched RSCoin in 2015, a CBDC project developed in partnership with the University College London, and carried out small scale experiments. RSCoin adopts a hybrid model featuring both centralization and DLT, and is designed for retail use in a two-tier system. In a discussion paper published in March 2020, the BoE touched on a range of issues on its approach to design retail CBDC in the future from objectives, design principles, distribution model and technology design. In the paper, the BoE points to CBDC as an innovation on the form of central bank money and the payment infrastructures, and discussed the role of private sector involvement in designing CBDC as a complement to cash and enhancement to the BoE’s ability to better fulfill policy objectives.

The Bank of France (BoF) announced the launch of a digital euro project in March 2020, with a

① Limited anonymity refers to the case in which CBDC balances within a certain limit are made anonymous, and beyond this limit are subject to real name-based registration.

view to improving the interbank clearing and settlement procedures with the wholesale CBDC solution. As the first testing of the digital euro was completed in May 2020, the BoF plans to conduct further experiments going forward.

The Bank of Canada (BoC) started the wholesale CBDC program, the so-called Project Japser, in 2016. The project was developed in phases, and the first three phases focused on how the use of DLT would improve large-value interbank payments system in Canada. Reports recorded technical success in the first three phases, yet limited improvements to payments efficiency. In phase IV, the BoC collaborated with the Monetary Authority of Singapore and BoE to work on a cross-border and cross-currency settlement system for large-value payments; the experiment has been successful so far. In February 2020, the BoC announced a research initiative on a retail CBDC in response to the emergence of a cashless economy and challenges posed by private sector digital currencies. No specific design plan has been published.

The Monetary Authority of Singapore's Project Ubin was initiated in 2016. The wholesale CBDC project aims to explore a more simplified and efficient payment system using DLT, and is applied to cross-border transactions and settlements. The first three phases involved interbank large-value payment system and the delivery versus payment capabilities. In phase IV, Project Ubin was linked up with Project Jasper of the BoC and a successful experiment on cross-border and cross-currency payments using CBDC was conducted. Phase V has succeeded in developing a blockchain-based payments network that enables payments to be carried out in different currencies on the same network.

The Bank of Korea (BoK) initiated the retail CBDC project in April 2020, and plans to carry out the project in three steps, namely demand analysis and technical review, operating process analysis and advisory, and pilot system construction and testing. The BoK expects to finalize preparatory works by the end of 2021.

3. Some Other Central Banks are Actively Exploring the Feasibility of CBDC, with No Specific Plans for Further Development

The U.S. Federal Reserve is assessing the costs and benefits, as well as legal considerations of the CBDC system, and are conducting researches and experiments related to DLT and their potential use for digital currencies, including the potential for CBDC. The Swiss National Bank has explored the need and relevant technical, policy and legal issues around the issuance of its own CBDC, and plans to build and test the prototype in 2020. The Reserve Bank of Australia has established the Innovation Lab and plans to conduct research on whether it is technically feasible to use wholesale CBDC in making large-value settlements. The Reserve Bank of India has carried out internal study on the feasibility of introducing CBDC. No detailed plans or implementation timetable has been disclosed. In addition, central banks in Italy, Norway and Denmark are also actively exploring the case for CBDC.

III. Potential Implications of CBDC Adoption on the Financial System

Forward-looking studies on how the adoption of

CBDC may potentially affect functioning of the financial system have been done by international organizations and some central banks. In short, the implications vary significantly depending on the specific type, distribution model and interest bearing rule of CBDCs. The introduction of a retail CBDC that adopts a one-tier model or bears interests is likely to significantly affect monetary policy transmission and financial disintermediation. And in the case of a wholesale-only CBDC or a non-interest bearing retail CBDC that adopts a two-tier model, the impacts are expected to be smaller.

CBDCs bearing interests could affect monetary policy transmission, while the effects are minimal for non-interest bearing ones. There're views that non-interest bearing CBDCs serve only as a means of payment and are unlikely to materially impact monetary policy, though may replace cash. Interest bearing CBDCs serve not only as a means of payment but also deposits. Since CBDC is a more liquid and safer asset than bank deposits, interest rates paid on CBDC may be used as a reference in setting the lower bound of deposit rates. Central banks would be able to influence bank deposit interest rates through adjusting CBDC rates. Furthermore, under the scenario that CBDCs have replaced cash, central banks could break through the lower bound of zero interest rate restrictions in the current monetary policy framework by paying negative interests on CBDC and raising cost of holding, thus guiding market interest rates to trend down. Other views acknowledge the adoption of CBDCs in preventing erosion of monetary policy transmission by private digital currencies.

CBDCs bearing interests may affect financial intermediation of banks, while the effects are minimal for non-interest bearing ones. Some views suggest that paying interests on CBDC would encourage depositors to shift their deposits from banks to central bank account due to security considerations. Banks may respond to this pressure of disintermediation by forcedly raising deposit interest rates or turning to wholesale funding at higher costs, which could potentially lead to credit contraction and maturity mismatch risks. Non-interest bearing CBDCs, as a potential complement or replacement for cash, are generally unlikely to cause disintermediation, though this could happen in extreme cases where deposit rates fall into zero or negative territory. Other views argue that financial disintermediation could be limited by applying two-tier model, paying no interests on CBDC or setting limits on individual CBDC holdings.

CBDC could potentially improve payment efficiency, lower costs and increase financial inclusion. Retail-only CBDCs can be considered as a supplement to cash, but with greater efficiency and convenience, and could be complementary to existing electronic payment methods, thus increasing market competition. Interest bearing CBDCs, serving as a store of value and a safer means to pay, could potentially replace existing electronic payment facilities. Wholesale CBDCs have advantages in improving large-value payment settlements, increasing efficiency and safety of cross-border payments and lowering costs, and could be used to facilitate international trade and financial transactions. Leveraging on its digital form and security benefits, CBDC could reach financially underserved areas via mobile applications or network communications, facilitate the provision of financial services with greater coverage and convenience, thus spurring greater financial inclusion.

CBDC could support AML/CFT and anti tax evasion. Different from the anonymous cash, CBDC could enhance know-your-customer compliance by allowing controlled anonymity, which serves to protect reasonable user privacy and increase efficiency and accuracy in identifying criminal transactions such as money laundering, financing of terrorism, and tax evasion.

IV. China's CBDC Initiative

The PBC launched the digital currency initiative in 2014, and invited the participation of a selection of commercial institutions at end-2017 in the research and development of the Digital Currency/Electronic Payment (DC/EP) project. Building on a series of progress in top design, standard setting, development of functions and program debugging, the DC/EP is currently undergoing closed pilot testing in some cities, including Shenzhen, Suzhou, Xiong'an and Chengdu, as well as in the upcoming Winter Olympics scenario. The pilot program will be conducted in a steady, secure and controlled manner, and in line with novelty and pragmatism principles.

The DC/EP, positioned as M_0, is a non-interest bearing retail-type CBDC and adopts a two-tier model. The PBC has closely studied possible impacts of the DC/EP on the macroeconomy, monetary policy, financial growth and financial stability, to prevent any potential shocks to the existing monetary and financial systems and the transmission of monetary policy. There has been no specific timetable for issuing the DC/EP yet. The PBC will continue the work on DC/EP, especially the ongoing pilot testing, in a steady and secure manner, and improve the DC/EP design by enhancing studies on relevant policies and the corresponding impacts.

Special Topic 18 Strengthening the Coordinated Regulation of Financial Infrastructures

Financial infrastructures commonly refer to systems and institutional arrangements responsible for providing underlying services for various financial activities, and are seen in areas such as payment, credit reporting, transactions, depository and registration, clearing and settlements. Financial infrastructures, which are inherently cross-institutional, cross-sectoral and cross-market, are the pivot of the functioning of the financial market. They underpin the sound and efficient operation of the financial market, and are important for implementing macro-prudential management and enhancing risk prevention and control. Strengthened governance arrangements of financial infrastructures promote the safe and efficient operation and the general stability of the financial market.

I. International Standards and Practices on Regulation of Financial Infrastructures

After the global financial crisis in 2008, enhanced regulation of financial infrastructures in a consolidated manner became a priority in the international regulatory reform agenda, and in this common view, national regulatory authorities have worked towards building highly-efficient, transparent, well-regulated and integrated financial infrastructures. Relevant international practices share the following features:

1. Harmonization and Enhancement of Regulatory Standards

The efficiency and safety of the functioning of financial infrastructures have traditionally been paid heavy attention to, and relevant international organizations have published a series of international standards such as the *Core Principles for Systemically Important Payment Systems*, the *Recommendations for Securities Settlement Systems* and the *Recommendations for Central Counterparties*. Drawing on important lessons from the global financial crisis, the CPMI and the IOSCO published, in 2012, the *Principles for Financial Market Infrastructures* (hereafter referred to as PFMI), in order to strengthen the regulation on financial infrastructures. CPMI and IOSCO members are expected to adopt the new standards and put them into effect as soon as possible. The PFMI is a consolidated and enhanced version of existing standards applied to all systemically important payment systems, central securities depositories, securities settlement systems and central counterparties.

The PFMI outlines 24 principles which are categorized into nine broad categories: general organization, credit and liquidity risk management, settlement, central securities depositories and exchange-of-value settlement systems, default management, general business and operational risk management, access, efficiency and transparency. These broad categories encompass the major elements critical to the safe and efficient operation of FMIs. The PFMI also outlines five responsibilities for financial regulators. In recognition of the increasing interdependency of FMIs, the PFMI calls for regulatory attention to the interplay between different systems and the adoption of comprehensive risk management measures to better ensure the safety and stability of the financial system. The PFMI stresses the need for effective cooperation and coordination among central banks, market regulators and other relevant authorities, both domestically and internationally, so as to better perform the duty of oversight, supervision and regulation of FMIs.

After the publication of the PFMI, major economies have adopted a more stringent and comprehensive approach to FMI regulation. For instance, the U.S. set up dedicated chapters in the *Dodd-Frank Act*, and the European Union published the *European Market Infrastructure Regulation* and the *Central Securities Depository Regulation*, which specified the access, governance structure, personnel qualifications, operating rules, risk control standards, information disclosure and risk resolution of FMIs.

2. Emphasis on the Role of the Central Bank in the Consolidated Regulation of Financial Infrastructures

Following the global financial crisis, the role of the central bank in the regulation and supervision of FMIs has been further highlighted. For instance, in the U.S., the Federal Reserve, the SEC and the CFTC all have a legal mandate to oversight FMIs. In the meantime, the *Dodd-Frank Act* reinforced the authority of the Federal Reserve in the consolidated regulation of designated systemically important FMIs, in terms of risk management standard-setting, examinations, enforcement measures, and data or information collection.

3. Emphasis on the Overall Planning of Development of Financial Infrastructures

In early years, constrained by technological development and economies of scale, the initiation and development of FMIs in advanced markets were mostly driven by market participants. In recent years, in response to the advocacy of international regulators, national authorities have attached greater importance to the overall planning of FMIs and the role of consolidated regulation at the central level, in order to maintain a properly competitive landscape. For instance, in the U.S., pursuant to requirements of the *Dodd-Frank Act*, a regulatory framework covering all market utilities, clearing and settlement agencies, central securities depositories and payment systems, has been established, in which the authority and the basis and methodology of FMIs oversight and supervision are specified. The ECB initiated and launched the pan-European platform for securities settlement TARGET2-Securities (T2S) to ensure that cross border financial activities can be delivered efficiently and safely. Payment systems and central depositories of many European countries have joined the platform.

