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BANK SIZE AS A SOURCE OF COMPETITIVE ADVANTAGE OF CHINESE GLOBAL SYSTEMICALLY IMPORTANT BANKS

Introduction

During the financial crisis in 2007–2009 banks all around the world suffered liquidity problems and were a subject to a system stability testing. The problems of large financial institutions, such as Bear Sterns, Fannie Mae or Freddie Mac, drew attention to the issue of financial liquidity more than ever in 2007. After the collapse of Lehman Brothers a question was raised about the stability and system security of the largest institutions in the financial system. Credit institutions recognised as systemically important, are distinguished by the enormous size of assets, which creates the risk of being *too big to fail* or *too important to fail*. The extent of links with other institutions on the market through various market segments makes them also *too connected to fail*.

The times of a global financial crisis were hard-hitting for many financial institutions, suffering great losses and illiquidity, in particular in the USA and in Europe. Nevertheless, for Chinese banks the same period occurred as a chance to take an advantageous position. It was going along with a parallelly realized, long-term strategy of opening the Chinese banking sector, its international expansion, technological development and an active role in financing the Belt and Road Initiative investments. In 2011 a first Chinese bank, Bank of China, started to be identified as one of the Global Systematically Important Banks (G-SIBs). Chinese banks developed and in the period of 2009–2019, between the global financial crisis and the coronavirus pandemic, they gained a supreme position in the world stage.

On the other hand, American banks were perceived as dynamically developing institutions that developed a dominant position on the financial map of the world throughout the 20th century. The size of assets and financial results made them possible to create trends and a specific benchmark on the financial services market. This changed after the collapse of Lehman Brothers and the crisis of confidence that severely strained the financial performance of many institutions. Nevertheless,

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the hegemony of American banks seemed difficult to overcome. However, even if American banks kept their strong position, domestic Asian banks gradually increased their presence in the cross-border banking area. Dirk Schoenmaker named it *a reshuffle of the global banking league*.[1]

The purpose of the article is to search for attributes of Chinese G-SIBs' performance, examining their size and profitability, in comparison to American G-SIBs. The article considers the size as one of the competitive advantages of banks. Therefore, the first part of the article focuses on a review of the relevant literature on competitiveness and competitive advantage factors, with particular regard to bank size, defined in different contexts. The second part recognises the evolving position of Chinese banks as G-SIBs with the respect of FSB approach and the size aspects. In the third part, the article considers the relation between size of the banks measured by their assets and market capitalization as well as their returns (return on equity and return on assets) and income sources.

The comparative analysis is based on desk research and data collection, analysing the primary and secondary data regarding the banks' performance and size in the periods of 2011–2019 (Financial Stability Board appraisal of Chinese banks) and 2019 (Chinese and American banks performance indicators). The primary data are gathered from Refinitiv Eikon database which bases on annual reports and are checked with original sources. The results were obtained on the basis of a two-stage procedure. In the first step the ranking of global systematically important banks was analysed in considered areas and in the second step the financial data collected were used to create two geographically oriented groups of G-SIBs being the background of subject analysis.

In connection with the purpose of the paper with distinct regard to the visibility and activity of Chinese banks, there was formulated a question if there is a relation between size and profitability of Chinese and American GSIBs. Following the purpose, two hypotheses were formulated: 1) the size of the Chinese is associated with their good performance and they do achieve prominent profitability results and 2) Chinese global banks profitability measured by return on assets (ROA) and return on equity (ROE) is higher than American global banks profitability. In the background of the analysis, one should take into account the differences between the functioning of the Chinese and American banking sector, the share of private and state capital, domestic and foreign, sources of income, investment structure, approach to prudential supervision, the type and traditions of commercial, commercial and investment banks.

[1] D. Schoenmaker, *What happened to global banking after the crisis?*, "Journal of Financial Regulation and Compliance" 2017, vol. 25, no. 3, pp. 241–242.

Size of a bank as a factor of competitiveness and competitive advantage: a theoretical approach

Competitiveness is emphasized as the phenomenon related to adapting products and services to market and competition expectations in terms of price and non-price competition.[2] Competitiveness manifests itself in effective product or market expansion and diversification of activities to maintain or increase market share and profits. Such a goal can be achieved through taking the position of a market leader by creating an area of market dominance as well as through mergers and acquisitions. Identification of competitive advantage factors is a key to building a bank's market strategy.

Due to the multidimensional nature of competitive advantage, there are many approaches to this issue. Based on the shaping of the competitive advantage described by Joanna Bednarz, one can distinguish an approach related to classical theories, pointing to external sources and the external environment, then concepts based on internal resources of the enterprise and concepts combining the above approaches.[3] Therefore, a significant role is played by the fact that a given entity has material, tangible resources (in case of a bank it is capital, a network of branches, infrastructure) and intangible resources (knowledge, technological solutions). The basic parameter of competitive advantage is also a bank's market value, which affects the behaviour of shareholders, customers and other entities from the bank's environment. Factors determining the bank's ability to create added value are also divided into traditional (tangible and financial assets of the bank) and non-traditional (intangible),[4] and market success is determined by their proper combination and adequate management.[5] Tangible factors include: the size of the bank, market share, number of clients, network of branches and outlets, and technical infrastructure. The studies on the banking sector in China investigated pace of certain reforms, like foreign equity investment, bank listing, and the growth in the number of rural commercial financial institutions, finding their positive contribution to the size and performance of China's banks.[6]

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[2] H.G. Adamkiewicz-Drwiłło, *Konkurencyjność przedsiębiorstw w świetle uwarunkowań współczesnej gospodarki*, Toruń 2010, p. 91.

