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Understanding the high profitability of Chinese banks

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**Understanding the High Profitability
of Chinese Banks**

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Abstract

The big Chinese state-owned banks came as winners out of the global financial crisis. According to *the Banker* ranking, Chinese banks led the global banking profitability ranking through the years from 2008 to 2010 and contributed one fifth of global banking profits in 2010. The Chinese banking sector, which was deemed as wholly insolvent ten years ago, was reborn like a phoenix from the fire of the Asian financial crisis and the current financial crisis. The banking reform in the last decade with large-scale capital injection, assets carve-outs, restructuring and public listing celebrated great success.

However, the low efficiency in Chinese banks is still persistent, as evident in many empirical studies (e.g. Feyzioglu, (2009)). The contradiction of high profitability and low efficiency causes great confusion in understanding banking in China. Our paper aims to reveal the real sources of the high profitability of the big Chinese banks. We compare their profitability pattern with peer banks from Asia, Europe and North America.

We first test the hypothesis that the average asset return of the “big five” Chinese banks will fall below the international comparative level if the current high net interest margin given by the managed interest system in China falls to the international peer average level. Surprisingly, the hypothesis has to be rejected. Instead, our results show that the profitability of Chinese banks stays at international comparative level, despite the high inefficiency in Chinese banks.

We therefore test a second hypothesis stating that the profitability of Chinese banks will fall below their international peers if staff costs increase by 30 percent in average to reach the international level, with the joint condition of margin decrease. This hypothesis can be proved, which means that the “big five” Chinese banks compensate its inefficiency by a combination of a non-competitive high interest margin and unsustainable lower labor cost.

The above results of course raise the question how the big Chinese banks can stay competitive if China continues to liberalize its interest rate system and labor cost increases. In our concluding remarks, we discuss the possibility that Chinese banks change their business model towards universal banking with additional non-interest income to compensate the drop in interest margin.

Key words: China; Banks; Finance; Banking business model; Universal banking

JEL classification: G01; G20; G21; G28 (englisch)

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1. Introduction

In sharp contrast to the large-scale government bail-outs in Western banking world, Chinese banks withstood the crisis without noteworthy write-offs and have even occupied the lead position of the global banking profitability ranking through the crisis years (see Table 1). According to *The Banker*, 101 Chinese banks are included in the *Top 1000 World Banks* ranking for 2010 and Chinese banks contribute to 21% of the global banking profits¹. Fully confident with the good performance in equity strength, asset quality, liquidity and profitability, Chinese banks regard the crisis even as golden opportunity for their oversea expansion.²

Table 1

Global top 10 banks by pre-tax profit 2007-2010³

2007			2008		
Bank	Country	US\$ million	Bank	Country	US\$ million
1 Bank of America	USA	31,973	1 ICBC	China	21,260
2 Citigroup	USA	29,639	2 CCB	China	17,520
3 HSBC Holdings	UK	22,086	3 Banco Santander	Spain	15,825
4 JP Morgan Chase	USA	19,886	4 BOC	China	12,620
5 Royal Bank of Scotland	UK	18,033	5 BBVA	Spain	9,640
6 Crédit Agricole	France	14,060	6 HSBC Holdings	UK	9,307
7 Barclays Bank	UK	14,009	7 Barclays Bank	UK	8,859
8 BNP Paribas	France	13,921	8 ABC	China	7,659
9 Mitsubishi UFJ Financial Group	Japan	12,824	9 UniCredit	Italy	6,952
10 Wells Fargo	USA	12,745	10 Royal Bank of Canada	Canada	6,077
2009			2010		
Bank	Country	US\$ million	Bank	Country	US\$ million
1 ICBC	China	24,494	1 ICBC	China	32,528
2 CCB	China	20,316	2 CCB	China	26,448
3 Goldman Sachs	USA	19,826	3 JPMorgan Chase & Co	USA	24,859
4 Barclays	UK	18,869	4 BOC	China	21,463
5 Wells Fargo & Co	USA	17,606	5 HSBC Holdings	UK	19,037
6 Banco Santander	Spain	16,951	6 Wells Fargo & Co	USA	18,700
7 BOC	China	16,319	7 ABC	China	18,230
8 JPMorgan Chase & Co	USA	16,143	8 BNP Paribas	France	17,406
9 BNP Paribas	France	12,222	9 Banco Santander	Spain	16,079
10 Itaú Unibanco Holding SA	Brazil	11,521	10 Goldman Sachs	USA	12,892

Source: The Banker

¹ See *The Banker*, July 2011, p. 143 and p. 128.

² For instance, ICBC purchased 20% share in the largest bank in Africa - the Standard Bank Group in South Africa - for USD 5.4 billion in 2008 and 70% share in Bank of East Asia Canada for USD 72 million in 2009. See Bloomberg, available at: <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a67bwjEMAumU> (last access on July 15th, 2011). Chinese banks view the international presence and the know-how transfer besides financial return as the main motivation of oversea investment. See Ngai and Wang (2008).

³ ICBC: Industrial and Commercial Bank of China; CCB: China Construction Bank; BOC: Bank of China; ABC: Agricultural Bank of China. The four state-owned commercial banks (SOCBs) are the largest in size and are named as the “big four” banks in China.

The great success of China's banking reform surprised many with the fear of a crisis resulting from the heavy bad loan burden of projected 35% only ten years ago⁴. The fact is that the whole banking sector withstood well the thunderstorms of both the Asian financial crisis in the late 90s and the current global financial crisis, thanks to gradual but consistent reform steps especially in the last decade, with capital injections and asset carve-outs totally costing an estimated over 20% of 2004's GDP⁵, reforming from wholly state ownership to shareholding banks, introduction foreign minority shareholders sitting on the board⁶, adoption of international best practices in risk management, corporate governance and public listing.⁷

Despite the great reform success in the last thirty years, the banking sector still struggles with many problems unsolved: the dominance of state-ownership and the related inefficiency⁸, policy intervention in lending⁹, limited access of private firms for bank financing¹⁰, financial repression¹¹ and foreign currency and interest rate controls¹². What confuses many outsider observers of the Chinese banking sector is the coexistence of high profitability and persistent low efficiency evident in many empirical studies. Both Feyzioğlu (2009) and García-Herrero, Gavilá and Santabárbara (2009) argue that the high profitability of Chinese banks is not related with outperformance in efficiency. Instead, Feyzioğlu (2009) suspects that large interest margin and high market concentration are possible explanations for the contradiction.

In our study, we try to find explanation for this contradiction by investigating the profitability pattern of Chinese banks compared with international peers. Using financial data of 1,000 banks from ASEAN, China, EU 15 countries and North America, we examine which factors are decisive in leading to the high asset return in Chinese banks compared to peer banks. To our best knowledge, our paper is the first to empirically engage with the profitability model of Chinese banks in an international context.¹³ Our findings show that the outperformance in profitability of big Chinese banks lies indeed in the higher margin - almost double as the level of international peers -, mostly resulted from the current guaranteed margin system. However,

⁴ See Woo (2002), p. 388.

⁵ See Kudrna (2007), p. 17.

⁶ Berger, Hasan and Zhou (2009) prove that foreign minority ownership improves the efficiency of Chinese banks.

