

<http://dx.doi.org/10.18778/8220-096-6>

# **China's economic growth – selected financial aspects**



WYDAWNICTWO  
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ŁÓDZKIEGO

Economics

# **China's economic growth – selected financial aspects**

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<http://dx.doi.org/10.18778/8220-096-6>

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Published by Łódź University Press

First edition. W.09908.20.0.K

Publisher's sheets 6.0; printing sheets 6.625

e-ISBN 978-83-8220-096-6

Łódź University Press

90-131 Łódź, 8 Lindleya St.

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# Introduction

This book focuses on the different aspects of China's economic growth. The nearly miraculous development of China over the course of the past eighty years constitutes a fascinating subject for research and attracts a lot of attention from the economists of the world. Research presented here focused on the more recent and less frequently analysed financial aspects of growth. The results can therefore help understanding the transition that the Chinese financial system has undergone over the past years.

The first chapter concentrates on the monetary policy of China. The author emphasizes the fact that it has evolved during last decades, in accordance with the process of transformation of the economy. The evolution of the monetary policy concerned mainly such aspects as: formulation of monetary policy targets, implementation of instruments and deregulation of interest rates. Creating new monetary policy framework, similar to standards used in developed countries, together with the process of opening of the economy and internationalization of the currency has been perceived as essential for enhancing the China's role in global economy and finance. What is more, operating within modern central banking standards is the key factor for the development of financial markets. However, there are still many challenges the Chinese central banking has to tackle, which are depicted in the aforementioned chapter.

The aim of the second chapter is to highlight the issue of bond market in China, which is becoming more and more important source of financing, substituting the traditionally dominant role of bank loans and credits. The author presents determinants of the development of bond market, with special emphasis put on the role of monetary policy and interest rate deregulation, as well as main initiatives stimulating the growth of the market and integrating it with the international financial markets. The chapter presents four categories (government, local government, corporate and financial) of bonds, functioning on primary and secondary markets, and categories of investors operating in the market. Special attention is paid to the segment of sovereign bonds, as it can become vital for the smooth functioning of the international monetary system as the process of internationalization of renminbi (RMB) and growth of foreign interest in these assets proceeds. Thus, the

chapter reviews main obstacles, prospects and challenges for an increase in the role of bond markets in China.

Third chapter describes the process of modernisation of China's largest banks that has allowed them to become one of the world's largest financial institutions. The chapter analyses the process of establishing today's "big four" banks of China and the strategic reforms they have implemented over the past years. Increasing international activity of these institutions is identified as an important element of their growth strategies. Chapter 3 focuses on corporate finance sector, particularly the most powerful players on the Chinese market for commercial banking. The author presents case studies for four Chinese giants: the *Industrial and Commercial Bank of China*, *China Construction Bank Corporation*, *Agricultural Bank of China* and *Bank of China*.

In chapter 4, the emphasis is placed on the subject of financial stability in China — home of the world's largest credit institutions. Pivotal role of the banking sector in the development of a modern economy makes it an interesting subject of research in the context of financial determinants of economic growth. Through the use of a specifically designed synthetic indicator, the capitalization of the largest credit institutions is analysed and conclusions on the future loss-absorbing capacity of China's banking sector are presented.

Chapter 5 presents the dynamic development of the Fintech sector on a global scale. Particular attention is paid to the Asian financial market, and above all to China, which stand out in this respect. The prospect of continuous development of innovation in the financial sector allows strengthening of Asia's position in the entire economy. Fintech, i.e. companies from the IT industry that provide increasingly modern solutions for consumers of financial markets on the market, have not been described in detail in the literature on the subject. The chapter presents the aggregated definition of FinTech, shows the scale of such projects in the world. The author analyses the dynamic development of FinTech in China — the conditions for this success and the potential of the Chinese economy.

Research results presented in all the five chapters indicate the major progress the financial world in China has experienced over the past years. Modernized financial institutions have not only adjusted to the global standards, but have also started to develop best practices and innovation themselves. The challenges ahead of the Chinese financial world will therefore be of very different nature to those overcome in the past.

# Chapter 1

## The monetary policy of China — evolution and perspectives

Joanna Bogotębska\*

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The evolution of China's monetary policy is strongly linked to the processes of transformation of the economy. It is particularly affected by the processes of marketization (especially in relation to the financial sphere) and liberalization of the economy and by the increase in the openness of the economy.

The level of development of financial markets plays an especially important role in determining the institutional and operational framework for monetary policy. The accelerated economic growth path that the country has been pursuing since 1978 leads to a gradual cessation of direct governmental control of the financial sector and creates conditions for the construction of financial markets. Nevertheless, it should be noted that despite the undertaken reforms, the financial system is still underdeveloped and subjected to internal and external limitations. The problem of the financial system is ineffective credit allocation in the banking system, as well as inefficiently functioning state banks burdened with a large portfolio of uncollectible credits.

Financial liberalization achieved by increasing the demand for money also plays an important role in determining the shape of the monetary policy. The increase in the demand for money, which contributes to fast monetization of the economy, reflects the pace of economic growth and is a particularly important condition for the monetary policy.

The capital flows in China are still subject to control, which is not effective. What's more, these flows are increasingly being liberalized. According to the paradigm of the so-called impossible trinity in an open economy, control of capital flows gives the central bank some room for manoeuvre in the independence of its

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monetary policy strategy under the conditions of the fixed peg parity. The ability to maintain a fixed peg parity is highly dependent on maintaining control of capital flows. However, with the increase in openness of the economy (since around 2002), external factors (such as the US federal funds rate) have been playing an increasingly important role in China's monetary policy, as the empirical research confirms.<sup>1</sup> Goodfriend et al. point out that controlling growth of credit and investment was indeed hampered by the massive inflow of speculative capital testing the sustainability of the RMB's fixed exchange rate against USD.<sup>2</sup> Also the research conducted by Giardin et al. shows that the prevention of exchange rate appreciation and massive capital inflows in the 2000s explain the impact of the US federal fund rate on monetary policy, which limited its independence.

Therefore, China's monetary policy is an example of the difficulties in achieving several economic objectives, in particular in the face of tensions related to the desire to stabilize the exchange rate, liberalize capital flows and keep the autonomous monetary policy.

Goodfriend et al. emphasize the importance of three factors that significantly impede the implementation of the monetary policy. These include: exchange rate regime, institutional weaknesses in both the financial and the corporate sector, and large excess reserves held by banks at the central bank.<sup>3</sup>

## 1.1. The evolution of the final and intermediate objectives of the monetary policy

Considering the above conditions, it should be emphasized that China's monetary policy evolved intensively in the last two decades, and this evolution concerned the rules, objectives (final and intermediate) and instruments used in the monetary policy.

China's central bank (People's Bank of China — PBoC) is not independent central bank, but institutionally subordinate to the State Council (which is equivalent of a cabinet), and ultimately the Communist Party of China (CPC). The PBoC has operational independence in setting short term interest rates through its operations, but key decisions need to be approved by the State Council. Its approval is needed, for example, for establishing the final monetary policy objective. Despite

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1 E. Giardin, S. Lunven, G. Ma [2017], *China's evolving monetary policy rule: from inflation — accommodating to anti-inflation policy*, "BIS Working Papers", vol. 641.

2 M. Goodfriend, E. Prasad [2005], *Monetary policy implementation in China*, in: *Monetary policy in Asia: approaches and implications*, "BIS Conference Papers", vol. 31.

3 *Ibidem*.

emphasizing the role of price stability as the final objective of monetary policy, it should be stressed that in reality it pursues the so-called double mandate — in the form of price stability and support for economic growth.<sup>4</sup> The so formulated double mandate causes that the final objective of monetary policy coincides with the mandate of some central banks of the G3 countries. Nevertheless, the way this policy is implemented differs significantly from the approach of central banks of the OECD countries.<sup>5</sup> The PBoC is not one of the banks officially applying the strategy of controlling inflation (price targeters), and the final objectives of its monetary policy are formulated much more broadly.

In the evolution of China's monetary policy a shift from quantitative targets to a price-based framework can be observed.<sup>6</sup> This can be explained by the visible change in the approach to inflation phenomena in the policy of the central bank. According to the analyses of Girardin et al., until 2002 this policy was geared to accommodating inflationary phenomena, and since 2002 it has become an anti-inflationary policy.<sup>7</sup> There are opinions that since 2002 monetary policy has become a kind of flexible inflation targeting with a hybrid reaction function and taking into account both backward-looking and forward-looking inflation expectations.<sup>8</sup> Trying to find a name for the implemented monetary policy strategy, Giardin et al. express the view that it is similar to informal inflation targeting.<sup>9</sup> Also Zheng et al. empirically prove that the monetary policy response to inflation phenomena was greater in 1998–2002 than in previous periods, which means an increase in the role of inflation in the central bank policy.<sup>10</sup> As noted by Giardin et al., the policy implemented after 2002 resembles the anti-inflationary monetary policy of the G3 countries implemented after 1979, but with a greater stress on growth and production factors, typical for emerging markets.<sup>11</sup>

The inflation phenomena in China in the 21<sup>st</sup> century are at a low and stable level (2.3% on average), which is quite a contrast to the persistent inflation of the 1990s, when it was 8.4% on average. Inflation in China was mainly of monetary nature and it was to a large extent caused by monetary accommodation of real sector

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4 A. Hossain [2015], *The evolution of central banking and monetary policy in the Asia-Pacific*, Elgar. The author proves that this is a multitude of objectives. An additional objective is also to support socio-political stability.

5 E. Girardin, S. Lunven, G. Ma [2017], *op. cit.*

6 M. McMahon, A. Schipke, X. Li [2018], *China's monetary policy communication: frameworks, impact, and recommendations*, "IMF Working Paper", vol. 18 (244).

7 E. Giardin, S. Lunven, G. Ma [2017], *op. cit.*

8 E. Giardin, S. Lunven, G. Ma [2014], *Inflation in China's monetary policy reaction function: 2002–2013*, in: *Globalisation, inflation and monetary policy in Asia and the Pacific*, "BIS Papers", vol. 77.

9 E. Giardin, S. Lunven, G. Ma [2017], *op. cit.*

10 T. Zheng, X. Wang, H. Guo [2012], *Estimating forward — looking rules for China's monetary policy: a regime-switching perspective*, "China Economic Review", vol. 23 (1).

11 E. Giardin, S. Lunven, G. Ma [2014], *op. cit.*

shocks having both internal and external sources. The accommodation of shocks created a large volatility in the pace of money supply growth and increased inflation volatility in conditions of a fixed peg parity. Budget deficits were not a source of inflation, but the rapid rate of accumulation of foreign exchange reserves increased the money supply despite undertaking sterilization operations.<sup>12</sup> It should be noted, however, that China's problem is not so much high inflation as its volatility, mainly resulting from supply-side structural shocks and monetary shocks. It seems justified to state that the high volatility of inflation also results from the multitude of monetary policy objectives and the limited control of the central bank over its instruments, and also reflects low credibility of the monetary policy.

Despite the successes with disinflation in recent decades, the official final objective of the monetary policy is currently not direct inflation targeting. Officially, the central bank's website informs that monetary policy is based on the formulation of two final objectives: exchange rate stability and support for economic growth.<sup>13</sup> In 2016, the governor of the central bank announced that „the annual objective of the central bank is to maintain price stability, promote economic growth, employment and maintain a balance of payments”. On the other hand, in 2017, the Work Conference of the Central Bank of China stated that monetary policy has to find a balance between economic growth, economic reforms, structure of the economy, household income, and financial stability. The multitude of the formulated monetary policy objectives makes them interchangeable, and also reduces their transparency.<sup>14</sup> Goodfriend et al. express the view that the central bank should clearly indicate low inflation as the sole final objective of monetary policy. Such a step would contribute to macroeconomic stability, which would in turn reduce the volatility of economic growth and contribute to financial stability.<sup>15</sup>

Since 1994, the monetary policy has been based on the quantitative intermediate objective of controlling monetary aggregate M2 (monetary targeting). This objective was set by the government and announced annually in the government's „Report on the Work of the Government”. Additional intermediate objectives were the increase in domestic credit and exchange rate control. Thus, the control of monetary and credit aggregates were the intermediate objectives supporting price stability and economic growth. Xie emphasizes that while the supply of money and bank credit were intermediate objectives, the operational objective was the monetary base.<sup>16</sup>

12 A. Hossain [2015], *op. cit.*

13 According to the People's Bank of China, the objective of the monetary policy shall be “to maintain stability of the value of the currency and thus promote economic growth”.

14 M. McMahon, A. Schipke, X. Li [2018], *op. cit.*

15 M. Goodfriend, E. Prasad [2006], *A framework for independent monetary policy in China*, “IMF Working Paper”, vol. 06 (111).

16 P. Xie [2004], *China's monetary policy: 1998–2002*, “Stanford Center for International Development Working Paper”, vol. 217, Stanford University.

As Xiaochuan admits, monetary policy based on quantitative objectives was to some extent the legacy of the centrally planned economy, under which the financial activity was controlled directly through credit plans.<sup>17</sup> Until 1998, the credit plan was the main instrument for controlling credit and money supply, and deposit and credit rates were occasionally adjusted.

The marketization of the Chinese economy, manifested a. o. in abandoning the credit quota system (formally since 1998), forced the central bank to abandon direct control of financial markets, but the quantitative monetary objective remained an important element of the monetary policy strategy. What's more, the price formation mechanisms on financial markets were not yet mature, and many types of interest rates were subject to government control. This meant that in the implementation of monetary policy the quantitative target was preferred rather than the price target.

However, since 2008 it has become increasingly obvious that the strategy based on controlling monetary aggregates is becoming more and more problematic, especially in view of the difficulties with their control and implementation of the intermediate objective (often the aggregate size did not coincide with the set objective) and the growing fluctuations of interbank rates.

Among the reasons why the central bank often exceeded the announced quantitative monetary target, Hossain points out: stabilizing the exchange rate, strategy for building foreign exchange reserves (although largely sterilized), and accommodating shocks in the demand for money.<sup>18</sup>

Zengping et al. argue, however, that because it is not obvious how the monetary target was determined or how determined the central bank was in achieving the objective, it cannot be clearly stated to what extent the so established intermediate objective translated into fluctuations in interest rates. In addition, as some studies show, the central bank more accommodated market liquidity demand than provided liquidity in line with the monetary objective.<sup>19</sup> Additionally, financial innovations in the conditions of growing financial markets weakened the role of the M2 aggregate as an indicator of financial activity. What's more, the rapidly changing structure of the financial system meant that the intermediate quantitative target of controlling the M2 aggregate was less and less correlated with growth and inflation.<sup>20</sup>

The above factors, as well as the growing deviations of the aggregate from the adopted projection, caused that in 2018 the central bank ceased to formally declare

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17 Z. Xiaochuan [2004], *Some considerations in the study of monetary policy transmission*, <http://www.pbc.gov.cn/hanglingdao/128697/128719/128766/2835231/index.html> (accessed: 07.12.2018), in: H. Zengping, J. Genliang, *An institutional analysis of China's reform of their monetary policy framework*, "Levy Economics Institute of Bard College. Working Paper", vol. 925.

18 A. Hossain [2015], *op. cit.*

19 H. Zengping, J. Genliang [2019], *op. cit.*

20 G. Ma [2017], *Interest rate transmission in a new monetary policy framework*, in: W. Lahm, M. Rodlauer, A. Schipke, *Modernizing China's monetary policy framework*, Washington D.C.

a quantitative target. The 2018 Annual Report on the Work of the Government did not include a quantitative target record — neither in the form of the M2 monetary aggregate, nor credit aggregates (such as total financing of social objectives, which was used in previous years).<sup>21</sup> Compared to the previous monetary policy formulation in Annual Work Reports, the year 2018 represented a significant change.

Nevertheless, despite the lack of numerical determination of the size of the monetary aggregate, as emphasized by Huang et al., the three intermediate objectives currently used include: money supply and bank credit (quantitative targets) and benchmark interest rates (price target).<sup>22</sup>

## 1.2. The evolution of monetary policy instruments

A characteristic feature of China's monetary policy is a wide range of used instruments.

Giardin et al. divide these instruments into three categories:

- price — like (partly regulated) bank credit and deposit rates, interest on mandatory and excess reserves, rediscount rate;
- quantitative — reserve requirement ratio and open market operations;
- administrative — controlling the credit window for commercial banks.<sup>23</sup>

All of such a wide range of instruments can affect interbank interest rates.

There has been an intensive reconstruction of the operational system of monetary policy in recent years. An especially visible monetary policy reform at the operational level has been taking place since 2013. As a result, as in developed countries, open market operations are starting to play a key role in liquidity management. Open market operations have been used regularly in the monetary policy since 1998, but their use have intensified after 2002 in connection with the sterilization of capital inflows. Treasury securities were used in reverse repo operations, and after they were exhausted, the central bank's own securities began to be used on a large scale.

In 2016, the frequency of conducting open market operations was increased through daily open market operations, which replaced the so-called Short-term Liquidity Operations — SLO (introduced in 2014 as part of the discount window, short-term liquidity operations, by definition a temporarily used instrument to effectively manage liquidity during periods of heavy payment flows).

21 M. McMahon, A. Schipke, X. Li [2018], *op. cit.*

22 Y. Huang, T. Ge, C. Wang [2018], *Monetary policy framework and transmission mechanism*, in: M. Amstad, G. Sun, W. Xiong [2018], *Handbook of China's financial system*, Princeton University Press, Princeton.

23 E. Giardin, S. Lunven, G. Ma [2017], *op. cit.*

The increase in the frequency of using open market operations meant that their key function became absorbing and providing liquidity, rather than controlling the amount of money.

The reserve requirement has been used in the monetary policy of the central bank since 1998, but has been particularly actively used since 2007 to drain liquidity from the market. Its special importance in Chinese monetary policy lies with money supply management, especially in dealing with the country's persistent current account surpluses.<sup>24</sup> Besides, its use in order to absorb liquidity in a permanent way results from the fact that in the opinion of the central bank it is a more cost-effective instrument. As regards the required reserve, the transition was made in 2015 from the calculation of the reserve at the end of each settlement day during the reserve maintenance period, to the so-called averaged system, calculated as an average for the period of keeping funds. The change was aimed at smoothing out interest rate fluctuations during the reserve maintenance period. However, as emphasized by Zengping et al., this causes the reserve maintenance period to become a period of speculation regarding future interest rates, which hinders open market operations as they must take into account a speculative demand for liquidity.<sup>25</sup>

The central bank also uses the so-called standing facilities, in the form of credit instruments for the banking system and the possibility of depositing excess reserves with the central bank.

According to Zengping et al., the two key changes in monetary policy that have taken place in recent years, contributing to the increase in its efficiency, are:

- establishing an interest rate corridor, and
- reducing difficulties in estimating market demand for reserves from the point of view of open market operations — this factor is the institutional basis for achieving the monetary policy price target.

According to the authors, both these changes help the central bank stabilize the interbank offered rate. At the same time, these changes may constitute the institutional basis for implementing a strategy based on price targeting.

After institutional reform, the method of determining interest rates has become clearer: the central bank establishes an interest rate corridor within which it controls the extent of fluctuations of interbank offered rates. Whether the target rate within the corridor is achieved depends on the ability to estimate and satisfy market demand for liquidity through open market operations. Within the corridor, the top-down rate is the SLF (standing lending facility) rate, while the bottom-up rate is the excess reserve rate.

The Standing Lending Facility (SLF) instrument introduced in 2013, which is the upper limit for fluctuations in interbank offered rates, allows to provide liquidity

24 M. Funke, A. Tsang [2019], *The direction and intensity of China's monetary policy conduct: a dynamic factor modelling approach*, "The Bank of Finland Institute for Economies in Transition. Discussion Papers", vol. 8.

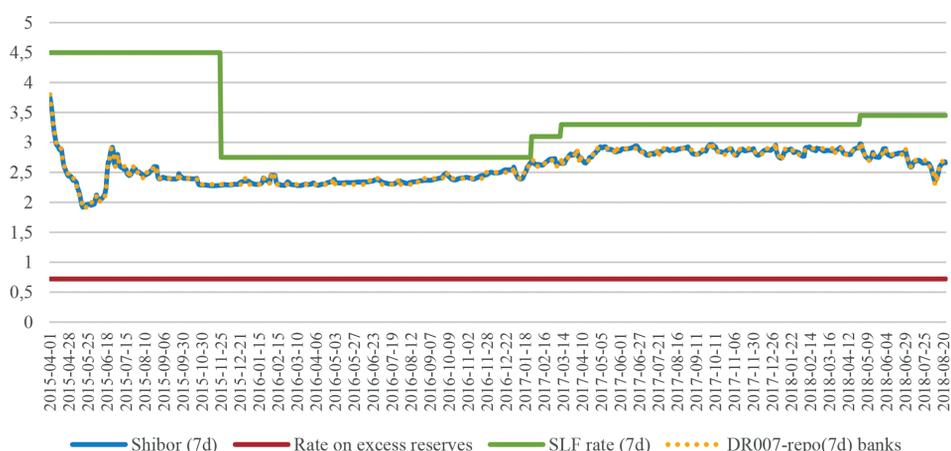
25 H. Zengping, J. Genliang [2019], *op. cit.*

to commercial banks and rural cooperative financial institutions, provided that adequate collateral is available. So this is one of the credit facilities for the banking system (next to refinancing policy). SLF credits are granted for a period of one to three months, i.e. longer than, for example, by means of open market operations.

It should be noted, however, that in the monetary policy of China's central bank there is no leading short-term interest rate on which the central bank would focus when implementing the policy. The PBoC has not officially announced which rate within the interest rate corridor is the so-called policy target rate. In the Federal Reserve System this role is played by the fed funds rate, while in the European Central Bank it is the EONIA rate. The lack of a main rate that would constitute the operational target of monetary policy is largely due to the segmentation of credit markets. The role of such a rate is partly played by Shanghai Interbank Offered Rate (SHIBOR) and China Interbank Offered Rate (CHIBOR). An important role in the interest rate corridor is also played by the DR007 rate (7-day repo rate), which reflects the liquidity conditions in the banking sector (due to enormous turnover volumes). It can affect all market interest rates, which is why it is strongly observed by markets.

However, as noted by Zengping et al., the coexistence of two price mechanisms in the market (market rates like SHIBOR and benchmark rates announced by the central bank) causes some conflict, uncertainty as to which of the interest rates will be the key ones for commercial banks, which reduces the efficiency of the monetary policy.

After introducing changes to the operational system, the fluctuations of the interbank SHIBOR rate clearly decreased in 2018, although compared to the federal funds rate in the US these fluctuations should still be considered as large.



**Figure 1.1.** Interest rate corridor

**Source:** own elaboration based on: *China Foreign Exchange Trade System* [2015–2018], <http://www.chinamoney.com.cn/chinese/> (accessed: 16.09.2019)

The figure 1.1. shows the development of the interest rate corridor system. As can be seen, currently the corridor is still asymmetric, while the PBoC is gradually narrowing its range.

The central bank's refinancing policy instruments also include:

- Medium-term Lending Facility (MLF) — used to provide medium-term liquidity to commercial banks and the so-called policy banks in order to influence medium-term interest rates and to adapt the medium-term financing costs of financial institutions and the real economy.
- Pledged Supplementary Lending (PSL) — introduced in order to manage money supply and long-term interest rates. Liquidity is provided to selected banks (the so-called policy banks), which then grant loans to the agricultural sector, small and medium-sized enterprises and for development purposes.
- Contingent Reserve Arrangement (CRA) — established in order to provide liquidity during periods of high payment flow, thereby removing the burden in satisfying this type of demand for liquidity from open market operations.

Another area of the reform of the monetary policy framework is the gradual deregulation (liberalization) of interest rates that has been in course for almost 20 years. The successive liberalization of interest rates, which began with money market rates, through elimination of the ceiling for credit rates (2013), and the climax of the formal elimination of the ceiling for deposit rates (2015), facilitated the transition towards a modern, price-based monetary policy and increased flexibility in the use of monetary policy instruments.

Nevertheless, as a result of many years of controlled interest rates, the central bank is still announcing RMB's official benchmark deposit and credit rates, despite the official abolition of deposit and credit interest rate control.<sup>26</sup> However, unlike the Federal Reserve System, which only sets the O/N federal funds rate, the Chinese central bank sets benchmark rates with different maturities — from overnight to 5 years' rates. Benchmark rates affect the cost of borrowing funds for banks, business sector and households.