[3] J. Bednarz, *Konkurencyjność polskich przedsiębiorstw na rynkach europejskich na przykładzie wybranych branż*, Gdańsk 2013, p. 144.

[4] Non-traditional factors go beyond the bank's core competencies and include: innovation in distribution, brand strategy, customer relationship management, or effective human capital management.

[5] J. Pietrzak, *Czynniki przewagi konkurencyjnej na rynku bankowych usług detalicznych*, Gdańsk 2003, pp. 90–92.

[6] S. Heffernan, X. Fu, *The Determinants of Bank Performance in China*, Working Paper Series, UK, CASS Business School, City University 2008, pp. 6–8, https://www.cass.city.ac.uk (accessed: 1.10.2020).

Size is considered one of the basic factors of bank competitive advantage, conditioning the achievement of goals, such as desired market share, international expansion and global strategy. Surveys of ten European banks in 1996–2002 showed that large banks have comparable ability to create competitiveness due to similar business environment, costs and productivity[7]. High market concentration may, however, create the conditions similar to oligopolistic competition, imposing higher prices and achieving higher revenues and profits.[8] In other study examining how the organizational structure affects the competitiveness of banks, it was found that the geographical coverage, market share of a bank, and its pricing strategy, is determined by the size and structure of the bank and its competitors.[9]

It is discussed in the economic literature, whether large banks report better results, but most authors find a significant relationship between the bank's market power and size.[10] Large banks accomplish a strong competitive position in relations with other institutions, a high reputation level, possibility of imposing high interest margins and successful implementation of new banking products and services due to economies of scale resulting from customer base size.[11]

Research on bank-level data for 80 countries in 1988–1995 showed differences in interest margins and bank profitability reflecting a variety of determinants: bank size and characteristics, macroeconomic conditions, bank taxation, deposit insurance regulation, overall financial structure, and underlying legal and institutional indicators.[12] All of these factors apply to China and the USA circumstances. Studies conducted at 18,000 banks in 101 countries in the years 1990–2005 proved that large banks profited from their size, operating in various geographical subregions, offering diverse products and services, and thanks to their presence on wholesale financial markets were able to achieve and offer financial products with high price flexibility.[13]

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[7] S.C. Valverde, D.B. Humphrey, R.L. del Paso, *Do cross-country differences in bank efficiency support a policy of "national champions"?*, "Journal of Banking and Finance" 2007, no. 31, p. 2137.

[8] É. Várhegyi, *Bank competition in Hungary*, "Acta Oeconomica" 2004, vol. 54, no. 2, p. 404.

[9] H. Degryse, L. Laeven, S. Ongena, *The impact of organizational structure and lending technology on banking competition*, "Review of Finance" 2009, no. 13, pp. 225–259.

[10] S. Claessens, L. Laeven, *What drives bank competition? Some international evidence*, "Journal of Money, Credit and Banking" 2004, no. 36(3), pp. 563–583.

[11] G.J. Benston, *Branch banking and economies of scale*, "The Journal of Finance" 1965, vol. 20, issue 2, pp. 312–331; D.C. Wheelock, P.W. Wilson, *The evolution of scale economies in US banking*, "Journal of Applied Econometrics" 2018, vol. 33, issue 1, pp. 16–28.

[12] A. Demirgűc-Kunt, H. Huzinga, *Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence*, "The World Bank Economic Review", May 1999, vol. 13, issue 2, pp. 379–408.

[13] J. Bikker, L. Spierdijk, P. Finnie, *The Impact of Bank Size on Market Power*, Netherlands Central Bank, DNB Working Papers 2006, no. 12.

In the discussion about size of the bank there are, however, opposite views that undermine its imperative. A large ratio of bank assets to gross domestic product and a low market concentration ratio lead to lower margins and profits, adjusted to differences in bank activity, leverage, and the macroeconomic environment. Some authors, like Allen N. Berger *et al.*, stated that the bank's efficiency increases only to a certain size of assets, and then large entities may experience diseconomies of scale. This may result from the complexity associated with managing large entities.[14]

According to Michael Porter, the emphasis on growth is a threat to the strategic position. Many entities present the temptation to grow, focusing on new markets and new customers which lead to compromises that make entities similar to their competitors.[15] Global competitive advantage is hampered when the markets of individual countries expect different varieties of products and services due to cultural, technological and income levels, which may hinder achieving an appropriate level of return by large global entities.[16]

The wide scale of operations similarly causes a number of repercussions related to inefficiency of banks and problems related to taking international actions by consistent supervision. A number of papers describe the problem of the supervision over the global or multinational banks.[17] Such banks are noted as challenging risk-taking incentives driven by insured deposits or determining the strategies "one size fits all" or "a financial supermarket". When capital requirements are set optimally, capital arbitrage within holding company conglomerates can raise welfare by increasing market discipline.[18] The challenge in designing resolution mechanisms for G-SIBs is to adapt existing resolution procedures, designed for smaller (national or regional) banks, to the resolution of larger banks with operational complementarities, operating across different jurisdictions. It requires adaptation of a fundamental link between efficient bank resolution, the operational structures, risks, and incentives of global banks.[19]

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[14] A.N. Berger, R.S. Demsetz, P.E. Strahan, *The Consolidation of the Financial Services Industry: Causes, Consequences and Implications for the Future*, "Journal of Banking and Finance" 1999, vol. 23, pp. 135–194.