II. Financial Infrastructures in China: Risks and Challenges

After years of development, China has established a financial infrastructure system supporting trading activities in currency, securities, funds, futures, foreign exchange and other financial markets. The system now features a wide range of functions and generally stable operations.

The rapidly evolving landscape of the financial market, as demonstrated by latest developments such as the comprehensive operation of financial businesses, the increasingly active cross-market trading and the booming Fintech activities, has posed challenges to the security and efficiency of domestic financial infrastructures. The legal framework, consolidated management and planning of financial infrastructures are yet to be improved. For example, there is a lack of unified standards on the access and exit, daily operation, internal governance, risk management and technical maintenance of financial infrastructures; certain locally-regulated trading platforms and emerging technology firms, including internet platforms, have jumped on the bandwagon to engage in the provision of quasi-financial infrastructure services; the centralized trade repository required by international regulatory reform is yet to be established, and the centralized collection of transaction data of all the markets is not yet realized.

III. Latest Developments in Strengthening Consolidated Regulation of Financial Infrastructures

In February 2020, the PBC, NDRC, MOF, CBIRC, CSRC and SAFE jointly released the *Work Plan for Coordinated Regulation of Financial Infrastructures* (hereafter referred to as the *Plan*). The *Plan* incorporates six types of facilities and their operating institutions into the regulatory framework of financial infrastructures, i.e. financial asset registration and depository systems, clearing and settlement systems (CCPs engaged in centralized clearing businesses included), trade facilities, trade repositories, major payment systems and basic credit reporting systems. The *Plan* also specifies uniform regulatory standards, adoption of access-based management, optimization of the layout design and enhanced governance structure, in an effort to foster a financial infrastructure system that is well-designed, effectively governed, advanced, reliable and resilient.

Under the requirement of the *Plan*, the PBC works closely with relevant authorities to steadily push forward relevant work. First, formulate the regulations of financial infrastructures, to allow harmonized regulatory and operational standards on the same category of financial infrastructures, and align domestic rules and regulations with international standards in a more standardized, law-based and internationally comparable manner. Second, enhance connectivity between the interbank and exchange bond market infrastructures to allow the "one-stop" purchase of bond products in both markets by investors. The increased connectivity is going to facilitate the free, efficient and smooth flow of capital and securities, and push forward the bond market reform in a more systemic, integrated and coordinated manner. Third, build master trade repository, promote the establishment of a trade reporting system covering the entire market and improve market data transparency, so as to support regulators and serve the market.

Special Topic 19 IAIS Published the *Holistic Framework for Systemic Risk in the Insurance Sector*

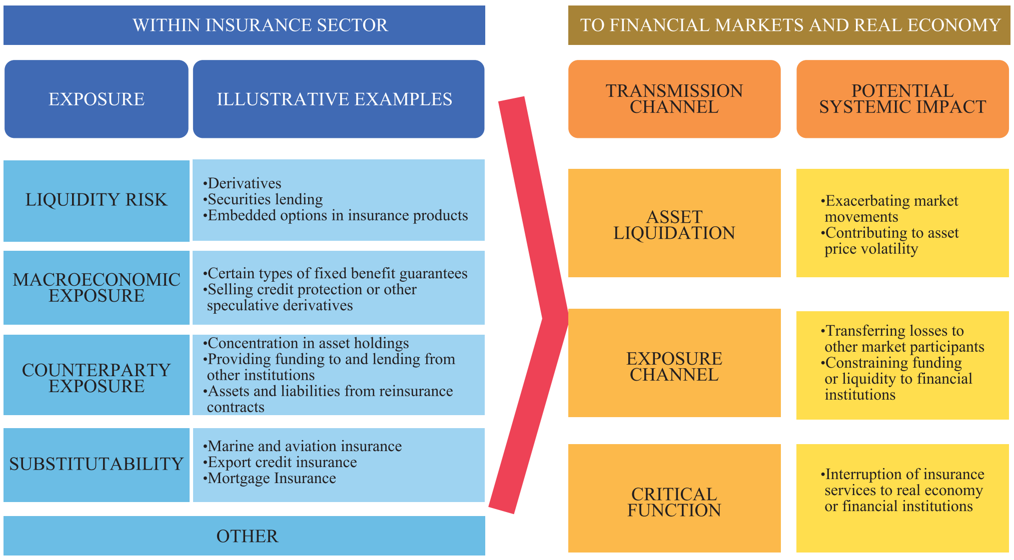
In November 2019, the IAIS published the *Holistic Framework for Systemic Risk in the Insurance Sector* (hereafter referred to as *Holistic Framework*), which puts forward regulatory requirements based on ICPs and ComFrame, and monitors and evaluates systemic risk in the insurance sector from an individual institution and a sector-wide level, so as to promote globally consistent supervision, monitor the development trend of global insurance market and address systemic risks.

I. Sources and Transmission Channels of Systemic Risk in the Insurance Sector

The *Holistic Framework* identifies the following key exposures in the insurance sector that may lead to a systemic impact. The first is the liquidity risk. Insurers may be more or less vulnerable to liquidity risk, depending particularly on the activities in which they are engaged. For instance, liquidity risk may be lower for certain insurers that rely on rather stable cash flows from premiums. Liquidity risk vulnerability may increase for insurers that engage in securities lending, derivatives or backing liquid liabilities with illiquid assets. The second is interconnectedness. Interconnectedness refers to mutual reliance with the real economy or other financial institutions, of which one type is macroeconomic exposure, i.e. exposure to risks of macroeconomic fluctuation that cannot be dispersed through diversification; the other type is counterparty exposure, i.e. exposure to risks caused by defaults of the counterparty that can be dispersed through diversification. The third is limited substitutability. There may be lines of business where only a few insurers dominate the market. In such markets, if the barriers to entry are high, the withdrawal of important insurance coverage could lead to increasing costs for those entities relying on these key services for their day-to-day business. Besides, size and global activity may also work as risk amplifiers.

The following three main risk transmission channels are identified. The first is asset liquidation. Asset liquidation refers to the sudden sale of assets on a large scale, by a large insurer or a sufficiently large number of smaller insurers, which could trigger a decrease in asset prices and significantly disrupt trading or funding in financial markets or cause significant losses or funding problems for other firms with similar holdings. The second is exposure channel, which includes two elements: one is indirect exposure stemming from macroeconomic exposures because institutions are exposed to the same or similar asset classes or because their exposures are highly correlated with the financial market; the other is direct exposure stemming from counterparty exposures, i.e. distress at the level of an individual insurer propagating through

Figure 3.4 Systemic Risk Transmission Mechanism



Source: IAIS, the *Holistic Framework for Systemic Risk in the Insurance Sector*, November 2019.

transferring losses to other institutions. The third is critical functions. If the insurer with a large market share provides services that are important to the functioning of the financial sector or real economy and there are few readily available substitutes (such as catastrophe coverage, marine, aviation, export credit or mortgage guarantee), the interruption of these services or failure of the insurer may have a systemic impact. The exposures in the insurance sector that may lead to a systemic impact do not correspond to risk transmission channels one-to-one. One exposure may correspond to multiple transmission channels (Figure 3.4).

II. Supervisory Material

The supervisory material (based on ICPs and ComFrame) in the *Holistic Framework,* which aims to protect policy holders and to contribute to global financial stability, allows the flexibility of supervisors to tailor the implementation of supervisory requirements based on the size and complexity of the insurers, so as to satisfy the principle of proportionality. The ICPs apply to all the insurers while ComFrame applies to IAIGs only. Supervisory material consists of the following elements.

The first is macro-prudential supervision. The macro-prudential supervision applies to all the insurers and aims to address the systemic risk at an individual insurer and at the sector-wide level. The supervisors should consider not only the risks to which the insurers are exposed but also the risks which insurers may pose to policyholders, the insurance sector and financial stability, thereby referring to risks from both individual insurer failure and the risks stemming from common exposures or activities. Meanwhile, macro-prudential analysis is required to be both quantitative and qualitative (including stress tests, etc.). IAIS plans to develop an *Application Paper* on this in 2021.

The second is requirements on insurers. This includes two elements. One is the Enterprise Risk Management (ERM) framework, which applies to IAIGs and other insurers deemed necessary by supervisors, including risk identification and measurement, risk appetite statement, asset-liability management, investment, underwriting policies and liquidity risk management, as well as the self-assessment of risk and solvency. The ERM aims to mitigate liquidity risk, counterparty exposure and macroeconomic exposure so as to address systemic risk in the insurance sector. The other is public disclosure requirements, which apply to all the insurers and require to disclose basic information related to company profile, governance and financial position, as well as quantitative and qualitative information on liquidity risk. The public disclosure requirements aim to enhance market discipline and promote information transparency. The IAIS developed an *Application Paper* on liquidity risk management in June 2020.

The third is crisis management and planning. In order to reduce the likelihood and adverse impact of a disorderly failure of an insurer, the IAIS supervisory material on the one hand establishes a resolution framework for all the insurers on both the law and regulation level, and on the other hand requires IAIGs and other insurers deemed necessary by supervisors to develop recovery and resolution plans and requires to establish a crisis management and cooperation mechanism that applies to all the insurers. The IAIS has developed an *Application Paper* on recovery planning, and will develop an *Application Paper* on resolution planning in 2021.

The fourth is powers of intervention for supervisors. In order to respond quickly and effectively to systemic risk, the supervisors should improve their crisis intervention capabilities. For insurers deemed necessary, the supervisors should be able to prevent a breach of regulatory requirements by preventive measures and respond to a breach of regulatory requirement by corrective measures.

Moreover, in order to promote globally consistent and effective implementation of the supervisory material, the IAIS plans to develop a detailed operational assessment approach for the supervisory material implementation, and the implementation assessment activities prioritize those IAIS member jurisdictions whose insurance sectors play a significant role in the global financial system.

III. Global Monitoring Exercise

The annual global monitoring exercise of the IAIS serves to assess global insurance market trends and developments and to detect the possible build-up of systemic risk at a global level. The global monitoring exercise includes the sector-wide monitoring and the individual insurer monitoring, which complement each other. The sector-wide monitoring assesses global insurance market trends while the individual insurer monitoring provides insights into the level of concentration of risks or potential outliers through analysis of the most significant players in the insurance sector, so that a comprehensive and forward-looking assessment of the risks in the global insurance sector can be formed. In addition, the identification of G-SIIs has been suspended and will be decided whether to restart in 2022 based on the implementation of the *Holistic Framework*.

1. Data Collection

The individual insurer monitoring. Insurers on a group level that meet at least one of the following criteria are eligible for inclusion in the monitoring pool: total assets of more than USD 60 billion and a ratio of premiums from jurisdictions outside the home jurisdiction to total premiums of 5 percent or more; or total assets of more than USD 200 billion and a ratio of premiums from jurisdictions outside the home jurisdiction to total premiums greater than 0 percent. Insurers are deemed representative by relevant supervisors can also be added into the pool. Based on the above criteria, around 50 insurance groups are included in the pool, accounting for approximately 25 percent of the global insurance market in terms of gross written premiums.