In the area of interest rate policy, the visible change is the weakening the government's role in shaping interest rates. For example, starting from 2013, the government no longer directly regulates any of the refinancing rates of commercial banks. Importantly, in 2018 the central bank expressed its intention to unify the framework for shaping interest rates. Currently there are two interest rate shaping systems — deposit and loan benchmark rates, and liberalized money market rates.<sup>27</sup>

<sup>26</sup> H. Zengpping, J. Genliang [2019], *op. cit.*

<sup>27</sup> M. McMahan, A. Schipke, X. Li [2018], *op. cit.*

**Table 1.1.** The process of China's interest rate deregulation

Date (Year / Month)	Interest Rate Deregulated
1996 / June	Interbank offered rate
1997 / June	Repurchase rate in interbank bond market
2000 / September	Foreign currency loan interest rate
2004 / November	Foreign currency deposit (less than 3 million dollars and more than one year) interest rate
2013 / July	RMB loan interest rate
2015 / May	Foreign currency deposit (less than 3 million dollars) interest rate
2015 / October	RMB deposit interest rate

**Source:** H. Zengping, J. Genliang [2019], *An institutional analysis of China's reform of their monetary policy framework*, "Levy Economics Institute of Bard College. Working Paper", vol. 925

The changes in the monetary policy operational system implemented in recent years, including deregulation of interest rates (table 1.1.), have undoubtedly contributed to the reduction of interbank interest rate fluctuations.

Summing up the above considerations, it should be emphasized that the operational framework of monetary policy can be described today as hybrid one, where the multitude of instruments does not promote communication and transparency.

### 1.3. China's exchange rate policy

The evolution of China's exchange rate regime is an important factor determining the shape of the monetary policy.

At the beginning of the 1990s, the so-called double exchange rate regime was functioning in China. The unification of the regime took place in 1994, and since 1995 the RMB has been stabilized using various variations of the fixed exchange rate to USD, and since 2005 to the basket of currencies. Two key phenomena can be observed in the evolution of the exchange rate regime:

- gradual appreciation of the RMB, reducing the degree of undervaluation of the currency;
- increasing the flexibility of the exchange rate regime.

Along with the increase in the flexibility of the RMB exchange rate regime (since 2005), the independence of China's monetary policy should increase. However,

some authors emphasize that greater flexibility of the exchange rate regime does not protect China from spillover effects from other economies and that control of capital flows is necessary in order to maintain monetary policy independence.<sup>28</sup> Pang et al. show that the Chinese economy is strongly influenced by real and credit shocks in the USA.<sup>29</sup>

Maintaining the stable value of the RMB is currently one of the monetary policy objectives. The formally used exchange rate regime is defined by the Chinese authorities as a managed floating exchange rate system, but it is still a fixed, administratively controlled exchange rate. In addition to managing money supply and interest rates, the central bank also influences the movements of the RMB exchange rate in relation to the basket of currencies, which contains 11 currencies, including a. o. USD, EUR, YEN, KRW (Korean won), although the central bank does not provide information on the weights of individual currencies in the basket.

The RMB exchange rate shaping mechanism raises great emotions, both in political circles and among economists. The prevailing belief is that the floating of the RMB, which should lead to a gradual appreciation of the exchange rate, would be the optimal solution from the point of view of both the Chinese and the global economy. Among the arguments in favour of floating there are the following positive consequences of such a step:

- improving investment decisions, consumer purchasing power, stimulating consumption growth;
- unblocking the adjustment mechanism, which would overcome the problem of global imbalances.

The supporters of the introduction of floating stress the problems arising from the use of a fixed peg parity. Hossain notes that one of the problems arising from the use of a fixed peg parity is that it created a large volatility in the development of at least three areas that are key for the economy: inflation, real interest rates and real exchange rates. The volatility of these factors, in turn, had a negative impact on real production and growth. In particular, fixing the course created the risk of boom-bust cycles.<sup>30</sup> Fixing the exchange rate makes it difficult to conduct monetary policy in the sense that it makes it difficult for the central bank to use the interest rate instrument in order to meet the national objectives.

Moreover, the problems for monetary policy, caused by fixing the exchange rate were reflected in the accumulation of foreign exchange reserves, which was largely the effect of the appreciation pressure on the RMB resulting from the inflow of speculative capital. However, massive sterilization used by the central bank as part of currency interventions raises macroeconomic and financial costs over time and

28 H. Rey [2015], *Dilemma not trilemma: the global financial cycle and monetary policy independence*, "NBER Working Paper Series", vol. 21162.

29 K. Pang, P. Siklos [2016], *Macroeconomic consequences of the real-financial nexus: imbalances and spillovers between China and the US*, "Journal of International Money and Finance", July.

30 A. Hossain [2015], *op. cit.*

creates risks for the economy. Devereux et al. note that structural changes taking place in the region, including an increase in the integration of commodity markets, a falling pass-through of the exchange rate (which means a weakening of the relationship between exchange rate stability and inflation stability), and the process of internationalization of financial markets, reduce the effectiveness of sterilized interventions.<sup>31</sup>

There are also minor voices in favour of maintaining a fixed peg parity, at least until the development of financial markets is more advanced. Arguments in favour of maintaining a fixed peg parity include:

- China's position as an immature creditor country; the result is that a country that generates excess savings cannot simultaneously offer credit abroad in its own currency; the banking sector cannot create receivables in foreign currency, because with the deposit base in banks created in RMB this would lead to currency mismatches; therefore, the public sector creates foreign receivables in the form of foreign exchange reserves;
- uncertainty about the impact of exchange rate appreciation on achieving a balance of payments (casus of Japan 30 years ago), moreover — concerns about translating into a decline in the growth rate;
- its ability to induce wage increases corresponding to the difference in productivity growth between China and the US;
- enabling exchange rate stability in neighbouring countries of the region.

## 1.4. Challenges for the monetary policy

The independence of monetary policy is of key importance for its effectiveness. An independent monetary policy implemented by an independent central bank is necessary for the further market evolution of China's economic and financial system. The analysis of the impact of the exchange rate on China's monetary policy leads to the conclusion that this policy could be given greater independence by introducing a floating exchange rate regime.

According to Zengping et al., a key challenge for monetary policy is to create coordination mechanisms between the central government and the central bank in order to manage the fiscal impact on liquidity. The current lack of such mechanisms means that the main burden of neutralizing fiscal impact on liquidity falls on open market operations. Uncertainty about budget revenues and expenditures makes it difficult for the central bank to reach the desired target rate. Additionally,

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<sup>31</sup> M. Devereux, J. Yetman [2014], *Responding to exchange rates in a globalized world*, in: *Globalisation, inflation and monetary policy in Asia and the Pacific*, "BIS Papers", vol. 77.

the difficulty in estimating the fiscal effects of economic activity makes it more difficult to manage liquidity through open market operations.<sup>32</sup> One of the possible solutions for managing fiscal impact on liquidity is opening special accounts at commercial banks, to which the funds from the currently functioning centralized TSA (Treasury Single Account) system would be transferred. Such a solution would require a reform of the TSA system introduced in 2001. It is somewhat a political problem concerning the principles of functioning of the fiscal and monetary power centre in the country.

Controlling the monetary policy objective is also a political problem resulting from the lack of independence of the central bank. At present, the monetary policy target and official benchmark interest rates are approved by the State Council, while monetary policy instruments and their interest rates are controlled by the central bank. It seems reasonable for the central bank to control the monetary policy objective, so this is a political problem that requires increasing the independence of the central bank.

Another challenge for the monetary policy is to increase the efficiency of monetary policy impulse transmission channels. Zhou et al.<sup>33</sup> show that the bank credit channel has been present in China since 1990s, and Pang et al. stress that the credit shock was the factor leading to inflation.<sup>34</sup> It should be noted that research on the transmission channel (most active today in the so-called systemically important economies), which is the interest rate channel in China, is scarce. It is due to the traditionally greater weight attributed to quantitative rather than price factors in monetary policy and relatively recently made sequential deregulation of interest rates. As a result, the interest rate channel is a relatively new channel of monetary policy impact. Price and wage control is a factor weakening the role of the interest rate channel. However, the research conducted by Liu shows that the functioning of the interest rate channel has improved since 2015, when the central bank ceased its administrative intervention in shaping interest rates in the banking system. In addition, there is a certain degree of pass through of money market rates to credit rates. Moreover, this pass through is negatively affected by the quality of assets of commercial banks and the large scale of shadow banking in China. In addition, as shown by empirical research conducted by Liu, macroeconomic conditions also affect credit rates.<sup>35</sup> In turn, Lombardi et al. emphasize that interest rates, which play a leading role in the transmission mechanism in the US, the euro area and Japan, currently play almost as much significant role in China.<sup>36</sup>

32 H. Zengping, J. Genliang [2019], *op. cit.*

33 Y. Zhou, Z. Jiang [2002], *Monetary channel, credit channel and the effectiveness of monetary policy*, "Journal of Financial Research", September.

34 K. Pang, P. Siklos [2016], *op. cit.*

35 K. Liu [2019], *The determinants of China's lending rates and interest rates pass through: a cointegration analysis*, "Research in Economics", vol. 73.

36 D. Lombardi, P. Siklos, X. Xie [2018], *Monetary policy transmission in systemically important economies and China's impact*, "Journal of Asian Economics", vol. 59.

It also seems obvious that banking sector reforms are the key factor in increasing the impact of monetary policy on economic activity through impulse transmission channels.

## Conclusions

The monetary policy of the PBoC has greatly evolved during last or two decades, in accordance with the process of transformation of the economy. This evolution has brought Chinese monetary policy closer to the standards used in developed economies. In short, the current stance of monetary policy can be depicted as based on multi-instrument mix of liquidity tools and pricing signals to achieve its competing policy goals. Especially the role of exchange rate policy is vital for the monetary policy framework and its autonomy. It is visible that the monetary policy evolved from quantity targets to price targets, however direct inflation targeting still is not the official monetary policy strategy. The central role of the hybrid monetary policy framework is to be performed by a corridor system of interest rates. However, this multi-instrument policy design complicates reading of PBoC signals, creating difficulty in interpreting China's monetary objectives.<sup>37</sup> Another area of not fully comprehensive monetary policy strategy is coexistence of a broad set of interest rates, both market and benchmark ones. From the institutional point of view, low degree of independence of the central bank creates an obstacle towards higher credibility, and in effect, higher effectiveness of the monetary policy. Among main challenges that Chinese monetary policy has to tackle is reforming banking sector and financial markets. A robust and efficient financial sector would greatly improve the effectiveness of monetary policy transmission channels.

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<sup>37</sup> M. Funke, A. Tsang [2019], *op. cit.*

## Chapter 2

# Directions and prospects for the development of the bond market in China

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The bond market has been a dynamically developing segment of the Chinese financial market in recent years. This development relates to both the scale of issues, trading volumes, and diversification of categories of issuers and investors. Currently, this market is the main direct financing channel for enterprises in China. The rapid development of this segment of financial markets is strongly connected with the public sphere of the economy, which through issuing debt can finance its investment and achieve development goals.

### 2.1. The bond market in the Chinese financial sector and the determinants of its development

It should be borne in mind that traditionally the most important role in financing in the Chinese financial system was played by bank credit, which was the basic channel for obtaining financing by the private sector. The strong dependence of the economy on bank capital was also partly due to the poor level of development of other segments of the financial market.

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An important factor limiting the development of the bond market was also the specific monetary policy, within which the central bank was shaping the entire term structure of credit and deposit rates in commercial banks. This situation meant that — since bank bonds and deposits (loans) were partly substitutive investment instruments — official interest rates served as base rates for the Chinese economy. The maturity structure of the official interest rates set by the central bank served as the opportunity cost of maintaining bonds, which in turn affected the structure of market interest rates and a bond excess return. Thus, as emphasized by Fan et al., the monetary policy of the country determined the dynamics of return in the Chinese bond market, and this effect could not be mitigated by arbitrage activities.<sup>1</sup> Only deregulation of interest rates, sequentially carried out in recent years, which has contributed to a decrease in the impact of monetary policy on market price mechanisms, stimulates the development of the bond market. Thus, a well-functioning primary and secondary market, allowing the determination of risk-free asset rates, is an integral part of interest rate liberalization.<sup>2</sup>

Also compared to the stock market, which previously started to grow dynamically, it can be seen that the Chinese bond market has started to play an important role in the financial sector relatively recently.

The modern Chinese bond market emerged when the first Treasury bonds were issued in 1981. In the period 1981–1990, the issue and trading of Treasury bonds looked analogous to savings products, there was no formal market for trading. This period is called the physical bond counter market period, as the instrument was traded in the form of a physical transfer between investors in bank branches and regional trading centres.<sup>3</sup> With the establishment of the Shanghai Stock Exchange in 1990, Treasury bonds could have been listed and traded on it, in a similar way as shares. In 1995, the government announced that the Shanghai and Shenzhen stock exchanges were the only places authorized to issue and trade bonds. This step improved the liquidity and functioning of the secondary bond market. However, the bond market in the 1990s was rather small. For example, in 1996 it covered 15 bonds (11 Treasury and 4 corporate bonds — issued by the state-owned enterprises: SOE). It turned out that the stock exchange market was mainly used to develop the share market. The secondary bond market (in which mainly commercial banks and individual investors operated) contributed to speculative growth in the share market. In particular, repo transactions using bonds allowed investors

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1 L. Fan, S. Tian, C. Zhang [2012], *Why are excess return on China's Treasury bonds so predictable? The role of the monetary system*, "Journal of Banking & Finance", vol. 36.

2 M. Amstad, Z. He [2019], *Chinese bond market and interbank market*, "NBER Working Paper Series", vol. 25549.

3 G. Sun [2015], *Reforms in China's monetary policy: a frontbencher's perspective*, Palgrave Macmillan, USA.

to use them as collateral to obtain debt financing from banks, which in turn was directed to the share market.<sup>4</sup>

A further impulse for the development of the bond market was the creation of the interbank market in 1997. As a consequence of the policy of the central bank, which ordered all banks to withdraw from the overheated stock exchange market and transfer operations to the newly created interbank market, 23 bonds (including Treasury, corporate and financial institutions' bonds) were traded on this market in 1997 alone. Over the next twenty years, the wholesale interbank market, in contrast to the more retail stock exchange market, became the dominant segment of bond trading, increasingly accessible to a wide range of entities.

In the next years, new instruments appeared in the bond market. In 2003, the central bank began issuing central bank bills, which were traded in the interbank market to control the money supply, which was the intermediate objective of monetary policy at the time, and to implement open market operations. Shortly thereafter other debt instruments: commercial papers, asset-backed bonds, medium-term commercial notes, and corporate bonds, appeared.

At the end of 2009, a total of 1.710 various bonds were traded on the stock exchange and interbank markets, which amounted to RMB 16.51 trillion, which was 48.4% of the country's GDP at the time.<sup>5</sup>

Especially many initiatives regarding the development of financial markets started in 2013. The following activities should be mentioned here:

- merger of the stock exchanges in Shanghai and Hong Kong, which allowed investors operating on both exchanges to trade instruments on a reciprocal basis (2014);
- RMB devaluation and more market-based fixing of exchange rates (2015);
- inclusion of RMB in the SDR basket, which strengthened the internationalization process of the RMB and became a signal to foreign investors that the currency is treated as „freely usable” and the financial system is becoming more market-based (2016); the internationalization of the RMB, which means that RMB may emerge over time as a new global reserve currency, may increase the demand of foreign central banks for Chinese financial assets in the future.

The gradual opening up to foreign investors has become a key determinant of the development of the bond market. Numerous initiatives and regulatory activities in this area include:

- amounts- and limits-free access;
- currency convertibility;

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4 M. Amstad, Z. He [2019], *op. cit.*

5 L. Fan, S. Tian, C. Zhang [2012], *op. cit.*

- flexibility in concluding hedging transactions; the opening of foreign exchange derivatives markets to foreign investors (2017) allowed them to enter into hedging transactions in a more liquid onshore market;
- creation of Bond Connect (2017) — a mutual access platform that enables mutual trading of bonds by connecting infrastructures in China and Hong Kong, which allowed foreign investors to participate in the bond market without having to maintain onshore accounts.

Until recently, the onshore Chinese debt securities market had severe restrictions regarding access for foreign investors. In 2002, special programs for the so-called qualified foreign institutional investors (QFII) were started, under which only a limited number of foreign investors could purchase specific instruments within the granted limits. Besides, access to the interbank market was limited to strategic investors only, while other QFII could only participate in trading on the stock exchange. In the government bond market, investors could, until recently, buy mainly government bonds denominated in USD and bonds issued in RMB in the offshore market (the so-called „dim sum” bonds).

A key change in the foreign investors’ access to the market took place in 2016. At that time the central bank announced the complete elimination of quota in investing in the interbank bond market to encourage foreign investors to make long-term investments in the onshore bond market. Also in 2016, the interbank market was made accessible to all qualified investors. Currently, most foreign institutional investors have unrestricted access to the bond market.<sup>6</sup>

The inclusion of Chinese government bonds in some bond indices by Citigroup in 2017 was an expression of recognition of dynamic market development and increased interest from global markets.<sup>7</sup> In April 2019, in turn, Treasury bonds and bonds issued by the so-called policy banks were included in the global bond index (Bloomberg Barclays Global Aggregate Index). The process of including Chinese bonds in the global index, as a result of which they are to constitute 6.1% of the index, indicates the recognition of Chinese bonds as an element of international financial markets.

As a consequence of taken action, currently foreign investors hold 2% of the Chinese bond market.<sup>8</sup> It should be emphasized, however, that the share of debt held by foreign investors is one of the smallest among emerging markets.

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6 A. Trivedi [2016], *Foreign money could be slow to enter China’s bond markets*, “Wall Street Journal”, February.

7 H. Lockett [2017], *Citigroup first to fully include onshore Chinese debt in bond benchmarks*, “Financial Times”, March.

8 China Central Depository & Clearing [2018], <https://www.ceicdata.com/en/china/shch-bond-depository/bond-depository-shch-commercial-paper>, Shanghai Clearing House (accessed: 30.04.2018).

## 2.2. Bond market segments, trading venues, and categories of investors

The majority of bonds are traded in the onshore market. Due to historical conditions, there is a segmentation of the primary market into two separate markets. This segmentation can potentially disrupt the operation of the „one price rule” in the market, disrupt price mechanisms and liquidity of government bonds.<sup>9</sup>

The bonds introduced into circulation by auction are traded in two markets: the centralized exchange-traded market and the OTC (Over-the-Counter) interbank market. The coexistence of both markets, which has developed in a relatively independent way, is a unique feature, typical of the Chinese bond market.

The current interbank bond market resembles the markets of developed countries. The stock market is part of the Shanghai and Shenzhen stock exchanges. Issue prices are determined by factors such as interest rates, credit status, liquidity, supply and demand in the market.

Trading in the stock exchange market is regulated by the China Securities Regulatory Commission, while in the interbank market it is regulated by the central bank. After opening the bond market for foreign investors, the turnover in the interbank market accounts for 90% of transactions, therefore it is the dominant, deeper market for bond trading.

Many bond market instruments are traded simultaneously in both markets (e.g. government bonds, corporate bonds) and are subject to multifaceted, often overlapping, regulations. Concerning corporate bonds, this also leads to the phenomenon of dual-listed enterprise bonds. Amstad notes that there is regulation competition between various government agencies, which results from market segmentation. At the same time, he emphasizes that despite recent attempts to integrate both markets, further co-existence of both markets should be expected in the near future.<sup>10</sup>

The main participants of the secondary market are commercial banks, insurance institutions, mutual funds, various categories of QFII, non-financial institutions, individual investors and other entities.

The largest investors in the bond market are commercial banks, which held over 60% of the market value of issued bonds in 2009. This reflects the still dominant role of banks in the Chinese financial system. Commercial banks get involved in bond trading for two reasons: to reduce credit risk arising from the asset portfolio and to manage liquidity. What's more, there are restrictions for Chinese banks to invest in share markets, so most of their assets are invested in bonds. It should be remembered that bank deposits are the main channel for investing savings, so

9 M. Amstad, Z. He [2019], *op. cit.*

10 *Ibidem.*

capital-rich banks are interested in reinvesting funds. The dominance of commercial banks as investors in the bond market is one of the reasons why the secondary market's liquidity is insufficient — banks hold bonds in their portfolio until the maturity of the instrument.

Foreign banks are starting to play an increasingly active role in the bond market. The value of bonds they held increased from RMB 109.39 billion in 2005 to RMB 1.08 trillion in 2009.<sup>11</sup>

The second-largest category of investors in the bond market were non-bank financial institutions (insurance companies, mutual funds, investment companies), holding over 15% of the total market value of bonds in 2009. Insurance companies invested over 60% of their assets in bond markets and other fixed-income products. Enterprises Annuity Plans are another group of investors which under additional private retirement plans invest up to 140% of their total assets in bonds using leverage.<sup>12</sup> Mutual funds, in turn, are the most active players in the bond market (participation in trading in the instrument), despite their low share in the possession of this instrument. They participate in the bond market and trade the instrument for profit, often using leverage, taking advantage of the inefficiencies in this market.

Most of the non-banking financial institutions participate in both the stock exchange market and the interbank market. They arbitrage thanks to differences in instrument prices (especially of Treasury bonds) in both markets. Therefore, it can be concluded that their activities contribute to the integration of both places of trading in these instruments.

The Central Bank of China participates in the bond market for many purposes; in addition to issuing its securities, it trades in these instruments to implement the monetary policy.

Therefore, institutional investors dominate among investors on the Chinese bond market. Individual investors constitute a small percentage of participants in this market.

There is no uniform segmentation of the Chinese bond market in the literature. It seems that this is due to its specificity, as issuers are clearly dominated by the government and entities associated with the government and controlled by the government (including state-owned enterprises — SOE, and most commercial banks).

For example, Amstad et al. distinguish three broad bond categories: government bonds, financial bonds issued by the financial sector, and corporate bonds issued by the non-financial sector. In the government bond segment, they distinguish Treasury bonds, municipal bonds, policy banks bonds and other bonds (e.g. central bank bonds).<sup>13</sup> Therefore, the basis for this classification is the emphasis on identifying issuers from the point of view of ownership (public versus private). Consequently, it

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11 L. Fan [2012], *op. cit.*

12 *Onshore Chinese bonds enter the global bond universe* [2017], "AON Hewitt", March.

13 M. Amstad, Z. He [2019], *op. cit.*

may be surprising to classify bonds issued by state-owned policy banks as government bonds.

According to another, very widespread classification, corporate and financial bonds are recognized jointly and are called credit bonds.

Hu et al.,<sup>14</sup> in turn, distinguish 4 categories of bonds: government bonds, central bank bonds, corporate credit bonds, and financial bonds. They include two forms of government bonds: Treasury bonds issued by the Ministry of Finance and local government bonds issued by local government authorities. Issuers of financial bonds include: policy banks, commercial banks, and other financial institutions.

Below is the classification of the bond market into 4 sectors in the onshore market. This is a fairly widely used classification adopted by international institutions and entities performing market analyses.

#### 1) Government bonds.

China began issuing government bonds in 1981, three years after the start of economic reforms in 1978. Initially, most of them were bought by the public sector as a long-term, non-tradable investment. Over time, they have become a key instrument in implementing the central bank's monetary policy.

#### 2) Local government and municipal bonds.

These are bonds issued by local self-government authorities. Their issue began in 2009, and on a large scale in 2011 to refinance the debt issued for fiscal stimulation in the aftermath of the global financial crisis. Their emissions gradually increased over the next five years until 2015, when there was a real explosion of issues.

#### 3) Corporate bonds.

This segment consists of non-financial sector bonds. This market segment was developing unevenly. It grew slowly in the 1980s when bonds were issued only by a limited number of government-owned enterprises. At the beginning of the 1990s, enterprises belonging to local governments were also allowed to issue bonds. After a series of bankruptcies of issuers, leading to financial instability, only government-owned and private enterprises with stable financial status were allowed to issue bonds. However, only 4% of corporate bonds are issued by private sector entities.

This bond sector is currently developing very dynamically. It grew by over 300% in the last 5 years. The issuers are entities wishing to obtain financing outside of a traditional bank loan system. A risk factor for this sector is again the scale of bankruptcy and insolvency of issuers.

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14 G. Hu, J. Pan, J. Wang [2018], *Chinese capital market: an empirical overview*, "NBER Working Paper Series", vol. 24346.

Short-term commercial papers with a maturity of up to 1 year are also issued in the interbank money market. They are mainly issued by large SOEs and significant private sector enterprises.

#### 4) Financial Bonds.

These bonds are issued by Chinese policy banks (China Development Bank, China Import and Export Bank and China Agriculture Bank) established in 1994 as a kind of financial innovation, to find financing sources for government investments and development projects in the economy and trade. Since they are banks supported by the central government, these bonds are risk-free. The average maturity of these bonds is 8.1 years. The two largest owners of this instrument are commercial banks and mutual funds. Over 55% of the pool of bonds is issued by CDB. Thanks to the depth and size of this market they have the status of liquid, free of risk instrument, equally attractive to investors as government bonds.

Other issuing entities are commercial banks, insurance companies, rural credit cooperatives, and post offices. The issue of such bonds, however, requires the approval of the Central Bank (People's Bank of China) and the State Council.

Due to a large role of the state in these institutions (ownership, government guarantees), they are considered an instrument representing lower risk level than corporate bonds.

Another money market instrument is also worth mentioning, namely the certificate of deposit, the issue of which began in 2013 and has been growing rapidly, mainly due to its high credit quality. The issuers of NCD (negotiable certificate of deposit) are smaller commercial banks and municipal credit unions, while the buyers are large state-owned banks, money market funds, and mutual funds.