[15] M. Porter, *Towards a dynamic theory of strategy*, "Strategic Management Journal" 1991, no. 12, p. 53.

[16] M. Porter, *Strategia konkurencji. Metody analizy sektorów i konkurentów*, Warszawa 2006, p. 341.

[17] T. Beck, *Regulatory Cooperation on Cross-Border Banking – Progress and Challenges After the Crisis*, "National Institute Economic Review" 2016, no. 235(1), pp. R40–R49; N. Cetorelli, L.S. Goldberg, *Global Banks and International Shock Transmission: Evidence from the Crisis*, "IMF Economic Review" 2011, vol. 59, pp. 41–76.

[18] X. Freixas, G. Loranth, A.D. Morrison, *Regulating financial conglomerates*, "Journal of Financial Intermediation" 2007, vol. 16, issue 4, pp. 479–514.

[19] P. Bolton, M. Oehmke, *Bank Resolution and the Structure of Global Banks*, "The Review of Financial Studies" 2019, vol. 32, issue 6, pp. 2384–2421.

Chinese global systematically important banks in the Financial Stability Board classification

Identifying the institutions which functioning is essential for the financial system stability and a challenge for the regulatory framework. The methodology of assessment G-SIBs takes into consideration such factors as size, global activity, interconnectedness, substitutability and complexity[20]. Due to the fact that large banks create systemic risk, the international institutions thoroughly analyse their liquidity and performance. In 2011 Financial Stability Board (FSB), in consultation with the Basel Committee on Banking Supervision (BCBS) and national authorities, developed the methodology of global systemically important banks identification. The list of G-SIBs was divided into 'buckets', corresponding to required level of banks' additional loss absorbency.[21] FSB evaluates and publishes the list of G-SIBs, assigning their importance for a financial system and mandating them with adequate requirements and tighter supervision.[22] The list of G-SIBs is updated annually, accompanied by data on the application of integrated policy measures set, addressing the systemic and moral hazard risks associated with the largest global banking institutions.

China, along with economic and financial reforms, built the influential banking system which is the part of Chinese economic success. It allowed domestic banks to adopt new accounting standards, enter the domestic and foreign exchanges, gain foreign stakeholders and through international expansion follow the customers at foreign markets. China Banking Regulatory Commission pursued the Basle framework in the assessment standards for domestic banks at the same time as it was proceeded in Western countries.[23]

Chinese banks started to be recognised as global players notably after the global financial crisis in 2007–2009, what was connected with their strategic internationalization, assets' growth and technological reorientation. In 2010, all major commercial banks completed the IPO procedure and were transformed from state-owned commercial banks into public banks with a diversified shareholding structure.

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[20] D. Schoenmaker, *What happened to global banking*…, p. 243.

[21] BCBS, *Global systemically important banks: revised assessment methodology and the higher loss absorbency requirement*, 5 July 2018, https://www.bis.org (accessed: 15.06.2020).

[22] C. Yibing, S. Yong, W. Xianhua, Z. Lingling, *Domestic Systematically Important Banks: A quantitative analysis for the Chinese banking system*, Hindawi Publishing Corporation, "Mathematical Problems in Engineering", vol. 2014.

[23] *The Guidelines on the Implementation of the New Basel Accord by China's Banking Sector*, China Banking and Insurance Regulatory Commission, 13.03.2007, https://www.cbirc.gov.cn/en/view/pages/ItemDetail.html?docId=1820&itemId=981 (accessed: 7.09.2020).

Moreover, in 2010, these banks increased their capital base and prepared for the implementation of the Basel II guidelines, and in subsequent stages of the Basel III rules. Consequently, the largest of them, namely Industrial and Commercial Bank of China (ICBC), China Construction Bank Corporation (CCBC), Bank of China (BOC), and Agricultural Bank of China (ABC), started to be classified by Financial Stability Board as G-SIBs.[24] At the initial period, in 2011–2012, only one Chinese bank was incorporated into the list of GSIBIs, which was Bank of China. Since 2013 Industrial and Commercial Bank of China joined the list, in 2014 Agricultural Bank of China and in 2015 China Construction Bank were included.

In 2011–2019 Chinese "newcomers" among the G-SIBs started to compete with American banks. The characteristic feature of Chinese banks is the bucket ratio estimation, which is each year high or very high (level 1 and 2, while maximum is 5). Buckets correspond to capital buffers that are required to hold in accordance with international standards – lower buckets are associated with lower capital buffers, which means a better stability level. The level of the bucket is based on such denominators as size of the bank (with total exposures as defined for use in the Basel III leverage ratio), cross-jurisdictional activity (claims and liabilities), interconnectedness (intra-financial system assets and liabilities), substitutability/financial institution infrastructure and complexity (e.g. amount of *over-the-counter* derivatives, trading and available-for-sale securities).[25] The surcharge is the required level of additional common equity loss absorbency as a percentage of risk-weighted assets that each G-SIB will be required to hold in 2021.

