

# The Development and Difficulties of Commercial Banks under the Background of Digital Finance: A Case Study of Z Bank

Yaxian Wang<sup>1, a</sup>

<sup>1</sup>Business School of Yunnan Normal University, Kunming 650106, China

<sup>a</sup>Corresponding Author's email: Nini-Bella@outlook.com

## Abstract

Under the background of the development of the digital finance, it was no doubt that the traditional financial industries and the commercial banks were shocked because of that. This paper research the changes of profitability in the context of the digital finance development and give explanation about the positive and negative effects on the commercial banks. The big data analysis and cloud computing devices were improved in this period, in distance some listed companies like Alibaba created some financial products, because of some features like its high yields of products, flexibility of use and security, this company occupied a lot of certain financial marketing share. Some customers in the financial market preferred to invest their money to the internet wealth management products. There were some impacts on the profitability of the commercial banks in some extent. For example, this paper research the Z commercial bank under the background of the development of digital finance in the last years, the change of the bank earnings. At the same time, in order to reflect the Z bank's profitability, using the analysis methods like operating revenue analysis and the Du Pont system to dissect the operating revenue and the ROE ( Return On Net Asset ). In addition, an overview of the Z bank's developed dilemma and the lack of measures and proposals will make.

## Keywords

Digital finance; Analysis of revenue; The Du Pont System; Earnings.

## 1. Introduction

### 1.1. The Research Background and Significance

#### 1.1.1. Background of the Research

As the development of methods like big data, technological platforms and IAAS, the concept of digital finance is clarity, it affect two types companies. First, the new technology companies, this type of technology companies use the techniques to support to solve the financial technical solution. Secondly, the traditional financial companies, financial organization should use the new digital techniques to improve their services. Internet finance(ITFIN) always confused with digital finance, it can be said that digital finance is the continuation of internet finance essentially, the appearance of internet finance supports the basis techniques for digital finance and provides a basis for the feasibility of digital development.

The suggestion of digital finance makes the new chances and challenges for some traditional industries, the typical company- commercial banks was suffered by that inevitably. Because the commercial banks' traditional techniques and minds cannot follow the news, the profits were affected. So, the business of commercial banks continue to seek to integrate with digital finance, product some digital productions like mobile banking APP. At the same time, because of some questions of digital finance development, the government makes some laws and policies positively, to reduce negative effects.

### 1.1.2. Significance of the Research

Under the background of the development of the digital finance, the traditional commercial banks are at a disadvantage in the marketing competition gradually, and the market performance has been affected obviously. The research significance has the following main areas:

To study the development of digital finance effects commercial banks (the case of Z bank) and to research the main effects to the profits of commercial banks through the factual data.

Making suggestions for commercial banks (the case of Z bank) to deal with the chances and challenges, maintaining the sound development of commercial banks.

## 1.2. Literature Review

The concept of digital finance was said by Don Tapscott in 1996 firstly. Then, the American commerce department released the report Emerging Digital Economy, concept of the digital economy formed formally. Although China's economy continues to grow, in the financial sector digital developed well in recent years, but under the situation that in today's global development, collaborative development can reflect to value[1]. According to the study at abroad, financial technology is the key of financial inclusion. In turn, it is the basis of the sustainable and balances development on the United Nations sustainable development objectives(SDG). Through the continued development of infrastructure construction to support the realization of the goals of sustainable development[2]. The research of Peterson K showed that the digital finance and financial inclusion was good at the financial services user, digital finance supporter, government and economy, for example increasing the chances of people who are middle class below access to financing, reducing banks and financial technology supporter's cost of agency and the spending of government[3]. And according to the study of Yan Shen and so on, the development of digital finance has a positive impact on the country's economy, and has the spillover effects on neighboring countries[4].

Then, China's banking industry exists "Pareto Principle", the problem of the SMES companies is severely limited in financing has not been solved completely; the digital finance has seized control the SMES loan and consumers loan marketing because of its characteristics like low cost, wide coverage and high efficiency, realized on the competition of asset side and tradition banking industry[5]. The negative effects of the households savings because of the financial marketing developed, and have the effect of heterogeneity[6]. And Wei Wang have found that residents' investment behaviors under the influence of the sophistication of financial market, financial market sophistication can increase the enthusiasm of households, reducing households savings[7]. However, Qian Wang made the quantitative analysis of digital finance impacts on the financial efficiency. The results show that digital finance increases the efficiency of financial department, but the provincial level has some significant differences to China[8]. And Zhimin Xie, according to Chinese characteristics of digital finance, used the methods of panel econometric models, mediating effect model and instrumental variable to assess the annual data from 2011 to 2018 of Chinese 30 provinces. The results show us that the development of digital finance increases the economy[9].