The sector-wide monitoring. All of the IAIS member jurisdictions may voluntarily participate in the sector-wide monitoring. For the purpose of monitoring global trends more sufficiently, all of the FSB members, home jurisdictions of IAIGs and participants of the individual insurer monitoring shall be covered in the sector-wide monitoring. These jurisdictions together account for a global market share of more than 85 percent of gross written premiums based on 2018 data and thus are sufficiently representative. Besides, jurisdictions covered in the sector-wide monitoring shall provide data covering at least their top three insurers and 60 percent of the local insurance market.

Table 3.4 Data Collection of the Global Monitoring Exercise

Data Category	Individual Insurer Monitoring	Sector-wide Monitoring
Size (not sources of risk but may work as risk amplifiers)	√	√
Global activity (not sources of risk but risk may spill over globally)	√	
Interconnectedness-Counterparty exposure (risk due to counterparty default) -Macroeconomic exposure (risk due to macroeconomic factors such as interest rates, FX rates)	√	√
Asset liquidation (risk of market deterioration due to the large scale sale of specific assets in a short time)	√	√
Substitutability (risk of insufficient service supply due to the difficulty to find substitutes in the market)	√	√
Underwriting & Solvency (risk due to lack of capacity to price new products or insufficient profitability in the whole insurance sector)		√
Policyholder behavior (risk due to indicators such as lapse rates in the whole insurance sector)		√
Emerging risks (systemic risk due to environmental developments, increasing cyber and FinTech activities, for example climate risk and catastrophe risk, etc.)		√
Economic environment (macro variables that may be used for macro-prudential monitoring and analysis, such as GDP, unemployment rates, population, wages, inflation and fiscal balances)		√

Source: IAIS, the *Holistic Framework for Systemic Risk in the Insurance Sector: Global Monitoring Exercise,* November 2019.

2. Assessment of Systemic Risk

The individual insurer monitoring. The assessment by the individual insurer monitoring consists of the following five approaches. The first is individual absolute assessment, where scores of individual insurers are calculated using the ratio of each quantitative indicator's value of an individual institution to the sample total in a defined base year, and then multiplied by the respective weights and summed. The systemic risk assessment of the individual insurer mainly uses this approach to better reflect the development of each insurer. The second is individual relative assessment, which calculates the score of each insurer using an approach similar to the individual absolute assessment but replaces the sample total in a defined base year with that of the relevant exercise year. The third is cross-sectoral analysis, which uses the mature scoring methodology of the G-SIBs identification for reference to score insurers and then compares the evolution of the scores of insurers and banks. The fourth is trend developments analysis, which includes developments of each quantitative indicator, drivers of those developments, identification of outliers, impact analysis of foreign exchange rates to the individual insurer, and a comparison of individual insurers' versus insurer pool developments. The fifth is ancillary indicators, which do not affect the total individual quantitative score but may provide additional context. For example, the IAIS is currently developing liquidity metrics.

The sector-wide monitoring. The assessment by the sector-wide monitoring consists of the following three approaches. The first is quantitative assessment, which uses various statistical methods including data coverage analysis, level and trend analysis and interrelation between insurance and macroeconomic developments, etc. The second is qualitative assessment, which assesses the perceived probability of major risks materializing, the expected impact should the risk materialize, and the evolution since last year, etc. The third is trend analysis, which analyses the trends in the insurance sector regarding profitability, underwriting, investment returns, market volatility and reserve adequacy, and also external developments such as societal and economic conditions.

The IAIS analyses the risk evolution of key insurers and the whole sector through the above methods, shares information with relevant supervisors, considers policy responses, and publishes the results of global monitoring exercise annually.

Special Topic 20 Progress of Research on Impacts of Climate Change on Financial Stability

In recent years, global warming has led to a significant increase in the frequency of extreme weather events and rising losses in the real economy, which further increases the risks in the financial system. According to the World Economic Forum's 2018 survey[①], extreme weather events, natural disasters, and the failure of climate-change mitigation and adaptation are three of the five most probable and influential risks on a global scale over the next decade. International organizations and some economies have begun to attach importance to potential impact of climate change on the financial system and conducted forward-looking studies on the relationship between climate change and financial stability. Overall, existing research is still in the initial stage focusing on qualitative analysis, while quantitative analysis is mainly based on macro scenario analysis. The next step is to further study the impact of climate risks on different financial sectors and corresponding policy measures.

I. The Path of Climate Change Impact on Financial Stability

Climate risks refer to potential uncertainties brought to economic and financial activities by extreme weather, natural disasters, global warming and other climatic factors, as well as the social transition to sustainable development. Climate risks can be roughly divided into physical risks and transition risks by the channels through which climate change affects the financial system.

Physical risks refer to the risk of property damage caused by extreme weather, natural disasters, and related events, which particularly stands out in the current context of global warming. Extreme weather and natural disasters can destroy housing and public infrastructure, reduce the frequency of economic activity, cause resource shortages, and reduce the wealth of enterprises and households. The impacts of physical risks on the financial system are mainly reflected in the following aspects: first, extreme weather or natural disasters lead to the decline of borrowers' repayment capacity, damage or depreciation of collateral, and further, the elevated credit risks of financial institutions. Second, the asset value of financial institutions fluctuates under the impact of climate change, and market risks rise. Third, extreme weather and natural disasters lead to borrowers'

① According to the *World Economic Forum's Global Risk Perception Survey 2017-2018*, the top five risks that are most likely to occur over the next 10 years are: extreme weather events, natural disasters, cyberattacks, data fraud or theft, failure of climate-change mitigation and adaptation; the five most influential risks are: weapons of mass destruction, extreme weather events, natural disasters, failure of climate-change mitigation and adaptation, water crisis.

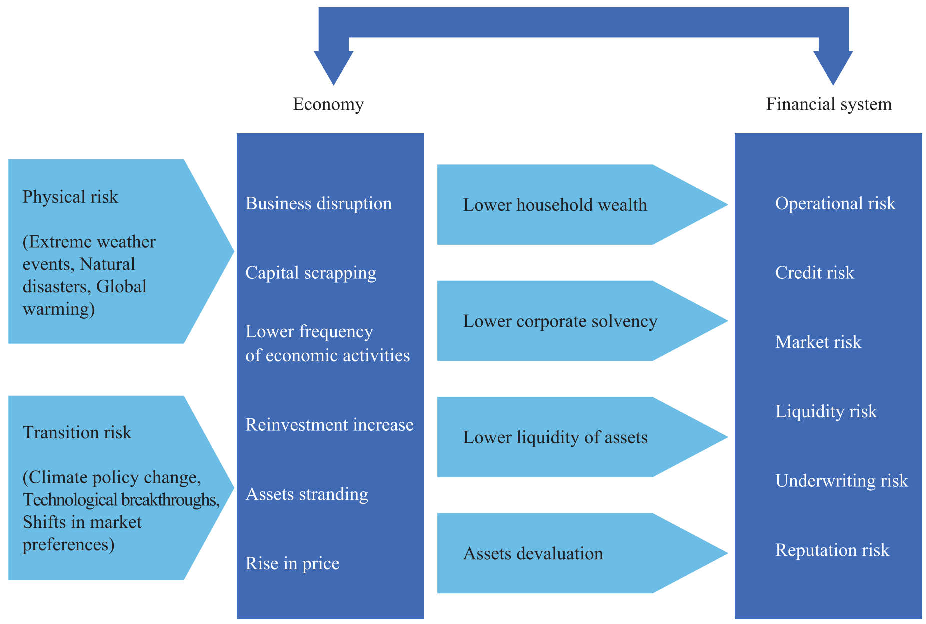
default and depreciation or destruction of financial institutions' assets, thus leading to less funds available to financial institutions than expected, and liquidity risks rise. Fourth, extreme weather and natural disasters may disrupt the business of financial institutions, and operational risks rise. Fifth, property insurance, agricultural insurance and business interruption insurance claim pay-outs are higher than expected, which causes insurance companies or reinsurance companies to bear unexpected losses, and underwriting risks rise.

Transition risks refers to the risk of losses of financial institutions caused by climate policy changes, technological breakthroughs and shifts in market preferences in the process of social transformation to sustainable development. The impacts of transition risks on the financial system are mainly reflected in the following aspects: first, "brown"[①] enterprises' solvency declines and collateral depreciates, leading to increased credit risks for financial institutions. Second, the expected return and market value of "brown" assets held by financial institutions decrease, and market risks rise. Third, the borrowers default and the "brown" assets held by financial institutions depreciate or come under selling pressure, leading to less funds available to financial institutions than expected, and liquidity risks rise. Fourth, climate-related policies change, and the reputational risk of financial institutions holding "brown" assets rises.

On the whole, climate risks have the characteristics of long-term, structural and systemic, and the potential impacts on financial stability cannot be ignored. First, under financial accelerators and collateral constraints, market signals may amplify the severity of climate risks, making their impact on individual financial institutions to evolve into systemic risks. Second, climate change is a long-term process with a high degree of uncertainty. Financial institutions usually pay attention to the average expected loss of climate change and are not well prepared for extreme abnormal situations. Third, the impact of climate risks on the financial system and the macroeconomy has the characteristic of "circular feedback". Losses from climate disasters will lead to credit contraction, further weaken the balance sheets of households and enterprises, and affect the potential growth rate of economy and output gap (Figure 3.5).

① "Brown" is the "green" counterpart to an asset or activity that emits high levels of carbon dioxide and other atmospheric pollutants.

Figure 3.5 Channels Through Which Climate Risk Affects the Financial System



Note: Assets stranding refers to the devaluation of raw materials, the termination of related businesses, and the resulted asset depreciation or the need for write-down due to policy changes and technology breakthroughs during a low-carbon economic transition.

II. Quantitative Analysis of the Impact of Climate Change on Financial Stability

At present, “macro scenario analysis” is widely used by international organizations and financial regulatory authorities of some economies to study climate risks, while simpler sensitivity analysis method is also used in some studies.

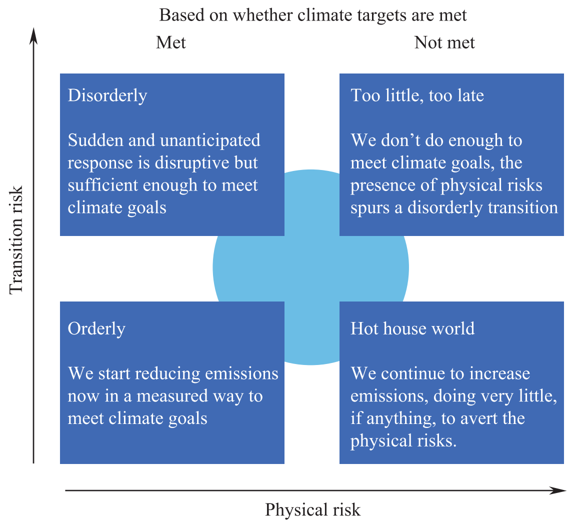
1. Macro Scenario Analysis

Macro scenario analysis is an important tool to assess the impact of climate change on the macroeconomy and financial system by analyzing the losses that climate risks may cause to the financial system through assuming the policies of the authorities to deal with climate change and the corresponding climate change path. The approach typically consists of three steps: scenario design, measuring the impact of climate risks on the macroeconomy, refining the impact of climate risks on different sectors of economy and transmitting the impact to the financial system.