⁷ For comprehensive overview of China's economic and financial sector reform and the most recent development, see for instance Nefteci and Xu (2007), Loechel and Zhao (2006), Wu (2005) and Herd, Pigott and Hill (2010).

⁸ Micco, Panizza and Yañez (2007) prove that state-ownership is related with lower profitability and efficiency in developing countries, pp. 227-228. Jia (2007) analyzes the case of China and finds the lending of SOCBs less prudent compared to joint-equity banks.

⁹ Zhang (2011) shows empirical evidence that the credit volume in China is loosely linked with interest rate spread movement, indicating the impact of the government's direct credit control on lending in China. See Zhang (2011), p. 6.

¹⁰ Héricourt and Poncet (2009) find empirical evidence of credit constraint for Chinese domestic private firms.

¹¹ See Lardy (2008).

¹² As Peng and Bajona (2008) empirically prove, the control of capital flows indeed helped in shielding China from the Asian financial crisis. In a more liberalized operating environment in line with the steps of internationalization of the Chinese currency, the weakness in China's banking sector bears potential of higher vulnerability to external crisis.

¹³ Despite the high policy and practical relevance of the business model transformation in Chinese banks, very few studies follow this transformation in international context. Hwa (2009) for instance addresses this development. See Hwa (2009), pp. 7-8.

our simulation shows that Chinese banks still reach the peer average level in asset return with a margin cut to half of the current level. The low inefficiency does not drive Chinese banks' asset return below the international average level.

We notice further that the personnel expenses in Chinese banks are 30% less than the international average. We combine the lowering of the lending margin to the international peer level with a simultaneous increase of personnel expenses ratio by 30% in the stressed scenario to test the asset return resilience. Under this scenario, the asset return of Chinese banks drops sharply from the current 0.81% to a mere 0.34%, compared to the international average of 0.41%. The outperformance in profitability of the “big five” Chinese banks is totally diminished.

Thus, the current outperformance of Chinese banks is rooted on the one hand in the higher margin given by the managed interest rate system, and on the other hand in the low labor costs.

To catch up the international profitability level in a more liberalized operating environment, Chinese banks should close the gap in business diversification, besides increase operational efficiency continuously. Our simulation shows that the doubling of non-interest income ratio can fully compensate the profitability drop in the stressed scenario.

Our findings are of special relevance in the light of the challenges from the dynamic changes in the operating environment for Chinese banks in the next years. In addition to the fulfillment of new regulatory rules introduced by Basel III¹⁴, the interest rate and foreign currency liberalization will put pressure on margin and the development of the corporate bond market will challenge bank's dominant role in corporate financing and accelerate the disintermediation in China.¹⁵ The change from the export-led to consumption-led economic model will dismantle the growth and profitability in corporate lending.¹⁶ The liberalization of banking business scope restriction will open the unique opportunity for Chinese banks to move up the value-chain from commodity lending to high value-added advisory and capital market financial services.¹⁷ Chinese banks which are stuck in the current “profitability trap” and reluctant for

¹⁴ The Chinese banking regulator -China Banking Regulatory Commission (CBRC) – released the Chinese version of Basel III rules in April 2011 and systemically important banks are obligated to have a capital adequacy ratio of 11.5% from 2013 on, 1% higher than the Basel III requirement. For the full version of Chinese Basel III, see CBRC, available at: <http://www.cbrc.gov.cn/chinese/home/jsp/docView.jsp?docID=20110503615014F8D9DBF4F4FFE45843249ABE00> (Chinese, last access on July 15th, 2011). For a detailed overview of banking regulation in China in international comparison, see Loechel, Packham and Li (2010).

¹⁵ As a roadmap for financial sector reform in the next five years, the 12th five-years-plan starting from 2011 sets the goal to “steadily promote the interest rate marketization reform”, “gradually realize the free convertibility of capital account” as well as “significantly increase the proportion of direct financing”. See Section 48, Article 3 and Article 2 of the 12th five-years-plan, available at: http://www.gov.cn/2011lh/content_1825838_12.htm (Chinese, last access on July 15th, 2011).

¹⁶ According to the *PWC Chinese Bankers Survey 2010*, 88% of the interviewees consider the change of the economic development model and the industry structure adjustment as the most relevant change of external environment. See PWC (2010), p. 5.

¹⁷ In the global survey on banking regulation covering 39 countries of the Institute of International Bankers in 2010, China has the most restrictive regulation in business scope restriction of banks. However, the restriction has been loosened in recent years. Bank's equity shareholding in asset management companies is permitted since February 2005 through the issuance of the *Administrative Rules for Pilot Incorporation of Fund Man-*

business model transformation will lose their competitive edge in a more liberalized operating environment.

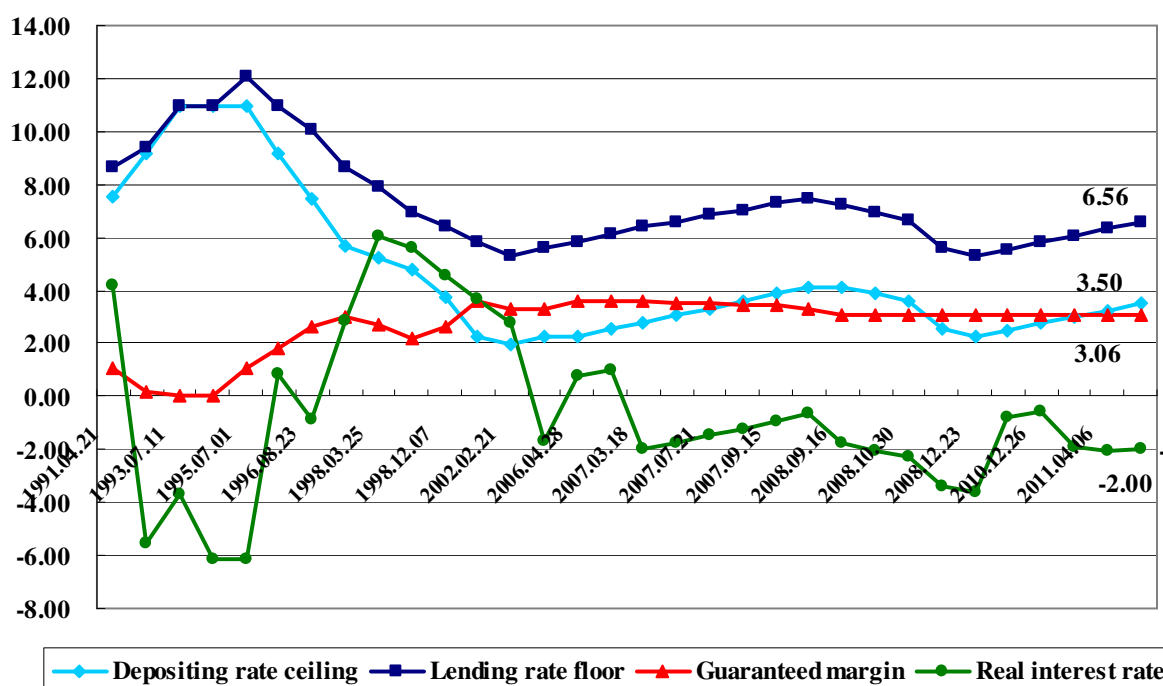
This paper is structured in the following way: Part II provides the background of the current emerging operating environment of Chinese banks. Part III compares the key financials of Chinese banks especially the largest “big five” banks with international peer banks for hypothesis building. Part IV examines the profitability determinants of Chinese banks in comparison to international peers and simulates the impact of possible changes in those determinants in the next years. Part V summarizes the main findings and provides outlook for related studies.

agement Companies by Commercial Banks. Since November 2009, banks are further allowed to invest in insurance companies through the issued *Notification of the Administration of Trial on Commercial Bank's Equity Investment in Insurance Companies.*

2. Current emerging operating environment for Chinese banks

Quite in contrast to the “big bang” financial sector reform in other transition countries, China follows the gradual way of reform in its transformation from the centrally planned to market-based economy.¹⁸ Till today, the deposit and lending rates still lie under the partial control of the central bank: the People’s Bank of China (PBC) sets a mandatory depositing rate cap of currently 3.50% and a lending rate floor of 6.56%, thus guarantees a net interest margin of 3.06% for one-year maturity (see Figure 1), an internationally comparative high margin in lending¹⁹.