## 1.3. The Research Methods

This article mainly uses theoretical analysis on the literature and the method of analysis of samples on the latest data to make an empirical analysis.

Theoretical analysis on the literature

This article uses methods like theoretical analysis of historical literature, providing a theoretical basis for the article through researching some literature about digital finance effects on commercial banks.

Empirical analysis of the theory

Analysis of revenue. Through summing up the revenues of Z bank, getting Z bank's business level in recent five years;

The Do Pont System. Using "The Du Pont System" to analyze Z bank's enterprise performance, getting Z bank's profitability level in recent five years.

## **2. Overviews of the Theory**

### **2.1. Overview of Digital Finance Theory**

#### **2.1.1. Definition**

Digital finance means through the internet and information technology combined with traditional financial services became a new financial services. It includes internet payments, mobile payments, online banking and other financial services. There are five specific financial businesses: infrastructure; payment and settlement; financing; investment; insurances.

#### **2.1.2. Characteristics**

According to the financial forum in Shanghai The Development Proposals and Objectives of the Construction of Shanghai Financial Center in 2020, report of the bank of China's former governor's speech can be drawn that digital finance compared to traditional finance has the following characteristics: (1) It relies on data elements, widely used data and depth reliable data. So it needs to be supervised and reliable digital management; (2) Through digital links, using stereoscopic interaction framework widely to find the consumer values. So it needs penetrable regulations. Furthermore, according to "The 14th Annual Golden Unicorn(11.460, 0.25, 2.23%)", the manager of Chinese bank Lu Chen pointed that the characteristics of digital finance are online, mobility, digitization and intelligent.

Overall, combing with the existing reference literature can seen that digital finance has the following characteristics: the characteristic of financial inclusion, digitization, relying on internet technology, incomplete financial regulations and so on.

## **2.2. Relevant Theories**

### **2.2.1. Internet Finance**

Internet finance means a new type of financial service, it makes traditional financial institutions and internet companies use the internet technology and messaging technology of financing, payment, investment and information intermediary service. In substance, internet finance is the predecessor of digital finance. Digital finance gets benefits from the development of internet finance.

### **2.2.2. Finance Technology**

Digital finance needs the development and innovation of financial technology, it is the foundation of digital finance development. General financial technology is the application of technological innovation in the field of financial services, named Finance+Technology, means through using a variety of techniques to create traditional financial products and services, improving the efficiency and declining the costs. But things have advantages and disadvantages, Peterson K pointed that Financial technology suppliers can promote economic growth through increasing financial transactions in the financial system, although we don't know if financial technology suppliers and its activities can exacerbate the economic crisis in difficult economic times[3,2].

### 3. The Analysis of Z Bank Present Development

#### 3.1. The Profitability Analysis of Z Bank

##### 3.1.1. The Development of Digital Finance in the Field of Commercial Banks

In recent years, with the development of financial technology and internet finance, digital finance has a qualitative leap. More and more banking businesses apply to online platforms. The research of Pengo pointed that a part of study indicated that because of the impact of digital finance, commercial banks will choose some high risk items and then improving the level of risks, another parts of studies through empirical analysis to verify that the development of digital finance will reduce commercial banks' risks levels[11]. Wencai He and Dashan Wang(2021) thought digital finance not only makes products pricing scientific and reasonable for financial institutions and makes a clearer understanding for customers, that is benefit to reduce operational costs and risks controls[11]. Yiping Huang and Kunyu Tao pointed out that financial services reflects better financial inclusion and higher efficiency because of digital finance[12].

##### 3.1.2. The Combination of Z Bank and Digital Finance



Figure 1. Z bank internet banking legend illustration

According to figure.1, the business options have basically covered most of the businesses above the legend. In the right the log accounts contains some different options, customers can solve different problems by that. The online platform can pay some fees for life, it is greatly convenient people's lives. And the obvious areas marked"Financial Inclusion", it reflects the development of digital finance brings some benefits for people.