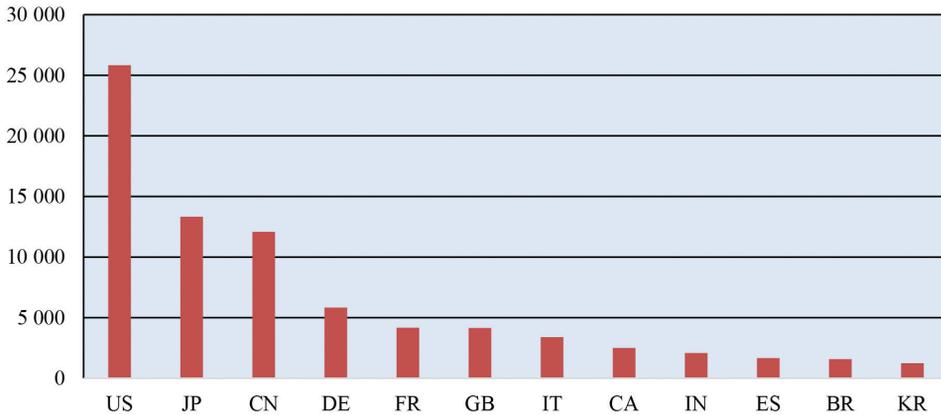
As Amstad et al. point out, financial bonds, if we don't include policy banks' bonds, constitute a small percentage of the bond market (about 7% at the end of 2018).

The role of bills and bonds issued by the central bank has been decreasing in recent years. This instrument played an important role in strengthening the effectiveness of monetary policy and dealing with fluctuations in the level of foreign exchange reserves in the period 2002–2012. The largest boom in the market took place in the period 2004–2010.

### **2.3. The characteristics of today's bond market**

The historically dominant role of the Chinese government in credit allocation limited the size of the bond market relative to the size of the economy. This factor is still visible today — China accounts for 15% of global GDP, but the share of issued bonds in global issues is much smaller.

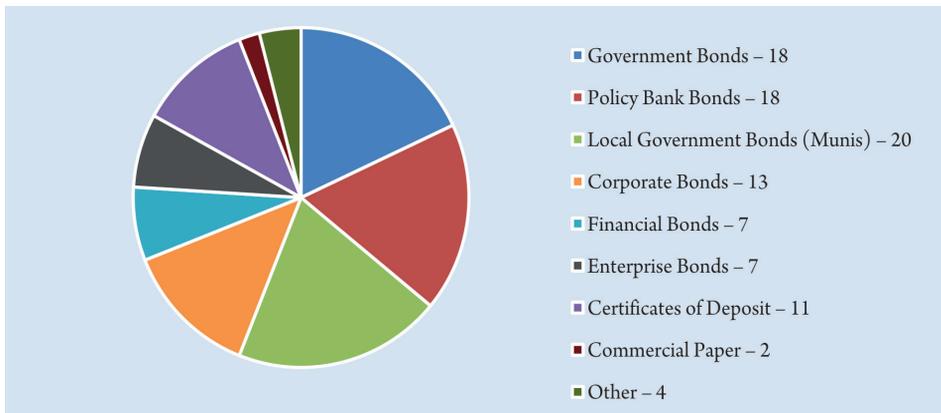
Nevertheless, since 2016, the Chinese bond market has been the third-largest in the world — after the US and Japan (figure 2.1.) and is growing rapidly (the total bond issue in 2016 increased by 29% compared to the preceding year). Particularly visible dynamics of market growth was recorded in the last decade. The capitalization of the bond market to GDP increased from 35% in 2008 to over 90% in 2017. For comparison, in the same period in the USA, it was stable at a little over 200%.<sup>15</sup>



**Figure 2.1.** Bond markets of the largest issuers in the world (bln USD)

**Source:** D. Furey, B. Zhang, J. Binny [2018], *Opening of China's Bond Market. What Global Investors Need to Know*, "State Street Global Advisors", June

The share of Treasury and financial bonds is dominant in the structure of the bond market (if the policy banks' bonds are included), which is illustrated by figure 2.2.



**Figure 2.2.** The structure of bond market (%)

**Source:** own study based on: D. Furey, B. Zhang, J. Binny [2018], *Opening of China's Bond Market. What Global Investors Need to Know*, "State Street Global Advisors", June

<sup>15</sup> M. Amstad, Z. He [2019], *op. cit.*

The issuing entities are dominated by the government (18%), policy banks (18%), local and municipal authorities (20%). Corporate bonds rank fourth, with public sector entities dominating as issuers.

An interesting phenomenon regarding the Chinese bond market is, therefore, the clear dominance of the public sector — entities associated with the government held more than half of issued bonds. Research conducted by Livingstone et al. shows that in the years 2010–2017 the annual number of non-governmental public bonds issues grew 10 times, and the annual amount issued increased by almost 600% in that period.<sup>16</sup>

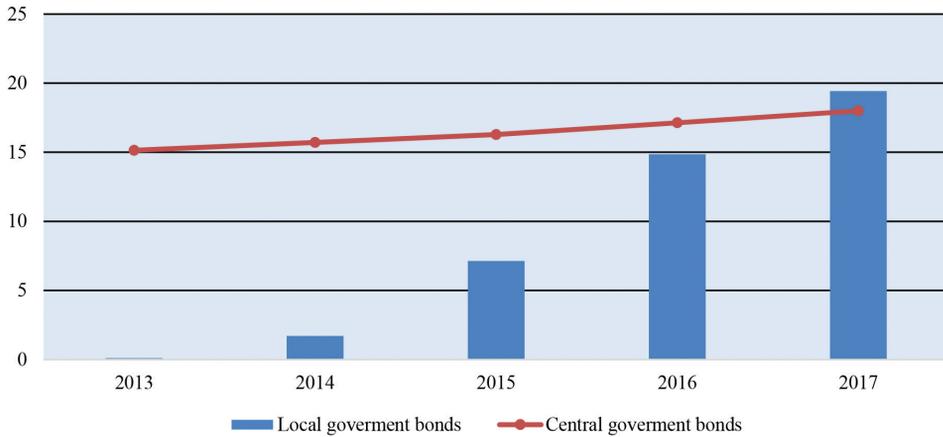
In the group of bonds issued by the public sector, the role of local government bonds and bonds issued by SOEs was growing particularly dynamically over the past two decades (figure 2.3.). The issue of local government bonds increased very intensively in the years 2014–2018 when the so-called debt-swap program was realized and also as a result of regulatory changes that were carried out at the time. It continues to rise as a result of new issues after the end of the program. The program helped local governments extend debt maturity, reduce interest rate costs, and standardize debt instruments.<sup>17</sup> Before 2014, local government bonds were an irrelevant financing instrument for local authorities due to restrictions, even though local government played a large role in regional development and social services. The scale of growth of the local government bond market (one of the largest in the world) is illustrated by the fact that these bonds accounted for 20% of GDP in 2017, even exceeding the size of the Treasury bond market. The local government bond market is underdeveloped, despite its huge size. Spreads suggest a small variation in credit risk, mainly because these bonds are seen to be backed by the central government. It should be emphasized that many local governments, especially in less developed regions, have problems with structural deficits — permanently higher expenses than income, despite financing in the bond market. Other factors hampering market development are its low liquidity and poor credit discipline.<sup>18</sup> Currently, as much as 90% of local government debt is in the form of debt securities, which indicates that the development of the bond market is important for the Chinese government and that it supports the replacement of traditional bank credit with it.

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16 M. Livingston, W. Poon, L. Zhou [2018], *Are Chinese credit ratings relevant? A study of the Chinese bond market and credit rating industry*, “Journal of Banking and Finance”, vol. 87.

17 R. Lam, J. Wang [2018], *China’s local government bond market*, “IMF Working Paper”, vol. 18 (219).

18 R. Lam, J. Wang [2018], *op. cit.*



**Figure 2.3.** Comparison of the scale of Treasury bond and local government bond markets (% of GDP)

**Source:** R. Lam, J. Wang [2018], *China's local government bond market*, "IMF Working Paper", vol. 18 (219)

The table 2.1., in line with the discussed market segmentation scheme, additionally distinguishes bonds from the point of view of ownership (private versus public entities) and the type of market in which they are traded.

**Table 2.1.** Key features of the greatest segments of Chinese bond market

#### Rates market

Type	Sector	Key Issuers	% of Total Market	Maturities	Amount Outstanding (CNY Billions)	Market
Government Bonds	Sovereign	Ministry of Finance	18	3m–50yr	13.434	CIBM & Exchange
Policy Bank Bonds	Quasi-Sovereign	China Development Bank Agricultural Development Bank of China Export-Import Bank of China	18	6m–50yr	13.349	CIBM & Exchange
Local Government Bonds (Munis)	Provincial and Local Governments	Provinces and Municipalities	20	1yr–10yr	14.745	CIBM & Exchange

**Table 2.1** (cont.)**Credit market**

Corporate Bonds	Corporates	Domestic Nonfinancial Corporates	13	3yr–30yr	9.948	CIBM & Exchange
Financial Bonds	Financials	Domestic deposit taking institutions, securities and insurance companies	7	3yr–10yr	4.999	CIBM & Exchange
Enterprise Bonds	Corporates	Unlisted corporate and private placements (mostly state-owned)	7	3yr–30yr	5.076	CIBM & Exchange

**Money market**

Certificates of Deposit	Financials	Domestic Banks	11	3 m, 6 m, 9 m, 1 yr	7.993	CIBM
Commercial Paper	Corporates	Domestic Nonfinancial Corporates	2	< 1 yr	1.516	CIBM

**Other**

	Other	ABS, Converts, Other	5	Various	3.601	
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**Source:** D. Furey, B. Zhang, J. Binny [2018], *Opening of China's Bond Market. What Global Investors Need to Know*, "State Street Global Advisors", June

When analysing the bond market, attention should be paid to the following issues:

- in the long term, there is a tendency to shorten the maturity of the instrument; the share of bonds with maturities over 5 years decreased from 59.8% in 2007 to 12.8% in 2018;
- government and financial bonds achieve the highest turnover, therefore their liquidity is the highest; the lowest turnover is observed in the case of corporate bonds;
- on the demand side, the dominance of commercial banks is visible;
- the participation of foreign entities is still modest; treasury bonds dominate in the possession of foreign investors, followed by policy banks' bonds.

As the increase in bond issue means an increase in debt in the national economy, the question about its sustainability arises. It should be noted that the increase

in total debt in the Chinese economy is mainly a consequence of the increase in private debt. The major increase in the total debt-to-GDP ratio — from 164% of GDP in 2007 to 266% of GDP in 2017 (which is one of the highest levels in emerging markets) is not a cause for concern if the following mitigating factors are taken into account:

- debt growth is largely a reallocation of internal capital and savings from consumption towards long-term investments; the savings rate in China is one of the highest in the world, reaching 50% of GDP, which makes the economy less dependent on the inflow of foreign capital;
- China is a net creditor, compared to the rest of the world; the country's investment position is positive, it is at the level of 14.7% of GDP and will most likely remain at a positive level considering the surpluses achieved in the country's current account;
- China has financial security in the form of huge foreign reserves, amounting to around USD 3 trillion in 2018.<sup>19</sup>

Moreover, most private debt is held by government-related enterprises. Most of the debt is domestic, with foreign debt accounting for only 13% of GDP (2017).

## 2.4. Treasury debt securities market

Because an effective and well-functioning Treasury bond market is crucial for the functioning of financial markets, development prospects for this sector of the bond market are particularly important.

As indicated above, government bonds accounted for 18% of the Chinese bond market in 2018. Compared to the US, where the share of Treasury bonds in the total bond market is 46%, it is perceived as a modest share.

The liquidity of government bonds, despite being one of the highest among Chinese bonds, is much lower than in the case of the US. Lack of adequate liquidity of Treasury bonds is often recognized as a reason for low efficiency in translating into the price system, which in turn distorts the effectiveness of the monetary policy.<sup>20</sup> The term structure of Treasury bonds is dominated by long-term and medium-term bonds.

Despite the low profitability of Chinese government bonds, it is higher than in the case of developed countries, and the real rate of return is positive. According to forecasts, higher — compared to developed countries — profitability should be maintained in the future if the higher growth rate in China, compared to developed

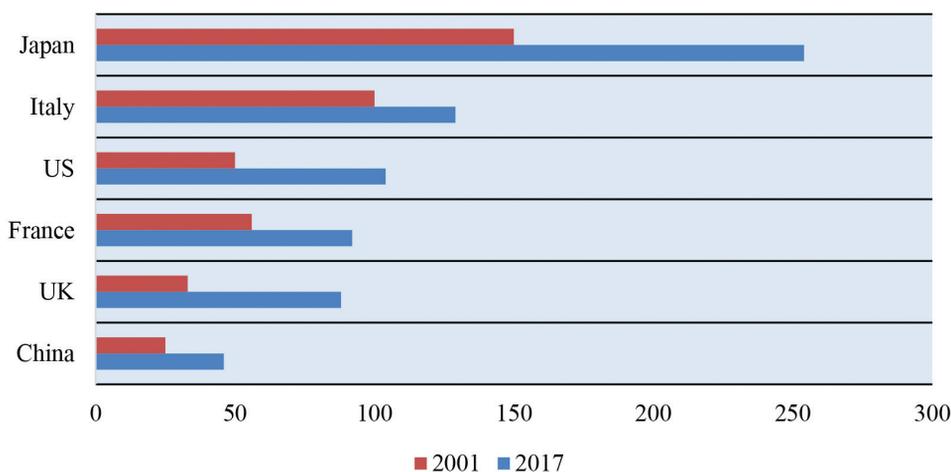
<sup>19</sup> D. Furey, B. Zhang, J. Binny [2018], *op. cit.*

<sup>20</sup> M. Amstad, Z. He [2019], *op. cit.*

countries, is maintained. However, the difference in profitability may disappear if the exchange rate risk of investing in RMB will be subject to currency hedging, as the relatively higher short-term interest rates in China create a hedge cost for European or US investors.<sup>21</sup>

In recent years, China has recorded an increase in government debt in relation to GDP. However, this indicator is currently below 50%, which is half of the corresponding indicator for developed countries (figure 2.4.).

Thus, even though government debt in relation to GDP is growing rapidly, it remains at a lower level than in developed countries. Therefore, there is scope to increase the scale of Treasury bond issues. Along with the process of internationalization of RMB, this may mean for the global economy the creation of a new category of safe assets in the future. From the point of view of the stability of the international financial system, this would mean a benefit in the form of removing the burden from US Treasury bonds as the main global safe assets, which, according to the currently posed hypothesis of a mismatch between the demand and supply of safe assets (safe asset shortage), would lead (by increasing the supply of safe assets) to potential reduction in the scale of mismatch.



**Figure 2.4.** Government debt in relation to GDP in China and selected countries (%)  
**Source:** D. Furey, B. Zhang, J. Binny [2018], *Opening of China's Bond Market. What Global Investors Need to Know*, "State Street Global Advisors", June

The issue of government bonds in China is currently associated with certain sources of risk for investors, despite the country's high economic growth rate. The following should be mentioned here:

21 *Onshore Chinese bonds enter the global bond universe* [2017], *op. cit.*

- credit risk — however, the US Treasury bond issue, which is subject to higher risk due to exchange rate risk, remains at a low level;
- political risk — the possibility of using capital outflow control instruments (e.g. to stabilize currency reserves and the exchange rate) causes foreign investors to fear that restrictions on profit repatriation will be implemented;
- exchange rate risk — which is mainly associated with concerns about the re-valuation of RMB following the expected change in the exchange rate regime.

## **2.5. Prospects for an increase in the role of the Chinese bond market in the international financial system**

Financial globalization and the growing importance of Chinese financial markets in global portfolios is indisputably becoming the leading trend in international finance. Interest in them is largely a result of attractive profitability and low correlation with other instruments. It is emphasized that the Chinese bond market is more strongly influenced by internal factors (monetary and fiscal policy, regulatory changes) than by external factors. External factors, such as geopolitical risk, global interest rates, the effects of contagion from other emerging markets, play a less important role, as evidenced by low correlations with global bonds.

The factors that may stimulate further growth of the role of the bond market in China are:

- stable inflation in the country, creating a favourable environment for trading in this type of financial instrument;
- the political will to continue the policy of removing restrictions for foreign investors accessing the market;
- expected RMB appreciation resulting from the implementation of the policy of flexibility in the exchange rate and increasing interest in the market from foreign investors, which will translate into an increase in the rate of return on bonds.

The integration of two trading planes, currently subject to strong fragmentation, is of key importance for further deepening of the bond market and increasing its efficiency. It could significantly increase market liquidity. Another problem of the market is the functioning of many national rating agencies, differing significantly in terms of rating standards. Also, despite the use of a methodology similar to global rating agencies, the ratings used by Chinese agencies are not consistent with international ones. They are characterized by the use of much looser standards. The empirical research conducted by Livingston et al. proves that the AAA

(AA+) sovereign credit rating assigned by Chinese agencies corresponds to the A (BBB) rating assigned by international rating agencies. This is very important for foreign investors.<sup>22</sup>

It seems that the removal of the above barriers will be conducive to deepening Chinese bond markets, which in turn will be conducive to the development of the financial sector. In the long time horizon, the increase in Chinese assets held by foreign investors should change the structure of capital flows, resulting in a change in net investment income flows and the shape of an international investment position.

## Conclusions

The Chinese bond markets have been developing fast and dynamically for the last decade. Previously, the dominant sector of financial markets was banking sector and, in consequence, the main channel of financing was performed through traditional bank loans. Among the main factors that stimulated the rapid development of bond markets one must mention the process of interest rates deregulation, which was depicted in the previous chapter. In spite of the fact that there are different classifications of Chinese bonds, it is obvious that the biggest share in the market is performed by the public sector entities. These are government bonds, local government and municipal bonds and policy bank bonds (bonds issued by the state owned banks). Due to the low level of public debt, it is envisaged that the sovereign bond market is the one with the biggest potential of growth. The process of removal for the limits and access to the market for foreign investors, which is under way, can create additional source of demand for this instrument. However, there are many challenges ahead of the development of the bond market: better (more transparent) ratings, unification of the trading markets (which can add to higher liquidity), to mention just the most important ones.

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22 M. Livingston, W. Poon, L. Zhou [2018], *op. cit.*

## Chapter 3

# Corporate finance — China’s big four banks

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The purpose of this chapter is to present the Chinese leaders in the world of finance. The chapter presents the origins of the “big four” as well as short case studies on each of the banks it is made up of. The following four Chinese giants are described: the *Industrial and Commercial Bank of China*, *China Construction Bank Corporation*, *Agricultural Bank of China* and *Bank of China*.

The corporate finances of China have been presented on the basis of four examples in order to depict the model of expansion onto the global financial markets adopted by this country. Not only the forming of the “big four” was described, but so were the basic features denoting the corporate governance of the giants on the Chinese financial market. In order to emphasize that all the business systems are managed and controlled in accordance with the highest international standards (at least in light of the available data and reports), the main focus were the strategic pillars of the banks (corporations) in question.

The structure of corporate governance determines the responsibility of various participants of the system for the model of a corporation’s development (shareholders, management, other stakeholders). Yet, what is crucial is that it also specifies the rules and procedures of decision-making and identifies key values. This is what the pillars of the strategy of each presented bank, the *Industrial and Commercial Bank of China*, *China Construction Bank Corporation*, *Agricultural Bank of China* and *Bank of China*, are based on. The main purpose of the strategy of the Chinese “big four” is to identify the direction of development of corporations in order to maintain long-term competitiveness and, therefore, a strong position on the global financial market.

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### 3.1. Origins and determinants of changes in the corporate finance of China

The Chinese banking system was gradually opening up to the world, which resulted in an increase in the role of Chinese banks in the international system. Chinese banks were also more and more active abroad. One of the main stimulating factors was a gradual liberalization of articles regulating banking laws in China. As a result, the Chinese banking system was rebuilt with the assumption that it will quickly and dynamically become part of the system of global economy. This decision was exemplified by abandoning the single-stage, fully centrally-controlled model and adopting an oligopolistic structure based on several key pillars – almost as a consequence of a single decision on a central level (which depicts the specificity of the Chinese model).

It was decided that in the zone of corporate finances the system will be based on the so-called “big four” banks: the *Industrial and Commercial Bank of China* (ICBC), *China Construction Bank Corp* (CCB), *Agricultural Bank of China* (ABC), *Bank of China* (BOC) and a system of smaller entities more or less controlled by the state. The level of privatization in the financial sector as well as the level of internationalization of the system were to be limited. However, it should be emphasized that the Chinese decision to enter the global financial market was conscious. Upon China joining the World Trade Organization (in December, 2001), Chinese banks began to expand into the global market of corporate finances. The changes resulted in a permanent position of the Chinese “big four” banks among the top 10 of the global financial corporations (in all classification types<sup>1</sup>).

It should be mentioned that Chinese companies obtained and are obtaining knowledge, skills, technologies and competences thanks to their international investments in the banking sector and the export expansion. Thus, they have been systematically improving their competitiveness as compared with their American and European rivals – once the only key players on global financial market. Although currently Chinese companies rely on the accumulation of economic capital as a driving force for the expansion, studies show that their governing bodies (as a result also the boards of directors in banks) understand and utilize the potential of intellectual capital (organizational, innovation and institutional) to a greater

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1 Due to their growth dynamics, Chinese companies have become the subject of in-depth studies. For the first time, the Financial Times intends to present the FT1000 – a special report on the rapidly developing companies in the Asia-Pacific region, to be published in April, 2020. The innovative and rapidly developing companies are the driving force of the economy of Asia-Pacific in the 21<sup>st</sup> century. They generate employment and maintain the competitiveness of the region, also in the sector of corporate finances. Financial Times 1000 [2020], *FT1000 Asia-Pacific High Growth Companies 2020*, <https://www.statista.com/page/ft1000-asia-pacific> (accessed: 14.02.2020).

degree.<sup>2</sup> It appears that Chinese governing bodies realize that understanding the essence of system competitiveness,<sup>3</sup> or the new model of competitiveness, will determine whether Chinese companies (including financial corporations — banks and insurance companies) will effectively compete on the international markets in the 21<sup>st</sup> century in the long-term.

Currently, China's expansion focuses on the consolidation of economic capital. Following the imperatives of Xi Jinping, China promotes mergers of the country's giants. The State-owned Assets Supervision and Administration Commission distinguishes key corporations, those working in the most important sectors of Chinese economy and enterprises constituting the pillars of its development. Those two types of mega-entities constitute 50% of all state companies. They were the first to flood the postal, telecommunications and transport services, the mining industry as well as energy production and supply. The enterprises that constitute the pillars of economic development are equated with state entities in the engineering, automotive, electronics, building and chemical industries, metallurgy as well as the research and development sector.<sup>4</sup>

The directives regarding the transformations in the sector of state enterprises were published in September, 2015. As a result, a wave of mergers and acquisitions aimed at reinforcing the international competitiveness of Chinese companies swept through China. Yet, approximately 44% of assets in Chinese industry remains under the control of state enterprises. 70% of large Chinese corporations (including those listed in the *Fortune Global 500* ranking<sup>5</sup>) are state corporations. In the 2019 *Fortune Global 500* ranking the number of Chinese and American corporations was almost equal: it included 121 companies from the United States, 119 from China and 10 from Taiwan.<sup>6</sup> In 2018, the 500 of the greatest companies in the world included 126 American and 111 Chinese; in 2017 — 132 and 109,

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2 Obviously, the treatment of human capital in Chinese banks is slightly more objectified than in their foreign competitors, but it is worth noting that the Chinese giants source their human capital from western financial institutions and quickly take advantage of its potential. The boards of directors of Chinese banks are undoubtedly knowledgeable about the theory of the role of intellectual capital in contemporary development. M. Rosińska-Bukowska [2019], *Human Capital and Intellectual Capital in Modern International Business — Based on Studies of the Strategies of Transnational Corporations*, "Comparative Economic Research", vol. 22 (2).

3 M. Rosińska-Bukowska [2017], *Strategic changes in transnational corporation as an adjustment to the challenges of the 21<sup>st</sup> Century*, "Entrepreneurial Business and Economics Review", vol. 5 (2); M. Rosińska-Bukowska [2020], *Global business networks. Concept, structure, competitiveness*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź (<http://dx.doi.org/10.18778/8220-046-1>).

4 E. Cieślak [2020], *Konkurencyjność Chin dzięki państwowym gigantom*, <https://www.obserwatorfinansowy.pl/tematyka/makroekonomia/trendy-gospodarcze/konkurencyjnosc-chin-dzieki-panstwowym-gigantom/> (accessed:12.02.2020).

5 *The Fortune Global 500* [1995–2019], <https://fortune.com/global500/> (accessed: 23.03.2020).