In 2019, among 30 global banks listed as G-SIBs, it might have been noticed altogether seven Asian banks. This group consisted of four banks from China, mentioned above, and three from Japan (since 2011 there were verified: Mitsubishi UFJ FG, Mizuho FG and Sumitomo Mitsui FG). Ten banks represented North America: eight of which were from the United States (JP Morgan Chase, Citigroup, Goldman Sachs, Bank of America, Wells Fargo, Bank of New York Mellon, Morgan Stanley and State Street) and two from Canada (Royal Bank of Canada and Toronto Dominion). From the geographical point of view on the G-SIBs list, number of banks originated from the USA was twice as these ones from China.

[24] *2019 list of global systematically important banks (G-SIBs)*, Financial Stability Board, https://www.fsb.org (accessed: 15.06.2020).

[25] Bank for International Settlements, *Playing it safe: global systemically important banks after the crisis*, "BIS Quarterly Review", September 2019, https://www.bis.org (accessed: 10.06.2020).

Size and profitability of global banks from China and the USA

1. The assets and market capitalization

There are many differences between the banking systems of China and the USA, including the ownership structure, the method of obtaining revenues and the investment portfolio. Considering the aim of the article, it is necessary to evaluate such size factors of analysed banks, like total assets and total liabilities. It is also worth taking into account the market capitalization and ratings, which in a way show the image of the perception of the largest banks by investors (demand and price on the capital market) and institutions assessing creditworthiness. With regard to total assets, the four biggest banks in the world are Chinese banks, recorded as follows: ICBC (4,324.95 bln USD), BOC (4,324.95 bln USD), ABC (4,324.95 bln USD) and CCB (4,324.95 bln USD). The fifth bank from China, which, however, does not have a status of G-SIBs, is the Bank of Communications with 1,422.85 bln USD of assets (table 1). It represents even higher asset level position than some banks having the status of G-SIBs, with the headquarters in the USA (Goldman Sachs 992.97 bln USD, Morgan Stanley with 895.43 bln USD).

The four biggest American banks are: JP Morgan Chase (2,687.38 bln USD of total assets), Bank of America (2,426.65 bln USD), Citigroup (1,951.16 bln USD) and Wells Fargo (1,927.56 bln USD). The eight biggest American banks' total assets are equal to 71.59% of total assets of the four biggest Chinese banks, and with regard to total liabilities it is the parity of 77.41%. If we compare the *four-to-four* biggest banks, this evaluation will be settled at the level of 60.67% for total assets and 60.63% for total liabilities, which means a huge dominance of Chinese banks in both categories. If similarly the *eight-to-eight* biggest banks are compared, the relations of total assets of the Chinese and American banks are 59.67% and 59.42% for total liabilities. This comparison shows the development gap between the banking sectors of these areas.

The potential G-SIBs, from the Chinese market are also some of joint-stock commercial banks: China Merchants Bank, Shanghai Pudong Development Bank, China Minsheng Banking Corporation, China Citic Bank (table 1), and China Everbright Bank, Industrial Banking Corporation or Huaxia Bank. According to annual reports their assets are comparable to the level of Morgan Stanley, Bank of New York Mellon or State Street[26]. It means that domestic systemic importance of Chinese banks is at the range of systemic importance of global banks.

[26] The comment based on analysing the figures from the annual reports of the biggest Chinese banks, Refinitiv Eikon database, data as reported for 31.12.2019.

Table 1. The comparison of assets and liabilities of the biggest global banks in China and the USA in 2019

No.	Bank name	Total assets (bln USD)	Total liabilities (bln USD)	Bank name	Total assets (bln USD)	Total liabilities (bln USD)
1.	Industrial and Commercial Bank of China Ltd	4,324.95	3,940.54	JP Morgan Chase & Co	2,687.38	2,426.05
2.	China Construction Bank Corp	3,653.69	3,335.34	Bank of America Corp	2,426.65	2,306.19
3.	Agricultural Bank of China Ltd	3,573.54	3,293.68	Citigroup Inc	1,951.16	1,757.92
4.	Bank of China Ltd	3,270.67	3,004.69	Wells Fargo & Co	927.56	1,740.41
5.	Bank of Communications Co Ltd*	1,422.85	1,308.91	Goldman Sachs	992.97	902.71
6.	China Merchants Bank Co Ltd*	1,065.42	977.61	Morgan Stanley	895.43	813.88
7.	Shanghai Pudong Development Bank Co Ltd*	1,007.38	927.92	Bank of New York Mellon	381.51	340.03
8.	China Citic Bank Corp Ltd*	969.64	894.37	State Street	245.61	221.18

* Chinese biggest banks which are not included in the list of Global Systematically Important Banks by Financial Stability Board, but are presented in the table for illustration of the size comparison of the 8 biggest banks in China and in the USA with reference to the assets and liabilities.

Source: own elaboration based on Refinitiv Eikon database (data as reported for 31.12.2019).

