

The Influence of Banking Development on Economic Growth in Zhejiang Province

Weiting Peng

Guangxi Normal University, Guilin, China

Abstract: *With the high-quality development of Zhejiang Province's economy, the banking industry has also developed rapidly. In terms of overall development analysis, the number of banking institutions in Zhejiang Province has increased by more than 3,000, the number of employees has nearly doubled, and total assets have doubled by nearly 10 times. However, compared with other eastern regions, there is still room for development of the banking industry in Zhejiang Province. In terms of efficiency analysis, the non-performing loan ratio of the banking sector in Zhejiang Province has been decreasing, indicating that its safety is generally on an upward trend and has remained at a high level after 2019. The loan-to-deposit ratio exceeded 90% after 2019, it is at a high level, indicating that the banking sector in Zhejiang Province has a large liquidity risk. Net profit has been improving since 2017, indicating an upward trend in profitability. From the regression analysis, Zhejiang province's banking industry development, the traditional deposit and loan business is no longer the absolute role and the role of intermediate business is increasing.*

Keywords: *Zhejiang Province, macro-analysis, activity analysis, regression analysis*

1. Introduction

With the rapid development of China's economy, China has entered the stage of building a modern socialist country in an all-round way. The party's 20th priority emphasizes that "realizing high-quality development is the primary task of building a modern socialist country in an all-round way." As the cornerstone of China's financial system, the development of the banking industry should be more high-quality development throughout ^[1], laying a good foundation for the high-quality development of China's economy. Zhejiang Province, as the top developed province in China's economic development, should play a leading role in the development of its banking industry, and strive to play the role of "vanguard", and lay the foundation for the economic development of Zhejiang Province.

In 2005-2021 nearly 20 years, the banking development of Zhejiang province always adhere to national policy as the guidance, especially since entering the new era, adhere to the new era of socialism with Chinese characteristics as the guidance, resolutely implement the Party Central Committee and the State Council on financial work deployment, makes the bank development from the overall always maintained a steady growth, development model industry gradually mature. This paper will analyze the development of the banking industry in Zhejiang province over the past 17 years from 2005 to 2021 from three aspects of development scale analysis, efficiency analysis and regression analysis with economic growth, and point out the direction for its future development according to the advantages and disadvantages of the development of banks in Zhejiang Province.

2. Zhejiang province's banking industry development scale

Over the past 17 years, banking financial institutions in Zhejiang Province have earnestly implemented monetary policies and accurately implemented various policy tools, making them have steady development in banking financial institutions, assets and liabilities, the balance in deposits and loans of local and foreign currencies and other aspects.

2.1. Analysis of banking financial institutions

2.1.1. The overall situation of the banking industry and financial institutions

As for the overall situation table of banking financial institutions in Zhejiang Province from 2005 to

2021, the number of institutions, the number of employees and total assets of the banking financial institutions in these 17 years have increased to a certain extent. The number of institutions increased from 10009 in 2005 to 13327 in 2021, with a total increase of 3318 banking financial institutions; from 146603 in 2005 to 244884 in 2021, or 117593 banking financial institutions; the total assets increased from RMB 2396647 billion in 2005 to RMB 222468 billion in 2021, or 19850153 billion. From the perspective of total growth, the average increase of a banking financial institution in Zhejiang Province needs to increase an average of 35.4 employees, and the average increase of a banking financial institution can create the total assets of 5.98 billion yuan. Contrast to other provinces in the eastern region, Zhejiang Province average increase a banking financial institutions need to increase the employees and can create more total assets in addition to higher than Hainan Province are lower than other provinces, visible, Zhejiang Province each increase a banking financial institutions can increase employment opportunities and create more total assets than the other eastern region.

Look at Zhejiang province between 2005-2021, the number of banking financial institutions, the number of employees and the total assets, within 17 years, the number of banking financial institutions has been declining for 5 years, and the number of banking practitioners did it decline only in 2015, but the number of banking financial institutions in Zhejiang province is on the rise. Looking at the range of change, 2009 was the year with the largest decline in the number of banking and financial institutions in Zhejiang Province, and also the year with the largest increase in the number of banking employees; 2010 was the year with the highest increase in the number of financial institutions in Zhejiang Province, and the increase in banking employees was neither the highest nor the lowest. It can be inferred that there is no inevitable relationship between the increase and change of the number of banking financial institutions in Zhejiang Province and the increase and decrease of the number of employees.