6 P. Mourdoukoutas [2019], *World's 500 Largest Corporations In 2019: China Matches America*, <https://www.forbes.com/sites/panosmourdoukoutas/2019/07/23/worlds-500-largest-corporations-in-2019-china-matches-america/> (accessed: 09.10.2019).

respectively. This indicates a visible growth tendency in the number of major Chinese players on the global market.<sup>7</sup>

The emerging behemoths are not necessarily more efficient, but are more visible and serve to confirm the economic power of China — in accordance with the strategy of the state. The purpose is to utilize the excess production capacity and facilitate the management of large projects, for instance those that are part of the New Silk Road.<sup>8</sup> Obviously, giant companies record higher incomes and climb the international rankings, thus becoming more and more recognizable global brands. On the other hand, they often have management problems (e.g. they are likely to be debt-laden).<sup>9</sup> Critics of this perspective on Chinese power claim that the main purpose of many of these companies is to expand their business, take over as much of the market as possible and, as a result, maximize revenues. As many as 82 out of 119 Chinese companies in the *Fortune Global 500* ranking are state-owned enterprises (SOEs), directly controlled by the authorities.<sup>10</sup> The management of enterprises boasts about the results to the “top”, obtaining subsequent privileges from both central and local government as well as party structures. Therefore, the aspiration for increasing income does not necessarily go hand in hand with increasing the cost-effectiveness of various ventures. A similar model applied during the phase of managerial capitalism in the 1960s, when managers profited from both the current income and building the current market value of their companies.

The assessment of the real consequences of Chinese instructions for enterprises is, obviously, only a matter of time. The *Fortune Global 500* ranking is based on the criterion of income size, therefore it promotes quantitative approach (thus also the somewhat outdated Chinese expansion model), not focusing as much on the quality of the leaders' actions. One thing is certain — merging companies results in the development of behemoth corporations that have and will have a lot of power on the global markets (it applies to corporations all over the world, including Chinese, American and European ones). The close cooperation between the zones of international business and finances is a factor that facilitates international expansion. In this case, growing Chinese enterprises expansively entering international markets are a transmission channel for impulses in the world of Chinese

7 *Chiny o krok od USA w rankingu największych firm świata* [2019], <https://www.bankier.pl/wiadomosc/Chiny-o-krok-od-USA-w-rankingu-najwiekszych-firm-swiata-7711179.html> (accessed: 22.07.2019).

8 E. Cieślak [2020], *op. cit.*

9 The emergence of behemoth companies may lead to major issues resulting from their growing concentration on the market, for instance: corruption phenomena, rent seeking behaviours, decrease in product quality or efficiency. The total amount of bonds not bought out by private Chinese corporations within the time limit has reached almost 99.4 bln RMB, that is approx. 14.1 bln USD in the first eleven months of 2019. *Rosną długi chińskich korporacji. To problem całego świata* [2019], <https://www.money.pl/gospodarka/rosna-dlugi-chińskich-korporacji-to-problem-calego-swiata-6459420625614977a.html> (accessed: 12.02.2020).

10 *Chiny o krok od USA w rankingu największych firm świata* [2019], *op. cit.*

corporate finances — they support the dynamic development of Chinese banks. In conclusion, the concentration and expansion of Chinese companies is of great significance, since it influences the sector of corporate finances to a high degree — the progressive internationalization of other, non-financial sectors of Chinese economy naturally results in the development of the financial sector. Additionally, the population of China in the sense of bank customers is also of no small importance, as is the presence of Chinese citizens outside of China. That, combined with the Chinese trade expansion into global markets, systematically dynamizes the increase in the number of customers of Chinese banks.

This chapter focuses on the sector of corporate finances as seen from the angle of the most powerful players on the Chinese market of commercial banking. In order to assess their positions thoroughly, not only the *Fortune Global 500* ranking (based on income) was referred to, but so was the more complex *Forbes Global 2000* which comprehensively examines the condition of the most powerful enterprises in the world. The *Forbes Global 2000* ranking is based on research encompassing: market value, profits, revenues as well as assets. In light of this data the growing strength of Chinese financial corporations as opposed to their business competitors appears indisputable (table 3.1.).

**Table 3.1.** The Chinese “big four” banks compared to their competition

Rank	Company	Revenues (bln USD)	Profits (bln USD)	Assets (bln USD)	Market Value (bln USD)	Employees (Thousand people)
1	Industrial and Commercial Bank of China	176	45	4035	305	439
2	JP Morgan Chase	133	33	2737	369	
3	China Construction Bank Corporation	150	39	3382	225	340
4	Agricultural Bank of China	138	31	3293	197	464
5	Bank of America	112	29	2377	287	
7	Ping An Insurance Group	152	16	1038	220	
8	Bank of China	127	28	3098	143	306
10	Wells Fargo	102	23	1888	215	
21	HSCB Holdings	64	14	2558	175	

**Source:** own elaboration based on: *Top100 of the Forbes Global 2000* [2019], <https://www.gfmag.com/global-data/economic-data/largest-companies> (accessed: 30.04.2019); Financial Times [2020], <https://markets.ft.com/data/equities/tearsheet> (accessed: 13.02.2020)

In the *Forbes Global 2000* ranking, the four Chinese giants, the *Industrial and Commercial Bank of China* (ICBC), *China Construction Bank Corporation* (CCB), *Agricultural Bank of China* (ABC), *Bank of China* (BOC), are among the top most powerful financial corporations in the world. In the 2019 *Forbes Global 2000*, ICBC is in the lead with assets of 4034.5 bln USD; CCB is in third place — with assets of 3382.4 bln USD (it should be mentioned that it would have been in second place, had banks been assessed solely on assets); ABC is in fourth place with assets of 3293.1 bln USD, and BOC with assets of 3097.6 bln USD is in eighth place. All “big four” Chinese banks have been in the top 10 for a decade — with stable profits (between 45.2 and 27.5 bln USD in 2019), market value (between 305 and 143 bln USD) and sales revenues (from 126 to 176 bln USD)<sup>11</sup> — which confirms the strength of their position on the global market of corporate finances.

Their strongest competitor is the American JP Morgan Chase (second place in the 2019 ranking) with assets of 2737.2 bln USD, profits — 32.7 bln USD, market value — 368.5 bln USD, revenues — 132.9 bln USD. The first European rival (financial corporation) is the British HSCB Holdings (21st place in the 2019 ranking), with assets of 2558.1 bln USD, profits — 13.7 bln USD, market value — 175.5 bln USD, revenues — 64.3 bln USD.<sup>12</sup> It is evident from this juxtaposition that Chinese financial corporations (the four above-mentioned banks and one entity on the insurance market — the Ping An Insurance Group in 7th place of the 2019 ranking) have permanently entered the circle of leaders of global corporate finances and their position appears to be stable for the long term.

### 3.2. Evolution of Chinese banking system — the emergence of China's big four banks

Prior to the reform and China opening up to the world, the country mostly had a centrally-planned economic system. Banks funded social investments and other undertakings approved by central authorities or local governments — banks played merely a secondary role in the vertical method of capital distribution. The financial system was dominated by the *People's Bank of China*.

After the third plenary session of the 11th Central Committee of the Communist Party of China in December 1978, China started a reform to open up its economy. Chinese economy began to develop quickly and its citizens' income was

11 *The Forbes Global 2000/2019* [2000/2019], <https://www.someka.net/excel-template/forbes-global-2000-list> (accessed: 15.09.2019).

12 *The Forbes Global 2000* [2006–2019], *The World's Biggest Public Companies*; <http://www.forbes.com/lists/>.html; <https://www.forbes.com/global2000/list.pdf> (accessed: 10.10.2019).

gradually increasing, which resulted in a higher demand for financial services. The situation was at odds with the investment and financial system, which at the time was dominated by a single bank. A reform was necessary.

In October 1979 Deng Xiaoping uttered a famous sentence: “banks must play the real banking role”, which differed from the initial Chinese reform of the financial system. To meet the diverse demand for financial services, *Agricultural Bank of China*, *Bank of China* and the *People's Construction Bank of China* were established in 1979. *China International Trust and Investment Corporation* (CITIC) was also established. The *People's Bank of China* played a double role of a central bank and a specialized bank. It was still involved in consumer and commercial loans as well as management of savings. This double role did not enable the desired reaction to the ongoing changes as it did not allow maintaining objectivity, which affected the quality of the created financial regulations. Therefore, the reform itself did not signify a unified and structured financial system able to rival the international competition.

In conclusion, China had a single-stage banking system until the end of the 1970s. The *People's Bank of China* (PBC) played a crucial role therein, combining the functions of a central bank with those of a commercial bank. Aside from its headquarters in Beijing, PBC also had approximately 15 thousand divisions and sub-divisions in the whole country. It also had three branches, not independent credit institutions: *Bank of China* (BOC), responsible for exchanging foreign currency and conducting international transactions, *Agricultural Bank of China* (ABC), financing agriculture and *China Construction Bank* (CCB), financing major planned state investments in infrastructure.<sup>13</sup>

PBC concentrated on conducting monetary policy and overseeing all Chinese financial institutions, therefore fulfilling all real functions of a central bank. However, due to its significant role in stimulating economic development, it did not gain full independence. The three previous specialist banks were transformed into state-owned commercial banks.<sup>14</sup> Despite the reforms undertaken, Chinese banks were dominated by the state for many years still, and varied greatly from those in countries with market economy. Their organizational structure resembled that of offices, the range of products on offer was narrow and the percentage of unpaid loans in banking portfolios became a major problem. Since there was no competition on the market for banking services, it was not necessary for banks to fight for customers or implement innovative financial instruments.<sup>15</sup>

The process of privatization of Chinese banks was accelerated due to China's preparations for becoming a member of the World Trade Organization (WTO).

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13 T. Bieliński, E. Gostomski [2018], *Modernizacja i otwieranie się na świat systemu bankowego Chin*, “Studia prawno-ekonomiczne”, T. CVII, pp. 179–196.

14 K. Schröder [2003], *Chinas Bankensystem auf langem Reformweg*, “SWP — Studie”, Berlin, vol. 43.

15 T. Bieliński, E. Gostomski [2018], *op. cit.*

The reinforcement of large state-owned banks began in 1998, when the government increased the capital of four major national banks. 33 bln USD was transferred to them and their own funds doubled. At the same time, the reserve requirements were lowered from 13 to 8% in order to increase liquidity in the banking sector. In 1999, to solve the issue of unpaid loans, a company managing bad assets was formed for each bank in the “big four”. These companies bought out unsustainable loans worth in total 169 bln USD.<sup>16</sup>

It should be mentioned that Chinese banks did not suffer from either the Asian financial crisis in 1997 or the global economic and financial crisis (2008–2009). Since 2007 the net profit of the whole Chinese banking sector has been systematically increasing — from 447 billion RMB at the beginning of this stage to 1973 trillion RMB in 2015. In 2007–2015 the ROA for the whole Chinese sector fluctuated between 0.9 and 1.1%, and the ROE between 14.3 and 19.0% — both were much higher than in developed countries.<sup>17</sup>

It was assessed that Chinese banks had adequate capital injection, no problems with financial liquidity and were among the most profitable in the world (despite the necessity to create deliberate reserves for unpaid loans). In 2015 the profits of each member of the Chinese “big four” have reached/exceeded 30 bln USD (ICBC — 44.8 bln USD; CCB — 37 bln USD; ABC — 29.1 bln USD; BOC — 27.5 bln USD), which put them in the first four positions on the global list of the most profitable banks.<sup>18</sup> There are two most frequently identified factors of profitability of Chinese banks. The first one is margin percentages twice as high as in developed countries (in American banks as well as European ones) — those margins are based on the interest rate policy of PBC made to be favourable to commercial banks. The second one involves the use of human capital as a competitive force with relatively low personnel costs in Chinese banks, to some extent resulting from appropriate regulations on the national level.

In conclusion, currently the following “big four” banks are the most significant players in corporate finances: the *Industrial and Commercial Bank of China* (ICBC), *China Construction Bank Corp* (CCB), *Agricultural Bank of China* (ABC) and *Bank of China* (BOC).<sup>19</sup> Yet, their international position appears to grow proportionally to China opening up more and more to the global market. The ongoing changes confirm China has taken the path of conforming to the international requirements in order to maintain a strong and long-term competitive position — the following subchapters illustrate this phenomenon on the basis of four case studies.

16 M. Schüller [2006], *Ausländische Banken drängen nach China: Sind Marktchancen höher als Risiken?*, “GIGA Focus”, vol. 1, pp. 1–6.

17 T. Bieliński, E. Gostomski [2018], *op. cit.*, pp. 193–194.

18 The Banker [2016], *Top 50 Banks in Top 1000 World Banks by Tier 1 2016*, [https://www.thebankerdatabase.com/index.cfm/featured\\_ranking](https://www.thebankerdatabase.com/index.cfm/featured_ranking) (accessed: 02.03.2017).

19 Assets at the end of 2015: ICBC (3421 bln USD); CCB (2826 bln USD); ABC (2740 bln USD); BOC (2590 bln USD). The Banker [2016], *op. cit.*

### 3.3. The Industrial and Commercial Bank of China — ICBC

The in-depth economic and social reforms initiated in late 1978 by Deng Xiaoping initially did not encompass the banking sector. Banks remained state-governed which was meant to ensure financial stability to enterprises and limit the increase in unemployment caused by structural changes to the Chinese economy. Banks had to give loans to these state companies with insufficient creditworthiness, which lowered the quality of their banking portfolio. Commercial banking was separated from the structure of the *People's Bank of China* only in mid-1980s. The biggest commercial bank in the country, the *Industrial and Commercial Bank of China* (ICBC), was established. Its basic function was to take deposits and give loans to national industrial and trade companies in cities through departments scattered all over the country.

On 17 September 1983, the State Council has officially decided that the *People's Bank of China* will serve only as a central bank, while the new *Industrial and Commercial Bank of China* will be established to give industrial and commercial loans and provide services regarding savings formerly handled by PBC. The *Industrial and Commercial Bank of China* (ICBC) with headquarters in Beijing was officially established on 1 January 1984.

ICBC is the greatest bank in terms of the size of assets and own funds in China, and, on the basis of rankings from the last couple of years, also in the world.<sup>20</sup> ICBC has 17.5 thousand departments and branch offices, 404 of which are abroad, and it has almost 440 thousand employees.<sup>21</sup> The bank has 1611 correspondents in 147 countries. It serves 7 033 thousand corporate customers and 607 mln personal customers in the country and abroad.<sup>22</sup> On 28 October 2005, the bank was completely transformed into a joint-stock company. The majority of its shares is owned by state institutions, while 24.5% belongs to foreign shareholders. On 27 October 2006, the *Industrial and Commercial Bank of China* was first admitted to listing on the Shanghai and Hong Kong Limited markets.

It appears that ICBC has become a leading world bank thanks to its diverse business structure and a systematically-developing customer base. ICBC provides a comprehensive offer of financial products and services, constantly developing its service portfolio which it perceives as the foundation of innovativeness and

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20 ICBC was in the first place in the *Fortune Global 500* ranking for the sixth time in a row and was among 500 best bank brands in the Brand Finance ranking for the third time in a row.

21 Financial Times [2020], *Markets Data*, <https://markets.ft.com/data/> (accessed: 13.01.2020).

22 Industrial & Commercial Bank of China [2020a], *Industrial & Commercial Bank of China*, [www.icbc.com](http://www.icbc.com) (accessed: 15.01.2020); Industrial and Commercial Bank of China [2013–2018], *Annual Report*, <http://www.icbc-ltd.com/ICBCLtd/Investor%20Relations/Financial%20Information/Financial%20Reports/> (accessed: 22.08.2019).

competitiveness on an increasingly demanding international market. The bank tends to retain stable growth indices. Table 3.2. presents the indices of profitability, asset quality and capital adequacy of ICBC.

**Table 3.2.** Financial Highlights *Industrial and Commercial Bank of China*

<b>Profitability (%)</b>	<b>2019.I-IX.</b>	<b>2018.I-IX.</b>	<b>Change</b>
Return on average total assets	1.16	1.18	-0.02
Return on weighted average equity	14.30	15.15	-0.85
Cost-to-income ratio	22.24	22.70	-0.46
<b>Asset Quality (%)</b>	<b>2019.09.30</b>	<b>2018.12.31</b>	<b>Change</b>
NPL ratio	1.44	1.52	-0.08
Allowance to NPL	198.09	175.76	22.33
<b>Capital Adequacy (%)</b>	<b>2019.09.30</b>	<b>2018.12.31</b>	<b>Change</b>
Core Tier 1 Capital Adequacy Ratio	12.93	12.98	-0.05
Capital Adequacy Ratio	16.65	15.39	1.26

**Source:** Industrial & Commercial Bank of China [2020b], *Financial Highlights*, [http://www.icbc-ltd.com/ICBCLtd/Financial Highlights/](http://www.icbc-ltd.com/ICBCLtd/Financial%20Highlights/) (accessed: 02.02.2020)

ICBC places particular emphasis on the search for the sources of competitiveness by implementing modern innovative solutions that are in line with the times, while simultaneously maintaining stability. The key pillars of strategy of ICBC are:<sup>23</sup> *excellent services to customers, maximum returns to shareholders, real success for our people, great contribution to society*. The corporation's value system is based on five values: *Integrity, Humanity, Prudence, Innovation, and Excellence*. They constitute an expansion of the motto: "Integrity Leads to Prosperity". They are a consequence of adopting an ambitious vision of a modern, world-class financial enterprise capable of successful competition on the international market as a guiding principle of ICBS development, thanks to innovativeness, orientation towards people, aspirations to greatness while maintaining identity, abiding by safety precautions in order to maintain system security (of the structure, network).<sup>24</sup> The

23 Industrial & Commercial Bank of China [2020c], *ICBC Corporate Culture*, <http://www.icbc-ltd.com/ICBCLtd> (accessed: 12.02.2020).

24 The vision of ICBC is as follows: "Build a world-class and modern financial enterprise with global competitiveness by adhering to the principles of delivering excellence, sticking to our founding mission, customers' favourite, leading in innovation, security and prudence, and people-oriented."

bank implements a strategy and fulfils a business model based on three-year development plans, focused on the basic pillars of strategy, evolving in accordance with the trends of economic and financial development as well as customer demands.

The predominating element of the bank's strategy is following the customers and expanding the product offer, which enabled ICBS to expand into the international markets. The current year, 2020, is the last in the fifth, three-year strategic development plan (2018–2020). The bank will not only implement directives regarding its transformation, but also focus on an in-depth transformation of the business model, improving basic competitiveness and speed up healthy, sustainable development of all enterprises involved in its global business network.<sup>25</sup> It should be mentioned that the Chinese giant emphasizes the fact that it is implementing the strategy of sustainable development. It consciously integrates social responsibilities with its development strategy as well as operational and management actions. It emphasizes the board's insistence on promoting finances facilitating inclusive management (social inclusion), actions supporting environmental protection or protection of natural resources as well as poverty prevention in its reports.<sup>26</sup>

ICBC is continuously improving its strategy in order to face up to being a leader in retail banking, global investment banking and managing international assets effectively. The bank's board of directors concentrates on ensuring a stable quality of structural adjustments and aspirations for innovation in order to improve development quality and effectiveness. The bank implements three major projects: the first, involving the restructuring of the model of loan management, the second, the complex management of sales of unpaid loans and the last — improving risk management. The implemented structural changes refer to assets, liabilities, profits and operational actions in order to adapt the ICBC system to meet the market challenges and manage other activities as successfully as possible. The bank implements innovative transformation of: information technology banking, retail banking, corporate banking, management and integration of mega assets as well as internationalization. The bank also follows a reform of the institutional mechanism, striving for the stabilization of system management throughout the introduction of changes. Maintaining an increase in profits while attempting to create long-term competitive advantage to meet new developmental requirements is of crucial significance.

It should be mentioned that ICBC has undertaken actions to overcome the negative influence of the international financial crisis on the results of the bank as

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25 ICBC fulfils actions for all layers of its system. On the basis of the division of connections into three levels – *ownership links* (OL), *strategic connections* (SC) and *cooperative relations* (CR) it regards entities with ownership links (OL), subsidiaries (SC) as well as elements loosely connected to the network (CR). M. Rosińska-Bukowska [2012], *Rozwój globalnych sieci biznesowych jako strategia konkurencyjna korporacji transnarodowych*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź.

26 Industrial & Commercial Bank of China [2020d], *ICBC Business Review*, <http://www.icbc-ltd.com/ICBCLtd> (accessed: 12.02.2020).

well as its position on the global market. It has made structural changes to its own network, but also prepared the foundations for fulfilling the concept of intense and sustainable development. The concept meets the requirements of building system competitiveness as it involves balanced pairs of: assets and capital, quality and benefits as well as costs and efficiency. The bank conducted an in-depth analysis of the requirements for transforming the system towards such goals and, on this basis, identified mechanisms and processes needed to build a stable management framework and foundations for long-term business development. The bank also made significant changes to international and integrated operations as well as improved its capabilities to provide transnational and cross-market services.

These actions have not only drastically increased the competitiveness of the *Industrial and Commercial Bank of China* among national banks, but also improved its position among the top international banks advanced in terms of main measures of competitiveness. The understanding of the essence of a complex competitive advantage — model of system competitiveness (base + operational + competence)<sup>27</sup> provided it with not only a strong current position, but also the ability to maintain a growing influence on the international market.

### 3.4. China Construction Bank Corporation — CCB

The *China Construction Bank Corporation* (CCB) with its headquarters in Beijing, is a leading, large, joint-stock commercial bank in China. It provides customers with complex financial services, such as: retail banking, corporate banking, investments and asset management. Its predecessor, *People's Construction Bank of China* (PCBC), was established in October 1954 as a wholly state-owned bank, governed by the Ministry of Finance of the People's Republic of China (PRC). The actions of PCBC were aimed at managing and distributing government funds for projects associated with building and infrastructure as part of the adopted economic plan. In 1979, PCBC became a financial institution governed by the State Council and gradually took over more and more functions in commercial banking.

The *People's Construction Bank of China* gradually became a full-fledged commercial bank after the establishment of *China Development Bank* (CDB) in 1994. That was mainly due to CDB taking over the loan-granting activities on the basis detached from purely economic assessment, which served funding undertakings in line with the government's development policy. In 1996, the *People's Construction Bank of China* changed its name to *China Construction Bank*. As a result of the separation procedure adopted by *China Construction Bank*, in accordance with

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27 M. Rosińska-Bukowska [2020], *op. cit.*

company law of PRC and after obtaining approval from the *China Banking Regulatory Commission*, a separation contract was concluded on 14 September 2004. Under the agreement of 15 September 2004 *China Construction Bank* was divided into: *China Construction Bank Corporation* and *Jianyin Bank*.

*China Construction Bank Corporation* (CCB) was established as a joint-stock commercial bank only in September 2004. Currently, CCB is one of the biggest banks of PRC and offers a wide range of banking services and products, focusing on three main business sectors: corporate banking, retail banking<sup>28</sup> and treasury operations. CCB is listed at the Stock Exchange of Hong Kong Limited and the Shanghai Stock Exchange.

The majority of the shares of *China Construction Bank Corp* belongs to state institutions, however more than 1/3 (36.8%) is in the hands of foreign shareholders. CCB has nearly 15 thousand departments and branches, 29 of which are located abroad. The bank has 1491 correspondents in 139 countries and regions. Its offer includes fund management, finance lease, trust, insurance, futures contracts, retirement funds as well as investment banking services and is available in almost 200 commercial banking entities on various levels, in various branches, for different industries and sectors. It serves a total number of 342 mln of retail customers and 3.9 mln corporate customers, employing approx. 370 thousand people. In 2019, CCB's profit reached almost 40 bln USD, with revenues of 150 bln USD. The market value of the company is 225 bln USD.<sup>29</sup>

By adopting a business philosophy that is “customer-oriented and market-oriented”, CCB aspires to become a bank with the highest capability to create value. The strategy of *China Construction Bank Corporation* aims to achieve balance between the short-term and long-term benefits as well as between business goals and social responsibilities. The business model refers to all stakeholder groups, indicating the necessity to maximize value for customers, shareholders, the society, as well as the whole community that constitutes the system, or the bank's multi-level global business network.

The three basic pillars of strategy adopted by *China Construction Bank Corporation* can be identified as: “*Customers*”, “*Products*”, “*Regions*”. They refer to meeting

28 At the end of September 2019, the financial loans granted amounted to the total of 902.58 bln RMB, which signifies an increase by 292.51 bln RMB since the beginning of the year, while the number of loan customers was 1 265 800 – increased by 247 900 since the beginning of the year.