Figure 1
Deposit rate ceiling, lending rate floor, guaranteed margin and real interest rate for one year maturity 1991-2011



Source: PBC, NBSC

The guaranteed high margin and the lasting credit boom in course of the rapid economic development provide banks “windfall” profits and little incentive for operational efficiency improvement and business innovation. It is especially problematic with the persistent negative

¹⁸ Wei (1997) provides a theoretical framework for the choice for the big bang or the gradual reform path.

¹⁹ Feyzioğlu (2009) also documents the high interest margin (3.0%) in China above the level in European countries (0.3% in France, 0.8% in Germany, 1.0% in the UK). See Feyzioğlu (2009), p. 6.

real interest rate over years, which leads to overinvestment and helps in constructing the current investment- and export-lead instead of consumption-lead growth model in China.²⁰

However, the interest rate regime is written in the reform agenda. The gradual interest rate liberalization starting in 1996 follows the principle: “foreign currency rates first, followed by local currency rates; lending rates first, followed by deposit rates; and large amount and long-term deposit rates first, followed by small amount and short-term deposit rates”.²¹ In 1996 and in 1997, the interbank lending rates and the interbank repo rates were liberalized respectively. In 1998, the interest rates in interbank markets for financial bonds and in 1999 for government bonds were allowed to be set by market forces. For foreign currencies, the lending rate was already liberalized in 2000. The partial liberalization of deposit rates for large amount of local currency (upon RMB 30 million) and foreign currencies (upon USD 3 million) was realized in 1999 and in 2000 respectively. The floating range for lending rates against PBC guiding rates was gradually widened to the range between 0.9 and 1.7 for commercial banks and to the range between 0.9 and 2.0 for rural cooperatives in 2004. The floating floor for private mortgage rates was further broadened to 0.85 in 2007 and further to 0.7 in 2008 respectively. In 2007, the Shanghai Interbank Offered Rate (Shibor) was set up, a milestone for the realization of a market-oriented interest rate system. In addition, competition from the upcoming wealth management products allowed to be provided by commercial banks increasingly undermines the binding deposit cap. The ongoing interest rate liberalization is expected to be accelerated, as the “promoting of the steady interest rate marketization reform” is stated as one of the major goals of financial reform for the next five years²². Accordingly, the PBC set the interest rate reform as one of the major reform tasks for 2011 at the working meeting early this year.²³

The interest rate reform is closely related with the loosening of foreign capital control in China. In contrast to the rapid capital account liberalization in other countries,²⁴ the flows of foreign currencies in the capital account are nowadays still controlled by the State Administration of Foreign Exchanges (SAFE) in China, although the current account was liberalized in 1996.²⁵ The control of capital accounts avoids the foreign capital flows into China and the alignment of interest rates level to international market conditions and worsens the situation of high accumulation of foreign exchanges. Ma and McCauley (2007) identify an onshore-offshore interest rate yield gap of up to 300 basis points for the maturity of three months,²⁶ indicating the effectiveness of the capital account controls in preventing the cross-boarder capital flows in the Chinese currency. However, the establishment of the B-share market in March 2001 opened the opportunity for equity investment of foreign capital in China, as B

²⁰ See Feyzioglu, Porter and Takáts (2009).

²¹ For the history of interest rate liberalization, see PBC, available at: <http://www.pbc.gov.cn/publish/zhengcehuobisi/624/index.html> (Chinese, last access on July 15th, 2011).

²² See the *Twelfth Five-Years-Plan* Chapter 48, Section 3, available at: http://www.gov.cn/2011lh/content_1825838_12.htm (Chinese, last access on July 15th, 2011).

²³ See *Financial News*, available at: http://www.financialnews.com.cn/zhjj/txt/2011-03/07/content_348783.htm (Chinese, last access on July 15th, 2011).

²⁴ Prasad, Rumbaugh and Wang (2005) provide a short overview of capital account liberalization in developed and developing countries.

²⁵ For the history of foreign capital control and the development of the exchange system, see SAFE, available at: http://www.safe.gov.cn/model_safe/whjjs/whjjs_detail.jsp?id=1&ID=160500000000000000 (Chinese, last access on July 15th, 2011). Yu (2008) also gives a comprehensive overview.

²⁶ See Ma and McCauley (2007), pp. 6-11.

shares enable foreign investors to buy shares of Chinese companies denoted in foreign currencies (in Shanghai in USD, in Shenzhen in HKD). Within the Qualified Foreign Institutional Investors (QFII) program introduced in 2002, foreign investors are permitted upon approval of the SAFE to invest in shares and bonds denoted with the local currency within a pre-determined contingent.²⁷ The liberalization of the Chinese currency was accelerated through the permission of the settlement in RMB Yuan for international trades on a broader basis²⁸ and the approval of the issuance of RMB-denoted bonds in Hong Kong²⁹, both of which opens the opportunity to hold and invest in Chinese currency for foreigners.

Besides the interest rate and foreign currency control, the banking market is characterized with an oligopolistic market structure. Due to historical path of the big four SOCBs³⁰ and their dominant role in financing state-owned enterprises (SOEs), the current banking market landscape is dominated by the “big five” banks with a market share measured by total assets of about 50%, whereas the majority of banks – 2,646 rural credit cooperatives – share together only 6.7% of the total banking assets. Moreover, modern banking management mechanism is still not in place in many rural institutions. All “big four” SOCBs have completed the restructuring and the largest banks are even in expansion into the rural banking business by setting up their own rural banking subsidiaries³¹. The share of foreign banks remains over years at about 2%. The oligopolistic market structure contributes to the high profitability of the largest Chinese banks.³² Furthermore, bank lending plays a dominant role in corporate financing especially for large enterprises, as the high listing requirement set by the China Securities Regulatory Commission (CSRC) in line with the immature stock market infrastructure limits companies’ ability in fund raising in the stock market, and the corporate bond market is still in its infancy³³. Thus, both the oligopolistic market structure and the weak negotiation power of lenders contribute to keeping a relatively high lending margin. However, the joint-stock commercial banks (JSCBs) are increasingly challenging the market position of the SOCBs, as the private-owned JSCBs operating on the full commercial basis usually have better performance in efficiency, product variety and service quality.