##### 3.1.3. Factual Analysis

###### (1) Analysis of revenue

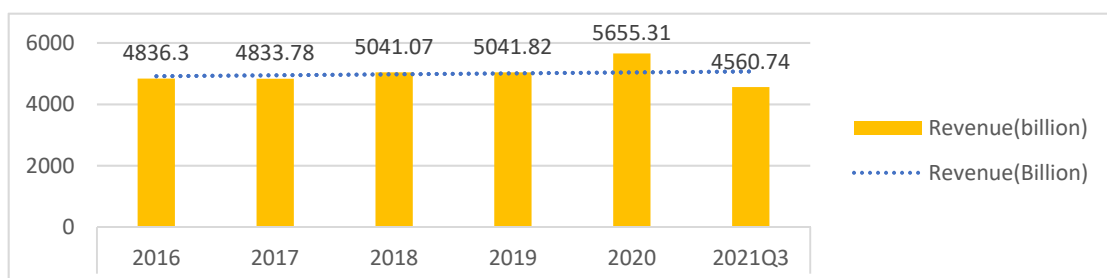


Figure 2. The operating revenue of Z bank in 2016-2021Q3: billion

According to figure.2, the revenues of Z bank has a stable growth from 2016 to 2021Q3. Generally, that means Z bank has a stable operating ability over the past years. Although COVID-19 impacted the revenues of Z bank in 2019, but it had a substantial increasing the in 2020. It is notices that the revenues of Z bank in the first three quarters of 2021 overtook the yearly turnover in 2016 and 2017. However, by the enterprise announcement, Z bank’s operating profit grow rate(12.88%) higher than increasing rate of main business revenue(6.32%). Through the comparison of two data, the overall costs of Z bank is exorbitant and the assets insufficient used, it can be improved.

(2) The Du Pont System

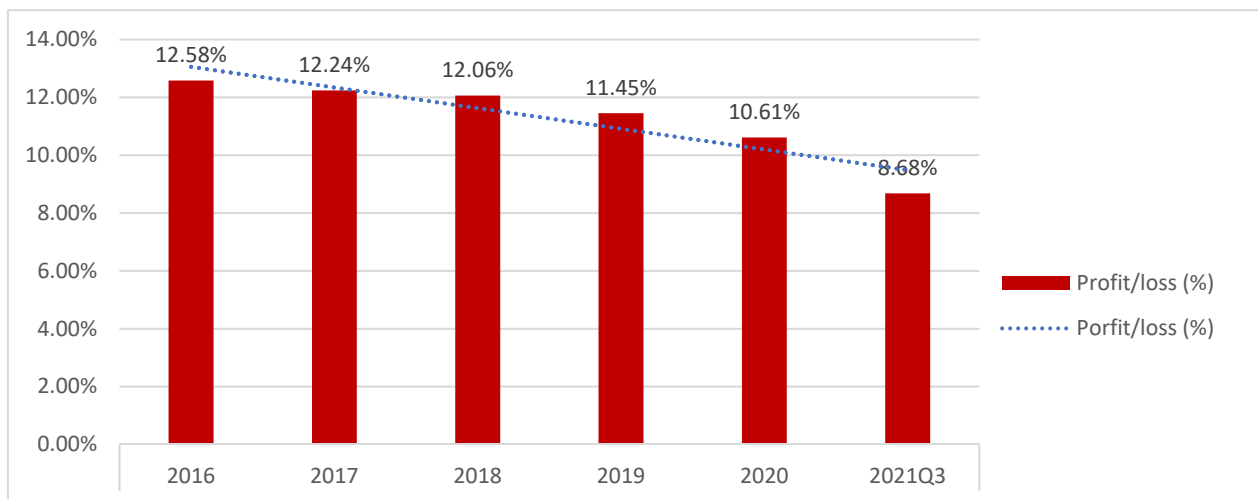


Figure 3. The ROE of Z bank in 2016-2021Q3

According to figure.3, using the Du Pont system (The links between the use of some key financial indicators to make a comprehensive analysis of enterprises’ financial operations) to specific analysis Z bank’s performances.