The global banks' high level of assets is not directly reflected in their market capitalization (fig. 1 and table 2). The G-SIB of the highest market capitalization is JP Morgan Chase with the value of 304.28 bln USD listed in New York, followed by ICBC (249.19 bln USD, Shanghai Stock Exchange) and BNP Paribas listed in Paris (215.68 bln USD). Then the following three highly market capitalized banks are also Chinese banks (CCB, ABC and BOC).

Unlike the asset comparison, the eight biggest American banks' market capitalization sum (758.98 bln USD) is almost equal to four Chinese banks market capitalization (778.01 bln USD), at ratio of 97.55%.

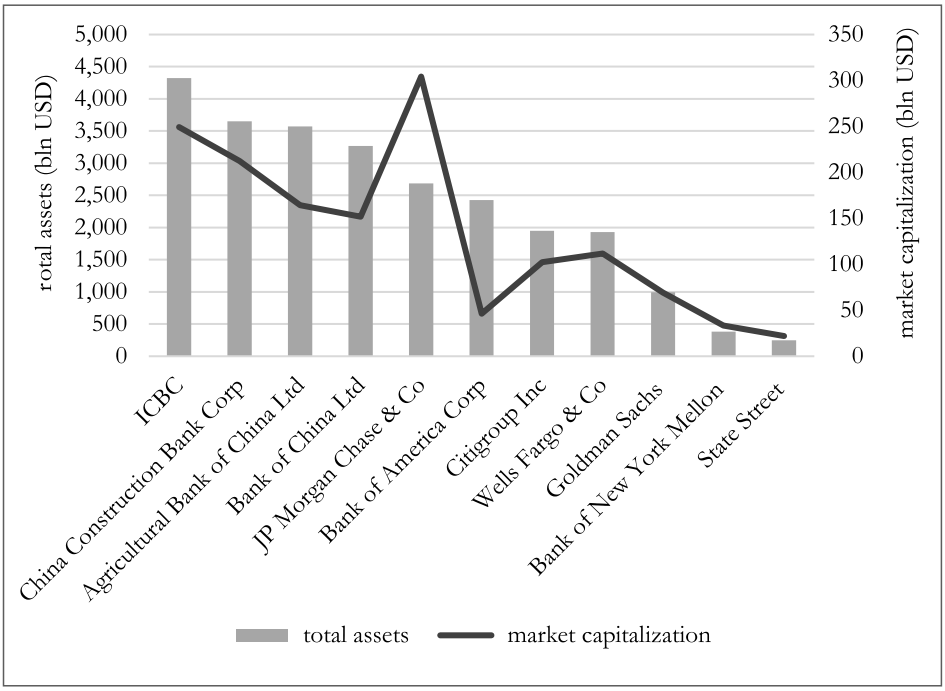

Fig. 1. Total assets and market capitalization of Chinese and American G-SIBS in 2019

Source: own elaboration based on Refinitiv Eikon database (data as reported for 31.12.2019).

Additionally, table 2 assumes the issuer rating of analysed banks giving the perspective of their assessment by rating agencies and investors. The highest issuer ratings at the level of AAA were given to Chinese banks (ICBC, ABC, CBC). One of Chinese banks (Bank of China) has the issuer rating lower and equivalent to the level achieved by Bank of America (A1). The other American global banks had lower rating levels. Among Chinese banks there are some more with the excellence of triple A rating, which are Bank of Communications, China Merchants Bank, Shanghai Pudong Development Bank, China Citic Bank, and also China Minsheng Banking Corporation.

Table 2. The comparison of market capitalisation and issuer ratings of the biggest global banks in China and the USA in 2019

No.	Bank name	Market capitalisation (bln USD)	Issuer rating	Bank name	Market capitalisation (bln USD)	Issuer rating
	Banks listed at Shanghai Stock Exchange			*Banks listed at New York Stock Exchange*		
1.	Industrial and Commercial Bank of China Ltd	249.19	AAA	JP Morgan Chase & Co	304.28	A
2.	China Construction Bank Corp	212.55	AAA	Bank of America Corp	46.34	A1
3.	Agricultural Bank of China Ltd	164.33	AAA	Citigroup Inc	102.34	BBB+
4.	Bank of China Ltd	151.94	A+	Wells Fargo & Co	111.60	Baa1
5.	Bank of Communications Co Ltd*	106.46	AAA	Goldman Sachs	69.20	BBB+
6.	China Merchants Bank Co Ltd*	124.20	AAA	Morgan Stanley	69.96	BBB+
7.	Shanghai Pudong Development Bank Co Ltd*	43.42	AAA	Bank of New York Mellon	33.28	A
8.	China Citic Bank Corp Ltd*	30.39	AAA	State Street	21.98	A

* Chinese biggest banks which are not included in the list of Global Systematically Important Banks by Financial Stability Board, but presented in the table for illustration of the size comparison of the eight biggest banks in China and in the USA with reference to the market capitalization and issuer ratings.

Source: own elaboration based on Refinitiv Eikon database (data as reported for 31.12.2019).