Summarizing the above description, Chinese banks still operate in the protective environment with margin guarantee and isolation from the competition in international financial markets

²⁷ Till the end of 2010, an accumulated amount of USD 19.72 billion were permitted within the QFII program, compared to USD 68.36 billion permitted within the Qualified Domestic Institutional Investors (QDII) program introduced in 2006, under which domestic institutional investors are permitted to invest in markets abroad within the pre-determined limits. Source: SAFE.

²⁸ See *Bloomberg*, available at: <http://www.bloomberg.com/news/2011-03-02/china-to-increase-using-yuan-as-settlement-currency-in-trades.html> (last access on July 15th, 2011).

²⁹ See *Wall Street Journal*, available at: <http://online.wsj.com/article/SB10001424052702304354104575568180321350908.html> (last access on July 15th 2011).

³⁰ All big four SOCBs in China were formed as the result of the split-up from the former PBC in the mono-banking system in the planned economy.

³¹ ICBC owns two rural banking subsidiaries: Chongqing Bishan ICBC Rural Bank and Zhejiang Pinghu ICBC Rural Bank; CCB two: Hunan Taojiang Jianxin Rural Bank and Zhejiang Cangnan Jianxin Rural Bank; ABC three: ABC Hubei Hanchuan Rural Bank, ABC Hexigten Rural Bank and ABC Ansai Rural Bank; BoCom two: Dayi BoCom Xingmin Rural Bank and Anji BoCom Rural Bank. Source: bank annual reports 2009.

³² See Feyzioğlu (2009), pp. 20-25.

³³ For instance, corporate bonds made only about 1% of the total bonds outstanding in China at the end of June 2011. Source: wind.

due to foreign currency control. The margin protection aims above all to maintain the system stability in course of the transition and reform. As the operation of the largest listed Chinese banks has been gradually upgraded to international level, the “windfall” profits is expected to be gradually diminished in course of the interest rate and foreign currency control liberalization in the next years. Banks which fail to reduce their high dependence on lending margin and adjust the business model accordingly will fall in the current “profitability trap”.

3. Performance comparison of Chinese banks

To better understand how the business pattern of Chinese banks distinguishes from their international peers, we compare financial data of Chinese banks with international peers from Asia, Europe and North America for the time period from 2003 to 2009. Financial data are drawn from the database *Bankscope* and consolidated financial data in universal banking format are applied. The total sample includes 1,000 banks, of which 125 banks are based in ASEAN countries, 115 from China, 583 from EU 15 countries and 177 from North America (see Table 2). Chinese banks in the sample are further divided into four groups: “big five” banks (ICBC, CCB, BOC, ABC and BoCom), twelve JSCBs (CMB, CITIC Bank, SPDB, Minsheng Bank, Industrial Bank, Everbright Bank, GDB, SZDB, Ping An Bank, Evergrowing Bank, Zheshang Bank and Bohai Bank)³⁴, ninety city commercial banks (CCBs) and eight rural commercial banks (RCBs).

Table 2

Summary sample size

ASEAN		EU 15	
Brunei Darussalam	1	Austria	23
Cambodia	1	Belgium	25
Indonesia	23	Cyprus	11
Laos	1	Denmark	23
Malaysia	29	Finland	11
The Union of Myanma	1	France	113
Philippines	22	Germany	49
Singapore	13	Greece	22
Thailand	16	Ireland	25
Vietnam	18	Italy	53
Total	125	Luxembourg	13
		Malta	8
		The Netherlands	41
		Portugal	23
		Spain	47
		Sweden	9
		UK	87
		Total	583
China			
Big five banks	5		
JSCBs	12		
CCBs	90		
RCBs	8		
Total	115		
North America			
Canada	53	USA	124
Total			177

Source: Bankscope

³⁴ China Merchants Bank (CMB), Shanghai Pudong Development Bank (SPDB), Guangdong Development Bank (GDB), Shenzhen Development Bank (SZDB).

We first compare the performance of the “big five” banks with international peers defined as the largest twenty banks according to average total assets in the sample years. As shown in Table 3, the largest four SOCBs with the average asset size of USD 838,292 million compete with international top twenty banks with an average asset size of USD 1,214,637 million. The largest Chinese bank ICBC with asset size of USD 1,037,671 million joins the league of top banks with assets over one trillion USD. Both measured in asset return and equity return, Chinese top banks with an average ROAA of 0.81% and an average ROAE of 12.91% significantly outperform international peers with an averaged ROAA of 0.41% and an averaged ROAE of 8.17%. It is noticeable that the average net interest margin of Chinese banks with 2.61% is almost double as the international average of 1.34%. The loan quality of Chinese banks (especially that of ABC) with an average bad loan ratio of 8.11% (for ABC even with 19.64%) is worse than the international average of 3.01%. The bad loan ratio shrinks however from the 2003 average of 17.6% to the 2009 average of 1.86% in course of the bad loan carve-outs. In addition, the loan portfolio of Chinese banks is heavily weighted in corporate lending with an average ratio of 81.03%, whereas international peers have a more balanced portfolio in residential mortgage loans (31.39%), other retail loans (22.88%) and corporate loans (37.68%). Chinese top banks have remarkably better cost control with an average cost income ratio of 42.29% compared to 69.74% of international peers, despite the low efficiency in Chinese bank. This can be partially explained by the lower personnel expenses of 0.55% of total assets, compared to 0.73% in international peer banks. Furthermore, the revenue source in Chinese banks is highly concentrated in lending business with non-interest income making only 15.18% of total revenues, compared to the average 50.59% in top international banks. Chinese banks benefit from high asset growth with an average rate of 18.36%, whereas the average growth with 9.16% in international banks is half less than in China. The capital level of Chinese banks reaches the international level with 8.86% of tier one ratio, compared to 8.57% in international peers, thanks to capital injections and public listing in Chinese banks in the last years.³⁵

³⁵ Indeed, Chinese listed banks increasingly make use of capital markets to strengthen capital base. For instance, BOC issued RMB 40 billion A share convertible bond in 2010, see BOC, available at: http://www.boc.cn/en/bocinfo/bi1/201001/t20100122_950755.html (last access on July 15th, 2011). ICBC also raised RMB 45 billion in 2010, see ICBC, available at: <http://www.icbc-ltd.com/icbc-ltd/about%20us/icbc%20history/> (last access on July 15th, 2011).