29 At the end of 2018 the bank's market capitalization reached 207 179 mln USD, thus putting the corporation in the fifth place among all banks listed on stock exchanges all over the world. The group is in second place of the top global banks with the highest capital. *China Construction Bank Corp.* [2020], <https://www.referenceforbusiness.com/history2/31/China-Construction-Bank-Corp.html> (accessed: 04.01.2020); *China Construction Bank (Europe)* [2018], *Audited annual accounts for the year ended 31 December 2018*, [http://eu.ccb.com/europe/uploadfile/gwym/20130818\\_1376768124/2019920111130860231.pdf](http://eu.ccb.com/europe/uploadfile/gwym/20130818_1376768124/2019920111130860231.pdf) (accessed: 04.01.2020).

the three main challenges – of providing the best customer service, maximizing value for shareholders and creating excellent career opportunities for the employees.<sup>30</sup>

On the level of “*Customers*” bank actions focus on target customers, products and geographical regions. CCB attempts to reinforce strong relationships with large corporate customers. There are certain entities of special interest to the bank, for example the leaders of the so called strategic sectors, such as: energy, telecommunications, sourcing and processing of oil and gas, infrastructure as well as main operation sectors of financial institutions and government agencies. Additionally, the bank develops relationships with the selected categories of customers from the sector of small and medium companies. In retail banking, CCB mostly concentrates on high-income customer groups. The bank also has a suitable offer for retail customers from other sectors, prepared with cost efficiency and economies of scale on the market of mass financial services.

On the level of “*Products*”, the bank develops all categories of corporate and retail products (both personalized and mass-produced). CCB focuses on charge-based business zones, including payment and settlement services, personal property management and management of corporation finances. The bank's plans involve a proactive development of personal banking, especially mortgage credits and a wide range of savings-related products. The additional goal of *China Construction Bank Corporation* is to take a leading position in the industry, in terms of all operations regarding the use and service of credit cards.

On the level of “*Regions*”, the bank focuses on the more developed geographical markets, or, in other words, prioritizes actions in the main cities of the Yangtze River Delta, Peral River Delta and the Bohai Economic Rim Region. Moreover, CCB has decided to create a stable bank network in all of China by focusing on the geographical expansion through establishing strong offices in the capitals of provinces of mainland China.

In conclusion, *China Construction Bank Corporation* is a modern commercial bank with a clear development model created in accordance with the 21<sup>st</sup> century requirements of competitiveness. The bank aspires to reach international standards of corporate governance to provide value to all stakeholder types. The bank has created a solid and efficient structure used to implement the adopted development strategy as well as enforce law and supervision to provide independence, successful control methods and balance between the levels of supervision. The bank has introduced new, modern framework of corporate governance, determining various rights and responsibilities of the annual general meeting of shareholders, board of directors, supervisory board and higher authorities. This is of crucial significance in achieving the main purpose — being competitive on the international arena — as well as current purposes — maintaining sufficient profitability indices, asset quality and capital adequacy (table 3.3.).

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30 China Construction Bank Corporation [2020], <http://en.ccb.com/en/home/indexv3.html> (accessed: 10.01.2020).

**Table 3.3.** Financial Highlights *China Construction Bank Corporation*

<b>Profitability (%)</b>	<b>2018</b>	<b>2017</b>	<b>Change (%)</b>
Return on average total assets*	1.13	1.13	–
Return on weighted average equity	14.04	14.80	–0.76
Cost-to-income Ratio**	26.61	27.15	–0.54
<b>Asset Quality (%)</b>	<b>2018</b>	<b>2017</b>	<b>Change (%)</b>
Non-performing Loan (NPL) ratio	1.46	1.49	–0.03
Allowance to NPLs	208.37	171.08	37.29
<b>Capital Adequacy (%)</b>	<b>2019 (I-IX) 3Q</b>	<b>2017</b>	<b>Change (%)</b>
Total equity to total assets	17.30	8.12	1.13
Core Tier 1 Capital Adequacy Ratio	13.96	–	–
Capital Adequacy Ratio	14.50	–	–

\* Calculated by dividing net profit by the average of total assets at the beginning and end of the year.

\*\* Operating expenses (after deduction of taxes and surcharges) divided by operating income.

**Source:** China Construction Bank [2019], *China Construction Bank Announces 2019 Q3 Results*, [http://en.ccb.com/en/newccbtoday/v3/whatsnew/20191030\\_1572437856.html](http://en.ccb.com/en/newccbtoday/v3/whatsnew/20191030_1572437856.html) (accessed: 30.10.2019)

In conclusion, the financial results (from 2017 to 2019<sup>31</sup>) indicate major development perspectives for *China Construction Bank Corporation* in the nearest future. As of 30 September 2019, the total assets of CCB amounted to 24.52 tln RMB, which means they have grown by 1.30 tln RMB, or 5.58% since late 2018. The sum of all loans and advance payments to customers was 14.87 tln RMB — an increase by 1.10 tln RMB, or 7.90% since late 2018. Customer deposits amounted to 18.46 tln RMB — an increase by 1.36 tln RMB (7.92% since late 2018). The net profit of CCB was 227.38 bln RMB, and the shareholders' net profit was 225.34 bln RMB — an increase by 5.83% and 5.25%, respectively, year-over-year. The annual average return on assets was 1.27%, while the annual return on equity was 15.13%. The total capital adequacy ratio of CCB was 17.30%, which constitutes the top result in the sector.<sup>32</sup>

CCB is making increasingly higher profits, and its key efficiency indices are solid and balanced. Revenues from brokerage are continuously increasing. Net income from charges and commissions is also growing (1088.97 bln RMB for three quarters of 2019 which means an increase by 12.89% year-over-year). All categories of products (bank cards, e-banking, agents, trust services) are developed in accordance with the adopted strategy and undergo a fast increase in profitability.

<sup>31</sup> Three first quarters of 2019.

<sup>32</sup> China Construction Bank [2019], *op. cit.*

In conclusion, *China Construction Bank Corporation* systematically improves the quality and effectiveness of its services. The bank released credit resources through many channels, offering support aimed at the key sectors of Chinese economy. Investments funded by CCB are projects in vital regions, including the Beijing-Tianjin-Hebei, the Yangtze River Delta and the Guangdong-Hong Kong-Macau Greater Bay Area. CCB is consistently reinforcing development foundations by promoting innovative zones, such as: the renting of houses (16 mln offers online in more than 300 administrative areas, more than 10 mln registered users); *Inclusive Finance* (a strategy of higher financial inclusion as a model preventing social exclusion); *FinTech* (promotion of innovative solutions on the financial market, building an ecosystem of an intelligent financial platform). Statistics confirm the bank's excellent condition. In 2019, CCB had profits of 39 bln USD, assets of 3382 bln USD, revenues of 150 bln USD, and market value of 225 bln USD.<sup>33</sup>

### 3.5. Agricultural Bank of China — ABC

The third financial giant in the Chinese “big four” is *Agricultural Bank of China* (ABC). The great majority of its shares is held by the government institutions of PRC, only 9.5% is held by foreign shareholders. The bank has fourteen main subsidiaries, including nine domestic and five foreign ones. In total, the bank has 23.7 thousand departments and branches (2016). The organizational structure encompasses its headquarters, the headquarters business division, three specialized business units managed by the headquarters, 37 level-one departments (including departments directly managed by the headquarters), 365 level-two departments (including business divisions in province departments), 3506 level-three departments (including economic divisions in counties, business divisions of departments managed directly by the headquarters as well as business divisions of level-two), 19 714 of foundation-level departments and 55 other facilities. Due to such high numbers of bank facilities, ABC is one of the biggest employers in the banking sector in the world. ABC serves approx. 500 mln (474 mln in 2015) retail customers<sup>34</sup> and more than 3.5 mln (3.64 mln in 2015) corporate customers, employing more than 500 thousand employees.<sup>35</sup>

33 *Top100 of the Forbes Global 2000* [2019], <https://www.gfmag.com/global-data/economic-data/largest-companies> (accessed: 30.04.2019).

34 At the end of 2016 the total of the bank's loans and advance payments was 9 713 639 mln RMB, the total of its deposits was 15 038.001 mln RMB. The capital adequacy ratio was 13.04%.

35 Agricultural Bank of China [2020], <http://www.ABoChina.com/en/> (accessed: 14.02.2020).

The value of assets of *Agricultural Bank of China* in 2019 amounted to 3293 bln USD. ABC's profits reached 31 bln USD, sales revenues — 138 bln USD. The bank's market value was almost 200 bln USD.<sup>36</sup>

Similarly to the two previously discussed banks, *Agricultural Bank of China* is a result of top-down changes to the Chinese banking sector. ABC's predecessor was the *Agricultural Cooperative Bank* established in 1951. Since late 1970s the bank had undergone a transformation from a specialized state bank through a commercial, wholly state-owned bank to a commercial institution controlled by the state. The bank was transformed into a joint-stock company in January 2009. In July 2010, *Agricultural Bank of China* was listed both on the Shanghai Stock Exchange and the Stock Exchange of Hong Kong Limited.

ABC, as one of the main providers of integrated financial services in China, is involved in building an international, premium-class, commercial banking group. The bank builds its market value on the basis of a complex business portfolio, a vast distribution network and an advanced IT platform. ABC has a rich, diverse portfolio of products as well as corporate and retail banking services for a vast circle of customers. It also conducts treasury operations and manages assets. The range of the bank's activities also encompasses investment banking, fund management, finance lease and life insurance.

The strategic goal of ABC is to create an international market offer that would stand out in terms of operations, efficient and convenient services, diverse functions as well as unique options of creating evaluations. The strategy is implemented by focusing on the creation of value through the search for synergy in the triad of: reducing capital restraints, lowering costs, risk optimization. The crucial challenge is to adopt the paths of restructuring business actions as adaptations to the changes in operational environment in accordance with the leading standards. Therefore, ABC intends to step away from “self-oriented operations” towards “customer-oriented operations” and change its image from that of “a typical credit broker” to “a provider of complex financial services” on an international market.

The bank assumes that in order to achieve better results it is necessary to concentrate on key competences (urban areas). However, it sees the necessity to obtain the synergy effect resulting from stronger interactions with the whole system of the bank's global business network. To maximize added value and financial profits, ABC plans to intensify the exploration of multi-level connections between: the headquarters and departments, national and foreign operations, departments and subsidiaries, various lines of business and online and offline enterprises. This development philosophy means that the bank understands the essence of the modern model of system competitiveness. Therefore, it may be recognized that the assumptions of ABC's strategy are in accordance with the requirements of building international competitiveness in the 21<sup>st</sup> century.

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<sup>36</sup> *Top100 of the Forbes Global 2000* [2019], *op. cit.*

In conclusion, study has shown that the next Chinese bank in the “big four” is ready to compete on the demanding international market, despite the fact that it has joined the competition relatively recently. ABC names values suitable to meet modern challenges as pillars of its strategy. The bank intends to develop in accordance with the principles of well-thought-through, professional customer service, risk management and sustainable development. It understands the significance of key competences: strengthening financial services in crucial areas, the significance of innovation and a suitable concept of organizational structures in maintaining a strong, long-term position on the global market.

ABC plans to step away from being a large retail bank and towards being a strong retail bank by consolidating its customer base, an innovative business model, marketing approach and service professionalization. Therefore, it understands the idea of using the layers of intellectual capital (organizational, innovation and institutional capital<sup>37</sup>) as a driving force for the development of the bank. ABC's strategy reports confirm that. They emphasize active participation in the developing strategic business sectors and modern service sectors, research on how to improve the effectiveness of the models of financial services for capital-intensive enterprises in developing industries; continuous improvement of service provision and use of innovative solutions; additionally, organizational flexibility achieved by adopting business structures, for instance to search for concepts of cooperation with growing companies with low capital use and high value added.

In conclusion, *Agricultural Bank of China* has redefined its development premises. The main motto of these changes is: instead of services rendered “everywhere”, provide comprehensive and professional services or business lines rendered “suitably”. ABC intends to follow the trends of “Industry 4.0”, encompassing smart production and inter-sectorial integration on the level of investment banking, activities on the financial market, asset management, interbank activities, trust services, retirement services and private banking. This is meant to be a quicker path for ABC towards the “Bank 4.0”.

### 3.6. Bank of China — BOC

Fourth of the “big four” Chinese banks is *Bank of China* (BOC). BOC is unique because it belongs completely to the Chinese authorities. *Bank of China* is a global bank of systemic significance. It is the most globalized of Chinese banks. It has a deeply rooted global service network with institutions in mainland China as well as 57 countries and regions. The bank has created an integrated service

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37 M. Rosińska-Bukowska [2020], *op. cit.*

platform based on the pillars of corporate banking, retail banking, the handling of financial markets. It offers a wide range of services in commercial banking, encompassing: investment banking, direct investments, securities, insurance, funds, airplane leasing, etc.<sup>38</sup>

It should be mentioned that *Bank of China* has built a perfect brand image. By using specific attributes it has upheld the spirit of “striving for perfection” for more than a hundred years. Currently, as a large state commercial bank, BOC emphasizes the significance of issues such as: development through technology and innovation, providing effectiveness by transformation and increasing strength by transformations that meet the requirements of a world-class bank in the modern era.

*Bank of China* is a bank with the longest continuous time of operation among the Chinese banks. It was formally established in February 1912. Between 1912 and 1949 it functioned as the central bank of China, an international exchange bank and a specialized international trade bank. By fulfilling its obligation to provide public services and develop the Chinese sector of financial services, *Bank of China* has taken the leading position in the Chinese financial sector.

During its years of activity BOC has achieved a good position on the international market. After 1949, it became responsible for controlling Chinese exchange operations, due to its long-standing history as a state-appointed specialized foreign exchange and trade bank. The bank supported the development of foreign trade and Chinese economic infrastructure by offering international trade settlements, foreign transfers and other non-commercial services of currency exchange. During the period of the Chinese reform and “opening up” the bank has taken the historic opportunity provided by the government strategy — to use foreign funds and advanced technologies to further its own economic development. As a result, BOC became the key channel of international funding for the country, building competitive advantage in the foreign exchange sector.<sup>39</sup>

In 1994, *Bank of China* was transformed into a commercial bank, yet remained in the ownership of the state. In August 2004, *Bank of China Limited* was established, which was listed at the Stock Exchange of Hong Kong Limited and the Shanghai Stock Exchange. In 2018, *Bank of China* was once again identified as a global bank with a system significance. In 2019, the profits of BOC equalled 28 bln USD, its assets — 3098 bln USD, revenues — 17 bln USD, and market value — 143 bln USD.<sup>40</sup>

38 Bank of China [2020], *About Bank of China*, [https://www.boc.cn/en/aboutboc/ab1/200808/t20080814\\_1601738.html](https://www.boc.cn/en/aboutboc/ab1/200808/t20080814_1601738.html) (accessed: 10.01.2020).

39 Bank of China [2020], *Bank of China Global Web Site*, [https://www.boc.cn/en/aboutboc/ab1/200809/t20080901\\_1601737.html](https://www.boc.cn/en/aboutboc/ab1/200809/t20080901_1601737.html) (accessed: 10.01.2020); Bank of China [2013–2018], *Annual Report*, <http://www.boc.cn/en/investor/ir3/> (accessed: 22.08.2019).

40 *Top100 of the Forbes Global 2000* [2019], *op. cit.*; *The Forbes Global* [2019], *The World's Largest Public Companies*, [https://www.forbes.com/global2000/list/#industry:Major%20Banks\\_country:China](https://www.forbes.com/global2000/list/#industry:Major%20Banks_country:China) (accessed: 22.08.2019).

BOC states that its current goals include the consolidation of developmental actions; strengthening key competences, its unique merits; improving systems and modes of action in all lines of business; a permanent increase of effectiveness and competitiveness — building an integrated capital (both economic and intellectual). By 2035, BOC means to transform from a large high-ranking bank into a strong bank of the highest rank, thus becoming a world-class bank on all levels in a new era. By 2050, *Bank of China* plans to achieve the position of a model entity in a global financial sector. To implement this development path it intends to take the following steps: *enable advancement through technology, drive development through innovation, deliver performance through transformation, enhance strength through reform, strengthen Party leadership and Party building at the bank.*

This means putting emphasis on the bank's digitization, its perfect service, elaborate action scenarios, fluent online-offline coordination as well as innovative and flexible products. All these aspects should be supported by efficient operations and management as well as smart risk management. Development through innovation means following the newest market trends and creating or anticipating customer needs. Innovations concern technology, products as well as methods of conducting business. The bank's ambitious plan is to become a leader in creating value added on the basis of data and a pioneer of smart services in the world.

BOC intends to focus on the requirements of real economy and challenges brought on by quality-based development. Above all, it intends to expand through the global structure of the enterprise, integrated services, operations based on resources and competences. The actions are to shape a development model with a high capability of creating value and market competitiveness. As a consequence, strategic concentration and bold methods (introducing reforms) are needed. A reform of the way of thinking is the most needed, especially regarding the mechanism and organization in the whole bank system. According to the authorities, strengthening leadership is required to provide a suitable management model.

*Bank of China* names responsibility, honesty, professionalism, innovativeness, deliberation and effectiveness as basic values. Responsibility regards all stakeholder groups: the country, the society, customers, employees, shareholders. Honesty signifies meeting all obligations, abiding by the rules and credibility. Professionalism means striving for competence perfection. Innovativeness involves going forward, searching boldly, learning from others and actively developing innovative ideas. Deliberation is strongly keeping to the lower line of risk management, abiding by the rules that regulate development in the process of attempting to achieve a stable, long-term growth. Finally, effectiveness means assessing results and profitability from the angle of respecting the principles of sustainable development.

In conclusion, the analysis of the development strategy plans of BOC suggests that the bank treats a perfect corporate governance as an important goal. It continuously attempts to implement the best practices, following the rules and regulations regarding capital markets and specific sectors. The bank reviews the company's

statute and regulations of each individual committee comprehensively and systematically. BOC is a definite part of modern business models — it analyses statements regarding the pillars of strategy, the values embraced, missions, plans, etc. The debate on whether these statements reflect the reality of Chinese economy is not settled. Yet, assuming that the results reflect the quality of a strategy and its ability to meet the 21<sup>st</sup> century challenges, the key financial data of the *Bank of China* should be worth looking at and it mostly confirms the strength of the foundations for long-term development. In 2019 the profits of BOC were 28 bln USD, its assets — 3098 bln USD, revenues — 17 bln USD and market value — 143 bln USD.<sup>41</sup> The systematically developing global business network of BOC also implies that the expansion plans are being consistently implemented. BOC has in total 1.6 thousand departments and branches, with 644 of them outside of the borders of mainland China.<sup>42</sup> This is much more than in case of the remaining three out of the “big four”, although still not much on the global scale. BOC also has more than 1600 correspondent banks in 179 countries.

## Conclusions

The crucial element of development of Chinese corporate giants is foreign expansion. Large Chinese banks open divisions and subsidiaries and systematically transform themselves into global banks.

For instance, the biggest Chinese bank, ICBC, has daughter-banks or operational divisions in more than thirty countries, including Poland. A significant area of the Chinese banks expansion is Germany, due to enormous trade volume between these countries. All banks of the “big four” have departments in Frankfurt and operational facilities in, for example, Berlin, Hamburg, Munich and Düsseldorf. Frankfurt also houses an education centre for employees of Chinese banks, the *China Executive Education Center*, whose existence confirms their long-term and long-range development plans on the European and global markets. Outside Germany, Chinese banks have departments or daughter-banks in all major financial centres: London, Paris, Milan, Madrid and Luxembourg.

It should be emphasized that the “big four” Chinese banks actively participate in the processes of international mergers and acquisitions. In the 21<sup>st</sup> century large banks began to expand into foreign markets by taking over active banks, opening divisions abroad or buying blocks of shares in foreign banks. Foreign banks in

41 *Top100 of the Forbes Global 2000* [2019], *op. cit.*

42 In 2009, there were 10 961 national and foreign departments of BOC, 9 988 of them in mainland China and 973 foreign departments, with 262 566.

*Special Administrative Regions* (SAR) of Hong Kong and Macau were the first of Chinese acquisitions. In July 2000, ICBC acquired 53% of shares of the *Union Bank of Hong Kong* and incorporated it into ICBC Asia Ltd. In April 2004, ICBC Asia bought 100% of shares of *Belgian Fortis Bank* in Hong Kong (during the take-over of *Fortis Bank Asia Hong Kong*). In August 2007, the bank signed an agreement to take over 79.83% of shares of the largest bank in Macau — *Seng Heng Bank Limited* (SHB) for 583 mln USD. In January 2008, ICBC finalized the transaction and took over the shares of SHB. The bank from Macau officially became a division of ICBC. In November 2007, ICBC and the shareholders of *Indonesian Bank Halim* finalized an agreement of ICBC taking over 90% of the bank's shares. It took over the remaining 10% within the next three years and afterwards changed its name to *Bank Halim Indonesia PT*. Later, Chinese banks began to take over banks in other locations. In June 2008, ICBC bought 20% of shares in the *Standard Bank Group of South Africa* for 5.5 bln USD.<sup>43</sup> Other Chinese banks, not only members of the “big four”, took similar actions.

The expansion gradually reached the European market as well. Chinese banks are not major entities in terms of asset size or employment in Europe. Instead, they specialize in corporate banking. Their offer mostly involves foreign trade settlements, currency exchange, hedging to minimize foreign exchange risk, funding businesses, granting syndicated loans. They engage in retail banking, including private banking only to a limited degree. However, it should be mentioned that these banks are highly dynamic and may yet prove a serious competition to European banks.

The presented analysis (on four case studies) has shown that the pillars of strategy of each bank in the Chinese “big four” — the *Industrial and Commercial Bank of China*, *China Construction Bank Corporation*, *Agricultural Bank of China* and *Bank of China* — are in accordance with the newest international standards and meet the requirements of building system competitiveness in line with the spirit of the 21<sup>st</sup> century. It is advisable that the actions of each of these global giants of corporate finances are followed, since the main purpose of the strategy of the whole Chinese “big four” is to determine the direction of development of these corporations in such a way, so as to create value added to the current standards in order to maintain long-term competitiveness and, therefore, a strong position on the international financial market.

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43 Cieřlik E. [2009], *Wielki skok ku globalizacji*, <https://prnews.pl/wielki-skok-ku-globalizacji-57687> (accessed: 08.02.2020); M. Pettersen, I. Romiszewska [2012], *System bankowy Chin*, in: S. Flejterski, J.K. Solarz (eds), *Systemy bankowe krajów G-20*, Constans, Szczecin, p. 149.

## Chapter 4

# China's largest credit institutions in light of Basel III implementation

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Different Asian economies were analysed in previous chapters, yet since this section is dedicated to the banking sector, the author decided to narrow down the focus to China. The size of Chinese credit institutions and their growing international presence put them at the core of global financial system's stability. Big four banks Chinese banks described in the previous chapter are at the same time among the world's largest financial institutions, that are growing fast and investing heavily in foreign markets. It is worth to point out that asset worth of four largest Chinese banks is nowadays much larger than the total assets of the entire banking sector of Japan. China's economic growth fuels these institutions even further, suggesting that their global presence will increase over the coming years.

After the financial crisis of 2008, financial stability has become a global concern, since it became clear that failure of a single institution may create a global shock and affect even the most advanced economies. This was acknowledged also by the Chinese authorities, who have put a lot of effort in modernising and opening the banking sector. The country has also implemented Basel III capital accord, increasing the capital requirements for its credit institutions.

China Banking Regulatory Commission (CBRC) supervises the implementation of Basel Committee's recommendations in terms of capital requirements. The aim of this section is to evaluate the net impact of stricter capital requirement on the financial standing of Chinese credit institutions. Unlike in commonly used stress-tests, assessing the potential impact of stricter requirements ex-ante, the author proposes using a specifically-designed synthetic indicator that helps assessing the changes in financial standing of credit institutions ex-post. The author's indicator is used to analyse the condition of China's five largest credit institutions over the period of six years.

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## 4.1. Short characteristics of the Chinese banking sector

As already indicated in the introduction, the main focus of this chapter is based on Chinese banking sector. The focus was narrowed down to just this one country, as it is the home to the world's largest credit institutions, the importance of which cannot be underestimated on a global scale. Over the past decade, Chinese banks have outgrown other credit institutions in the world and are more and more involved in international transactions, growing in importance for the global economy.

Strong trade connections between China and the rest of the world and substantial capital surpluses, create favourable growth perspectives for the banking institutions of the Middle Kingdom. Their growing asset base and international presence places them at the focus of international prudential supervision, since their bankruptcy would have truly global consequences. This process also gains momentum through growing popularity of trade finance in China.<sup>1</sup>

Chinese banking sector was experiencing rapid growth over last two decades. According to Zhu, Wu et al. banking sector's profit increased rapidly during 2003–2013, which is known as the “golden era” of Chinese banks.<sup>2</sup> Currently, Chinese banks are on top of the list of the world's largest banks in terms of assets ownership. Graph below depicts the assets value of five largest Chinese banks in comparison to the entire asset value of the banking system of USA, Japan and the European Monetary Union (EMU) over the years 2013 until 2018.