2. The bank assets level versus ROA and ROE

After analysing the competitive advantages factors, it seems apparent that the larger size of banks should have a positive effect on the bank's competitiveness, and thus on its efficiency and profitability ratios. To investigate whether this relationship is true, the assets size of the global banks from China and the USA was compared to their ROA and ROE ratios. The determinants of bank profitability are researched

in the literature considering measures like ROA, ROE and net interest margin or interest and non-interest income.[27]

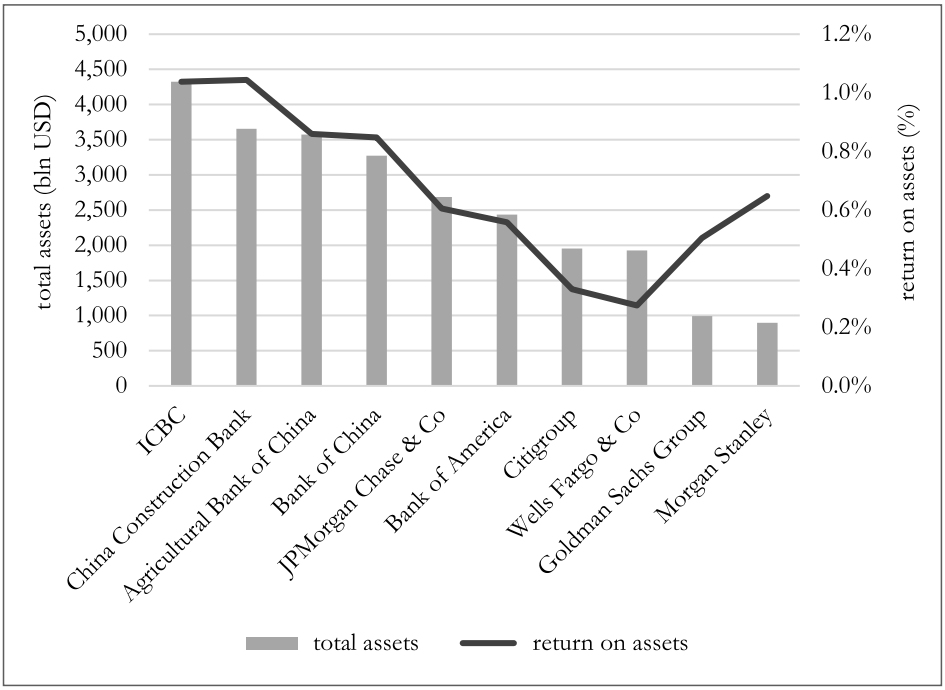

Fig. 2. Total assets and ROA of Chinese and American G-SIBS in 2019

Source: own elaboration based on Refinitiv Eikon database (data as reported for 31.12.2019).

The highest ROA within the range of analysed banks was achieved by ICBC and CCB at the level of 1.0% (fig. 2), then Bank of New York Mellon and ABC 0.9%, Bank of China and State Street 0.8%, Bank of America and JPMorgan Chase 0.6% (the other G-SIBs had 0.5% or less). This profitability measure shows good performance of Chinese and American banks.

The *peer comparison* among G-SIBs listed by BIS shows that the outstanding ROA was accomplished in 2019 by Barclays (1.8%), which achieved this results having the total assets at the level of only 34.53% of those possessed by ICBC. The bank size and ROA are correlated, however, it has to be concluded that not only the size matters, but also the specialization of a bank. Concerning Goldman Sachs or Morgan Stanley ratios, engaged highly in the investment banking operations, it is worth noting that it allows them to achieve higher results than by universal banks at the same market. All four analysed American banks have ROA at the level of 0.5%–0.6%,

[27] S. Heffernan, X. Fu, *The Determinants of Bank Performance*…, pp. 4–6.

while the assets of Morgan Stanley and Goldman Sachs are equal not even to half of its commercial banking peers in the USA. At the same time American banks, both universal and investment ones, do not reach the level of ROA worked out by Chinese banks, which character is fundamentally universal.

The highest ROE among G-SIBs was achieved in 2019 by CCB, reaching the level 12.2%, while ICBC 11.9%, ABC 11.5%, BOC 10.5%, State Street 9.8%, Bank of New York Mellon 9.1%, JPMorgan Chase 7.5%, Morgan Stanley 7.4%, then Goldman Sachs 6.0% and the other G-SIBs worked out the return on equity below 6% (fig. 3). Peer bank comparison will show good result of Royal Bank of Canada (13.8%), whereas again banks with high profile of investment and corporate banking (Goldman Sachs, Bank of New York Mellon, State Street) achieved higher ROE despite lower size.