Understanding the High Profitability of Chinese Banks

Table 3

Key financial indicators of top twenty banks (average value from 2003 to 2009)

Bank name	Size	Profitability		Lending business		Loan portfolio			Cost control		Business diversification	Growth	Capital strength		
	Total assets (million USD)	ROAA (%)	ROAE (%)	Net interest margin (%)	Impaired loans/ gross loans (%)	Residential mortgage loans/ gross loans (%)	Other customer retail loans/ gross loans (%)	Corporate and commercia l loans/ gross loans (%)	Cost income ratio (%)	Personnel expenses/ total assets (%)	Non-interest income/ gross revenue (%)	Growth of total assets (%)	Tier 1 ratio (%)	Total regulatory capital ratio (%)	Equity/ total assets (%)
"Big five" Chinese banks															
1 ICBC	1,037,671	0.85	4.51	2.70	8.63	14.45	3.75	81.80	36.59	0.50	11.93	17.32	9.47	11.35	0.89
2 CCB	798,040	1.11	29.08	3.00	3.09	15.98	5.42	78.60	38.40	0.62	11.99	19.07	9.34	11.43	5.87
3 ABC	748,382	0.39	-0.81	2.23	19.64	10.31	5.75	83.93	53.61	0.68	19.71	17.33	7.85	9.75	0.50
4 BOC	769,076	0.91	14.28	2.39	5.43	19.06	5.10	75.84	40.58	0.54	20.00	14.00	9.29	11.29	6.43
5 BoCom	258,870	0.78	17.49	2.71	3.77	9.92	5.10	84.98	42.27	0.42	12.29	24.07	8.36	11.29	4.91
<i>Average</i>	<i>722,408</i>	<i>0.81</i>	<i>12.91</i>	<i>2.61</i>	<i>8.11</i>	<i>13.94</i>	<i>5.03</i>	<i>81.03</i>	<i>42.29</i>	<i>0.55</i>	<i>15.18</i>	<i>18.36</i>	<i>8.86</i>	<i>11.02</i>	<i>3.72</i>
International peers															
1 Deutsche Bank	2,532,690	0.22	10.25	0.63	1.75	21.49	n.a.	21.41	89.48	0.67	48.75	1.67	9.95	12.55	2.03
2 BNP Paribas	2,345,667	0.42	11.77	0.85	4.37	n.a.	n.a.	n.a.	62.68	0.64	55.86	13.43	8.04	11.36	3.02
3 Barclays	2,102,636	0.48	18.32	0.88	2.68	n.a.	47.70	n.a.	60.39	0.67	55.08	18.90	8.48	12.55	2.78
4 Royal Bank of Scotland	1,867,245	0.43	7.43	1.26	2.22	n.a.	n.a.	n.a.	65.00	0.61	45.20	23.10	9.07	14.10	4.37
5 Société Générale	1,377,227	0.35	10.30	0.67	4.26	22.49	20.81	35.30	67.77	0.83	70.54	5.20	8.22	11.10	3.08
6 ING Bank	1,267,358	0.29	11.03	1.18	1.54	52.16	4.29	37.91	65.84	0.57	27.96	1.93	7.86	10.98	2.72
7 UniCredit	1,262,059	0.50	9.08	1.66	6.52	n.a.	n.a.	n.a.	61.54	0.86	39.12	3.96	7.18	10.74	5.74
8 Banco Santander	1,227,051	0.91	15.24	1.88	1.62	n.a.	56.21	26.43	48.93	0.70	41.33	11.04	8.18	12.92	5.52
9 Bank of America	1,131,085	1.11	12.87	2.91	1.43	n.a.	8.89	19.85	54.45	1.13	44.12	15.19	8.77	11.38	9.01
10 RBS Holdings (former ABN AMRO)	1,073,879	0.20	8.66	0.83	1.85	0.71	35.49	41.88	97.06	0.80	111.13	-5.50	11.80	14.95	2.87
11 HSBC Bank	984,563	0.63	13.68	1.13	1.65	41.35	13.58	48.10	59.95	0.79	57.42	23.46	7.88	11.60	4.23
12 Bank of Scotland	954,861	-0.28	-11.71	1.18	4.80	52.85	4.37	41.48	49.85	0.35	31.06	16.18	6.62	10.82	2.82
13 Citibank	949,554	0.73	9.20	3.45	2.34	n.a.	27.12	24.27	64.81	1.29	35.00	13.93	9.38	13.37	7.96
14 Credit Agricole	846,972	0.09	2.15	-0.05	2.36	n.a.	n.a.	n.a.	109.29	0.38	101.82	12.42	9.22	10.48	1.87
15 BNP Paribas Fortis-Fortis Bank	843,574	-0.36	-6.77	0.89	2.68	25.08	3.49	41.62	80.98	0.54	39.28	-14.73	9.40	13.88	3.22
16 Intesa Sanpaolo	803,770	0.77	8.31	2.16	5.60	n.a.	n.a.	71.79	62.82	1.03	34.78	4.10	7.33	10.33	9.04
17 Commerzbank	768,572	-0.02	-0.35	0.79	4.61	17.86	n.a.	n.a.	79.51	0.54	44.83	11.57	8.14	12.67	2.36
18 Lloyds TSB Bank	673,396	0.55	12.51	1.79	3.57	48.50	13.83	34.92	61.27	0.80	44.25	15.36	9.25	11.55	3.37
19 Natixis	661,328	0.06	1.04	0.43	2.36	n.a.	n.a.	n.a.	106.54	0.56	43.06	1.48	8.72	10.84	3.48
20 Banco Bilbao Vizcaya Argentaria	619,262	1.10	20.41	2.37	1.93	n.a.	38.80	44.93	46.65	0.91	41.20	10.52	7.88	12.17	5.00
<i>Average</i>	<i>1,214,637</i>	<i>0.41</i>	<i>8.17</i>	<i>1.34</i>	<i>3.01</i>	<i>31.39</i>	<i>22.88</i>	<i>37.68</i>	<i>69.74</i>	<i>0.73</i>	<i>50.59</i>	<i>9.16</i>	<i>8.57</i>	<i>12.02</i>	<i>4.22</i>

Source: Bankscope

The comparative statistics for the whole banking sector show a more differentiated picture, as summarized in Table 4. Chinese banks with the average asset size of USD 68,508 million are smaller than European banks with averaged USD 98,591 million, larger than North American banks with averaged USD 46,482 million and Asian banks with averaged USD 13,772 million. The asset return of Chinese banks of 0.78% lies however below the level of ASEAN and North American banks with averaged return of 1.21% and 0.92% respectively, is however slightly higher than the European average of 0.74%. The highest equity return of average 14.78% is partially the result of the thin equity base of 5.49% in equity ratio of Chinese banks. The margin of 2.94% in Chinese banks is relatively low as the loan quality with bad loan ratio of average 4.57% is relatively high. The loan portfolio in Chinese banks suffers the high concentration in corporate lending with an average ratio of 84.16%. Chinese banks benefit from lower cost (cost income ratio of 42.74% and personnel expenses of 0.49% of total assets) and high asset growth (average 27.57%) in comparison to international peers. The business model is highly focused on lending with non-interest income making 13.25% of gross revenue, lower than the level of ASEAN banks with 29.42%, North American banks with 31.37% and European banks with 44.13%.