2.1.2. The average situation of banking and financial institutions

In Zhejiang Province, between 2005 and 2021, the average number of employees per banking financial institution (average number = total number of employees/total number of institutions) increased from 14.65 in 2005 to 19.82 in 2021, A total increase of 5.17 units; The average total assets created by each banking financial institution (average total assets = total assets/total number of institutions) increased from 239 million yuan in 2005 to 1.669 billion yuan in 2021, A total increase of 1.43 billion yuan; The average amount of assets created by each banking employee (average total assets created by employees = total assets/total number of employees) increased from 16.3479 million yuan in 2005 to 84.2057 million yuan in 2021, 5 times that as in 2005. Compared to other provinces in the eastern region, among the 10 provinces in the eastern region, by 2021, Shanghai has the highest employees, reaching 29.94, Zhejiang Province ranks the 6th; the highest total assets created by each banking financial institution, reaching 6.682 billion yuan, Zhejiang Province ranks the 7th; the average total assets created by each banking employee is Shanghai, reaching 240 million yuan, while Zhejiang Province ranks the 7th. Thus, the average each banking financial institution in Zhejiang Province can accommodate the number of employees, can create the total assets and each banking professionals total assets created in the eastern region of the 10 provinces in the position, although as developed cities, the banking development in Zhejiang Province in the top position, Beijing, Shanghai than these developed cities still have the development space.

2.2. Analysis of the balance of domestic and foreign currency deposits and loans in the banking industry

Zhejiang Province, during the period of 2005-2021, the banking industry, the balance of local and foreign currency deposits and loan balances have continued to grow every year, even in 2008 was deeply affected by the financial crisis to maintain the trend of growth. To 2021, the balance of local and foreign currency deposits has grown from 2111.794 billion yuan in 2005 to 1,165.274 billion yuan, totaling 953.948 billion yuan, ranking 5 in the entire eastern region of Guangdong Province, ranking 1 of 29.3 trillion yuan, higher than about 17.7 trillion yuan. The total growth of 953.948 billion yuan, the balance of local and foreign currency deposits in the entire eastern region ranked 5th, ranked first in Guangdong Province, the balance of local and foreign currency deposits amounted to 29.3 trillion yuan, higher than the Zhejiang Province of about 17.65 trillion yuan; the balance of loans in local and foreign currency from 171,212,214,000,000 yuan in 2005 grew to 1,657,575,500,000,000 yuan in 2021, the total growth of 14,863,356,000,000 yuan. 148633.56 billion yuan, the balance of local and foreign currency loans in the entire eastern region ranked 3rd, the first two were in Guangdong Province, up to 22.2 trillion yuan, higher than the Zhejiang Province of about 7.34 trillion yuan, Jiangsu Province, the balance of local and foreign currency loans in 2021 amounted to 180,538,690,000,000 yuan, higher than the Zhejiang Province of about 1.48 trillion yuan. Therefore, it can be found that by 2021, the

balance of local and foreign currency loans in Zhejiang Province is higher than that of its local and foreign currency deposits, which indicates that compared with other provinces in eastern China, Zhejiang Province has a strong loan demand and deposit willingness is weak.

3. Banking efficiency analysis efficiency

For the so-called bank efficiency analysis, different scholars have different definitions. Some people believe that the efficiency of commercial banks refers to the result of the ability of commercial banks to use their own monetary funds to carry out business operations in accordance with the principle of security, liquidity and profitability, and is an effective analysis of comprehensive competitiveness, resource allocation and sustainable development^[2]; some people believe that commercial bank efficiency analysis is an important measure of its technical level, resource utilization capacity, performance success to carry out an important measurement, and can be based on the different types of input resource elements and results output results, commercial bank efficiency classification^[3]. In this paper, we will refer to Gu Hongmei's conceptual definition of efficiency analysis of the banking industry, unify the safety, liquidity and profitability of commercial banks, around the non-performing loan ratio, deposit and loan ratios and net profit indicators to carry out efficiency analysis of the banking industry in Zhejiang Province.