(1) Scenario Design

Scenario design refers to the use of models to make consistent assumptions about meteorological, chemical, social development and other variables, specifically including climate-related policies, greenhouse gas emission concentration, temperature rise pathway, socioeconomic context, technological evolution, consumer preferences and other aspects. The Intergovernmental Panel on Climate Change (IPCC), based on the intensity of climate policies and the degree of temperature rise, has summarized four representative paths of climate change—orderly, disorderly, too little too late and hot house world (Figure 3.6). Most of the existing studies refine and supplement on basis of the representative paths published by the IPCC.

Figure 3.6 Representative Pathways to Climate Change



Source: Central Banks and Supervisors Network for Greening the Financial System (NGFS) , *A Call for Action: Climate Change as a Source of Financial Risk*, 2019.

(2) Measuring the Impact of Climate Risk on the Macroeconomy

Current research mainly measures the impact of climate risk on macroeconomy from medium-short-time horizons and long-time horizons. In the medium-short-time horizons, climate risks mainly affect GDP, unemployment rate, inflation rate and other factors. For example, in 2018, the staff of the De Nederlandsche Bank used a 5-year horizon in their analysis of climate risk. In the long-time horizons, climate risks will also affect the decisive factor of economic growth, such as capital, labor and total factor productivity, leading to economic structural changes. For example, in 2020, the staff of the Banque de France studied climate risks from now to 2100 and the BoE also plans to study climate risk from now to 2050.

At present, the mainstream model to study the macroeconomic impact of climate risk is Integrated Assessment Models (IAMs), which mainly consists of two modules—the climate science module for analyzing the impact of greenhouse gas emissions on atmospheric temperature and the economic module for analyzing the impact of atmospheric temperature rise on economic growth and policy making. IAMs organically combine the above two modules by constructing loss equation (such as the loss of GDP caused by temperature rise) and cost equation (such as the cost of controlling greenhouse gas emissions) to analyze the impact of climate risk on the macroeconomy. For example, in 2020 the staff of the Bank of Canada used IAMs in their analysis of climate risk. The study shows that if no further action is taken to reduce carbon emissions, global temperatures could rise by 4.1 degrees Celsius by 2100, causing losses up to USD 30 trillion. Moreover, some researchers also used the Input-Output Models, the National Institute Global Econometric Model (NiGEM) and other methods to analyze the impact of climate risk on the macroeconomy.

(3) Refining the Impact of Climate Risks on Different Sectors of Economy and Transmitting the Impact to the Financial System

Since climate risks have different impacts on different sectors of economy, it is helpful to refine their impacts on different non-financial industries or sectors to accurately quantify their potential risks to the financial system. The common practice of current research is to decompose the changes of macroeconomic financial variables into industries through historical data such as input and output, carbon emissions of various industries and their contribution to economic growth, and calculate the corresponding changes of financial sector exposure, further transmit the shock to the financial system. For example, in 2018 the staff of De Nederlandsche Bank analyzed the impact of transition risks on GDP, price level, interest rate, stock price index and other macroeconomic financial variables, built "transition vulnerability factors" in various industries, used the product of the factor and the stock price index representing the impact on stock prices across industries, and finally calculated the assets of related industries held by financial sector to measure possible losses. In the scenario that technologies rely on fossil fuels are being phased out and meanwhile the carbon price rises to USD 100 per ton of CO_2 emissions due to the sustainable energy development, the result shows that the Dutch banking and insurance assets will lose 3 percent and 11 percent over five years respectively, the CET1 ratio will decrease by slightly more than 4 percentage points.

2. Sensitivity Analysis

Sensitivity analysis studies the direct impact of the change of a single climate factor on the financial system or a financial sector (institution) under the situation that other conditions remain unchanged. The IMF used sensitivity analysis to measure the physical risks faced by the insurance sector when it carried out the Financial Sector Assessment Program (FSAP) for member economies such as the U.S., Belgium, Denmark and Sweden. Taking the U.S. FSAP in 2015 for example, the test constructed three scenarios of a hurricane in Florida, an earthquake in California and tornadoes in the Midwest respectively, and analyzed the direct losses suffered by the U.S. insurance sector. In 2019, the Prudential Regulation Authority of the BoE used sensitivity analysis to analyze the transition risks and physical risks faced by the domestic insurance sector. Taking transition risks as an example, the test assumed two scenarios of "gradual and orderly transition" and "sudden and disorderly transition", and set the proportion of losses suffered by power generation industry, fossil energy industry, transportation industry, agriculture, real estate industry, etc., to calculate the transition risks of insurance sector.

III. Existing Problems and the Future Research Fields

At present, the researches on climate risk by international organizations and financial regulatory authorities of some economies are still in the early stage, facing many challenges in modeling, data collection and other aspects, and the range of research needs to be further refined and expanded. First, the model has limitations. The existing model is mainly used to analyze the deviation degree of macroeconomic and financial variables from long-term equilibrium under the hypothetical scenario, but it does not consider the policy response, as well as nonlinear characteristics and tail risks of climate change path. Second, the model parameters are difficult to calibrate due to the lack of research in relevant fields, and carbon pricing is usually regarded as the only proxy variable of climate policy. Most models ignore social system, geopolitics and other factors. Third, insufficient disclosure of climate risk information leads to low data granularity, which is not good for accurately measuring risk. Fourth, the existing research methods generally separate physical risk and transition risk, but the two risks affect each other and amplify each other, causing multiple rounds of shocks to the economic and financial system. Fifth, the existing researches focus on analyzing potential impacts of climate risks on the banking and insurance sectors, pay little attention to other financial fields, and fail to consider the contagion risks within the financial system and the interaction between the financial system and the real economy.

Next, in addition to continuing to strengthen disclosure of climate risk information and data collection, refining macro scenario design and perfecting the quantitative analysis tool, the following aspects can also be strengthened: first, the differential impact of climate risk on specific financial sectors should be studied in depth, the study of the potential impact of climate risk on bond, stock, foreign exchange and other financial markets and financial infrastructures should be strengthened, and contagion risks within the financial system should be taken into account. Second, comprehensively consider physical and transition risks, including their interaction, to enhance the comprehensiveness of climate risk research. Third, strengthen policy research on dealing with climate risks and incorporate it into macro scenario analysis to verify policy rationality.

Appendix

Statistics

Table 1 Selected Economic Indicators

Items	2015	2016	2017	2018	2019
Gross Domestic Product (RMB 100 million)	688 858	746 395	832 036	919 281	990 865
Industrial Value Added	234 969	245 406	275 119	301 089	317 109
Fixed Asset Investment (RMB 100 million)	562 000	606 466	641 238	645 675	560 874
Retail Sales of Consumer Goods (RMB 100 million)	300 931	332 316	366 262	380 987	411 649
Exports & Imports (RMB 100 million)	245 503	243 386	278 099	305 010	315 505
Exports	141 167	138 419	153 309	164 129	172 342
Imports	104 336	104 967	124 790	140 881	143 162
Balance	36 831	33 452	28 520	23 247	29 180
Foreign Direct Investment (USD 100 million)	1 263	1 260	1 310	1 350	1 381
Foreign Exchange Reserves (USD 100 million)	33 304	30 105	31 399	30 727	31 079
Consumer Price Index (previous year=100)	101.4	102.0	101.6	102.1	102.9
Fiscal Revenue (RMB 100 million)	152 269	159 605	172 593	183 360	190 390
Fiscal Expenditure (RMB 100 million)	175 878	187 755	203 085	220 904	238 858
Per Capita Urban Household Disposable Income (RMB)	31 195	33 616	36 396	39 251	42 359
Per Capita Rural Household Disposable Income (RMB)	11 422	12 363	13 432	14 617	16 021
Number of Employed Persons in Urban Areas (million)	404.1	414.3	424.6	434.2	442.5
Registered Unemployment Rate in Urban Areas (%)	4.05	4.02	3.9	3.8	3.6
Total Population (million)	1 374.6	1 382.7	1 390.1	1 395.4	1 400.1

Note: ① GDP from 2015 to 2018 is verified and final, and GDP in 2019 is preliminary.

② In accordance with China's regulations on GDP data revisions and international practices, systematic revisions are made on the GDP figures for 2018 and previous years by the NBS of China, with data from the fourth national economic census.

Source: Calculated on the basis of data from *China Statistical Year Book* and *Statistical Communique of The People's Republic of China on the National Economic and Social Development*.

Table 2 Selected Financial Indicators (1)

(Year-end Balance)

(RMB 100 million)

Items	2015	2016	2017	2018	2019
Money & Quasi-money (M_2)	1 392 278.1	1 550 066.7	1 690 235.3	1 826 744.2	1 986 488.8
Money (M_1)	400 953.4	486 557.2	543 790.1	551 685.9	576 009.2
Currency in Circulation (M_0)	63 217.6	68 303.9	70 645.6	73 208.4	77 189.5
Total Deposits with Financial Institutions	1 357 021.6	1 505 863.8	1 641 044.2	1 775 225.7	1 928 785.3
Household Deposits	526 281.8	569 149.3	595 972.6	631 202.4	697 395.4
Non-financial Enterprise Deposits	430 247.4	502 178.4	542 404.6	562 976.2	595 365.0
Total Lending by Financial Institutions	939 540.2	1 066 040.1	1 201 321.0	1 362 966.7	1 531 123.2

Source: The PBC.

Table 3 Selected Financial Indicators (2)

(Growth Rates)

(percent)

Items	2015	2016	2017	2018	2019
Money & Quasi-money (M_2)	13.3	11.3	8.1	8.1	8.7
Money (M_1)	15.2	21.4	11.8	1.5	4.4
Currency in Circulation (M_0)	4.9	8.1	3.4	3.6	5.4
Total Deposits with Financial Institutions	12.4	11.0	9.0	8.2	8.7
Household Deposits	8.5	8.2	4.7	5.9	10.5
Non-financial Enterprise Deposits	13.7	16.7	8.0	3.8	5.8
Total Lending by Financial Institutions	14.3	13.5	12.7	13.5	12.3

Note: Growth rates have been adjusted to reflect recent changes in statistical coverage.
Source: The PBC.

Table 4 International Liquidity

(USD million)

Items	2015	2016	2017	2018	2019
Total Reserves (minus gold)	3 345 193	3 029 775	3 158 877	3 091 881	3 127 493
Special Drawing Rights (SDRs)	10 284	9 661	10 981	10 690	11 126
IMF Reserve Position	4 547	9 597	7 947	8 479	8 444
Foreign Exchange	3 330 362	3 010 517	3 139 949	3 072 712	3 107 924
Gold (1 million ounces)	56.66	59.24	59.24	59.56	62.64
Gold (national valuation)	60 191	67 878	76 473	76 331	95 406
Foreign Liabilities of Other Depository Corporations	199 865	182 683	313 413	304 431	241 046

Note: The gold (national valuation) since 2016 is market value, which cannot be compared with data of previous years.
Source: The PBC.