Table 4

Summary statistics (average value from 2003 to 2009)

	China			ASEAN			EU 15			North America		
	mean	std.	obs.	mean	std.	obs.	mean	std.	obs.	mean	std.	obs.
Size												
Total assets (million USD)	68,508	215,535	479	13,772	23,998	522	98,591	299,548	2,102	46,482	163,725	754
Profitability												
ROAA (%)	0.78	0.51	470	1.21	1.45	522	0.74	2.63	2,093	0.92	3.38	754
ROAE (%)	14.78	15.05	470	12.24	25.71	522	7.58	19.90	2,093	9.35	14.18	754
Lending business												
Net interest margin (%)	2.94	1.08	467	3.76	1.69	522	3.09	13.78	2,088	3.16	1.52	754
Impaired loans/gross loans (%)	4.57	9.43	393	6.58	6.08	470	4.00	4.81	1,010	1.48	4.39	654
Loan portfolio												
Residential mortgage loans/gross loans (%)	10.71	6.94	104	16.73	10.54	147	36.80	25.45	340	34.54	25.26	229
Other customer retail loans/gross loans (%)	6.59	8.18	119	24.54	19.84	147	27.32	25.66	339	14.67	23.15	665
Corporate and commercial loans/gross loans (%)	84.16	10.33	122	69.58	25.54	251	72.70	32.37	763	28.48	24.57	628
Cost control												
Cost income ratio (%)	42.74	13.51	466	54.16	27.89	520	67.79	38.95	2,070	68.60	53.99	748
Personnel expenses/total assets (%)	0.49	0.14	167	0.96	0.52	514	1.60	2.65	2,020	2.18	8.31	735
Business diversification												
Non-interest income/gross revenue (%)	13.25	12.61	467	29.42	23.05	522	44.13	46.41	2,085	31.37	36.82	752
Growth												
Growth of total assets (%)	27.57	20.64	395	20.44	57.20	476	12.56	37.15	1,803	15.10	47.46	734
Capital strength												
Tier one ratio (%)	9.16	4.79	343	13.05	7.62	350	12.06	10.43	1,078	21.74	55.73	693
Total regulatory capital ratio (%)	10.52	4.74	392	16.52	8.16	407	15.09	11.21	1,167	23.27	55.44	694
Equity/total assets (%)	5.49	4.80	479	10.25	5.87	522	10.21	12.84	2,102	11.79	11.86	754

Source: Bankscope

Summarizing the above comparison of key statistics, the financials of the “big five” Chinese banks clearly outperform international peers. The asset size and equity strength of the “big five” banks have reached international comparative level. Chinese largest banks enjoy high interest margin almost double as the international level and better cost control with 40% lower cost income ratio and roughly 30% lower personnel cost ratio. The asset return is almost double of the international level and the equity return is 60% higher than peer banks. In regard to the whole banking sector however, the reform process to strengthen capital base, increase loan quality and improve credit risk man-

agement to achieve higher margin and return is still on going. In addition, Chinese banks suffer from high dependence on corporate lending as revenue source and the non-interest income business is not sufficiently explored.

4. Explanation for the outperformance of “big five” Chinese banks

As the high lending margin is recognized as the key to understand the disparity between high profitability and low efficiency in Chinese banks, we suspect that the outperformance of the “big five” Chinese banks would be diminished if the lending margin shrinks to international comparative level. We assume:

Hypothesis 1: The average asset return of the “big five” Chinese banks will fall below the international comparative level if the current high average net interest margin falls to the international peer average level.

To test the above hypothesis, we first determine the impact of different financial variables on asset return measured by return on averaged assets (ROAA). we investigate the impact of size as indicator for market power and scale economy (the natural logarithm of total assets), capital base (reported equity to capital ratio is chosen for better data availability), interest spread in lending (net interest margin), loan quality (impaired loans ratio), cost income ratio, business diversification (non-interest income ratio), growth (assets growth rate) and funding sources (customer deposits funding ratio) on asset return with the following OLS regressions for i bank at time t separately for the j testing fields³⁶:

$$\begin{aligned}
 [ROAA]_{ijt} = & \alpha_j + \beta_{1j} * [Ln \text{ total assets}]_{ijt} \\
 & + \beta_{2j} * [Equity/total \text{ assets}]_{ijt} \\
 & + \beta_{3j} * [Net \text{ interest margin}]_{ijt} \\
 & + \beta_{4j} * [Impaired \text{ loans/gross loans}]_{ijt} \\
 & + \beta_{5j} * [Cost \text{ income ratio}]_{ijt} \\
 & + \beta_{6j} * [Non-interest \text{ income/gross revenue}]_{ijt} \\
 & + \beta_{7j} * [Growth \text{ of total assets}]_{ijt} \\
 & + \beta_{8j} * [Customer \text{ deposits/total funding exclusive derivatives}]_{ijt} \\
 & + \varepsilon_{ijt}.
 \end{aligned}$$

In addition, beta regressions are tested to compare the comparative sensitivity of asset return across country/regions. The regression results are summarized in Table 5.

³⁶ As the operating environment and business pattern of banks in the four testing fields can differ substantially, we conduct OLS regressions separately for the respective country/region. For the regression for Chinese banks, we add a dummy variable for the “big five” banks in an alternative regression model. The result shows however that the “big five” bank dummy is statistically not significant. Indeed, both the largest five Chinese banks and banks of other types in China mainly follow the “narrow banking” business model with the dominant role of corporate lending as revenue source.

Table 5

ROAA OLS and beta regressions results

Variable model 2	China		ASEAN		EU 15		North America	
	OLS	Beta	OLS	Beta	OLS	Beta	OLS	Beta
Ln total assets	0.0297 ***	0.1217	0.0013	0.0016	-0.0009	-0.0017	-0.0290 *	-0.0521
<i>t</i> value	2.90		0.05		-0.05		-1.73	
<i>p</i> value	0.0040		0.9640		0.9580		0.0840	
Equity/total assets	0.0292 ***	0.1475	0.0641 ***	0.2995	0.0556 ***	0.2659	0.0140 **	0.0665
<i>t</i> value	3.48		8.20		8.09		2.22	
<i>p</i> value	0.0010		0.0000		0.0000		0.0270	
Net interest margin	0.2293 ***	0.5049	0.2281 ***	0.3631	0.0013	0.0020	0.1568 ***	0.1741
<i>t</i> value	9.37		10.83		0.06		5.94	
<i>p</i> value	0.0000		0.0000		0.9510		0.0000	
Impaired loans/gross loans	-0.0008	-0.0139	-0.0017	-0.0091	-0.0697 ***	-0.2830	-0.0465 ***	-0.1711
<i>t</i> value	-0.32		-0.29		-10.06		-5.99	
<i>p</i> value	0.7490		0.7690		0.0000		0.0000	
Cost income ratio	-0.0191 ***	-0.4036	-0.0251 ***	-0.5417	-0.0123 ***	-0.3458	-0.0203 ***	-0.7134
<i>t</i> value	-9.25		-15.84		-12.22		-25.97	
<i>p</i> value	0.0000		0.0000		0.0000		0.0000	
Non-interest income/gross revenue	0.0084 ***	0.2017	0.0039 **	0.0695	0.0058 ***	0.1276	0.0080 ***	0.1587
<i>t</i> value	4.36		2.18		4.41		5.39	
<i>p</i> value	0.0000		0.0300		0.0000		0.0000	
Growth of total assets	0.0017 *	0.0669	0.0013 **	0.0719	0.0013	0.0412	0.0027 ***	0.1074
<i>t</i> value	1.67		2.39		1.51		3.94	
<i>p</i> value	0.0960		0.0170		0.1310		0.0000	
Customer deposits/total funding exclusive derivati	-0.0024	-0.0491	0.0048 **	0.0715	0.0054 ***	0.1187	-0.0009	-0.0141
<i>t</i> value	-1.18		2.12		4.10		-0.49	
<i>p</i> value	0.2390		0.0340		0.0000		0.6250	
Constant	0.5713 **	-	0.5092	-	0.7170 ***	-	1.5578 ***	-
<i>t</i> value	2.27		1.51		2.80		5.48	
<i>p</i> value	0.0240		0.1310		0.0050		0.0000	
F value	43.79		99.74		63.94		113.43	
R-squared	0.5157		0.6519		0.3684		0.6117	
Adjusted R	0.5039		0.6454		0.3626		0.6063	
Obs.	338		435		886		585	

*** / ** / * Statistically significant at 1% / 5% / 10% level

Source: Bankscope

The above results confirm the superior importance of net interest margin for Chinese banks with coefficients of 0.2293 (beta coefficient of 0.5049), whereas better cost control remains the core asset return determinant across peer banks (with beta coefficients for cost income ratio of -0.5417, -0.3458 and -0.7134 in ASEAN, European and North American banks respectively, compared to -0.4036 in Chinese banks). Larger banks in China tend to be more profitable with the coefficient for size of 0.0297, eventually through the mixture of the reform success, economies of scale and market power.