3.1. Non-performing loan ratio analysis

The non-performing loan ratio is an indicator used to assess the asset quality of banks. The higher the non-performing loan ratio, the larger the proportion of the loan that banks cannot recover from the total loan. On the whole, the non-performing loans in Zhejiang province showed a downward trend, from 1.96% in 2014 to 0.74% in 2021, with an overall decline of 1.22%, indicating that the asset quality of Zhejiang Province have showed a trend of improvement. Specifically, in 2014, the non-performing loan ratio in Zhejiang Province was at a high level, so financial institutions and governments at all levels in Zhejiang province increased the disposal of non-performing loans. The annual disposal of non-performing loans reached 132.12 billion yuan, more than the total amount of disposal in the previous three years, but the effect was not obvious, and the non-performing loan ratio rose to the highest point. Therefore, in 2015, financial institutions and governments at all levels in Zhejiang Province continued to increase the disposal of non-performing loans. Throughout the whole year, the total disposal of non-performing loans reached 196.82 billion yuan by means of cash settlement, loan cancellation, debt repayment and transfer to asset management companies, which was 1.5 times that of 2014. Through the joint efforts of financial institutions and governments at all levels, by 2016, the non-performing loan ratio of Zhejiang province had achieved a "double reduction" for the first time in five years, that is to say, the balance of non-performing loans decreased by 3.16 billion yuan, and the non-performing loan ratio decreased by 0.17%. Although its non-performing loan ratio is still at a high level, it has begun to show a downward trend. After 2017, the asset quality of Zhejiang province has gradually improved, and by 2019, it had dropped to less than 1% and maintained a low level. The pressure reduction in non-performing loans for small and medium-sized enterprises has had a significant effect, and the non-performing loans decreasing by 12.09 billion yuan compared to the beginning of the year, contributing 76.3% to the decline in the overall non-performing rate for enterprises. Therefore, we can know that from the security analysis of the banking industry, the operating efficiency of Zhejiang Province generally shows an upward trend, and has maintained a high level since 2019.

3.2. Analysis of loan-to-deposit ratio

The loan-to-deposit ratio refers to the ratio of the total amount of loans of the bank to the total amount of deposits and loans. If the higher the bank's deposits and loans, the better its profitability, but at the same time, the more likely it is to throw the bank into liquidity risk. Looking at the deposit-loan ratio in Zhejiang Province over the past 17 years, the loan-to-loan ratio is the ratio of the loan balance to the deposit balance. For commercial banks, the loan-to-deposit ratio should not be too high or too high. Too high will increase the liquidity risk borne by commercial banks too high, and too low will make the profitability of commercial banks poor. At present, the central bank of the red line is not exceed 75%, but can be found, as early as in 2005, the loan ratio is far higher than 75%, and in 2021 up to 97.04%, close to 100%, which means that the deposits of Zhejiang province banking balance almost all are used for loan projects. Therefore, from the liquidity analysis of the banking industry, the

operating efficiency of Zhejiang province generally shows an upward trend, and it has been maintained at a high level since 2019.

3.3. Net profit analysis

On the whole, the net profit of the banking industry in Zhejiang Province continuously declined from 2011 to 2015, from 193.395 billion yuan in 2011 to 58.49 billion yuan in 2015, down 134.905 billion yuan, a large decrease; but since 2017, the net profit of the banking industry in Zhejiang Province gradually increased. The reason is that during 2011-2015, the scale of the banking industry in Zhejiang province gradually expanded, resulting in a decline in its operating interests. By 2014, due to the increase of financial support for the real economy and the steady progress of financial reform, market competition became more sufficient, and the total profits of banks tended to decline, and the net profit decreasing by 23.5%, 19.4 percentage points more than that of the previous year. In 2015, the decline in net profit in Zhejiang province still failed to ease, because the net profit of the banking industry fell to 58.49 billion yuan due to the growth of the non-performing loan ratio and the narrowing of the interest rate. This situation did not ease until 2017. In 2017, the expansion of assets and liabilities in the banking industry in Zhejiang province began to slow down, and profitability was restored. After that, the net profit of the banking industry in Zhejiang province began to rise gradually. This shows that from the profitability analysis of the banking industry, the operating efficiency of Zhejiang province has been continuously improving since 2017.

4. Regression analysis of the banking industry and economic growth in Zhejiang Province

Since entering the 21st century, the banking industry in Zhejiang Province has been developed rapidly, and the economy of Zhejiang Province has shown a huge growth, at the same time, the average number of employees, the average total assets of institutions, the average total assets created by institutions, the average deposits per capita, and the average loans per capita in the banking industry of Zhejiang Province have been growing as well, so there is a relationship between the growth of Zhejiang Province's regional. Is there any relationship between the growth of GDP and the growth of these five indicators? To this end, this paper will measure the scale of banking industry development in Zhejiang Province with the above five banking indicators as the dependent variable, and measure the economic growth of Zhejiang Province with the regional GDP as the independent variable, describing the regression analysis of banking industry and economic growth in Zhejiang Province during the period of 2005-2021, in which the data of banking indicators of Zhejiang Province come from the report of the regional financial operation of Zhejiang Province, and the data of the regional GDP come from the data of banking industry in Zhejiang Province is from Zhejiang Regional Financial Operation Report, and the data of regional GDP is from Zhejiang Statistical Yearbook.