Table 5 Gold and Foreign Exchange Reserves

Year	Gold Reserves (10 thousand ounces)	Foreign Exchange Reserves (USD 100 million)	Change in Foreign Exchange Reserves (percent)
2001	1 608	2 121.7	28.1
2002	1 929	2 864.1	35.0
2003	1 929	4 032.5	40.8
2004	1 929	6 099.3	51.3
2005	1 929	8 188.7	34.3
2006	1 929	10 663.4	30.2
2007	1 929	15 282.5	43.3
2008	1 929	19 460.3	27.3
2009	3 389	23 991.5	23.3
2010	3 389	28 473.4	18.7
2011	3 389	31 811.5	10.7
2012	3 389	33 115.9	4.1
2013	3 389	38 213.2	15.4
2014	3 389	38 430.2	0.6
2015	5 666	33 303.6	–13.3
2016	5 924	30 105.2	–9.6
2017	5 924	31 399.5	4.3
2018	5 956	30 727.1	–2.1
2019	6 264	31 079.2	1.1

Source: The PBC.

Table 6 Assets of China's Financial Sector

(December 31, 2019)

(RMB trillion)

Type of Financial Institutions	Assets
Financial Sector	354.93
Central Bank	37.11
Banking Financial Institutions	290.00
Securities Financial Institutions	7.26
Insurance Financial Institutions	20.56

Note: Assets of securities financial institutions refer to assets of securities companies, with assets of clients excluded.
Source: Calculated by the Financial Stability Analysis Group of the PBC.

Table 7 Depository Corporations Survey in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Net Foreign Assets	260 083.03	261 730.80	262 993.65	264 599.38
Domestic Credits	2 039 203.61	2 074 943.10	2 124 547.70	2 172 833.39
Claims on Government(net)	260 601.41	266 278.66	276 851.27	290 115.78
Claims on Non-financial Sectors	1 514 310.67	1 550 378.03	1 601 533.91	1 631 601.14
Claims on Other Financial Sectors	264 291.53	258 286.42	246 162.53	251 116.47
Money & Quasi-Money	1 889 412.14	1 921 360.19	1 952 250.49	1 986 488.82
Money	547 575.54	567 696.18	557 137.95	576 009.15
Currency in Circulation	74 941.58	72 580.96	74 129.75	77 189.47
Corporate Demand Deposits	472 633.97	495 115.22	483 008.20	498 819.68
Quasi-Money	1 341 836.59	1 353 664.01	1 395 112.54	1 410 479.67
Corporate Time Deposits	359 015.48	362 162.76	374 318.07	363 486.04
Personal Deposits	782 606.12	790 201.11	807 437.27	819 161.84
Other Deposits	200 214.99	201 300.14	213 357.20	227 831.79
Deposits Excluded from Broad Money	46 938.67	47 447.74	46 835.37	48 194.51
Bonds	263 847.38	268 945.81	272 586.06	280 399.31
Paid-in Capital	55 041.18	57 368.41	61 933.98	64 795.53
Other Items (net)	44 047.28	41 551.76	53 935.46	57 554.60

Source: The PBC.

Table 8 Balance Sheet of Monetary Authority in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	218 109.66	218 521.93	218 767.53	218 638.72
Foreign Exchange	212 536.65	212 455.20	212 353.95	212 317.26
Monetary Gold	2 663.61	2 781.97	2 855.63	2 855.63
Other Foreign Asstes	2 909.41	3 284.76	3 557.96	3 465.84
Claims on Government	15 250.24	15 250.24	15 250.24	15 250.24
Of Which: Central Government	15 250.24	15 250.24	15 250.24	15 250.24
Claims on Other Depository Corporations	93 667.54	101 860.31	106 774.83	117 748.86
Claims on Other Financial Corporations	4 708.59	4 841.63	5 167.63	4 623.39
Claims on Non-financial Sector	26.97	0.00	0.00	0.00
Other Assets	16 789.62	23 121.16	16 006.52	14 869.26
Total Assets	**348 552.63**	**363 595.27**	**361 966.76**	**371 130.48**
Reserve Money	303 711.03	313 085.98	305 881.99	324 174.95
Currency Issue	81 310.67	78 236.87	80 217.69	82 859.05
Deposits of Financial Corporations	209 648.14	221 817.24	212 229.56	226 023.86
Deposits of Other Depository Corporations	209 648.14	221 817.24	212 229.56	226 023.86
Deposits of Other Financial Corporations	0.00	0.00	0.00	0.00
Deposits of Non-financial Corporations	12 752.22	13 031.88	13 434.74	15 292.04
Deposits of Financial Corporations Excluded from Reserve Money	4 693.39	4 236.60	4 775.23	4 574.40
Bond Issue	315.00	740.00	940.00	1 020.00
Foreign Liabilities	819.25	903.76	1 105.55	841.77
Deposits of Government	31 407.14	35 682.52	38 526.80	32 415.13
Own Capital	219.75	219.75	219.75	219.75
Other Liabilities	7 387.06	8 726.66	10 517.43	7 884.49
Total Liabilities	**348 552.63**	**363 595.27**	**361 966.76**	**371 130.48**

Source: The PBC.

Table 9 Balance Sheet of Other Depository Corporations in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	61 767.86	62 599.90	64 271.44	63 618.27
Reserve Assets	223 795.70	236 258.71	225 914.74	236 958.41
Deposits with Central Bank	217 426.60	230 602.81	219 826.81	231 288.83
Cash in Vault	6 369.10	5 655.91	6 087.94	5 669.58
Claims on Government	276 758.30	286 710.93	300 127.82	307 280.67
Of Which: Central Government	276 758.30	286 710.93	300 127.82	307 280.67
Claims on Central Bank	0.00	0.00	0.00	0.00
Claims on Other Depository Corporations	294 875.95	295 166.31	290 077.06	296 766.19
Claims on Other Financial Institutions	259 582.94	253 444.78	240 994.89	246 493.07
Claims on Non-financial Institutions	1 023 574.63	1 040 312.12	1 072 307.21	1 085 249.79
Claims on Other Resident Sectors	490 709.08	510 065.90	529 226.71	546 351.35
Other Assets	109 324.64	109 708.29	110 958.59	110 002.47
Total Assets	**2 740 389.10**	**2 794 266.96**	**2 833 878.45**	**2 892 720.22**
Liabilities to Non-financial Institutions and Households	1 716 456.29	1 749 286.60	1 778 064.83	1 798 147.07
Deposits Included in Broad Money	1 614 255.57	1 647 479.09	1 664 763.53	1 681 467.55
Corporate Demand Deposits	472 633.97	495 115.22	483 008.20	498 819.68
Corporate Time Deposits	359 015.48	362 162.76	374 318.07	363 486.04
Personal Deposits	782 606.12	790 201.11	807 437.27	819 161.84
Deposits Excluded from Broad Money	46 938.67	47 447.74	46 835.37	48 194.51
Transferable Deposits	15 017.88	14 926.96	14 018.91	15 660.48
Other Deposits	31 920.79	32 520.77	32 816.46	32 534.03
Other Liabilities	55 262.05	54 359.77	66 465.93	68 485.01
Liabilities to Central Bank	99 705.13	108 056.97	90 790.32	98 826.22
Liabilities to Other Depository Corporations	108 128.80	107 772.27	106 141.89	114 185.41
Liabilities to Other Financial Corporations	172 181.03	171 808.87	186 008.05	198 935.37
Of Which: Deposits Included in Broad Money	168 962.67	168 313.65	181 042.06	193 523.84
Foreign Liabilities	18 975.24	18 487.27	18 939.77	16 815.85
Bond Issue	263 847.38	268 945.81	272 586.06	280 399.31
Paid-in Capital	54 821.42	57 148.66	61 714.23	64 575.78
Other Liabilities	306 273.82	312 760.51	319 633.31	320 835.22
Total Liabilities	**2 740 389.10**	**2 794 266.96**	**2 833 878.45**	**2 892 720.22**

Source: The PBC.

Table 10 Balance Sheet of Chinese-funded Large Banks in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	33 607.82	34 433.27	34 650.85	33 060.93
Reserve Assets	114 263.58	121 144.31	116 632.20	115 339.86
Deposits with Central Bank	111 007.21	118 291.72	113 529.16	112 446.60
Cash in Vault	3 256.36	2 852.59	3 103.05	2 893.26
Claims on Government	176 290.10	181 811.55	187 998.98	190 308.42
Of Which: Central Government	176 290.10	181 811.55	187 998.98	190 308.42
Claims on Central Bank	0.00	0.00	0.00	0.00
Claims on Other Depository Corporations	110 879.23	106 288.46	104 356.06	108 627.92
Claims on Other Financial Corporations	60 247.84	58 905.69	56 648.63	59 675.10
Claims on Non-financial Corporations	507 840.50	511 600.80	530 200.45	531 980.52
Claims on Other Resident Sectors	246 081.59	254 094.59	261 743.33	269 474.04
Other Assets	51 284.48	51 198.55	52 360.13	49 340.18
Total Assets	**1 300 495.15**	**1 319 477.23**	**1 344 590.63**	**1 357 806.98**
Liabilities to Non-financial Institutions and Households	881 378.34	886 185.40	902 169.43	899 124.38
Deposits Included in Broad Money	810 464.49	816 430.88	823 408.37	817 776.11
Corporate Demand Deposits	235 333.45	243 249.03	237 395.90	235 743.20
Corporate Time Deposits	129 917.94	128 647.86	133 662.96	128 904.45
Personal Deposits	445 213.10	444 533.99	452 349.51	453 128.45
Deposits Excluded from Broad Money	24 740.65	24 537.40	23 911.21	24 106.24
Transferable Deposits	7 334.72	7 106.66	6 688.68	7 167.44
Other Deposits	17 405.93	17 430.73	17 222.53	16 938.80
Other Liabilities	46 173.19	45 217.12	54 849.84	57 242.02
Liabilities to Central Bank	49 225.11	52 089.01	43 931.28	46 897.94
Liabilities to Other Depository Corporations	20 705.75	23 623.85	21 879.24	28 760.32
Liabilities to Other Financial Corporations	65 085.14	66 869.79	74 351.98	76 363.43
Of Which: Deposits Included in Broad Money	63 673.35	65 435.22	72 822.72	74 666.79
Foreign Liabilities	6 326.46	6 410.02	7 218.67	5 415.55
Bond Issue	108 965.38	113 085.21	116 591.36	121 339.51
Paid-in Capital	22 529.88	23 327.47	26 773.71	26 489.63
Other Liabilities	146 279.09	147 886.47	151 674.96	153 416.22
Total Liabilities	**1 300 495.15**	**1 319 477.23**	**1 344 590.63**	**1 357 806.98**

Source: The PBC.