We further investigate which factors contribute to the superior cost control in Chinese banks. We test the impact of margin, loan quality, labor costs and business diversification on cost income ratio with the following regression model for *i* bank at time *t* in the *j* testing field:

$$\begin{aligned}
 [\text{Cost income ratio}]_{ijt} = & \alpha_j + \beta_{1j} * [\text{Net interest margin}]_{ijt} \\
 & + \beta_{2j} * [\text{Impaired loans/gross loans}]_{ijt} \\
 & + \beta_{3j} * [\text{Personnel expenses/total assets}]_{ijt} \\
 & + \beta_{4j} * [\text{Non-interest income/gross revenue}]_{ijt} \\
 & + \varepsilon_{ijt}.
 \end{aligned}$$

As indicated from the regression results summarized in Table 6, the increase in personnel costs contributes most to higher cost income ratio in all testing fields (with regression coefficients of 22.9903, 35.9022, 23.2695 and 27.9708, beta coefficients of 0.3772, 0.6610, 0.6105 and 0.4917 for China, ASEAN, EU 15 and North America respectively). With an average personnel cost ratio of 0.55% compared to the peer average of 0.73%, the “big five” Chinese banks are able to have better cost control. Moreover, the higher interest margin also contributes to the favorable cost income ratio in Chinese banks (with regression coefficients of -6.2353, -10.7405, -10.0725 and -11.0370, beta coefficients of -0.5298, -0.6580, -0.5578 and -0.3678 in Chinese, ASEAN, EU 15 and North American banks respectively). Thus, Chinese banks have the high margin as the main driver for lower cost income ratio, whereas high personnel cost ratio is the main contributor for high cost income ratio for international peers.

Table 6
Cost income ratio OLS and beta regressions results

Variable	China		ASEAN		EU 15		North America	
	OLS	Beta	OLS	Beta	OLS	Beta	OLS	Beta
Net interest margin	-6.2353 ***	-0.5298	-10.7405 ***	-0.6580	-10.0725 ***	-0.5578	-11.0370 ***	-0.3678
<i>t value</i>	-7.17		-12.52		-15.48		-8.37	
<i>p value</i>	0.0000		0.0000		0.0000		0.0000	
Impaired loans/gross loans	0.2636 ***	0.2930	0.3172 **	0.0712	0.3156 *	0.0470	1.6480 **	0.0808
<i>t value</i>	4.53		1.99		1.67		2.25	
<i>p value</i>	0.0000		0.0480		0.0950		0.0250	
Personnel expenses/total assets	22.9903 ***	0.3772	35.9022 ***	0.6610	23.2695 ***	0.6105	27.9708 ***	0.4917
<i>t value</i>	5.44		12.91		16.59		11.19	
<i>p value</i>	0.0000		0.0000		0.0000		0.0000	
Non-interest income/gross revenue	-0.4094 ***	-0.4032	-0.7026 ***	-0.5333	-0.5759 ***	-0.4571	-0.5409 ***	-0.3160
<i>t value</i>	-5.83		-14.48		-14.77		-7.60	
<i>p value</i>	0.0000		0.0000		0.0000		0.0000	
Constant	48.8525 ***	-	78.1317 ***	-	82.4210 ***	-	77.9556	-
<i>t value</i>	16.52		23.87		38.79		15.90	
<i>p value</i>	0.0000		0.0000		0.0000		0.0000	
F value	24.75		86.14		97.82		37.04	
R-squared	0.4074		0.4277		0.2835		0.1904	
Adjusted R	0.3910		0.4228		0.2806		0.1853	
Obs.	149		466		994		635	

*** / ** / * Statistically significant at 1% / 5% / 10% level

Source: Bankscope

Summarizing the findings from the above regressions, the outperformance of the “big five” Chinese banks in asset return in comparison to international peer banks can be rooted on the one hand in the high interest margin realized in the current environment of guaranteed margin system and isolation from the competition on the international financial markets due to foreign capital control, on the other hand in the low labor cost advantage.

To test hypothesis 1, we first simulate the impact of reduced net interest margin on the performance of the “big five” banks, using the results from the above regression models. If the average margin in the “big five” Chinese banks shrinks from the current 2.61% to the international average level of 1.34% (a decrease of the net interest margin by 48.66%), the cost income ratio would increase from the current average of 42.29% to 48.66% and the average asset return of Chinese banks would be reduced from the current high level of averaged 0.81% to 0.41%, surprising still on the same level of international peers (see Table 7). The projected fall of the profitability below the international peer level in hypothesis 1 is rejected. Thus, the higher margin advantage should not be the sole explanation for the outperformance of Chinese banks in profitability, taking into consideration the much lower efficiency of Chinese banks compared to international peers.

Table 7
Impact of net interest margin (NIM) on asset return (ROAA)

	NIM original	NIM stress ↓	CIR original	CIR stress ↑	ROAA original	ROAA stress
ICBC	2.70	1.39	36.59	49.10	0.85	0.37
CCB	3.00	1.54	38.40	49.31	1.11	0.46
ABC	2.23	1.14	53.61	52.41	0.39	0.19
BOC	2.39	1.23	40.58	46.74	0.91	0.56
BoCom	2.71	1.39	42.27	45.72	0.78	0.47
Big five average	2.61	1.34	42.29	48.66	0.81	0.41
Top 20 average	1.34		69.74		0.41	

Source: Bankscope, own calculation

Reviewing the comparative statistics in section II, we further noticed that another feature distinguishing Chinese banks much from the peer banks is the extreme lower cost income ratio and the personnel expenses ratio. Indeed, the largest Chinese bank ICBC for instance had 397,339 employees at the end of 2010 with total personnel expenses of USD 10,515 million, compared to Deutsche Bank with 102,062 employees costing USD 16,931 million, the average wage at Deutsche Bank are thus more than six times compared to ICBC.³⁷ The favorable lower labor costs could grant Chinese banks the advantage for better cost control, which is not at all an indicator for better operational efficiency, as evident in Feyzioğlu (2009). Although the wage level is low, the average number of employees is high in Chinese banks, indicating the abundance of personnel and the low labor productivity. In total, the level of personnel costs in Chinese banks is roughly 30% under the international peer level.