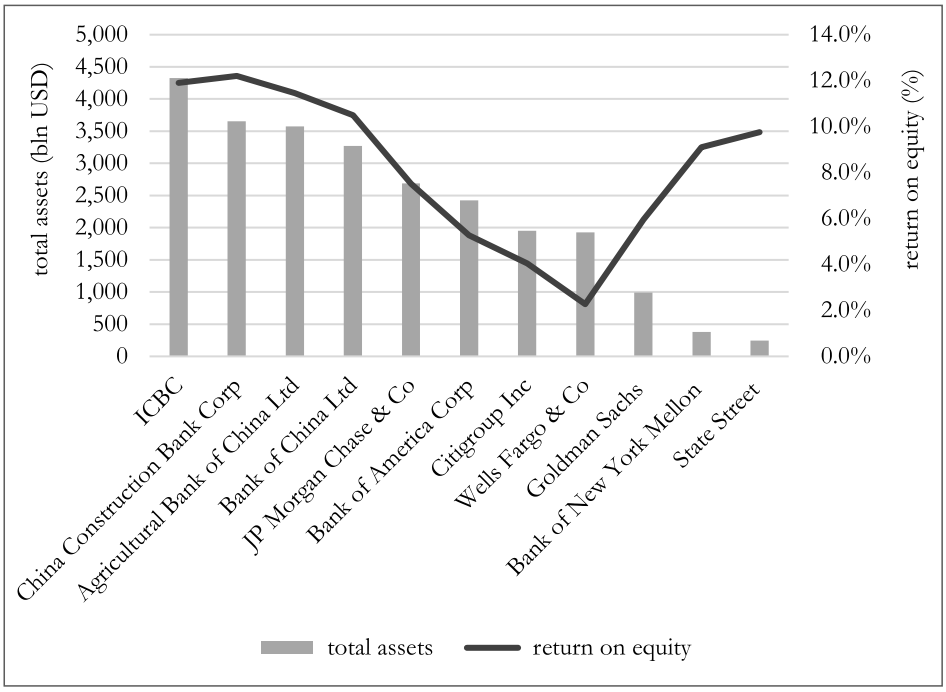

Fig. 3. Total assets and ROE of Chinese and American G-SIBS in 2019

Source: own elaboration based on Refinitiv Eikon (data as reported for 31.12.2019).

The profitability measures like ROE and ROA, show better performance of Chinese universal banks compared to American banks. The average ROE of four G-SIBs from China equals 11.25%, while the four largest American G-SIBs, being universal banks, achieved average ROE of 4.775%. As to average ROA, the

four G-SIBs from China equals 0.95%, the four largest universal American G-SIBs reached average at the level of 0.4%.

The dependence of ROE and ROA on the bank size seems quite difficult to identify without taking into account additional factors affecting the bank's results, like the reality of low interest rates level, reflected in the structure of banks' income (fig. 4).

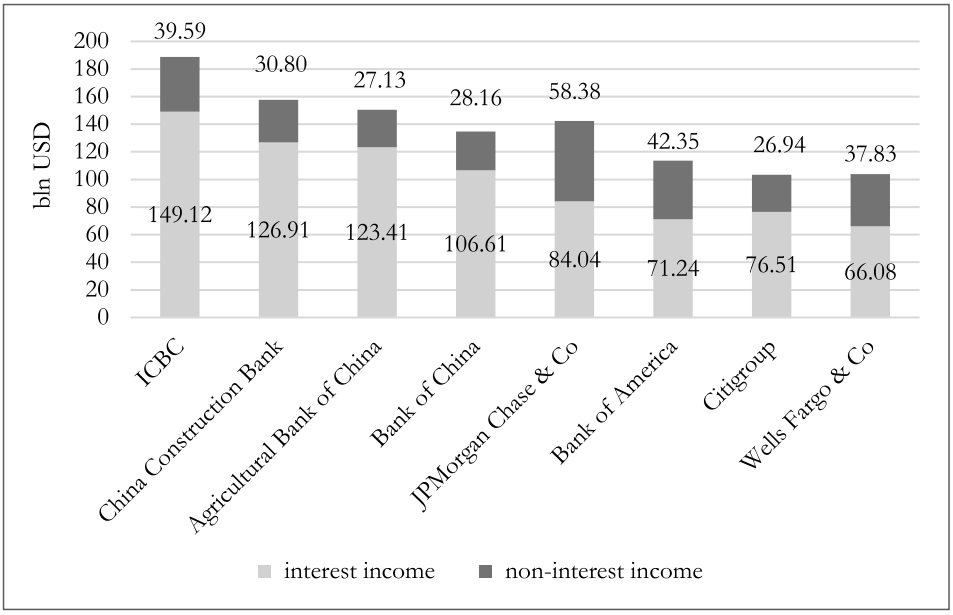

Fig. 4. The comparison of interest income and non-interest income in Chinese and American G-SIBs in 2019

Source: own elaboration based on Refinitiv Eikon (data as reported for 31.12.2019).

Bank performance is determined by achieving favourable interest income generated from the assets, affected by the interest rates and bank asset composition. Interest income usually depends on bank size, since it is associated with a market power allowing to charge the customers in particular types of loans. Non-interest income is the result of the set of fees charged on services (FX transactions, card fees, etc.), usually higher in larger banks.

Market competition limits excessive charging rates, however, large banks provide more services which might be charged, and develop advanced technologies that allow them to reach wider customer base.