Table 11 Balance Sheet of Chinese-funded Medium-Sized Banks in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	23 766.21	23 657.00	24 963.47	25 405.90
Reserve Assets	36 865.87	39 869.15	37 926.83	40 480.93
Deposits with Central Bank	36 317.71	39 362.73	37 417.46	39 958.08
Cash in Vault	548.16	506.42	509.37	522.85
Claims on Government	57 823.96	59 972.38	62 971.47	65 120.91
Of Which: Central Government	57 823.96	59 972.38	62 971.47	65 120.91
Claims on Central Bank	0.00	0.00	0.00	0.00
Claims on Other Depository Corporations	39 877.93	42 354.17	42 024.34	41 453.38
Claims on Other Financial Corporations	89 914.49	91 389.30	84 221.08	87 300.51
Claims on Non-financial Corporations	242 418.76	246 837.66	253 745.13	259 666.41
Claims on Other Resident Sectors	119 419.47	124 971.01	129 645.35	133 930.46
Other Assets	19 349.54	20 372.51	18 971.96	19 640.41
Total Assets	**629 436.23**	**649 423.19**	**654 469.64**	**672 998.92**
Liabilities to Non-financial Institutions and Households	295 753.66	308 801.75	310 632.67	314 307.07
Deposits Included in Broad Money	278 223.05	291 252.50	292 210.90	296 613.03
Corporate Demand Deposits	104 160.37	111 927.68	107 294.22	111 423.76
Corporate Time Deposits	109 754.08	111 702.44	116 149.21	113 512.27
Personal Deposits	64 308.61	67 622.38	68 767.48	71 677.00
Deposits Excluded from Broad Money	14 660.92	14 731.65	14 371.35	14 638.38
Transferable Deposits	4 602.83	4 584.19	4 079.83	4 543.72
Other Deposits	10 058.09	10 147.46	10 291.51	10 094.66
Other Liabilities	2 869.69	2 817.60	4 050.42	3 055.65
Liabilities to Central Bank	40 115.31	42 104.47	33 555.13	36 167.33
Liabilities to Other Depository Corporations	35 155.96	33 654.50	34 915.28	35 853.92
Liabilities to Other Financial Corporations	65 134.64	66 012.09	72 329.82	77 677.82
Of Which: Deposits Included in Broad Money	64 119.97	65 251.96	70 797.40	76 642.57
Foreign Liabilities	6 612.57	6 418.25	6 388.75	6 419.05
Bond Issue	110 744.79	113 788.38	116 547.96	121 922.97
Paid-in Capital	6 431.92	7 560.19	8 228.75	9 505.89
Other Liabilities	69 487.38	71 083.55	71 871.28	71 144.87
Total Liabilities	**629 436.23**	**649 423.19**	**654 469.64**	**672 998.92**

Source: The PBC.

Table 12 Balance Sheet of Chinese-funded Small Banks in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	1 694.99	1 856.37	1 890.92	2 005.44
Reserve Assets	58 543.55	60 856.42	56 777.56	64 860.12
Deposits with Central Bank	56 469.83	58 972.15	54 735.14	62 936.69
Cash in Vault	2 073.72	1 884.27	2 042.42	1 923.43
Claims on Government	38 174.20	40 257.60	44 116.65	46 624.22
Of Which: Central Government	38 174.20	40 257.60	44 116.65	46 624.22
Claims on Central Bank	0.00	0.00	0.00	0.00
Claims on Other Depository Corporations	99 607.75	99 873.66	98 605.81	97 216.01
Claims on Other Financial Corporations	100 037.23	94 682.93	90 945.32	91 183.75
Claims on Non-financial Corporations	218 027.37	225 585.53	231 031.53	235 857.96
Claims on Other Resident Sectors	106 887.20	112 490.32	119 494.42	125 354.11
Other Assets	22 301.49	21 854.65	22 982.14	24 517.97
Total Assets	**645 273.78**	**657 457.47**	**665 844.36**	**687 619.58**
Liabilities to Non-financial Institutions and Households	431 792.53	444 499.08	454 179.94	466 768.77
Deposits Included in Broad Money	423 363.23	435 576.31	444 454.93	455 700.58
Corporate Demand Deposits	100 492.25	104 676.81	104 402.42	107 988.32
Corporate Time Deposits	88 712.28	90 938.61	91 117.18	89 184.37
Personal Deposits	234 158.69	239 960.89	248 935.33	258 527.89
Deposits Excluded from Broad Money	3 314.02	3 641.57	3 786.69	4 161.72
Transferable Deposits	835.24	925.66	990.44	1 102.19
Other Deposits	2 478.78	2 715.91	2 796.24	3 059.54
Other Liabilities	5 115.28	5 281.20	5 938.32	6 906.47
Liabilities to Central Bank	9 361.58	12 897.54	12 459.43	14 790.28
Liabilities to Other Depository Corporations	40 332.72	38 497.86	37 738.88	38 822.75
Liabilities to Other Financial Corporations	40 356.57	37 090.64	37 610.43	42 923.42
Of Which: Deposits Included in Broad Money	39 865.18	36 271.33	36 070.18	40 697.69
Foreign Liabilities	1 190.05	1 201.82	1 051.55	931.65
Bond Issue	43 349.40	41 197.41	38 599.81	36 267.48
Paid-in Capital	16 718.56	16 993.44	17 426.93	19 063.43
Other Liabilities	62 172.38	65 079.67	66 777.39	68 051.79
Total Liabilities	**645 273.78**	**657 457.47**	**665 844.36**	**687 619.58**

Source: The PBC.

Table 13 Balance Sheet of Foreign-funded Banks in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	2 500.53	2 443.42	2 546.47	2 949.84
Reserve Assets	2 644.78	2 903.66	2 879.59	3 251.56
Deposits with Central Bank	2 639.32	2 898.53	2 874.61	3 247.02
Cash in Vault	5.46	5.13	4.98	4.54
Claims on Government	2 739.90	2 884.31	3 095.66	3 387.65
Of Which: Central Government	2 739.90	2 884.31	3 095.66	3 387.65
Claims on Central Bank	0.00	0.00	0.00	0.00
Claims on Other Depository Corporations	5 178.01	5 377.88	4 864.89	5 186.35
Claims on Other Financial Corporations	3 811.95	3 663.66	3 645.86	3 662.39
Claims on Non-financial Corporations	11 982.75	12 132.32	12 632.78	12 266.48
Claims on Other Resident Sectors	1 524.19	1 572.89	1 609.37	1 682.57
Other Assets	12 961.53	12 812.80	13 114.29	12 684.30
Total Assets	**43 343.64**	**43 790.94**	**44 388.92**	**45 071.15**
Liabilities to Non-financial Institutions and Households	17 054.10	17 706.37	18 493.99	19 485.67
Deposits Included in Broad Money	12 744.39	13 126.12	13 101.72	14 390.32
Corporate Demand Deposits	3 849.58	4 131.48	3 869.68	5 346.55
Corporate Time Deposits	7 606.71	7 690.59	7 928.57	7 705.69
Personal Deposits	1 288.09	1 304.05	1 303.47	1 338.08
Deposits Excluded from Broad Money	3 302.60	3 624.62	3 850.18	3 952.53
Transferable Deposits	1 700.79	1 752.43	1 764.07	1 945.53
Other Deposits	1 601.82	1 872.19	2 086.11	2 007.01
Other Liabilities	1 007.11	955.64	1 542.09	1 142.82
Liabilities to Central Bank	84.99	160.62	133.40	183.44
Liabilities to Other Depository Corporations	2 823.37	2 893.23	2 497.27	2 662.67
Liabilities to Other Financial Corporations	1 128.05	1 162.94	1 210.79	1 263.59
Of Which: Deposits Included in Broad Money	1 024.17	1 052.33	1 058.91	1 140.01
Foreign Liabilities	4 827.00	4 444.31	4 272.80	4 041.18
Bond Issue	694.91	806.35	785.45	858.75
Paid-in Capital	1 954.11	1 974.89	1 976.51	1 978.68
Other Liabilities	14 777.11	14 642.23	15 018.71	14 597.17
Total Liabilities	**43 343.64**	**43 790.94**	**44 388.92**	**45 071.15**

Source: The PBC.

Table 14 Balance Sheet of Rural Credit Cooperatives in 2019

(Quarter-end Balance)

(RMB 100 million)

Items	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Foreign Assets	6.94	6.89	4.74	4.66
Reserve Assets	8 764.40	8 740.77	8 697.48	9 541.03
Deposits with Central Bank	8 279.02	8 333.37	8 270.18	9 215.56
Cash in Vault	485.38	407.40	427.30	325.47
Claims on Government	1 658.06	1 691.74	1 857.13	1 697.81
Of Which: Central Government	1 658.06	1 691.74	1 857.13	1 697.81
Claims on Central Bank	0.00	0.00	0.00	0.00
Claims on Other Depository Corporations	19 770.05	19 638.55	18 915.62	15 993.80
Claims on Other Financial Corporations	1 517.21	1 110.59	1 513.89	894.71
Claims on Non-financial Corporations	15 642.67	15 149.55	14 820.58	13 808.16
Claims on Other Resident Sectors	15 309.56	15 476.15	15 359.45	14 559.84
Other Assets	2 929.43	2 966.42	3 008.55	3 256.19
Total Assets	**65 598.31**	**64 780.67**	**64 177.43**	**59 756.20**
Liabilities to Non-financial Institutions and Households	46 879.67	45 975.93	44 995.20	42 228.06
Deposits Included in Broad Money	46 799.40	45 904.31	44 925.21	42 106.71
Corporate Demand Deposits	7 663.73	7 653.37	7 397.27	6 353.52
Corporate Time Deposits	1 505.49	1 478.78	1 454.10	1 270.92
Personal Deposits	37 630.18	36 772.16	36 073.84	34 482.27
Deposits Excluded from Broad Money	0.27	0.25	0.43	0.52
Transferable Deposits	0.25	0.24	0.41	0.51
Other Deposits	0.02	0.01	0.02	0.02
Other Liabilities	80.00	71.37	69.56	120.82
Liabilities to Central Bank	654.43	558.48	502.42	552.65
Liabilities to Other Depository Corporations	7 991.80	7 959.11	8 222.37	7 277.28
Liabilities to Other Financial Corporations	134.96	237.55	157.53	317.65
Of Which: Deposits Included in Broad Money	113.99	123.96	102.63	111.77
Foreign Liabilities	0.68	1.21	0.66	0.88
Bond Issue	16.18	8.48	1.48	0.60
Paid-in Capital	1 510.10	1 476.46	1 407.60	1 416.18
Other Liabilities	8 410.49	8 563.46	8 890.17	7 962.90
Total Liabilities	**65 598.31**	**64 780.67**	**64 177.43**	**59 756.20**

Source: The PBC.

