

A Grey Correlation Analysis Method for Relationship of the Overseas M&A and Business Growth of Commercial Banks

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Abstract

While the Chinese banks have started the impact of foreign banks. At the same time, rising pressure on foreign exchange reserves and appreciation of the renminbi has prompted Chinese banks to go abroad and diversify their risks. The financial crisis of 2008 has caused the continued turbulence of the major financial markets around the world, and the valuation of foreign financial institutions has been drastically shrinking, providing opportunities for Chinese banks to carry out overseas M&A. Based on the overseas M&A status of Chinese commercial banks, this paper sums up the characteristics of the overseas M&A. Then taking a series of overseas M&A conducted by ICBC from 2006 to 2011 as an example, it analyzes the relationship between M&A and performance growth using grey incidence model. The test shows: there is a positive correlation between both overseas M&A and interest rate differential with performance growth of ICBC, and overseas M&A transactions role in promoting the performance growth is significantly higher than the interest rate differential.

Keywords: Commercial Bank, Overseas, M&A, Business Performance, Grey Incidence Analysis

1. Introduction

Overseas merger and acquisition of commercial banks is a way of capital transnational movement, and is also an important way for banks to seek international development. In recent years, the domestic and foreign business environment of Chinese banks has undergone tremendous changes. After the full opening of China's banking industry at the end of 2006, the restrictions on the management, region and form of foreign banks have been cancelled, and the foreign banks have developed rapidly in terms of the scale of assets, the number of institutions and the types of business, while the Chinese banks have started the impact of foreign banks. At the same time, rising pressure on foreign exchange reserves and appreciation of the renminbi has prompted Chinese banks to go abroad and diversify their risks. The financial crisis of 2008 has caused the continued turbulence of the major financial markets around the world, and the valuation of foreign financial institutions has been drastically shrinking, providing opportunities for Chinese banks to carry out overseas M&A. In order to better cope with the challenges, Chinese banks have accelerated the pace of overseas M&A in recent years, and the total value and scale of M&A have been constantly updated. It is worth noting that the most fundamental goal of overseas M & A is to improve performance. But whether the continuous high yield of Chinese banks in recent years is related to overseas M&A is a problem that Chinese banks must seriously consider.

2. The current situation of overseas M&A of commercial banks

The major overseas M&A cases of Chinese banks from 2000 to 2014 are shown in the table below (In view of the particularity of Hongkong and Macao, M&A cases of banks in both areas will also be included in overseas M&A.).

Diversification of M&A: The main cases of overseas M&A of Chinese banks is concentrated in state-controlled banks, especially in Industrial and Commercial Bank of China (ICBC). The main reason is that the state-controlled banks have strong capital and M&A are in line with their long-term strategic plans. After 2007, some small and medium-sized joint-stock commercial banks and policy banks also joined the wave of overseas M&A and began to deploy overseas. Limited number and scale of M&A list all authors' last names with "and" in the text or "&" in parentheses separating the two authors and the year of publication. M&A target extends from Southeast Asia to North America in recent years, the regional distribution of overseas M&A by Chinese banks has expanded from North East Asia to North America. Before 2006, M&A cases were mostly concentrated in areas close to Hong Kong, Macao, and Southeast Asia where trade was closely linked. At the end of 2006, China fully liberalized its foreign-funded banks. Since then, the overseas layout of Chinese-funded banks has also tilted toward North America, such as United States and Canada. Diversity in M&A payment methods on the one hand, most Chinese banks choose to buy only part of their equity in overseas M&A, so as to achieve the goal of "big fight". They are mainly equity holders, not necessarily seeking absolute holding. ICBC, for instance, has become the largest shareholder by acquiring only 20% stake in Standard Bank of South Africa. On the other hand, the mode of payment is gradually converted from cash payment to cash and equity mix. With Chinese Banks flush with cash and the appreciation of the RMB, cash payments become the main way. But the cash payment method is difficult to meet the larger and more frequent cross-border M&A cases. ICBC's Asian acquisition in 2004 took the form of "cash + equity", which is the first time a Chinese bank has raised funds in the form of a share placement in the international financial market. "Cash + equity" is bound to become the trend of payment.

3. The analysis of the grey correlation degree between transactions and performance growth in ICBC's overseas M&A cases

ICBC, the largest commercial bank by assets in China, is also the world's largest bank by market capitalization, customer deposits and profitability. In the wave of overseas M&A of Chinese Banks, ICBC has always been on the front end of the industry, with strong representation, in terms and number of M&A. Since its first overseas acquisition in 1998, it has successfully launched 13 overseas mergers and acquisitions by the end of July 2014. This article selects 2006-2011 industrial and commercial bank of eight deals, for example. In this paper, grey relational analysis is used to verify the correlation between M&A transactions and bank performance growth.