4.1. Correlation analysis

According to the following scatter plot, it can be found that as the GDP of Zhejiang Province grows, the average number of employees also grows, but the distribution of scatters is generally more dispersed; the average total assets of the institutions show a significant positive correlation, and the scatters are basically distributed on the fitted regression line, with only the last two scatters slightly off. The average total assets created by employees also increase with the increase of regional GDP. Total assets created by average employees also increases significantly with the increase of regional GDP, with a significant linear positive correlation. While deposits per capita and loans per capita in the banking sector show a significant linear negative correlation with regional GDP, and the scatters are almost all distributed on the fitted regression line, with only a few scatters slightly deviated. From the overall point of view, only the average number of employees and GDP scatter plot distribution deviates slightly, the rest of the indicators and GDP scatter plot distribution basically distributed on the fitted regression line, therefore, this paper can initially set the regression model as a linear regression model.

4.2. Regression analysis

Determine the regression model belongs to the linear, respectively to the average number of employees in Zhejiang province, the average total assets, the average institutions creating total assets, per capital deposits and per capital loans should be the variable, in order to reduce the degree of sample deviation, reduce the fluctuation of the variable, and the fluctuation level of other variables, so the

independent variable and should take logarithm, then use the least squares method, get the regression results are as follows:

Table 1: Regression results of GDP and banking indicators in Zhejiang Province

The average number of employees			
	ratio	p	R2
C	1.18	0.0008	0.7137
LNx	0.16	0.0000	
Average total institutional assets			
C	-9.39	0.0000	0.9844
LNx	1.09	0.0000	
Average total assets created by employees			
C	-1.36	0.0000	0.9938
LNx	0.92	0.0000	
Per capital deposit			
C	2.11	0.0000	0.9693
LNx	-0.06	0.0000	
Per capital loan			
C	1.90	0.0000	0.9693
LNx	-0.06	0.0000	

According to Table 1, the regression equation for the average number of practitioners and gross regional product is $y=0.16x+1.18$. It means that for every one unit of GDP increase in Zhejiang Province, On the average increase of 0.16 employees to meet the development needs of the banking industry in Zhejiang Province; And the p-values of the x and constant terms in the regression model are 0.0008 and 0, respectively, are significant at the 5% significance level, Passing the t-test; looking at the fit of the regression model, R2 values close to 1 indicate a better fit of the model, generally speaking, $R^2 > 0.8$ indicates that the regression model would fit well, the model fit was only 0.7137, the degree of fit was in general. The regression equation for the average total institutional assets and gross regional product is $1.09x-9.39$, which again indicates a positive correlation between the two. The regression coefficient and constant term are also significant at the significance level of 5%, and the fit degree of the model equation is as high as $0.9844 > 0.8$, with a high degree of fit. The regression equation between the total assets created by the average employees and the regional GDP is $0.92x-1.36$, which has a positive correlation. The regression coefficient and constant term are significant and the model fit is also high. However, the return result of per capital deposit and per capital loan and regional GDP is out of normal, and there is a significant negative correlation, but this does not mean that the development of the banking industry and economic growth in Zhejiang Province show a negative correlation. Because the deposit is the main source of funds in the banking industry but not all the sources of funds, the loan is the main use of funds in the banking industry but not the total use of funds, with the rapid development of the modern financial industry, bonds, intermediate business assets and other financial assets in the development of the banking industry occupies a more and more important role. For example, the bond financing in Zhejiang Province has risen from 9.2 billion yuan in 2005 to almost 200 billion yuan in 2021, which promotes the development of the banking industry in Zhejiang Province, but the negative correlation between per capita deposits and per capita loans in the banking industry and the GDP of the region can only show that in the development of the banking industry in Zhejiang Province, the traditional deposit and loan business is no longer the absolute role, and the role of the intermediary business is constantly increasing.

5. Conclusions

In order to analyze the development of the banking industry in Zhejiang Province, it is far from representing its overall level from one perspective, but rather from multiple perspectives. In general, the banking industry in Zhejiang Province is developing rapidly, but compared with other provinces in the eastern part of China, it is not the fastest than Beijing, Shanghai. From the perspective of efficiency analysis, the security and profitability of Zhejiang Province are on the rise, but the deposit and loan have a high liquidity risk, the traditional deposit and loan business is no longer an absolute role, while the role of intermediate business is increasing.

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