The results of the research conducted by H. Löchel, H. Xiang Li for the period of 2003–2009 showed that the profitability of Chinese banks stayed at international comparative level, despite the high inefficiency of Chinese banks. They even

outperformed international peers what was explained partly by the lower personnel expenses, higher concentration of revenue sources in lending business with non-interest income making only 15.18% of total revenues, compared to the average of 50.59% in the international banks for that analysed period. Chinese banks were to suffer from high dependence on corporate lending as revenue source and the non-interest income business was observed as not sufficiently explored.[28]

The total income of Chinese banks, considered as the sum of interest income and non-interest income, was observed as being higher than in American institutions (ICBC 188.72 bln USD, CCB 157.70 bln USD, ABC 150.54 bln USD, Bank of China 134.70 bln USD). Chinese banks achieved their income mainly as an interest income. Non-interest income, reported as lower in volume, was also a lesser part of total income structure in Chinese banks than in American banks. Non-interest income revealed the level of only 18–21% for banks from China (ICBC, CCB, ABC, Bank of China, compared with 26–41% in American banks (JP Morgan Chase 41%, Bank of America 37%, Wells Fargo 36% and Citigroup 26%). The 2019 data show that Chinese banks developed slightly and achieved better results in non-interest income, however, for American banks the scenario was definitely reverse, as they lost more in this area (no analysed bank reached the level of previous 50%).

Conclusions

Chinese banks started to be recognised as G-SIBs after the global financial crisis, what was associated with their strategic internationalization, assets' growth and technological reorientation. The analysis considered four Chinese G-SIBs: Industrial and Commercial Bank of China (ICBC), China Construction Bank Corporation (CCBC), Bank of China (BOC), and Agricultural Bank of China (ABC), compared with the biggest American banks (only G-SIBs). The eight biggest American banks' total assets make equal to 71.59% of total assets of the four biggest Chinese banks, and with regard to total liabilities it is the parity of 77.41%. If taking a comparison of only *four-to-four* G-SIBs from both sectors, American banks' represent 60.67% in total assets and 60.63% in total liabilities, which means big supremacy of Chinese banks in both categories.

This comparison shows the development gap between the banking sectors of these areas, which reveals that Chinese and American GSIBs are not comparable in size, however, their market capitalization is on average similar.

Referring to the first hypothesis, it was positively verified. The size of Chinese global banks is associated with their good performance measured by ROE and

[28] H. Löchel, H. Xiang Li, *Understanding the high profitability of Chinese banks*, Frankfurt School of Finance & Management, September 2011, Working Paper No. 177, pp. 2, 14–16.

ROA. All the banks have constructive results, which are also underlined by their market capitalization and ratings. Following the second hypothesis which stated that Chinese global banks profitability measured by ROA and ROE is higher than American global banks profitability, it was also verified positively. Studies have shown that the largest Chinese banks definitely outperform American banks.

The average ROE of four G-SIBs from China equalled 11.25%, while the four largest American G-SIBs, being universal banks, achieved average ROE of 4.775%. As to average ROA, four G-SIBs from China equalled 0.95%, the four largest universal American G-SIBs reached average at the level of 0.4%. The profitability measures showed better performance of Chinese universal banks compared to American universal and investment banks.

The dynamic growth of Chinese banks' assets after 2009 and positive financial results of these banks indicate a shift in supremacy in the financial sector. It has to be underlined that Chinese global banks gain a competitive advantage thanks to their size, a universal character and non-interest income. The outcomes presented in the paper confirm, however, the significant level of profitability achieved by Chinese banks in both interest and non-interest income that make up the overall concept of their high competitiveness. The differences between two analysed sectors, Chinese and American, might be the subject to further analysis with regard to such aspects as technological infrastructure, purchasing power, or share of banks with state ownership. Despite the limited geographical expansion of Chinese banks in comparison with American banks, two issues are noteworthy – their similar proportions of size and technological development, and the structure with definitely prospective approach to banking business. The efficiency of banks at the microeconomic level is generally associated with the improvement of management and obtaining economies of scale and scope. Leading banks invest the most in the development of information and quality technologies to achieve higher efficiency.

In connection with the purpose of the paper further studies may analyse the business segments of Chinese banks, particularly the terms of products and services offered in personal, corporate and investment banking to find detailed information about the sources of income of Chinese banks determining their high profitability. The largest Chinese banks use the potential to operate simultaneously as large international banks and as the largest domestic banks. This way, they maintain lasting relationships with enterprises on their market, and if they can take advantage of synergies with presence on a foreign market, it can increase their efficiency by offering products and services tailored to the needs of customers.

STRESZCZENIE

WIELKOŚĆ BANKU JAKO ŹRÓDŁO PRZEWAGI KONKURENCYJNEJ BANKÓW CHIŃSKICH O CHARAKTERZE GLOBALNYCH BANKÓW WAŻNYCH SYSTEMOWO

Dekada obejmująca pokryzysowe lata 2009–2019 była korzystna dla chińskich banków pod względem budowania ich międzynarodowej pozycji. Nie dotknęły ich problemy z płynnością w takim stopniu, jak banki amerykańskie i europejskie. Głównym celem artykułu jest analiza miar wielkości i poziomu wskaźników rentowności chińskich globalnych banków ważnych systemowo (GSIBs) na tle banków amerykańskich. Analiza została przeprowadzona na tle koncepcji wyjaśniających wagę wielkości banku jako jednego z czynników przewagi konkurencyjnej i konkurencyjności banków. Badania dowiodły, że największe banki chińskie przewyższają banki amerykańskie pod względem zarówno aktywów, jak i uzyskiwanych miar rentowności, co wskazuje na trwałe zmiany w zakresie dominacji chińskich banków w międzynarodowym systemie finansowym.