3.1. Case review

As can be seen from table 1, in terms of quantity, ICBC accounted for half of the eight overseas M&A between 2006 and 2011. In terms of scale, the largest amount involved was the acquisition of standard bank of South Africa in 2007, with a transaction value of \$5.46 billion. After the financial crisis, the pace of M&A slowed markedly, with only \$73m in 2009 and a steady growth in the next two years. From the perspective of region, ICBC has gradually improved its global layout through mergers and acquisitions from southeast Asia to the north American market.

3.2. the analysis of the grey correlation degree between transactions and performance growth

The basic idea of grey correlation analysis is to judge whether the relation is close according to the similarity of the geometric shape of the sequence curve. Curve the closer, to verify the sequence, the greater the correlation between conversely the smaller, which can determine the main factors of the development of the system and the secondary factor. Compared with other mathematical statistical methods, this method has no special requirements for the number of samples and data distribution, and the calculation is small and easy to realize (Deng, 1992). The basic steps of grey correlation analysis are as follows:

Step 1: determine the analysis sequence. According to grey correlation analysis method, with ICBC of overseas M&A in each of the amount and the related economic indicators, on the basis of sequence data from 2006 to 2011, the grey correlation model is set up, the analysis of ICBC of overseas M&A amount in each of the relationship with

the growth. In view of the link between ROE and bank's income margin, asset turnover and equity lever, it is the comprehensive performance of bank profit creation, capital utilization efficiency and financial management ability, which can reflect the bank's operating performance better, so the ROE is selected to measure the growth of performance. A ROE of X0 sequence (i.e., mother sequence, also known as the reference sequence), overseas M&A amount and net interest margins X1 and X2 sequences (namely subsequences, also known as comparison sequences). The original data of each sequence is shown in table 1.

Table 1: The master sequence and subsequence data

<i>Year</i>	<i>X 0 (ROE%)</i>	<i>X1 overseas M&A (Billion)</i>	<i>X2 net interest margins (%)</i>
2006	10.43	1.72	2.94
2007	15.08	410.8	2.67
2008	18.36	44	2.8
2009	19.08	4.98	2.16
2010	20.13	37.23	2.35
2011	21.77	47.58	2.61

Data source: net interest margin data from HeXun, other data from ICBC website.

Step 2: dimensionless of variables. In this paper, the original data is processed without dimension alization, and the corresponding parent sequence and subsequence are formed. The calculation formula is as follows: The results of initialization of each sequence are shown in table 2.

Table 2: The mother sequence and subsequence after initialization

<i>Year</i>	<i>X 0 (X0/X1)</i>	<i>X1 (X1/X1)</i>	<i>X2 (X2/X2)</i>
2006	1	1	1
2007	1.45	238.8	0.91
2008	1.76	25.5	0.95
2009	1.83	2.9	0.77
2010	1.93	21.6	0.80
2011	2.09	27.6	0.89

Data source: net interest margin data from HeXun, other data from ICBC website.

Step 3: calculate the correlation coefficient. In this paper, when calculating the correlation coefficient, the coefficient of resolution is equal to 0.5, and the calculation results are as follows:

equence are shown in table 3.

Table 3: The correlation coefficients

<i>Year</i>	$\eta_1(k)$	$\eta_2(k)$
2006	1	1
2007	0.33	0.53
2008	0.83	0.43
2009	0.99	0.36
2010	0.86	0.35
2011	0.82	0.33

Data source: net interest margin data from HeXun, other data from ICBC website.

4. Result

Through the grey correlation analysis, it can be found that overseas M&A can promote the growth of ICBC. It is because that through a series of M&A, ICBC has been fast into the southeast Asia market, obtained in Canada and

the United States banking licences, obtained in Canada and Thailand market network channels, products and employees, customers. ICBC implements in a year in North America and southeast Asia market layout, not only save a large amount of network construction cost and construction time, may also gain synergies, successful use of economies of scale and scope economy, rapid filling overseas retail business platform, thereby to enhance the ability to provide service for retail customers and business enterprise. At the same time, ICBC's business in southeast Asia and North America is also relying on its powerful network and customer base in mainland China, easy to form a good interaction, providing customers with high-quality cross-border services, can quickly improve the ability of customer service to the mainland and overseas, will be within the territory of the overall advantage to overseas, the opportunity to improve its global layout, and the ability to move into the insurance and investment banking, lay a foundation for the globalization of comprehensive management.

In addition, it is important to recognize that the impact of overseas mergers and acquisitions on Banks is complex, not purely positive or negative. The potential operational risks and the high cost of integration add great uncertainty to the success of M&A. The positive effect of M&A in the new market environment remains a very big test for Chinese Banks.

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