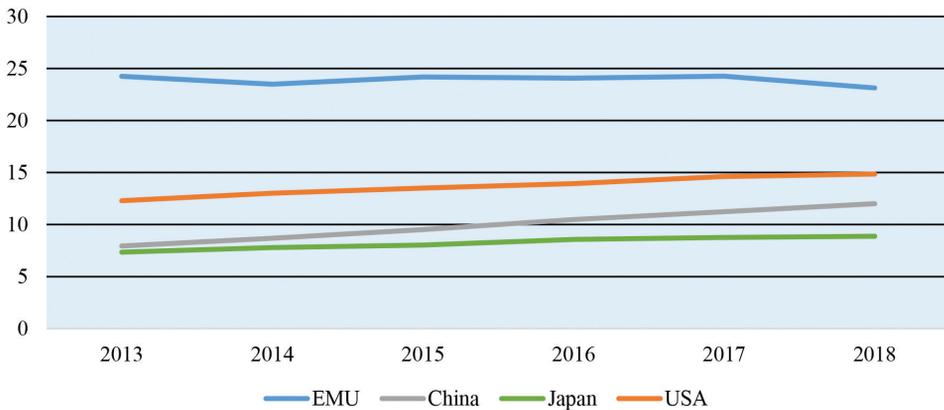
Figure 4.1. signals growing importance of these institutions for the entire financial system. Four out of five institutions taken under consideration for this comparison are at the same time the four largest banks of the worlds in terms of assets.<sup>3</sup> This is why these institutions have been chosen for further analysis in terms of their stability and loss absorbing capacity. These issues will be evaluated in the context of prudential supervision standards set forth by the Basel Committee on Banking Supervision that are being implemented by the China Banking Regulatory Commission.

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1 Committee on the Global Financial System [2014], *Trade finance: development and issues*, Bank for International Settlements, Basel.

2 N. Zhu, Y. Wu, B. Wang, Z. Yu [2019], *Risk performance and efficiency in Chinese banking*, “China Economic Review”, vol. 53, pp. 324–341.

3 *The Forbes* [2019], *The World's Largest Public Companies*, [https://www.forbes.com/global2000/list/#industry:Major%20Banks\\_country:China](https://www.forbes.com/global2000/list/#industry:Major%20Banks_country:China) (accessed: 22.08.2019).



**Figure 4.1.** Total banking assets (mln EUR)

**Source:** own elaboration based on: the Eurostat [2013–2018]; Bank of Japan [2013–2018]; Federal Reserve Statistical Release [2013–2018]

The five credit institutions chosen for the analysis are the first five entities that were allowed to conduct commercial banking activities in China i.e. Bank of China (BOC), Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB), Agricultural Bank of China (ABC) and Bank of Communications. First four institutions were set up to serve different parts of the Chinese economy i.e. loans and deposits in cities (BOC) and rural areas (ABC), fixed asset transactions (CCB) and financing commercial activities (ICBC). The fifth, smallest entity – Bank of Communications (BCM) – was established as a joint-stock company and its stocks are listed on the exchange.

There were four major reforms of the Chinese banking sector since 1949. After the country was established, the banking sector was focused under the roof of a single entity – People’s Bank of China. In 1979, most commercial activities of the monopoly were delegated to the three of the abovementioned, state-owned entities — BOC, CBC and ABC.<sup>4</sup> After that, People’s Bank of China took the role of a contemporary central bank and regulatory authority. Remaining commercial activities were delegated to ICBC in 1984, while the first Chinese shareholding bank, BCM, started its activities in 1986.<sup>5</sup>

4 C. Roland [2008], *Banking sector and liberalization in India. Evolution of reforms and comparative perspectives on China*, Physica-Verlag Heidelberg, Heidelberg, p. 53.

5 D. Luo [2016], *The development of the Chinese financial system and reform of Chinese commercial Banks*, Palgrave Macmillan, London, pp. 3–4.

## 4.2. Basel Accords short overview

Banking sector is very specific, and each country has its own set of rules that regulate it. At the same time, today's financial institutions operate in many countries simultaneously, which creates compliance risks. Basel Committee on Banking Supervision (BCBS) was created under the Bank for International Settlements as an international forum for cooperation on banking supervision. It should be underlined that recommendations of the BCBS are voluntary and are not legally binding.

First set of recommendations of the BCBS is known as Basel Capital Accord or Basel I and was published in 1988. Basel I focused mainly on credit risk, which was considered to be the basic type of risk for the banking industry. What is more, Basel I implemented five categories of banking assets.<sup>6</sup> These regulations were changed several times to adjust to the changes taking place on the financial market, in particular in terms of exposure to market risks.

In 2004, BCBS published Basel II. Basel II focused on improving evaluation of credit risk and introduced a more detailed calculation of operational risks.<sup>7</sup> The revised accord was changed once again two years later. This time Basel II introduced requirements to publish more detailed information about risk exposure and capital adequacy.<sup>8</sup> The new regulations were, however, not enough to protect the financial market from the crisis of 2007–2008.

In the aftermath of the last financial crisis, BCBS proposed a new approach towards the complex financial products, that previously were treated as low risk investments.<sup>9</sup> BCBS also updated capital requirements, in order to better reflect the new structure of banks assets. In 2010, Third Basel Accord, commonly known as Basel III, was announced. The main aim of Basel III was improving the quality of bank's capital and reducing systemic risk through increasing capital requirements. Basel III introduced new financial indicators – capital conservation buffer, countercyclical capital buffer and leverage indicator.<sup>10</sup> BCBS obliged banks to reach the minimum thresholds set forth by them until 2019. Additionally, Basel III introduced two new liquidity requirements — Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).<sup>11</sup>

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6 Basel Committee on Banking Supervision [1988], *International Convergence of Capital Measurement and Capital Standards*, Bank for International Settlements, Basel.

7 Basel Committee on Banking Supervision [2004], *International Convergence of Capital Measurement and Capital Standards*, Bank for International Settlements, Basel.

8 Basel Committee on Banking Supervision [2006], *International Convergence of Capital Measurement and Capital Standards. A revised framework*, Bank for International Settlements, Basel.

9 Basel Committee on Banking Supervision [2008], *Basel Committee on Banking Supervision announces steps to strengthen the resilience of the banking system*, Press releases, Bank for International Settlements, Basel.

10 Basel Committee on Banking Supervision [2010], *Basel III: a global regulatory framework for more resilient banks and banking systems*, Bank for International Settlements, Basel.

11 Basel Committee on Banking Supervision [2013b], *Basel III: the Liquidity Coverage Ratio and liquidity risk monitoring tools*, Bank for International Settlements, Basel; Basel Committee

### 4.3. Basel Accord implementation and prudential supervision in China

Since 2003, Chinese banking system is regulated and supervised by the China Banking Regulatory Commission.<sup>12</sup> Within its mandate, CBRC safeguards the banking sector's stability, while committing itself to promoting innovation and increasing the general competitiveness of the Chinese banks. This regulatory authority also contributed to opening the national market to competition from foreign banks — this process is ongoing since 2001, when the country joined the World Trade Organisation.<sup>13</sup> According to the so-called “opening-up” initiative, commercial activities on China's financial markets are to be fully liberalised by 2021.<sup>14</sup>

Chinese regulatory authority had to face the challenge of supervising a very large banking sector, where the average credit growth equalled approx. 20% per year over the past decade.<sup>15</sup> Nonetheless, according to the International Monetary Fund's (IMF) Financial Sector Assessment Program, CBRC was largely successful in this task. Among the more fundamental issues identified by the IMF was the legal capacity of the State Council to overrun CBRC's decisions and insufficient powers of the regulator to exercise oversight over changes in ultimate ownership of banks. Nonetheless, China is considered to be maturing well in terms of prudential supervision and has been considered compliant with most regulatory standards set forth by the Basel Accord.

In terms of Basel III standards:

- Chinese banking system was considered compliant with minimum capital requirements, with certain deviations regarding claims on domestic banks — rules applied by the Chinese regulations are stricter than required, but may become less strict if the Chinese sovereign debt rating is reduced;<sup>16</sup>

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on Banking Supervision [2014], *Basel III: the Net Stable Funding Ratio*, Bank for International Settlements, Basel.

12 Y. Xu [2009], *The regulatory practice of China's banking sector*, [https://unctad.org/sections/wcmu/docs/c1mem3p32\\_en.pdf?fbclid=IwAR3oP2iO4pYzUHqvHO6wg2m7KJB4qZLKo0pVbiDerBT3yvOTRkWe9WIS1iw](https://unctad.org/sections/wcmu/docs/c1mem3p32_en.pdf?fbclid=IwAR3oP2iO4pYzUHqvHO6wg2m7KJB4qZLKo0pVbiDerBT3yvOTRkWe9WIS1iw) (accessed: 22.08.2019).

13 G. Turner, N. Tan, D. Sadeghian [2012], *The Chinese banking system*, “Reserve Bank of Australia Bulletin”, Sydney, vol. 3, p. 55.

14 Ernst & Young [2018], *Interpreting the CBIRC's Initiative to expedite the market opening-up for the banking and insurance industries*, [https://www.ey.com/Publication/vwLUAssets/ey-pov-china-further-opens-up-financialsector-IV-en/\\$FILE/ey-pov-china-further-opens-up-financial-sector-IV-en.pdf](https://www.ey.com/Publication/vwLUAssets/ey-pov-china-further-opens-up-financialsector-IV-en/$FILE/ey-pov-china-further-opens-up-financial-sector-IV-en.pdf) (accessed: 20.08.2019), p. 5.

15 International Monetary Fund [2018], *The People's Republic of China. Financial sector assessment program. Systematic oversight of financial market infrastructures — technical note*, “IMF Country Report”, vol. 18 (192), Washington D.C.

16 Basel Committee on Banking Supervision [2013a], *Assessment of Basel III regulations – China*, Bank for International Settlements, Basel, p. 12.

- national legislation was criticised for non-imposition of requirements regarding certain information disclosure, particularly regarding credit quality;<sup>17</sup>
- no gaps were identified in terms of LCR standards and the Chinese regulations were found stricter in terms of high-quality liquid assets (HQLA) definition — Chinese law does not allow inclusion of all central bank reserves or assets deposited with central banks in the HQLA value. Inclusion of residential mortgage-backed securities and common equity shares is also not allowed.<sup>18</sup>

Chinese law was found compliant with Basel global systemically important bank (G-SIB) framework, although some deviations were found in terms of higher loss absorbency — Chinese law does not specify any capital conservation ratios when the loss absorbency capacity requirements are not met.<sup>19</sup> Basel Committee has also highlighted that the local authorities have decided to impose a higher than required minimum capital requirement.

It should also be noted that the CBRC continues to monitor its compliance with the Basel Accord and has pledged to address all the major non-compliance issues identified.<sup>20</sup> In conclusion, Chinese legislation should be perceived as compliant to a large extent with the Basel Accord as of 2013. This year was therefore chosen to evaluate the impact of the new regulations on the financial standing of the largest credit institutions in China.

## 4.4. Economic impact of implementing the Basel Accord

Improved supervisory tools were to increase the stability of financial institutions and to ensure that they could be held accountable for their operations. The consequence of this solution were the associated costs that these entities had to bear in order to meet the new requirements. These costs stemmed from the need to raise additional capital, the alternative being divestment, particularly in risky, but potentially profitable assets. In practice credit institutions tended to implement

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17 *Ibidem*, pp. 33–35.

18 Basel Committee on Banking Supervision [2017], *Assessment of Basel III LCR regulations – China*, Bank for International Settlements, Basel, p. 26.

19 Basel Committee on Banking Supervision [2016], *Assessment of Basel III G-SIB framework and review of D-SIB frameworks – China*, Bank for International Settlements, Basel.

20 Basel Committee on Banking Supervision [2018], *RCAP jurisdictional assessments: self-reporting monitoring template for RCAP follow-up actions*, Bank for International Settlements, Basel.

a mixture of both solutions i.e. reducing maximum risk exposures, while raising additional funds. Both the affected companies and the regulatory authorities tried to model the potential consequences of this general shift in operations, through running stress-tests and calculating the missing capital against different thresholds, but the net impact of more strict supervision was hard to assess.

The author proposes using a dedicated synthetic indicator to perform ex-post analyses of the impact that the new capital requirements had on the affected financial institutions. Such measure analyses the different aspects of the bank's operations collectively in order to evaluate how well a given entity performed when compared to its competitors. The results can then be presented in form of a ranking, that can provide valuable feedback to both bank's management and the supervisory authorities.

For the purposes of the analysis presented here, three aspects of bank's operations have been evaluated:

- profitability,
- risk exposure,
- liquidity.

These aspects have been parametrised with financial indicators that are both commonly used and relatively easy to interpret. Profitability was measured with Return on Equity (ROE), Return on Risk-Adjusted Assets (RORAA) and operational costs level indicator. First two reference the net income of a bank against its equity size and risk-adjusted asset size respectively. Last one compares the bank's total costs to its total risk-weighted assets value.

Risk exposure of credit institutions was represented with three measures: provisions level, loans quality and the BCBS-recommended Tier 1 capital ratio. First ratio compares the size of the bank's loan loss provisions (funds set aside to cover future expected losses) to the total value of loans granted. Second indicator reflects the percentage of loans granted by the bank that are considered to be non-performing i.e. unlikely to be repaid in part or in total. Tier 1 capital ratio compares the value of Tier 1 regulatory capital and the bank's risk-weighted assets. Only the most liquid instruments can be included in Tier 1 regulatory capital, such as bank's shares, provisions and retained earnings.

In terms of liquidity the chosen indicators were loans/deposits ratio and the Basel-recommended NSFR. The first ratio reflects the share of deposits that are used for granting loans, that constitutes the most standard banking activity. Low values of this ratio also signal that the given institution invests the accumulated funds in other, potentially more risky investments. The NSFR is a long-term liquidity indicator, that compares the value of the bank's stable financing (such as loan loss provisions) to the value of its long-term assets, including loans to customers and derivatives. Different positions are also assigned different weights so as to better reflect their long-term availability or financing needs. It should be noted that since the BCBS recommendation introduces a very detailed procedure for calculating

NSFR that requires similarly detailed data, a simplified approach had to be taken for the purposes of this analysis. The following positions have been used for calculating a simplified NSFR (table 4.1.):

**Table 4.1.** Simplified NSFR calculation parameters

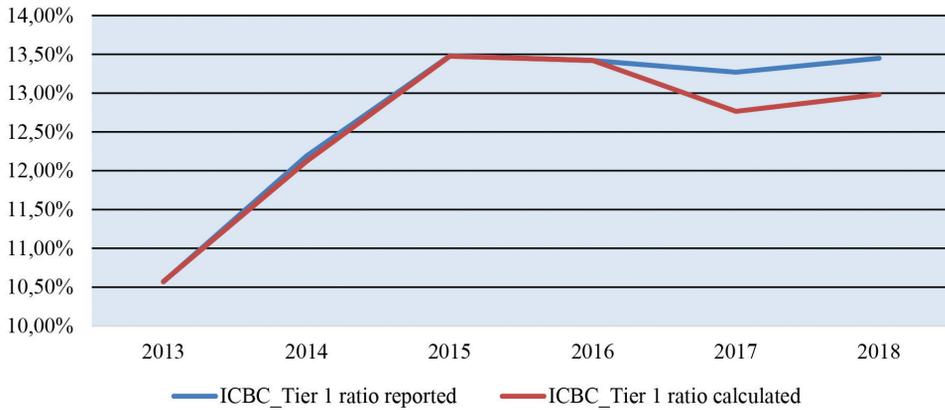
Required stable funding	Weight
Loans to non-financial customers	1
Loans to financial customers	0.85
Derivatives	0.3
Other securities and other earning assets	0.3
Fixed assets and non-earning assets	1
Available stable funding	Weight
Deposits from non-financial customers	0.85
Deposits from financial customers	1
Loan loss provisions	1
Other funding sources (other provisions, retained earnings, short-term loans)	1
Equity	1

**Source:** own elaboration

Financial information necessary to calculate all the components of the synthetic measure were collected for the years 2013 until 2018. The analysis scope was narrowed down to these years due to data availability — 2013 was the first year for which complete financial reports were available for all five analysed banks. Year 2013 was also the first year when Basel recommendations in China were first evaluated by the Bank for International Settlements (BIS).<sup>21</sup>

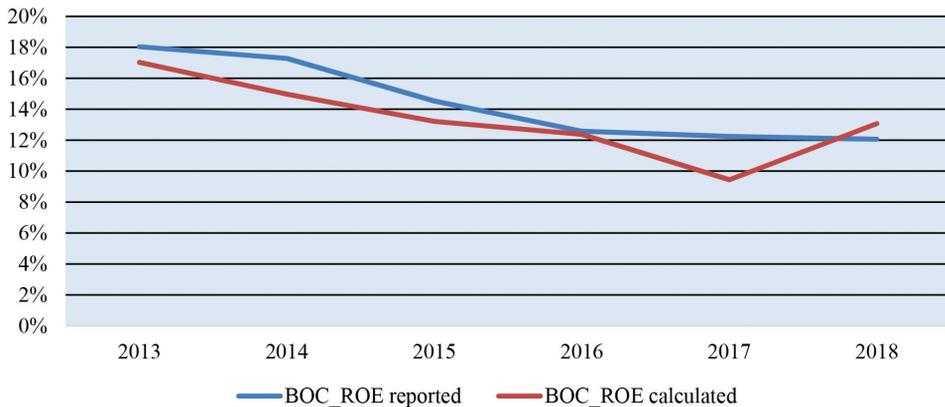
It is important to highlight that all the component indicators considered for this analysis have been calculated manually by the author i.e. even when a given institution provided information on e.g. its ROE in a given year, calculated value was used instead in order to ensure comparability. This has resulted in several minor discrepancies between the information provided by the analysed institutions and the data actually used for the synthetic measure. This was the case for Tier 1 ratio for ICBC as per figure 4.2. For other banks the reported and calculated values of Tier 1 ratio were aligned.

<sup>21</sup> Basel Committee on Banking Supervision [2013a], *op. cit.*



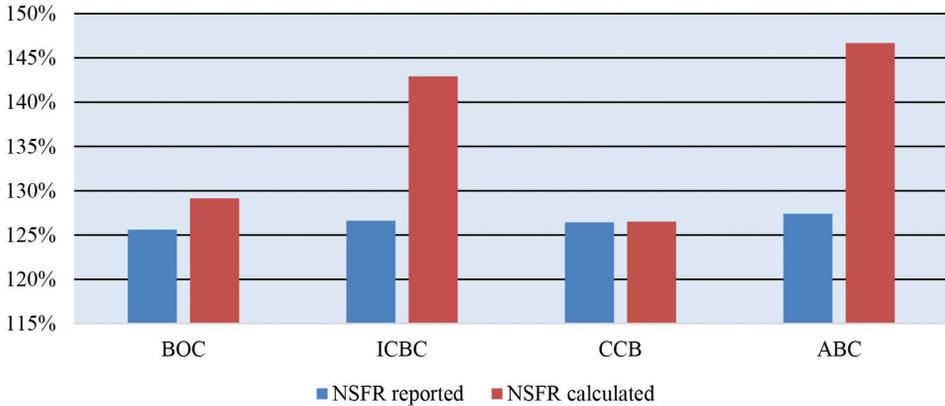
**Figure 4.2.** Discrepancies between reported and calculated values of Tier 1 ratio (%)  
**Source:** own elaboration based on: financial statements of analysed banks

More notable differences were observed between reported and calculated values of ROE, as depicted on figure 4.3. — unfortunately, only Bank of China disclosed information that allowed such comparison.



**Figure 4.3.** Discrepancies between reported and calculated values of ROE (%)  
**Source:** own elaboration based on: financial statements of analysed banks

Finally, a comparison was made between the 2018-reported and calculated NSFR, where available. The simplified approach used for this analysis proved to be relatively accurate for two out of four banks (figure 4.4.).



**Figure 4.4.** Discrepancies between reported and calculated values of NSFR in 2018 (%)  
**Source:** own elaboration based on: financial statements of analysed banks

After all the financial indicators were calculated they had to be analysed in terms of their correlation. Results indicated high correlation between operational costs level and NSFR, as well as RORAA and ROE. In order to ensure only new, non-correlated information are brought into the synthetic measure by each of its components, ROE and operational costs level indicator have been excluded from further analyses. It should be noted that relatively strong link still existed between NSFR and Tier 1 but given that both parameters represent different aspects of bank's functioning, the author decided to keep both parameters in the new measure.

In order to include all the component indicators in a single measure, they had to be brought down to additive values. Normalisation was done through the following calculation:

$$z_{ij} = \frac{x_{ij}}{\max x_i} \quad (\text{for stimulants})$$

$$z_{ij} = \frac{\min x_i}{x_{ij}} \quad (\text{for destimulants})$$

$$z_{ij} = \begin{cases} 1 & \text{dla } x_{lo} \leq x_{ij} \leq x_{hi} \\ \frac{x_{ij}}{x_{lo}} - 1 & \text{dla } x_{ij} < x_{lo} \quad (\text{for nominants}) \\ \frac{x_{hi}}{x_{ij}} - 1 & \text{dla } x_{ij} > x_{hi} \end{cases}$$

where:

- $z_{ij}$  – normalized value of indicator  $j$  in a given year,
- $x_{ij}$  – value of indicator  $j$  calculated for bank  $i$  in a given year,
- $\max x_i$  – maximum value of an indicator for bank  $i$ ,
- $\min x_i$  – minimum value of an indicator for bank  $i$ ,
- $x_{hi}$  – upper threshold for a given indicator,
- $x_{lo}$  – lower upper threshold for a given indicator.

Stimulants are indicators, for which high values are desirable (RORAA, Tier 1 ratio and NSFR), while destimulants should be as low as possible (loans quality ratio). Indicators, the value of which should fall within certain thresholds are called nominants. Literature recommends loans/deposits ratio values to fall between 80 and 160%.<sup>22</sup>

Calculation of a synthetic measure comes down to calculating arithmetic average out of all of its components. Weights can also be introduced in order to place emphasis on a given aspect of the bank's performance. The analysis was performed in four variants — one without weights and three, where larger weight was assigned to liquidity, risk-exposure and profitability respectively. Calculation results were presented below, but before they are analysed, an additional reference value needs to be calculated, that reflects the minimum value of the synthetic measure, that can be deemed satisfactory — such calculation is done according to the following equation:<sup>23</sup>

$$m_{s\_ref} = \sum_{i=1}^n \frac{(z_{i\_ref\_j} \times w_j)}{n}$$

$$z_{i\_ref\_j} = \begin{cases} \min z_{ij} & \text{for stimulants} \\ \min z_{ij} & \text{for destimulants} \\ 1 & \text{for nominants} \end{cases}$$

where:

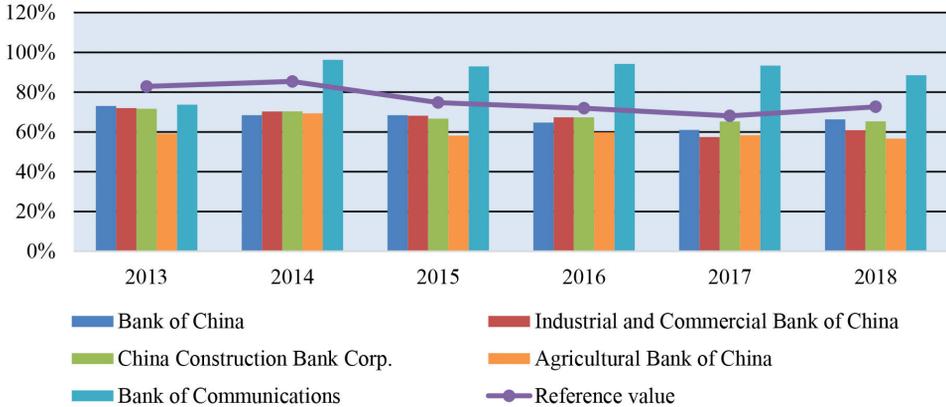
- $m_{s\_ref}$  – reference value of the synthetic indicator,
- $z_{i\_ref\_j}$  – normalized reference value for indicator  $j$  calculated for bank  $i$ ,
- $w_j$  – weight assigned to the given indicator,
- $\min z_{ij}$  – minimum normalized value of indicator  $j$  calculated for bank  $i$  over the analysed period.

The results of the base calculation (with no weights assigned to the components) have been presented on figure 4.5. Over the analysed period only the smallest institution, Bank of Communications, has managed to achieve values of the synthetic measure greater than the reference metrics. This signals that the new prudential regulations have been particularly burdensome for the largest Chinese banks. Such conclusion is also in line with the sharp decline in profitability as observed on figure 4.3.

<sup>22</sup> D. Strahl [1996], *Modele zarządzania bankiem (model Triada)*, Wydawnictwo Akademii Ekonomicznej, Wrocław.

<sup>23</sup> *Ibidem*.