Table 15 Statistics of Securities Market

Year	2014	2015	2016	2017	2018	2019
Number of Domestic Listed Companies (A shares, B shares)	2 613	2 827	3 052	3 485	3 584	3 777
Number of Domestic Listed Foreign Investment Shares (B shares)	104	101	100	100	99	97
Number of Overseas Listed Companies (H shares)	202	229	241	252	267	284
Total Issued Shares (100 million shares)	36 795.10	43 024.14	48 750.29	53 746.67	57 581.03	61 719.92
Of Which: Negotiable Shares (100 million shares)	32 289.25	37 043.37	41 136.05	45 044.87	49 047.57	52 487.62
Total Market Value of Shares (RMB 100 million)	372 546.96	531 462.70	507 685.88	567 086.08	434 924.03	592 934.57
Of Which: Negotiable Shares (RMB 100 million)	315 624.31	417 880.76	393 401.67	449 298.14	353 794.20	483 461.26
Trading Volume of Shares (100 million shares)	73 383.09	171 039.47	95 525.43	87 780.84	82 037.25	126 624.29
Turnover of Shares (RMB 100 million)	742 385.26	2 550 541.31	1 277 680.32	1 124 625.11	901 739.40	1 274 158.81
Shanghai Composite Index (close)	3 234.68	3 539.18	3 103.64	3 307.17	2 493.90	3 050.12
Shenzhen Composite Index (close)	1 415.19	2 308.91	1 969.11	1 899.34	1 267.87	1 722.95
Number of Investor Accounts (10 thousand)	7 294.36	9 910.54	11 811.04	13 398.29	14 650.44	15 975.24
Average P/E Ratio						
Shanghai	15.99	17.63	15.94	16.30	12.49	14.26
Shenzhen	41.91	52.75	41.21	36.21	20.00	26.15
Average Turnover Rate (%)						
Shanghai	242.01	489.63	158.43	180.47	150.91	193.44
Shenzhen	471.99	825.65	541.76	412.88	356.92	454.90
Government Bond Issuance (RMB 100 million)	21 747	59 408	91 086	83 513	78 278	85 187
Corporate Credit Bond Issuance (RMB 100 million)	51 516	67 205	82 242	56 352	77 905	107 058
Turnover of Outright Government Bond Purchase in the Interbank Market (RMB 100 million)	58 797	99 296	126 130	131 269	190 695	210 675
Turnover of Government Bond Repo in the Interbank Market (RMB 100 million)	839 347	1 589 806	1 757 356	1 913 543	2 144 206	2 694 737
Number of Securities Investment Funds	1 899	2 723	3 873	4 848	5 580	6 111
Total Net Asset Value of Securities Investment Funds (RMB 100 million)	45 374.30	83 971.83	91 595.16	115 989.13	130 339.08	147 672.51
Turnover of Securities Investment Funds Listed on Exchanges (RMB 100 million)	47 230.89	152 684.59	111 444.32	98 051.89	102 704.59	91 679.38
Trading Volume of Futures (10 thousand lots)	250 585.57	357 802.25	413 782.44	307 106.17	301 069.67	392 156.68
Turnover of Futures (RMB 100 million)	2 919 882.26	5 542 346.94	1 956 343.83	1 878 950.60	2 108 057.48	2 905 856.06

Source: The PBC, the CSRC, Asset Management Association of China, China Central Depository & Clearing Co., Ltd.

Table 16 Ratio of Stock Market Capitalization to GDP

(RMB 100 million, %)

Year	GDP	Market Capitalization	Ratio of Market Captialization to GDP (percent)	GDP	Negotiable Market Capitalization	Ratio of Negotiable Market Captialization to GDP (percent)
2002	120 333	38 339	31.85	120 333	12 487	10.38
2003	135 823	42 478	31.26	135 823	13 185	9.70
2004	159 878	37 081	23.18	159 878	11 701	7.31
2005	183 868	32 446	17.64	183 868	10 638	5.78
2006	211 923	89 441	42.19	211 923	25 021	11.80
2007	249 530	327 291	131.10	249 530	93 141	37.30
2008	300 670	121 541	40.36	300 670	45 303	15.04
2009	335 353	244 104	72.74	335 353	151 342	45.10
2010	397 983	265 423	66.69	397 983	193 110	48.52
2011	471 564	214 758	45.54	471 564	164 921	34.97
2012	519 322	230 358	44.36	519 322	181 658	34.98
2013	568 845	239 077	42.03	568 845	199 580	35.09
2014	636 463	372 547	58.53	636 463	315 624	49.59
2015	676 708	531 463	78.51	676 708	417 881	61.76
2016	744 127	507 686	68.30	744 127	393 402	52.85
2017	827 122	567 086	68.56	827 122	449 298	54.32
2018	900 309	434 924	48.31	900 309	353 794	39.30
2019	990 865	592 935	59.84	990 865	483 461	48.79

Source: The NBS, the CSRC.

Table 17 Ratio of Domestic Stock Financing to Bank Loan Increment

(RMB 100 million, %)

Year	Domestic Stock Financing	Bank Loan Increment	Ratio (percent)
2002	720.05	18 475.00	3.90
2003	665.51	27 652.00	2.41
2004	650.53	22 648.00	2.87
2005	339.03	23 543.82	1.44
2006	2 374.50	31 809.00	7.46
2007	7 814.74	36 322.51	21.51
2008	3 312.39	49 041.00	6.75
2009	4 834.34	95 941.63	5.04
2010	9 799.80	79 450.29	12.33
2011	7 154.43	74 715.39	9.58
2012	4 542.40	82 037.63	5.54
2013	4 131.46	88 916.22	4.65
2014	8 498.26	97 815.77	8.69
2015	16 361.62	117 238.60	13.96
2016	20 297.39	126 496.23	16.05
2017	15 534.98	135 277.81	11.48
2018	11 377.88	161 704.90	7.04
2019	12 538.82	168 144.09	7.46

Notes: ① Since 2015, the item "Total Lending" includes loans offered by banking financial institutions to non-banking financial institutions.

② The amount of domestic stock financing does not include the amount of convertible bonds.

Source: Calculated on the basis of data from the CSRC and the PBC.

Table 18 Statistics of Stock Market

Year		2013	2014	2015	2016	2017	2018	2019
Number of Domestic Listed Companies (A shares, B shares)		2 489	2 613	2 827	3 052	3 485	3 584	3 777
Of Which: ST Companies		53	44	51	62	64	57	137
SME Board		701	732	776	822	903	922	943
ChiNext		355	406	492	570	710	739	791
Number of Domestic Listed Foreign Investment Shares (B shares)		106	104	101	100	100	99	97
Of Which: ST Companies		7	3	0	4	4	1	4
Total Issued Shares (100 million shares)		33 822.04	36 795.10	43 024.14	48 750.29	53 746.67	57 581.03	61 719.92
Of Which: SME Board		2 818.48	3 470.59	4 853.94	6 423.69	7 612.24	8 360.10	9 322.12
ChiNext		761.56	1 077.26	1 840.45	2 630.61	3 258.49	3 728.17	4 097.11
Total Market Capitalization of Shares (RMB 100 million)		239 077.19	372 546.96	531 462.70	507 685.88	567 086.08	434 924.03	592 934.57
Of Which: SME Board		37 163.74	51 058.20	103 950.47	98 113.98	103 992.02	70 122.00	98 681.32
ChiNext		15 091.98	21 850.95	55 916.25	52 254.50	51 288.81	40 459.59	61 347.62
Market Capitalization of Negotiable Shares (RMB 100 million)		199 579.54	315 624.31	417 880.76	393 401.67	449 298.14	353 794.20	483 461.26
Of Which: SME Board		25 543.70	36 017.99	69 737.04	64 088.77	71 155.07	50 478.88	73 661.29
ChiNext		8 218.83	13 072.90	32 078.68	30 536.90	30 494.77	24 542.95	40 231.74
Volume (100 million shares)	Total	48 372.68	73 383.09	171 039.47	95 525.43	87 780.84	82 037.25	126 624.29
	Daily Average	203.25	301.04	700.98	388.08	359.76	337.60	518.95
	SME Board	8 245.92	11 313.55	25 409.95	20 578.13	17 409.44	18 286.37	31 971.44
	ChiNext	3 035.84	4 035.30	9 938.88	9 509.90	8 829.88	11 642.30	19 009.23

(Cont)

Year		2013	2014	2015	2016	2017	2018	2019
Turnover (RMB 100 million)	Total	468 728.61	743 912.98	2 550 541.31	1 273 844.74	1 124 625.11	901 739.40	1 274 158.81
	Daily Average	1 969.45	3 036.38	10 453.04	5 220.68	4 609.12	3 710.86	5 221.96
	SME Board	100 224.40	152 166.57	497 556.18	344 164.94	259 879.80	203 625.83	310 656.51
	ChiNext	51 181.94	78 041.34	285 352.81	216 831.62	165 521.59	158 862.19	231 604.19
Average Turnover Rate (%)	Shanghai	169.22	242.01	489.63	158.43	180.47	150.91	193.44
	Shenzhen	423.79	471.99	825.65	541.76	412.88	356.92	454.90
Average P/E Ratio	Shanghai	10.99	15.99	17.63	15.94	16.30	12.49	14.26
	Shenzhen	34.05	41.91	52.75	41.21	36.21	20.00	26.15
	SME Board	34.07	41.06	68.06	50.35	45.56	21.04	28.47
	ChiNext	55.21	64.51	109.01	73.21	51.39	32.78	47.01
Shanghai Composite Index	Open	2 289.51	2 112.13	3 258.63	3 536.59	3 105.31	3 314.03	2 497.88
	Highest	2 444.80	3 239.36	5 178.19	3 538.69	3 450.50	3 587.03	3 288.45
	Date	2013/2/18	2014/12/31	2015/6/12	2016/1/4	2017/11/14	2018/1/29	2019/4/8
	Lowest	1 849.65	1 974.38	2 850.71	2 638.30	3 016.53	2 449.20	2 440.91
	Date	2013/6/25	2014/3/12	2015/8/26	2016/1/27	2017/5/11	2018/10/19	2019/1/4
	Close	2 115.98	3 234.68	3 539.18	3 103.64	3 307.17	2 493.90	3 050.12
Shenzhen Composite Index	Open	887.36	1 055.88	1 419.44	2 304.48	1 972.55	1 903.49	1 270.50
	Highest	1 106.27	1 504.48	3 156.96	2 304.49	2 054.02	1 966.15	1 799.10
	Date	2013/10/22	2014/12/16	2015/6/12	2016/1/4	2017/3/17	2018/1/25	2019/4/8
	Lowest	815.89	1004.93	1408.99	1618.12	1753.53	1212.23	1231.83
	Date	2013/6/25	2014/4/29	2015/1/5	2016/1/27	2017/6/2	2018/10/19	2019/1/4
	Close	1 057.67	1 415.19	2 308.91	1 969.11	1 899.34	1 267.87	1 722.95

Source: The CSRC,Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 19 Summary of China's Bond Issuance

(RMB 100 million)

Year	Government Bonds			Financial Bonds			Corporate Credit Bonds		
	Issue	Redemption	Outstanding	Issue	Redemption	Outstanding	Issue	Redemption	Outstanding
2000	4 657	2 179	13 020				83		862
2001	4 884	2 286	15 618				147		
2002	5 934	2 216	19 336				325		
2003	6 280	2 756	22 604				358		
2004	6 924	3 750	25 778				327		
2005	7 042	4 046	28 774				2 047	37	
2006	8 883	6 209	31 449				3 938	1 672	
2007	23 139	5 847	48 741				5 181	2 881	7 683
2008	8 558	7 531	49 768				8 723	3 278	13 251
2009	17 927	9 745	57 950				16 599	4 309	25 541
2010	19 778	10 043	67 685				16 094	5 099	36 318
2011	17 100	10 959	75 832	23 491	7 683	75 748	23 548	10 326	49 095
2012	16 154	9 464	82 522	26 202	8 588	93 362	37 365	8 750	77 710
2013	20 230	8 996	95 471	26 310	13 306	105 772	36 784	18 673	93 242
2014	21 747	10 365	107 275	36 552	19 345	125 489	51 516	27 388	116 214
2015	59 408	12 803	154 524	102 095	53 852	184 596	67 205	39 757	144 329
2016	91 086	19 709	225 734	182 152	125 677	236 499	82 242	61 139	175 180
2017	83 513	27 567	281 538	258 056	216 410	278 301	56 352	52 378	183 252
2018	78 278	29 875	330 069	274 056	229 047	322 585	77 905	51 561	205 603
2019	85 187	37 175	377 273	259 360	217 335	364 622	107 058	74 064	246 176

Notes: ① Financial Bonds are bonds issued by financial insitutions, including financial bonds issued by CDB; policy financial bonds; common bonds, subordinated bonds and hybrid bonds issued by commercial banks; asset-backed securities; bonds and short-term financing bills issued by securities companies; financial bonds issued by asset management companies; and interbank negotiable certificates of deposit.