However, the favorable situation of lower wage level can be seriously challenged in the next years with a salary increase of the predicted yearly rate of 10%.³⁸ Thus, the current advantage with an average cost income ratio of the “big five” banks of only 60% of the international average is expected to be cleared out over time. We suspect that the increased labor cost pressure will undermine much of the asset return of Chinese banks. To investigate the impact of rising labor costs, we simulate the profitability of the “big five” Chinese banks in case that the average net interest margin falls to international peer level and, in addition, the personnel costs increase by 30%. We assume:

Hypothesis 2: The asset return of the “big five” Chinese banks will fall below the international peer level if the average lending margin shrinks to international peer average level and the personnel expenses ratio increases by 30%.

As presented in Table 8, the shrinking margin to international peer average and the increase of personnel costs ratio by 30% would lead to similar personnel costs ratio as international peers (0.71% compared to 0.73% in peer banks) and slightly lower cost income ratio (52.45% compared to 69.74% in peer banks), and the asset return falls in the stressed scenario sharply from the current 0.81% to 0.34%, far below the international peer average of 0.41%. Hypothesis 2 is confirmed.

³⁷ Source: Bankscope. For a comparative case study on Deutsche Bank with Bank of China, see Loechel and Sottocorona (2011).

³⁸ See PWC (2011), p. 27.

Table 8

Impact of net interest margin (NIM), personnel expenses ratio (Pexp) and cost income ratio (CIR) on asset return (ROAA)

	NIM original	NIM stress ↓	Pexp original	Pexp stress ↑ 30%	CIR original	CIR stress ↑	ROAA original	ROAA stress
ICBC	2.70	1.39	0.50	0.65	36.59	52.55	0.85	0.31
CCB	3.00	1.54	0.62	0.80	38.40	53.57	1.11	0.38
ABC	2.23	1.14	0.68	0.88	53.61	57.09	0.39	0.10
BOC	2.39	1.23	0.54	0.70	40.58	50.43	0.91	0.49
BoCom	2.71	1.39	0.42	0.54	42.27	48.60	0.78	0.41
Big five average	2.61	1.34	0.55	0.71	42.29	52.45	0.81	0.34
Top 20 average	1.34		0.73		69.74		0.41	

Source: Bankscope

Thus, the possible margin decrease by 49% and the simultaneous increase of personnel costs by 30%, a possible scenario as the consequence of the interest rate liberalization and labor cost development in the next years, would reduce the asset return of the “big five” banks dramatically to make Chinese banks to rapidly fall from the leading position of global banking profitability ranking. The current high guaranteed interest margin and the labor cost advantage are key to understand the divide between high profitability and low efficiency of Chinese banks.

One way to close the profitability gap caused by margin decrease and high labor costs is to open new revenue sources in non-interest income business to compensate the lost profit in course of the disintermediation, a business model transformation most Western banks went through in the early 90s. Our calculation shows that the doubling of the non-interest income ratio would compensate the loss in asset return caused by shrinking margin and increased labor costs to reach the level of 0.46%, at international comparable level (0.41% for international peer banks) (see Table 9).

Table 9

Impact of net interest margin (NIM), personnel expenses ratio (Pexp), cost income ratio (CIR) and non-interest income ratio (NII) on asset return (ROAA)

	NIM original	NIM stress ↓	Pexp original	Pexp stress ↑ 30%	CIR original	CIR stress ↑	NII original	NII ↑ 100%	ROAA original	ROAA stress
ICBC	2.70	1.39	0.50	0.65	36.59	52.55	11.93	23.86	0.85	0.41
CCB	3.00	1.54	0.62	0.80	38.40	53.57	11.99	23.97	1.11	0.48
ABC	2.23	1.14	0.68	0.88	53.61	57.09	19.71	39.43	0.39	0.21
BOC	2.39	1.23	0.54	0.70	40.58	50.43	20.00	40.00	0.91	0.66
BoCom	2.71	1.39	0.42	0.54	42.27	48.60	12.29	24.57	0.78	0.51
Big five average	2.61	1.34	0.55	0.71	42.29	52.45	15.18	30.37	0.81	0.46
Top 20 average	1.34		0.73		69.74		50.59		0.41	

Source: Bankscope

Summarizing the above analyses and simulations, the current outperformance of the “big five” Chinese banks over international peers is rooted in the high margin and lower personnel costs advantage. In a more liberalized interest rate regime, more competition from domestic JSCBs and international players as well as the expansion of alternative fund raising channel of core corporate lending clients would push down the margin for large banks to international average level. The additional pressure from increased personnel costs would jointly drive down the profitability level of the “big five” banks to the below peer average level. One way out of the current profitability trap is more business diversification. The doubling of the share of non-interest income revenue source would hold the asset return on international comparative level even in the stressed scenario.

5. Conclusion and Outlook

Summarizing our findings, we document the great reform success of the last decade in China's banking sector in improved capital level and loan quality up to internationally comparative level. The high profitability of Chinese banks is however rooted in large extent in the guaranteed high net interest margin and lower personnel costs advantage. In the current emerging operating environment of margin guarantee, capital flow control and restrictive market competition through entry barrier and business scope restriction, Chinese banks still enjoy the transition "windfall" profits under protective conditions.

The gradual interest rate liberalization and the subsequent decrease in margin as well as the projected salary increase in the next years would diminish the current outperformance in profitability of the "big five" Chinese banks. Business diversification to increase non-interest income revenues by increasing product variety and promoting innovation and expansion in high value-added wealth management, advisory and insurance services can leverage the current customer base and explore the cross-selling potential to compensate the slow-down of increase in interest income. The gradual move from the current pure commercial banking model to universal banking model with mixed services in commercial and investment banking and even with component of bancassurance is the next cornerstone of the banking system transformation in China. In regard to the whole banking sector, the successful reform path in the "big five" banks to strengthen equity base, improve credit risk management and corporate governance should be followed in city and rural commercial banks.

Currently, business diversification is indeed put with high priority as the next cornerstone of banking reform in China. As recognized by a Chinese financial expert, business diversification is deemed to be the next big reform wave after the first wave of banking reform, restructuring and IPO.³⁹ The regulatory reform to loosen banking business scope restriction is already under way. Since 2005, selected banks are allowed on the pilot trial basis to set up fund management subsidiaries.⁴⁰ Since 2009, pilot banks are permitted to found insurance subsidiaries.⁴¹ The rapid development in cross-sector financial services in China puts new challenge and opportunities for both banks and regulators. Are Chinese banks already capable to handle the complexity in capital market related risks while the build-up of credit risk management capacities is still under construction? How to align the current sectoral supervisory structure to the need for cross-sectoral financial services? What about the potential risk transfer within financial conglomerates in a financial system still lack of explicit deposit insurance? Research topics on the development of integrated financial services providers in China are still open to be explored.

³⁹ See *Financial News*, available at: http://www.financialnews.com.cn/zhjj/txt/2011-03/07/content_348783.htm (Chinese, last access on July 15th, 2011).

⁴⁰ See CBRC, available at: <http://www.cbrc.gov.cn/english/home/jsp/docView.jsp?docID=1236> (last access on July 15th, 2011).

⁴¹ See CBRC, available at: <http://www.cbrc.gov.cn/chinese/home/jsp/docView.jsp?docID=200911268BC7969D8FC35EA8FFB873C49745E500> (Chinese, last access on July 15th, 2011).

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