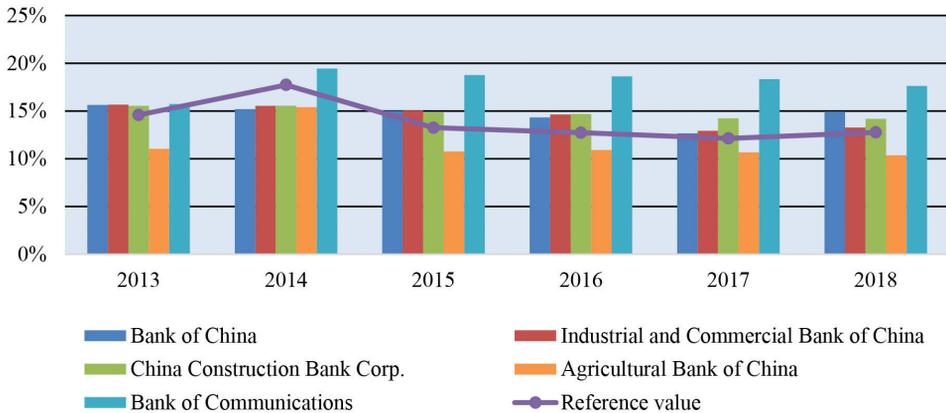
Judging by its relative position over the analysed period, Agricultural Bank of China seemed to be struggling most with meeting the new capital requirements.



**Figure 4.5.** Synthetic indicator – base scenario (%)

**Source:** own elaboration based on: financial statements of analysed banks

Variant 2 of the analysis, putting greatest emphasis on profitability was presented below (figure 4.6.). In this case weight of 0,4 was assigned to RORAA, while the other parameters had the weight of 0,15. The results clearly put the Chinese institutions in a better light, since four out of five analysed institutions have met the minimum requirement each year except for 2014. In this variant, performance of the ABC appears to be notably worse than of its competitors, since its score remained well below the reference value over the analysed period.

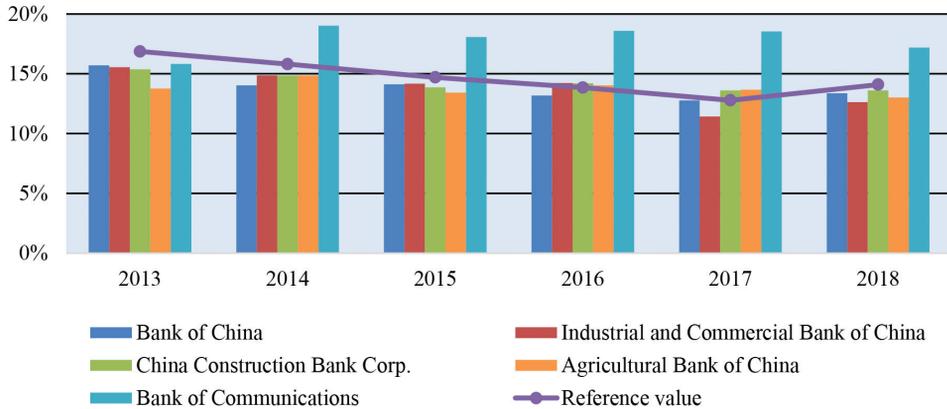


**Figure 4.6.** Synthetic indicator – focus on profitability (%)

**Source:** own elaboration based on: financial statements of analysed banks

Variant 3 of the analysis, prioritising risk exposure parameters, was presented on figure 4.7. Although CCB and ABC both managed to achieve the minimum

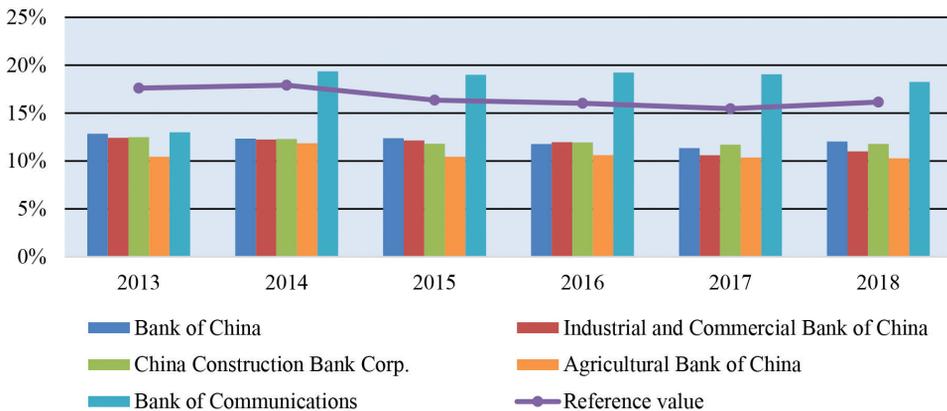
value of the synthetic measure in 2016 and 2017, only Bank of Communications has exceeded the minimum value in the last year of the analysis. It is also worth to point out that this time it was ICBC that performed worst over the last two years.



**Figure 4.7.** Synthetic indicator – focus on risk exposure (%)

**Source:** own elaboration based on: financial statements of analysed banks

In the last variant of the analysis, strongest emphasis was put on liquidity parameters (figure 4.8.). Results of the study in this case are definitively worst for all four state-owned credit institutions, as they are significantly below the minimum satisfactory value in all years of the analysis. This may be largely stemming from the fact that their loans/deposits ratio remained below the recommended 80% threshold throughout the analysis. Once again the ABC ranks last, suggesting that this entity had encountered largest difficulties with raising its capital base. Results of this variant also signal that the overall financial standing of ICBC deteriorated over the last two years, when compared to its competitors.



**Figure 4.8.** Synthetic indicator – focus on liquidity (%)

**Source:** own elaboration based on: financial statements of analysed banks

The results of the analysis in each variant seem to confirm that large financial institutions have difficulties with meeting the new capital requirements, since they are obliged to raise substantial funds to cover their exposures. While the analysed institutions were able to improve their capitalisation substantially, they have seen a notable decline in their profitability.

## Conclusions

The story of China's competitive banking sector is relatively short, but the country has developed fast in terms of supervising its financial institutions. Improving compliance with BCBS recommendations and growing experience of the national regulatory authority have resulted in successful increase of the banking sector's capitalisation. China has also decided to speed up the liberalisation of the sector in an attempt to increase competition and reduce market concentration.

The analysis with the use of a synthetic indicator that was presented showed general deterioration in the financial standing of Chinese credit institutions. It needs to be emphasised, though, that this does not mean that their condition is in any way bad. The resultant ranking shows changes in a bank's relative condition that may, to a large extent, be a result of the new capital requirements.

The results of ex-post synthetic analysis of the largest Chinese banks do not suggest the need for any immediate regulatory action although they do flag up ABC as an institution that might become of concern if the trend continues. The analysis also confirmed that larger banks find it much more difficult to adjust smoothly to the new capital requirements. This underlines the need for strict supervision of the banks in China, which are already among the largest in the world and continue to grow as they expand onto different markets and as the national economy develops further.

## Chapter 5

# The development of the FinTech sector as a source of innovation for the Asian financial market — the example of China

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The chapter presents innovative FinTech companies, dynamically developing in Asia, representing the economic sector combining technological and financial solutions, usually using the Internet or other available electronic communication technologies. The chapter shows the aggregate definition of FinTech and its characteristics. The next part focuses on the development of FinTech companies on the Asian financial market in comparison with the global scale. The chapter also shows the conditions for the development of the FinTech market in the Asian market, with particular emphasis on China — as the country in which the most FinTech companies operate and the most capital from FinTech financing rounds is located there.

The chapter uses a critical analysis of literature on the subject, mainly English language studies from recent years, indicating the state of the Asian FinTech market and its importance on a global scale. The author analysed statistical data from PWC Global FinTech Report, CitiGPS reports, Capgemini and KPMG reports, which made it possible to present the value of global investments in FinTech. The conducted causal analysis indicates that investments in the Asian sector of FinTech, especially in China, are becoming increasingly popular. They are increasingly used by banks and companies.

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## 5.1. The FinTech sector in global terms

Recent years have seen rapid development of new technologies in the world around us. This also applies to events on the financial services market. Undoubtedly, innovations have been an important element of achieving competitive advantage in the financial sector in recent years. They are a key factor determining the potential of financial institutions to adapt to new market conditions. Financial market participants implement innovative products and services on a large scale or implement solutions manufactured by third parties, which in the long run significantly affects the ways of managing human resources, relations with customers and their assets.<sup>1</sup>

While financial innovation is nothing new, investment in technology and the pace of innovation have increased significantly. FinTech's solutions are being implemented using digital identification, mobile applications, cloud computing, large data sets analysis, artificial intelligence, blockchain and distributed registry technology. New technologies are changing the financial sector and the way consumers and businesses access services, giving FinTech based solutions the ability to provide digitally connected citizens with better access to finance and greater financial inclusion for citizens. Modern technologies are dynamically entering the financial sector. They are used not only by banks, but also by entities that want to operate in the financial sector. Active and creative companies from the FinTech sector are doing better and better on the market. Recent years have seen effective entry of companies from this sector into the markets of Asia, Europe and the United States. Particularly noteworthy is the development of the Chinese FinTech industry, which has become a global phenomenon. Its most important segments, i.e. peer-to-peer loans, online wealth management, insurance and payments, have increased several times since they were set up. Moreover, the FinTech of the Middle Kingdom manage more and more resources.<sup>2</sup>

The dynamic development of the FinTech sector is related to one of the most important objectives in the current development of the People's Republic of China, i.e. the increase in the innovativeness of the Chinese economy by 2020. They plan to achieve the status of an innovative nation, and by 2050 — a global scientific power.<sup>3</sup> The pursuit of these goals is manifested in the pro-innovative economic policy. From the point of view of presenting appropriate forecasts for the further development of the Chinese economy, it is important to analyse current concepts for the development of its innovativeness. It is also important to assess the func-

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1 W.S. Frame, J.L. White [2002], *Empirical Studies of Financial Innovation: Lots of Talk, Little Action?*, "Federal Reserve of Atlanta. Working Paper", vol. 6, p. 41.

2 S. Chishti, T. Puschmann [2018], *The Wealthtech Book: The FinTech Handbook for Investors, Entrepreneurs and Finance Visionaries*, Wiley, United Kingdom, p. 10.

3 V. Mayer-Schänberger, K. Cukier [2017], *BIG DATA. A revolution that will change our thinking, work and life*, MT Biznes, Warszawa, p. 38.

tioning of instruments supporting the innovativeness of the Chinese economy. Currently, a record number of patents are registered in China, although according to experts, there is still a problem with their quality. Chinese institutions and companies are becoming increasingly innovative and competitive. Currently, China is one of the four leading countries in the world in the field of scientific publications.<sup>4</sup>

## 5.2. FinTech as an innovation in the financial market

Innovations in the modern world are the core of modern strategies for economic growth, business development and the formation of the prosperity of nations. We can observe a dynamic shift in the structures of developed economies towards knowledge-based industries and services.<sup>5</sup> The innovation process is moving away from a single event, focusing on a complex of events and phenomena leading to the emergence of new products, patterns, technologies and services. Additionally, this process takes place in a specific system, which includes a network of enterprises, research institutions, the government and non-governmental organisations.<sup>6</sup>

The economy in the modern world could not function without an efficient financial system defined as a set of markets, institutions and regulations through which financial services are provided. The modern financial system is characterized by constant implementation of innovative financial solutions. Therefore, financial innovations can be defined as financial services offering new products to specific clients, as well as activities that are related to the introduction or improvement of financial instruments, changes in the organizational structure of the system and the implementation of modern technologies and computerization.<sup>7</sup>

FinTech is an innovative way of making various types of value management transactions and technologies that make it possible.<sup>8</sup> Financial innovation shortens the time of reaching customers with new solutions and reduces operating and process costs wherever there is an online transfer of value. FinTech's solutions can

4 D. Ernst [2011], *China's Innovation Policy Is a Wake-Up Call for America*, "Asia Pacific Issues", vol. 100, p. 17.

5 J. Błach [2017], *Financial innovations and their significance in the modern financial system – identification and systematization of the problem*, "e-Finances", vol. 7, p. 36.

6 W. Szpringer [2017], *New technologies and the financial sector. FinTech as an opportunity and a threat*, Wydawnictwo Naukowe Poltext, Warszawa, p. 31.

7 A. Czubała [1996], *Production Distribution*, Państwowe Wydawnictwo Naukowe, Warszawa, p. 28.

8 B. Nicoletti [2017], *The Future of FinTech: Integrating Finance and Technology in Financial Services*, Palgrave Macmillan, Rome, pp. 62–73.

be offered by start-ups and mature, well-established financial institutions. The main objective of financial technologies offered by entities from this sector is to improve the efficiency and availability of financial services, both from the perspective of the customer and the financial institution.<sup>9</sup>

FinTech develops in virtually every corner of the world. The Silicon Valley is often regarded as the cradle and the essence of FinTech, where many global technological trends began. It is there, south of San Francisco, that giants such as Google and Apple were born. In the case of FinTech, however, it is a bit different.<sup>10</sup> According to a ranking important for the industry — “Connecting Global FinTech: Hub Review” by Deloitte, a consulting firm, which is created on the basis of three indices: The World Bank’s Doing Business Index, Global Innovation Index (Cornell University, INSEAD, World Intellectual Property Organization) and Global Financial Centres Index (Z/YenGroup) — FinTech’s top four places: London, Singapore, New York and Silicon Valley. The largest number of FinTech’s is in Europe, with a clear dominance of London. Old Continent is fast chasing Asia, where market regulators are open to FinTech and willingly cooperate with regulators from other countries. This is the case, for example, in Singapore, where such renowned financial institutions as HSBC, Aviva, Allianz, UBS or Citi implement their cooperation programmes with innovative companies (so-called accelerators of innovation).<sup>11</sup>

FinTech solutions include a wide variety of innovations for banking, insurance, asset management and capital markets, capital raising, personal finance, payments, data acquisition and storage, analytics, cyber security and other technologies. Taking into account the subject of innovation, the best way to group them is in five basic segments: financing, asset management, payments, insurance and advanced analytics. The largest number of FinTech entities operate on the payments and financing market (mainly of individual customers and small and medium companies).<sup>12</sup>

The FinTech sector includes very diverse entities, and most often:<sup>13</sup>

- giants of technologies known under the acronym GAFA, such as Google, Apple, Facebook and Amazon, which cooperate with traditional banks by providing them with applications for mobile payments (including Google Pay, Apple Pay);
- entities offering several financial services (so-called multifinancing), operating mostly in the virtual, m-payment and payment card markets or in the

9 KPMG [2018a], *The Pulse of FinTech 2018*, <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/the-pulse-of-fintech-2018.pdf> (accessed: 10.10.2018).

10 KNF [2017], *Report on the work of the Financial Innovation Working Team (FinTech)*, [https://www.knf.gov.pl/knf/pl/komponenty/img/Raport\\_KNF\\_FinTech\\_60024.pdf](https://www.knf.gov.pl/knf/pl/komponenty/img/Raport_KNF_FinTech_60024.pdf) (accessed: 11.12.2017).

11 Ernst & Young [2019], *Global FinTech Adoption Index 2019*, London, [https://assets.ey.com/content/dam/ey-sites/ey-com/en\\_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf](https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf) (accessed: 12.03.2019).

12 Ch. Skinner [2014], *Digital Bank. Strategies to Launch or Become a Digital Bank*, Marshall Cavendish Int., Singapore, p. 12.

13 NBP [2017], *Globalny raport konkurencyjności 2016–17 Światowego Forum Gospodarczego*, [https://www.nbp.pl/aktualnosci/wiadomosci\\_2016/20160928\\_awans.pdf](https://www.nbp.pl/aktualnosci/wiadomosci_2016/20160928_awans.pdf) (accessed: 08.12.2017).

short-term loan market; the largest of them, such as Ant Financial Services Group, Grab and DuXiaoma, operate in Asian markets, providing services to the financially excluded;

- entities specializing in the provision of a narrow range of services, such as Robinhood, offering applications for trading in shares of listed companies, ETFs, options and cryptovalues;
- modern virtual banks (the so-called neobanks), such as Nubank from Brazil, Atom Bank from Great Britain or Revolut, which are among the largest FinTech companies in the world.

The term FinTech has become a popular international abbreviation for Financial Technology, i.e. innovative financial services based on ICT (Information-Communication Technology), for the financial sector and for the customers of this sector. The Basel Committee proposed to treat FinTech as: *technological financial innovations, which result in new business models, applications, processes or products, which have significant material impact on the operation of financial markets and institutions, as well as on the provision of financial services.*<sup>14</sup> The main objective of the financial technologies offered by this sector is to improve the efficiency and accessibility of financial services, both from the perspective of the client and the financial institution.<sup>15</sup>

Although the phenomenon of FinTech has been discussed in terms of context, novelty and innovation for only a few years, the earliest references to this phenomenon appeared in the American press as early as the early 1980s. These included computerisation solutions and the mass use of telecommunications in banks and financial markets. Undoubtedly, the dynamic development of FinTech companies is strongly correlated with the development of the Internet at the beginning of the 1990s. The first strictly FinTech companies with global reach were created with the mass spread of new online services, e.g. PayPal in 1999, which proved to be an ideal solution for auction portals. The FinTech revolution started for good with the mass popularization of smartphones, i.e. after 2010.<sup>16</sup>

### **5.3. The characteristics of the Asian market FinTech**

Based on the CEE FinTech Report analysis, it can be concluded that the global investment market in FinTech is estimated at over USD 19 billion, i.e. over EUR 15 billion. The reports forecast the growth rate of investments in this sector to be

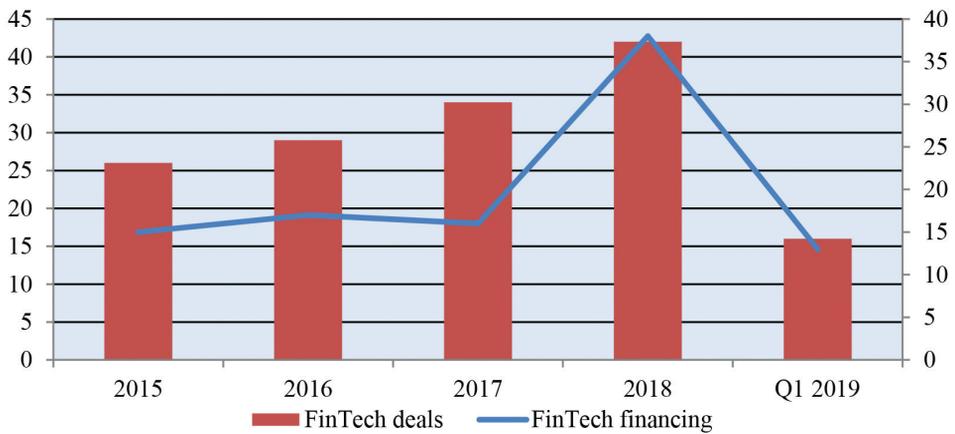
<sup>14</sup> W. Szpringer [2017], *op. cit.*, p. 18.

<sup>15</sup> T. Bull, S. Lewis [2015], *Fintech is gaining traction and Young, High-Income Users are the Early Adopters*, "Journal of Financial Perspectives", vol. 3, p. 15.

<sup>16</sup> KNF [2017], *op. cit.*

55 % per annum by 2020. Celent, a consulting company, calculated that last year European banks spent EUR 5 billion on information technologies. The market of technologies supporting financial services in Central and Eastern Europe is worth approx. The market of technologies supporting financial services in Central and Eastern Europe is worth about EUR 2.2 billion. On the European scale, the FinTech sector is the fastest growing sector in Great Britain. In 2015, FinTech companies from this country recorded revenues of approximately EUR 26 billion. In Central and Eastern Europe, they generate 2.2 billion revenues annually, i.e. twelve times less.<sup>17</sup>

In 2018 CB Insights selected 250 best FinTech's from all over the world. Starting in 2013, the companies included in the ranking raised a total of USD 53 billion in 947 financing rounds (figure 5.1.).



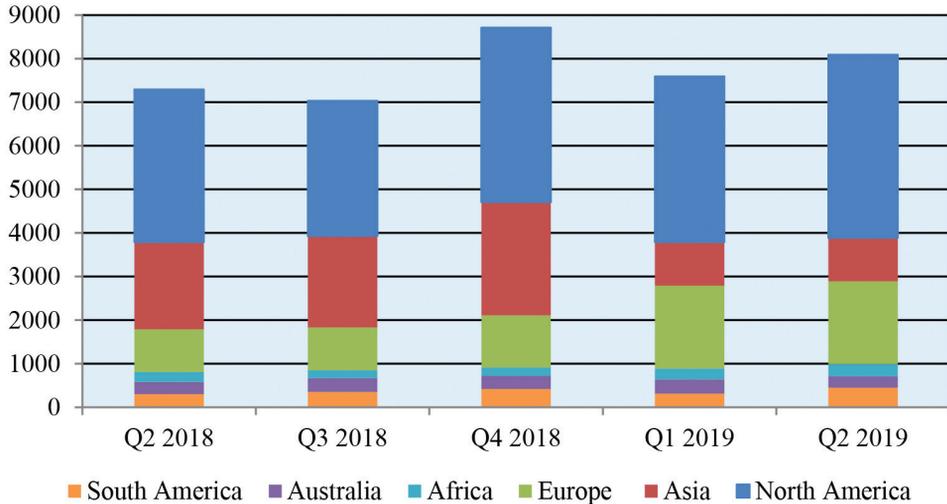
**Figure 5.1.** Annual global VC-backed FinTech deals and financing, 2015 – Q2'19 (mln USD)

**Source:** own elaboration based on: PWC [2019], *Global FinTech Report 2019*, <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2019.pdf> (accessed: 09.11.2019)

The ranking included 30 unicorns, i.e. companies valued at a minimum of USD 1 billion. New unicorns include such companies as Revolut, Nubank, or PolicyBazaar, most of them come from the United States. Since 2017, 250 distinguished finishes have gained a total of 31.8 billion dollars in 373 rounds of financing. After the United States, the highest positions are occupied by Great Britain and India. The largest venture capital investor in the Fintech industry is Ribbit Capital, which supported such companies as Revolut, Nubank, PolicyBazaar, Robinhood, Coinbase, Gusto, or Upgrade, while the highest investment was a subsidy for the Chinese company Ant Financial, from the Alibaba group. Chinese FinTech received

<sup>17</sup> KPMG [2018a], *op. cit.*

USD 14 billion (table 5.1.) and investors included General Atlantic. In the first half of 2018, total investment in the 875 largest FinTech companies worldwide reached a record USD 57.9 billion (figure 5.2.), more than 70% more than in 2017. Nearly half of this money was invested in two companies focusing on digital payment services: WorldPay and Ant Financial.<sup>18</sup>



**Figure 5.2.** Global VC-backed FinTech funding by continent, Q2'18 – Q2'19 (mln USD)  
**Source:** own elaboration based on: PWC [2019], *Global FinTech Report 2019*, <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2019.pdf> (accessed: 09.11.2019)

FinTechs are increasingly mature, larger, more stable and generate higher revenues, resulting in higher and higher valuations in subsequent financing rounds. An analysis of investments in the fintech in 2018 shows that banks, insurance companies, venture capital funds, or technology investors who are looking for new opportunities to use their digital competences, are choosing an increasingly wide range of solutions.<sup>19</sup>

The amount of investment in the FinTech industry is constantly increasing. New development centres are also appearing. The countries of the Association of South-East Asian Nations (ASEAN) do not intend to passively observe these changes. Around 21.6% of the venture capital investments (USD 345 million) from last year and the beginning of this year, the associated countries have earmarked for FinTech companies and solutions. Singapore, Philippines, Thailand, Indonesia and other members are increasing their interest in blockchain technology and alternative ways of financial management. It is the payments and

<sup>18</sup> Ernst & Young [2019], *op. cit.*  
<sup>19</sup> KPMG [2018a], *op. cit.*

lead generation that attracts the most attention from investors. Funds targeting these sectors represent as much as 78% of all ASEAN investments last year and this year. The demand for new ways of payment and off-bank financial solutions is steadily growing, due to the preferences of citizens. Simpler and cheaper solutions are, of course, very tempting.<sup>20</sup>

In 2018, investments in Asian FinTech companies reached USD 22.7 billion in 372 transactions. The 14 billionth round of Ant Financial in the first half of the year was a huge outlier (table 5.1.). FinTech investments in Singapore increased to a new maximum of USD 346.6 million. Global expansion and investments are the top priority for Chinese FinTech's and large technologies. In 2018, Asia reached a new highest level in FinTech financing, with nearly USD 22.7 billion raised in 372 transactions. More than half of this investment, however, came from one crushing world record in the first half of the year 18: the C series worth USD 14 billion by Ant Financial. In addition to the Ant Financial Agreement, Asia saw only one additional agreement for more than 1 billion dollars — in December USD 1.3 billion was raised through Lu.com's online loan platform.<sup>21</sup>

**Table 5.1.** Top 10 FinTech deals in Asia in H1'18 (mln USD)

Name of company	Amount of transaction	Country
Ant Financial	14000	China
Dianrong	290	China
PolicyBazaar	200	India
Wecash	160	China
Meili Jinrong	130	China
Tiantian Paiche	100	China
Lendingkart	88	India
Pine Labs	82	India
Capital Float	67	India
9F	65	China

**Source:** own elaboration based on: KPMG [2018a], *The Pulse of FinTech 2018*, <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/the-pulse-of-fintech-2018.pdf> (accessed: 10.10.2018)

20 Capgemini & LinkedIn & Efma [2016], *World FinTech Report 2017*, [www.capgemini.com/serve/introducing-the-world-fintech-report-2017](http://www.capgemini.com/serve/introducing-the-world-fintech-report-2017) (accessed: 05.05.2017).