② Due to statistical method adjustment, since 2012, the item "Enterprise bonds" is replaced by "Corporate credit bonds", including debt financing instruments of non-financial enterprises, enterprise bonds, corporate bonds, convertible bonds, bonds with detachable warrants, and SME private-funded bonds.

Source: The PBC.

Table 20 Statistics of China's Insurance Sector

(RMB 100 million, %)

Items	2013	Growth (y-o-y) (percent)	2014	Growth (y-o-y) (percent)	2015	Growth (y-o-y) (percent)	2016	Growth (y-o-y) (percent)	2017	Growth (y-o-y) (percent)	2018	Growth (y-o-y) (percent)	2019	Growth (y-o-y) (percent)
Premium Income	17 222.24	11.20	20 234.81	17.49	24 282.52	20.00	30 959.10	27.50	36 581.01	18.16	38 016.62	3.92	42 644.75	12.17
1.Property Insurance	6 212.26	16.53	7 203.38	15.95	7 994.97	10.99	8 724.50	9.12	9 834.66	12.72	10 770.08	9.51	11 649.47	8.17
2.Personal Accident Insurance	461.34	19.46	542.57	17.61	635.56	17.14	749.89	17.99	901.32	20.19	1 075.55	19.33	1 175.16	9.26
3.Health Insurance	1 123.50	30.22	1 587.18	41.27	2 410.47	51.87	4 042.50	67.71	4 389.46	8.58	5 448.13	24.12	7 065.98	29.70
4.Life Insurance	9 425.14	5.80	10 901.69	15.67	13 241.52	21.46	17 442.22	31.72	21 455.57	23.01	20 722.86	–3.41	22 754.14	9.80
Claims and Payments	6 212.90	31.73	7 216.21	16.15	8 674.14	20.20	10 512.89	21.20	11 180.79	6.35	12 297.87	9.99	12 893.97	4.85
1.Property Insurance	3 439.14	22.11	3 788.21	10.15	4 194.17	10.72	4 726.18	12.68	5 087.45	7.64	5 897.32	15.92	6 501.62	10.25
2.Personal Accident Insurance	109.51	13.12	128.42	17.27	151.84	18.24	183.01	20.53	223.69	22.23	267.70	19.68	297.66	11.19
3.Health Insurance	411.13	37.88	571.16	38.92	762.97	33.58	1 000.75	31.17	1 294.77	29.38	1 744.34	34.72	2 351.48	34.81
4.Life Insurance	2 253.13	49.71	2 728.43	21.09	3 565.17	30.67	4 602.95	29.11	4 574.89	–0.61	4 388.52	–4.07	3 743.21	–14.70
Operating Expenses	2 459.59	13.27	2 795.79	13.67	3 336.72	19.35	3 895.52	16.75	4 288.06	10.08	4 717.73	10.02	2.48	16.38
Bank Deposits	22 640.98	–3.43	25 233.44	11.45	24 349.67	–3.50	24 844.21	2.03	19 274.07	–22.42	24 363.50	26.41	25 227.42	3.55
Investment	54 232.43	20.26	66 997.41	23.54	87 445.81	30.52	109 066.46	24.72	129 932.14	19.13	139 724.88	7.54	120 618.47	–13.67
Of Which: Government Bonds	4 776.73	–0.38	5 009.88	4.88	5 831.12	16.39	7 796.24	33.70	10 167.99	30.42	14 027.62	37.96	20 672.01	47.37
Securities Investment Funds	3 575.52	–1.38	4 714.28	31.85	8 856.50	87.87	8 554.46	–3.41	7 524.77	–12.04	8 650.55	14.96	9 423.29	8.93
Total Assets	82 886.95	12.70	101 591.47	22.57	123 597.76	21.66	151 169.16	22.31	167 489.37	10.80	183 308.92	9.45	205 644.92	12.18

Notes: ① Data of premium income, claims and payments and operating expenses are data for the year.
② Data of bank deposits, investment and total assets are data of the year-end balance.

Source: The CBIRC and the former CIRC.

Table 21 The Structure of Non-life Insurance Premium Income, 2015-2019

(RMB 100 million, %)

Insurance Lines	2015	Proportion (percent)	2016	Proportion (percent)	2017	Proportion (percent)	2018	Proportion (percent)	2019	Proportion (percent)
Automobile Insurance	6 198.96	73.59	6 834.55	73.76	7 521.07	63.98	7 834.02	66.64	8 188.32	62.91
Enterprise Property Insurance	386.16	4.58	381.54	4.12	392.10	3.34	423.11	3.60	464.10	3.57
Cargo Transportation Insurance	88.16	1.05	85.46	0.92	100.19	0.85	121.11	1.03	130.12	1.00
Accident Insurance	199.95	2.37	247.69	2.67	312.66	2.66	416.60	3.54	526.57	4.05
Liability Insurance	301.85	3.58	362.35	3.91	451.27	3.84	590.79	5.03	753.30	5.79
Others	1 248.18	14.82	1 354.60	14.62	1 764.09	15.01	2 370.06	20.16	2 953.92	22.69
Total	8 423.26	100.00	9 266.17	100.00	10 541.38	89.67	11 755.69	100.00	13 016.33	100.00

Source: The CBIRC, the former CIRC.

Table 22 The Structure of Life Insurance Premium Income, 2015-2019

(RMB 100 million, %)

Insurance Lines	2015	Proportion (percent)	2016	Proportion (percent)	2017	Proportion (percent)	2018	Proportion (percent)	2019	Proportion (percent)
Life Insurance	13 241.40	83.49	17 442.09	80.40	21 455.49	82.40	20 722.80	78.91	22 754.14	76.80
Of Which: Common Life Insurance	6 728.14	42.42	10 451.65	48.18	12 936.48	49.68	9 120.97	34.73	10 473.62	35.35
Participating Insurance	6 413.19	40.44	6 879.77	31.71	8 403.20	32.27	11 489.15	43.75	12 166.97	41.07
Unit-linked Insurance	4.18	0.03	3.85	0.02	3.91	0.02	4.12	0.02	4.40	0.01
Accident Insurance	435.61	2.75	502.20	2.32	588.66	2.26	658.95	2.51	648.60	2.19
Health Insurance	2 182.13	13.76	3 748.51	17.28	3 995.40	15.34	4 879.12	18.58	6 225.68	21.01
Total	15 859.13	100.00	21 692.81	100.00	26 039.55	100.00	26 260.87	100.00	29 628.42	100.00

Source: The CBIRC, the former CIRC.

Table 23 Insurance Premium Income of China's Different Regions in 2019

(RMB 100 million)

Regions	Insurance Premium Income	Property Insurance	Life Insurance	Accident Insurance	Health Insurance
Total	42 645	11 649	22 754	1 175	7 066
Guangdong	4 112	1 071	2 303	129	609
Jiangsu	3 750	941	2 215	85	509
Shandong	2 751	663	1 514	62	511
Henan	2 431	532	1 379	52	468
Zhejiang	2 251	734	1 159	66	292
Sichuan	2 149	513	1 231	56	348
Beijing	2 076	455	1 163	58	401
Hebei	1 989	573	1 062	38	317
Hubei	1 729	398	975	44	312
Shanghai	1 720	525	839	91	265
Hunan	1 396	398	710	35	254
Shenzhen	1 384	362	709	66	248
Anhui	1 349	453	658	31	207
Shaanxi	1 033	217	639	25	152
Heilongjiang	952	202	527	18	205
Fujian	948	260	478	29	182
Liaoning	919	284	473	19	142
Chongqing	916	220	506	26	164
Shanxi	883	227	492	19	146
Jiangxi	835	260	395	22	158
Yunnan	742	297	293	25	127
Inner Mongolia	730	213	376	15	126
Jilin	679	184	348	14	133
Guangxi	665	217	299	25	124
Xinjiang	654	225	289	18	122
Tianjin	618	152	355	18	92
Guizhou	489	223	172	19	75
Qingdao	487	127	260	10	89
Gansu	444	138	213	13	80
Ningbo	376	166	164	9	37
Dalian	371	88	230	7	47
Xiamen	227	79	107	7	33
Hainan	203	71	90	8	33
Ningxia	198	68	88	6	36
Qinghai	98	42	38	3	16
Tibet	37	25	5	3	4
Group and Head Office Level	52	47	0	4	1

Note: Data of "Group and Head Office Level" refer to the premium income earned by the group and head office, which are not reflected in any region's data.
Source: The CBIRC.

Table 24 Transactions of Payment Systems

(10 thousand transactions, RMB 100 million)

Items/Year	2015		2016		2017		2018		2019	
	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
HVPS	78 883.86	29 520 565.22	82 566.97	36 162 984.12	93 208.70	37 318 633.92	107 310.73	43 534 782.76	109 420.65	49 507 235.60
BEPS	183 526.95	249 402.68	234 830.13	309 131.24	252 753.84	331 445.29	218 279.40	355 326.99	262 747.64	605 762.37
IBPS	296 555.07	277 563.81	445 314.80	374 610.10	846 427.92	617 200.49	1 209 784.49	890 544.71	1 401 083.51	1 107 671.35
ACH	39 515.72	1 243 363.80	37 246.57	1 308 049.55	35 902.76	1 308 500.57	35 488.89	1 120 284.71	28 222.42	818 879.01
CFXPS	207.88	57 002.02	198.58	54 732.23	201.66	67 456.07	213.52	83 267.58	220.26	85 351.07
CIPS	8.67	4 808.98	63.61	43 617.74	125.90	145 539.58	144.24	264 463.17	188.43	339 255.39
Intra-bank Payment Systems of Banking Financial Institutions	1 970 775.51	11 940 122.11	2 583 027.85	12 154 693.66	3 231 336.24	13 336 885.70	3 669 527.73	13 320 871.21	1 646 891.13	12 186 942.70
Interbank Bankcard Payment System	2 066 757.44	492 752.74	2 376 180.09	670 694.00	2 934 772.13	938 491.66	3 551 388.83	1 202 916.18	13 517 472.61	1 736 037.62
NetsUnion Clearing Platform	—	—	—	—	—	—	12 847 693.77	579 065.80	39 754 200.00	2 598 422.78
Urban Commercial Bank Draft Processing System and Payment&Clearing System	—	—	—	—	—	—	6 295.78	5 882.82	477.20	7 320.89
Rural Credit Bank Payment &Clearing Systerm	—	—	—	—	—	—	59 778.84	30 285.70	130 239.91	29 284.94

Notes: ① According to the requirement of the PBC on “breaking the direct connection between the third party payment institutions and commercial banks”, all third-party payment institutions joined the system of UnionPay or NetsUnion, the business between the payment institutions and commercial banks will not be included in calculating transactions of the intra-bank systems, the business between the Urban Commercial Bank Clearing Co.,Ltd./members of Rural Credit Banks Funds Clearing Center and third-party payment institutions will not be included in calculating transactions of urban commercial bank payment and clearing system as well as rural credit bank payment and clearing system.

② Since 2018, the statistical standard of item “Interbank Bankcard Payment System” is adjusted. First, online payments involving bank accounts initiated by payment institutions and processed by the interbank bankcard payment system are included; second, the number of transactions only includes transactions of capital settlement; inquiries, account verification and other non-capital settlement transactions are excluded.

Source: The PBC.

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