21 T. Copp [2012], *Development concepts and instruments for supporting the innovativeness of the Chinese economy*, "Scientific notebooks of the Szczecin University", vol. 715, p. 16.

FinTech's investment in China has slightly decreased this year, not counting the huge investment of Ant Financial. Partly, this was probably due to the maturing of the key FinTech sub-sectors in China. For example, investors were less focused on payments as China grew rapidly by a few dominant market leaders, leaving little interest in smaller players. FinTech investments in other sub-sectors have started, including biometric security, face recognition and voice recognition.<sup>22</sup>

One of the important factors behind the strong growth of the centres in the region is the ever-increasing efficiency of Asia in innovation management. The latest data from the World Intellectual Property Organization shows that Asia has more than doubled its share of patent applications filed with the UN Patent Cooperation Treaty. Within a decade, from 2005 to 2015 — in this field, it achieved a 43% increase. The region is also currently receiving over 56% of subsidies for the protection of intellectual property (in 2005 it was 45%). On the other hand, Europe's share in the use of these subsidies decreased from 24% to 13% between 2005 and 2015.<sup>23</sup>

Not only companies from the region invest in Asian innovation centres. In the latest Capgemini Consulting survey, their percentage dropped from 41% to 29%. At the same time, the number of investors from the USA increased — in this case from 32% to 53%. This means that Americans themselves increasingly believe in the opportunities of Asian competitors of the United States in the innovation sector. According to the American authorities, China is a country that stands on a similar level to the USA in the rapidly developing field of AI — deep learning. It is worth recalling in this context that in 2015, technological giants such as Google, Facebook, Microsoft and Baidu spent USD 8.5 billion on acquisitions of companies whose activities are connected with artificial intelligence. This is a fourfold increase since 2010. AI is interested in various sectors of the economy, including financial and automotive. For example, Honda opened the AI Innovation Center in Tokyo to make good use of the competences needed to commercialize autonomous cars. There will be more and more such Asian enterprises.<sup>24</sup>

Interest in the Asian continent in terms of innovation is announced by the official Ferrero company, which opened the Ferrero Innovation Centre in Singapore. The company's first such centre in Asia. The task of the new centre is to strengthen Ferrero's position as a global leader in innovation. The centre will include several strategic innovative functions in health and nutrition, research and development in the field of new raw materials and products, consumer behaviour analysis and conceptual activities. The President of the Singapore Economic Development Council, Dr. Beh Swan Gin, commented that Ferrero's decision to establish the

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22 S. Chishti, T. Puschmann [2018], *op. cit.*, p. 28.

23 Ł. Piechowiak [2019], *Chinese vision for the development of the fintech sector? Regulations and support of global expansion*, <https://fintek.pl/plany-chin-na-rozwoj-sektora-fintech/> (accessed: 15.01.2019).

24 V. Mayer-Schänberger, K. Cukier [2017], *op. cit.*, p. 38.

world's first Asia Innovation Centre in Singapore reflects the importance of fast-growing consumer markets in the region and highlights Singapore's position in the region as a food and nutrition centre.<sup>25</sup>

The decision to locate the Ferrero Innovation Centre in Singapore was influenced by its strategic location in Asia and the significant role that Singapore plays in the global scientific community, including the Science, Technology and Research Agency and major university centres. Singapore is a dynamic and innovative environment, combining human resources and scientific talents with the diverse demographic structures of Asian consumers. It is the ideal platform to work with new technologies and raw materials to create and test new products in a market of strategic importance to Ferrero.<sup>26</sup>

## 5.4. Development of FinTech's market in China

The three largest Asian economies in terms of exports, both traditionally measured and in terms of value added. China's total spending on research and development in 2017 amounted to 1.76 trillion yuan (USD 297 billion), which is 14 percent more than in the previous year — said the Chinese minister of science on Monday, adding that by 2050 China wants to become a “power of innovation”. For several years now, the Chinese authorities have been trying to make the economy independent of heavy, low-quality industry and to switch to high-tech growth to reduce environmental pollution and move up the global supply chain. According to Reuters' calculations, R&D spending accounted for 2.1% of China's gross domestic product in 2017. For comparison, according to World Bank data, in 2015 Poland spent 1% on research and development, the USA 2.79%, Germany 2.88%, and Japan — 3.28% of its GDP.<sup>27</sup>

Innovation is the source of the country's prosperity. Reform and openness are an important idea and a real innovation that has been an inexhaustible source of growth for China over the past 40 years and has greatly inspired the creativity of the Chinese people. Shenzhen, 40 years ago a small fishing village, became a capital of innovation and a window on the world of reforming and opening China. World famous companies such as Huawei, Dajiang, BYD and many others flourished there. In 2017 China was the second largest country in the world in terms of R&D spending, the first in terms of employment in R&D, and the number of patent applications filed by the Chinese over the last seven years was the highest

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25 Ernst & Young [2019], *op. cit.*

26 W.S. Frame, J.L. White [2002], *op. cit.*, p. 41.

27 KPMG [2018a], *op. cit.*

in the world. The development of high-speed railways, quantum communications and electronic payments has made China one of the world's leading players in these industries. In the future, China will continue to implement its innovation strategy, accelerate the building of an innovative country and strive to move from rapid economic growth to high quality growth.<sup>28</sup>

The main source of the dynamic growth of the FinTech segment in China (table 5.2.) is the immature and structurally challenging financial market. Although the Chinese authorities are fully aware of these shortcomings and are gradually trying to address them, it appears that the internet and mobile devices, which fill many of the gaps in the financial system, are making changes faster than any formal measures. The FinTech industry owes its dynamic development also to the creation of BAT (Baidu, Alibaba and Tencent trio), increased investments in modern ways of conducting transactions, a gigantic increase in e-commerce and digital payments, and regulatory pressure. Already in 2016, Beijing's activity promoting modern technologies paid off, the published rankings of 100 best FinTechs included four companies from China. Ping An Technology took the 38<sup>th</sup> place at the highest level. Next place was taken by Hundsun Technologies Inc. (54<sup>th</sup>), Pactera Technology International Ltd (55<sup>th</sup>) and ECCOM Network (64<sup>th</sup>). In 2015, none of the Chinese companies was included in the ranking.<sup>29</sup>

The development of the Chinese FinTech industry is a phenomenon on a global scale, as its most important segments, i.e. peer-to-peer lending, on-line wealth management, insurance and payments, have even increased several times since their inception. In addition, Chinese FinTechs are managing more and more resources. For example, Yu'E (owned by Ant Financial) currently trades in assets worth over 210 billion dollars, which means almost 80% growth from 2014.<sup>30</sup> In 2017, the market for investments in the industry closed at USD 6.4 billion, which was three times higher than in 2013. For comparison, in the period 2013–2016 the market of investments in FinTech in the United States, so far the leader in this area, increased “only” by 42%. Chinese FinTech were also targeted at investors who like risky undertakings. Still in 2013, venture capital bypassed this industry in the Middle Kingdom, while in 2017 investments in Chinese FinTech's were the highest in the world. In 2017, China accounted for 47% of the global market for investments in the FinTech sector, while in 2015 its share was only 20%.<sup>31</sup>

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28 T. Copp [2012], *op. cit.*, p. 32.

29 CFA Institute [2018], *FinTech in Asia Pacific: 2018 Edition*, <https://www.cfainstitute.org/-/media/documents/book/industry-research/fintech-booklet.ashx> (accessed: 19.03.2019).

30 *Ibidem*.

31 KNF [2017], *op. cit.*

**Table 5.2.** Top 10 FinTech Companies China

Name	Creation date	Business profile
<b>Ant Financial</b>	Founded 2004 (Alipay), 2014 incorporated as Ant Financial	Financial Services Provider Offer services to individuals and MSMEs and enhancing financial inclusion
<b>BUBI</b>	Founded 2016	Blockchain service platform Applies blockchain to supply chain finance and digital assets Smart contracts Consensus mechanism Privacy protection Interconnection (effective cross chain transactions and security of users private data)
<b>Dianrong</b>	Founded 2012	Online marketplace P2P lending Helps individuals and companies get funding through the platform
<b>Du Xiaoman Financial (Baidu FSG)</b>	Founded 2015	Online Financial Services Provider Short-term lending Consumer Finance Online Banking Online Insurance Wealth and Fund Management Financial Asset Transaction Platform Services
<b>Fox Fintech Group</b>	Founded 2014	Online financial services platform: Huli.com Online lending platform: Souyidai Consumer finance: Xiaohujr.com Risk management services: Fengren
<b>Fumi Technology</b>	Founded 2016	Financial Services Provider Financial Information Trading Assistance Data and Transactional Services Stocks, ETFs, CFDs Trading
<b>Fuzamei Technology</b>	Founded 2008	Supply Chain Finance Blockchain Contract Certificate Asset Digitalization
<b>iPayLinks</b>	Founded 2015	Cross-Border Payment Solutions Provider International credit cards Localised solutions Offer services to Chinese enterprises
<b>JD Digits</b>	Founded 2013	Online Financial Services Provider Consumer Credit Wealth Management Supply Chain Finance Payment Services Crowdfunding Insurance Securities

**Source:** own elaboration based on: KPMG [2018b], *China Leading FinTech 50*, <https://assets.kpmg/content/dam/kpmg/cn/pdf/en/2018/12/china-fintech-50.pdf> (accessed: 15.12.2018)

FinTech companies in China are very different from those in the United States or Europe, especially in terms of the main players and the types of services offered. They are most successful in focusing on e-commerce and financial services products and services. In Europe, the industry focuses on e-commerce and payment solutions, and B2B models are considered the most successful. The United States' Fintech market is similar to the European market for FinTech which is also active

in the B2B segment. The exponential growth of Chinese FinTech is characterised by a short period of maturity compared to global market players. For example, Lufax reached the ceiling for P2P loans of 9 billion yuan in two years of operation, while its American counterpart Lending Club had the same amount only after five years of operation.<sup>32</sup>

In August, the central bank tightened its security tools in the banking FinTech sector. To this end, it signed an agreement with 45 non-bank financial companies, under which they joined the Wanglian clearing platform. In September, the People's Bank of China banned all Initial Coin Offerings (ICOs), which were often used to raise capital for the development of FinTech. In the justification of his decision, he announced that they arouse suspicion of illegal financial activity. In the end, all funds obtained through the ICO were returned to investors and the exchange of virtual currencies issued during the ICO was prohibited. Despite these restrictions, the JP Morgan market forecasts that in 2020 the industry will reach the value of 69 billion USD of revenues, which means an annual growth of over 40%. Online payments alone should increase to a level exceeding 30 billion USD online distribution of financial products will amount to almost 8 billion, online loans may close to over 21 billion USD, and insurance will reach the level of 9 billion USD.<sup>33</sup>

FinTech companies in China benefits from less stringent regulations and infrastructure already built by the sector, which puts new players in a privileged position and does not appear to be a potential threat to the stability of the financial system as a whole. Within a few years, Ant Financial, a holding company that grew from the Alipay online payment scheme launched in 2004, has become one of the most important players in the financial market. The first historically and most important element of the financial empire built by Jack Ma is Alipay — a scheme supporting online and mobile payments. In terms of the number of processed operations, in 2017 Alipay overtook the card giant Mastercard. Also impressive is the number of customers — 620 million in China alone and 870 million worldwide, including the company's operations with various partners.<sup>34</sup>

The popularity of Alipay (and its largest, also non-banking competitor, WeChat) has become a problem for Chinese banks over time. Users transfer funds to their Alipay payment accounts outside the banking system. Money may later circulate between "purses" and customers deprive the cheap source of funding of institutions based on population deposits. From 2017, Alipay users can buy various types of insurance — from health insurance to property protection — with the help of the application. Already in the first month since the start of the project, 17 million customers benefited from the offer. The suppliers of insurance products are not only companies that have decided to cooperate with the giant, but also

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32 KPMG [2018a], *op. cit.*

33 Capgemini & LinkedIn & Efma [2016], *op. cit.*

34 KPMG [2018a], *op. cit.*

insurers associated with Ant Financial. The company also offers loans and boasts as spectacular successes as in other fields of financial activity. If Ant Financial were a bank, it would rank second in China in terms of the value of its involvement in consumer lending. The value of the company's portfolio was estimated at 600 billion yuan in March 2017.<sup>35</sup>

As a result of the rapid and dynamic development of the FinTech market in China, we are dealing with unprecedented parameters for the adoption of digital products. According to DBS bank calculations, 40% of financial sector clients use digital payments and transfers, 35% at least once bought insurance on the Internet and 14% took out a loan. It is worth noting that most of these people have never had any contact with banks. This is a result of the low level of Chinese society's bankruptcy — the majority of state-owned banks served retail customers only to a small extent and small companies unable to demonstrate either credit history or material security — the credit penetration of bank customers is only 20%. According to the World Bank, the availability of traditional banking services is still low — the number of branches and ATMs per 100.000 inhabitants is even 3–4 times lower than in Europe or the USA, the number of payment cards per capita is 10 times lower than in Singapore (3.3 cards per person) and this is not a result of the financial boom.<sup>36</sup>

The number of innovation centres that are developing research on artificial intelligence and its possible applications has increased from one (July 2015–February 2016) to nine (March–October 2016). Four of these nine centres have just been opened in Asia. Capgemini analysts point out that in 2016 China has presented its plans to stimulate innovation in AI. The Middle Kingdom wants to participate in a global race to develop this technology.

According to the US authorities, China is a country that stands at a similar level to the US in the fast-growing field of AI-deep learning. It is worth recalling in this context that in 2015, technological giants such as Google, Facebook, Microsoft and Baidu spent USD 8.5 billion on acquisitions of companies whose activities are connected with artificial intelligence. This is a fourfold increase since 2010. AI is interested in various sectors of the economy, including financial and automotive. For example, Honda opened the AI Innovation Center in Tokyo to make good use of the competences needed to commercialize autonomous cars. There will be more and more such Asian enterprises. The scale of global innovation before our eyes is tilting to the Eastern Hemisphere.<sup>37</sup>

According to DBS bank data, in the middle of 2016, 656 million people, i.e. 92.5% of the total, used online services via mobile devices. The Harvard

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35 Ernst & Young [2019], *op. cit.*

36 CFA Institute [2018], *op. cit.*

37 World Bank [2017], *The Global Findex Data Base 2017*, <https://globalfindex.worldbank.org/> (accessed: 10.03.2017).

Business Review survey shows that the Chinese pay much less attention to privacy and personal data protection than the citizens of many Western countries. A significant part of them are millennials, who already account for 45% of Chinese consumer spending; the area of expansion remains huge — over 40% of Chinese people still do not have access to the Internet. Support in the development of the Chinese FinTech market came from investors who were encouraged to operate by the Central People's Bank of China (PBOC) from 2013. In the first half of this year, Asia recorded the largest inflow of funds to the sector — almost USD 10 billion. Most of them were attracted by the Chinese market, which grew by over 250 percent between July 2015 and June 2016 — to 8.8 billion dollars.<sup>38</sup>

The number of non-cash transactions worldwide reached 482 billion in 2016. The fastest increase in such methods of payment was observed in Russia — an increase of 36.5% year on year, although this is mainly due to a low comparative base of only 17 billion transactions. China grew by almost 26% with up to 50 billion transactions. There were more in Europe — 108 and the USA — 161 billion non-cash payments. The growth of the Middle Kingdom is mainly due to the explosion of online shopping, in which China has a 40% share of the world market. This is not only about purchases from Chinese companies that pay with smartphones using Alipay and WeChat — in 2016 these companies had 520 million and one billion users, respectively, who made a total of 2.9 trillion dollars worth of transactions, which, according to Aite Group, equalled half of the consumer goods sold on the Chinese market.<sup>39</sup>

Electronic wallet (eWallet) transactions accounted for only 8.6% of all non-cash transactions in 2016, but they have great potential to be generated by major technology companies such as Google, Apple, Amazon, Tencent, and Alibaba, accounting for more than 70% of the total. The share of Chinese players is particularly visible — they processed as many as 16.3 billion out of 25.5 billion global e-currency transactions.<sup>40</sup>

In 2018, mobile payments experienced a sharp increase in volume, by 7.4% in the first half of the year, reaching 566 million, and the percentage of Chinese Internet users using online financial services increased from 16.7% to 21% in the first half of 2018. In total, 788 million Chinese used their mobile phones to surf the Internet in the first half of 2018, representing 98.3% of all Internet users. Competition for market share drives innovation that combines online payments with direct retail transactions. QR codes, a kind of matrix barcode, play a key role in facilitating offline and online interaction and are widely used in Chinese retailers, from street vendors to Starbucks, from metro tickets to taxis and even street performers.

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38 S. Chishti, T. Puschmann [2018], *op. cit.*, pp. 69–78.

39 World Bank [2017], *op. cit.*

40 M. Springut, S. Schlaikjer [2011], *China's Program for Science and Technology Modernization*, Center Technology Inc., p. 39.

QR codes can be used by both buyers and sellers, for example a seller can display a code that customers scan using their mobile phone to initiate payments, or a customer's WeChat or Alipay account can generate a unique transaction-specific code that the seller scans to complete a transaction. In both cases, the mobile phone serves as both a credit card and wallet. A transfer between pages is as easy as sending a text message.<sup>41</sup>

It seems that there is still a large area on the market to be developed for technology companies and innovative banks. Over 230 million Chinese citizens are still not using financial services. The credit gap with regard to small and medium-sized enterprises is estimated at USD 3.5 billion. Recently, the Chinese People's Bank issued its "FinTech Development Plan" (2019–2021), which clearly proposes a guiding ideology, basic principles, development goals, key tasks and tasks of financial science and technology in the next three years. The plan indicates that financial technology is a technology-based financial innovation. The financial industry should adopt a socialist Xi Jinping approach with Chinese characteristics in the new era as a guide, fully implement the spirit of the 19<sup>th</sup> Congress of the National Communist Party of China and uphold the requirements of the National Financial Labor Conference, uphold "sincere and innovative, safe and controlled, open and vibrant, open and won" The basic principle is to fully exploit the role of financial technology and strengthen its position to promote the high quality development of China's financial industry.<sup>42</sup>

The People's Bank of China has published a three-year plan for the development of FinTech's sector in the Middle East. The publication shows that FinTech is supposed to be a new engine for the development of financial services, and its primary goal is to increase the level of satisfaction of the society. The Chinese FinTech sector development plan published on Thursday is to be based on the following pillars:<sup>43</sup>

- helping to increase global competitiveness;
- inter-bank and inter-branch financial risk assessment;
- the development of a basic regulatory framework;
- control and monitoring.

In its plan, the People's Bank of China called for better surveillance and 'more appropriate' use of large data sets, artificial intelligence technologies and cloud computing. In addition, there is a need to increase the level of cyber security and the protection of financial information. In Tech is designed to support the real economy. The key here seems to be the control of the largest FinTech service providers, who are increasingly responsible for the condition of the economy in the Middle Kingdom. In July this year, the European Parliament adopted a resolution

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41 KPMG [2018a], *op. cit.*

42 KNF [2017], *op. cit.*

43 Ł. Piechowiak [2019], *op. cit.*

on the subject. The People's Bank of China has published its first project aimed at regulating the largest Chinese FinTech companies, including Ant Financial and Tencent. The latter includes WeChat, an internet communicator that is a real FinTech combine, used by 950 million Chinese. In addition, China is testing new regulations that are supposed to limit the risk of debt.

## Conclusions

FinTech is an opportunity that can change the financial sector, question existing business models, services and regulations. FinTech is about combining financial services and digital and increasingly personalised technologies using databases to a greater extent (Big Data). FinTech covers new forms of m-payment, virtual currencies, advanced transactional and relational B2C and B2B banking, as well as innovation in the field of funds. FinTech Start-ups have the advantage over financial institutions that they usually offer their services at much lower prices, which forces big financial institutions to be more flexible, to invest not only in newer technological solutions, but also in customer satisfaction — they must develop in terms of risk assessment and become active in social media. Fintech is a pro-consumer phenomenon. Dynamic development makes life easier for small and medium enterprises and, consequently, stimulates the main sector of the modern world economy.

The phenomenon of FinTech's development on the Chinese market was conditioned by the financial needs of a huge number of Chinese internal economic emigrants — the needs of almost 280 million people (according to the Chinese Central Statistical Office) migrating from a poor province to cities had to be met by differently tailored and delivered services — money transfers, payments and small loans. Thanks to this, the share of Chinese using financial services within five years increased from 54% to over 75%. This was significantly helped by smartphones, of which there are already 1.3 billion in China. China has become an area of interest for investors due to the need for digitalization of the region's population and the lack of stringent regulatory requirements.

The Chinese market is considered to have the greatest potential for the development of FinTech, especially in the field of P2P Lending, which is already operating at the level of USD 100 billion. Alibaba has the means and capabilities to take over everything it considers to be developmental, but it will not change the fact that the average Chinese, although characterised by high payment morality, is still only a human being and the lack of regulation on markets dominated by some FinTechs, e.g. the aforementioned P2P lending poses a significant systemic threat to the economy. Nevertheless, JP Morgan forecasts that in 2020 the industry will

reach the value of 69 billion dollars of revenues, which means an annual growth of over 40%. Online payments alone should increase to the level exceeding 30 billion dollars, online distribution of financial products will amount to almost 8 billion to, online loans may close at the level of over 21 billion dollars, and insurance will reach the level of 9 billion dollars.

# Conclusions

Considerations presented in this monography have emphasised the growing importance of China on a global scale. Chinese financial institutions have evolved and matured over the years and now have the potential to drive China's economic growth in the future. Nonetheless, it should be noted that there are many challenges ahead of the financial sector, including the development of a liquid bond market, falling profitability and development of FinTech companies.

The analysis of the China's monetary policy showed that it has evolved towards multi-instrument mix of liquidity tools used within competing policy final goals. In the process of evolution, quantity targets were substituted by price targets and inflation became more prominent goal of the policy. These changes, together with the process of interest rate deregulation, resulted in creating the interest rate corridor. However, the coexistence of market and benchmark rates disrupt its transparency. Summing up, the current monetary policy stance can be depicted as hybrid, based on many signals and targets. Notwithstanding the fact that the operational framework of monetary policy is quite similar to that of developed countries, there are still many challenges ahead. It is crucial to enhance the independence of monetary policy, both in its operational aspect (through implementing truly floating exchange regime) and in its institutional aspect (through making the central bank more independent of central government, State Council). It is essential to improve the transmission channel functioning, which is strongly connected with reforming the financial sector. Banking sector reforms are the key factor in enhancing the effectiveness of the monetary policy.

Changes in the Chinese monetary policy, within which deregulation of interest rates took place, were the key incentive for the development of the bond markets. Among other factors stimulating the development of the bond market were many initiatives undertaken by the authorities, especially these aiming at opening up the market to foreign investors. In spite of these initiatives, foreign ownership still constitutes a modest part in the market, even in comparison with other emerging market economies, which is a good prospect for creating the potential demand in the future. Another important feature of the bond market in China is strong dominance of public sector as issuers of the instrument. Among main bond issuers are: government and entities associated with government (local governments,

municipals, policy banks, state owned enterprises). The modest level of public debt (less than 50% of GDP) indicates that there is a room for fiscal stimulus in the economy and enlarging the size of government bonds issuance. However, there are still many impediments to the deeper development of the bond market: segmentation of the primary markets (interbank and stock exchange markets), poor rating practices to recall just a few. Overcoming these shortcomings may stimulate further development by enhancing liquidity and transparency of the market.

Successful modernisation of the financial institutions presented in chapter three has signalled growing competitiveness of China's economy. Nowadays, the "big four" banks of China have started putting a growing emphasis on foreign investment and expansion to new markets. With a strong focus on building long-term competitive advantage, the financial institutions of China are aspiring to become global leaders both in size and innovation.

Conclusions drawn from chapter 4 indicate that loss-absorbing capacity of China's (and at the same time world's) largest credit institutions has increased significantly over the course of the past few years. Stability of the banking sector is an important factor that can impact the sustainability of the country's economic growth. Given the importance of China's economy for the growth of the entire region, the fact that the country has improved substantially in terms of prudential supervision is a good sign.

Chapter 5 showed that the Asian financial innovation market is crucial on a global scale, with the largest FinTech financing rounds being carried out and the largest number of start-ups being created. This is the result of the creation of innovation centres on the Asian continent since 2016, simplified regulations in the field of FinTech and their pro-consumer activities. In China alone, the number of Chinese using financial services has grown from 54 to over 75 percent in five years. It significantly helped the interest of the population in modern solutions and numerous smartphone applications, of which there are already 1.3 billion in China alone. Singapore, Tokyo, Bangalore and Shanghai play a key role on the map of Asian innovation. Intensive investment in the FinTech market is the result of the financial needs of the Asian population, the functioning of the banking sector and the money market as well as numerous direct investments of foreign trans-native corporations and the undertaking of intensive economic development activities, which constitutes consideration of previous chapters.

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