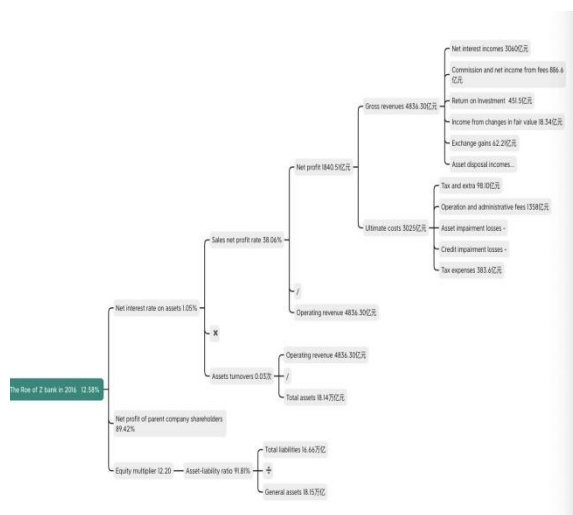


Figure 4. The ROE specific analysis in 2016

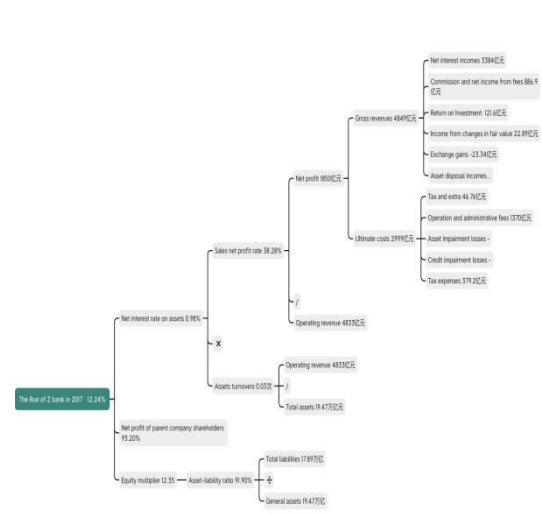


Figure 5. The ROE specific analysis in 2017

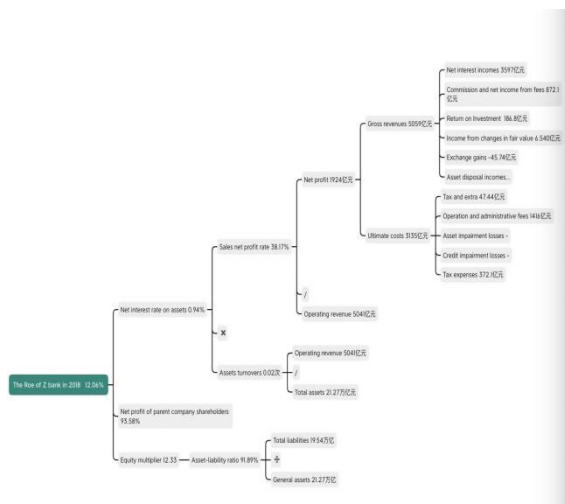


Figure 6. The ROE specific analysis in 2018

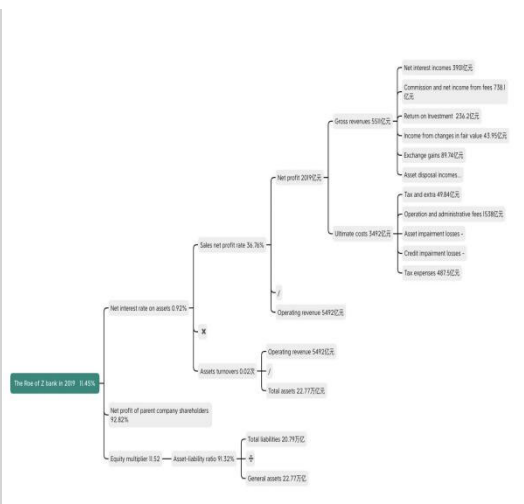


Figure 7. The ROE specific analysis in 2019

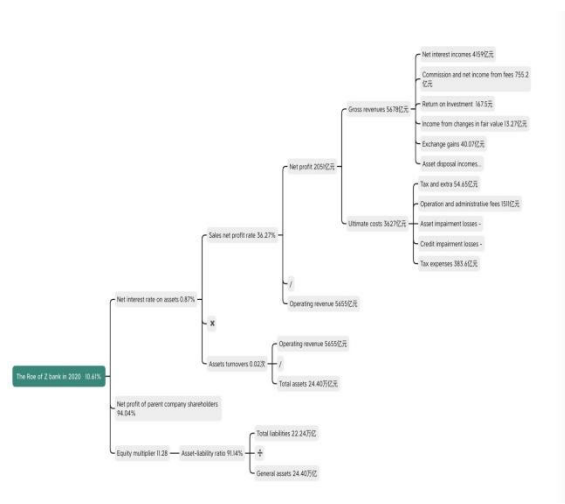


Figure 8. The ROE specific analysis in 2020

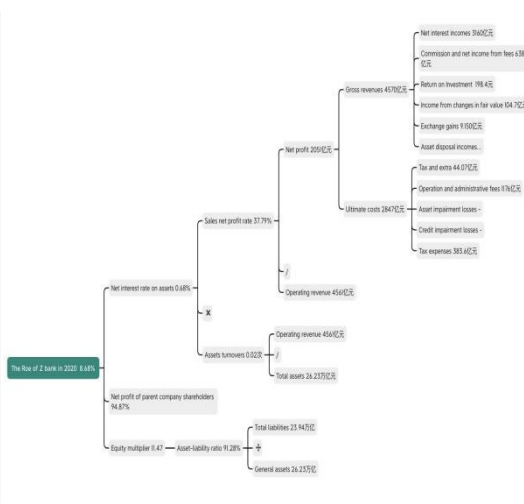


Figure 9. The ROE specific analysis in 2021Q3

According to the specific analysis of ROE in recent five years, the equity multiplier of Z bank decreases from 12.20% in 2016 to 11.47% in 2021Q3, and the profit rate of net worth drop from 1.05% in 2016 to 0.68%. The asset turnover are stable, but the profit margins have dropped to about 37%. The reduction of investment incomes and income from changes in fair values have the main effects on Z bank's yield, the taxes and extra spending is the main reason of the increasing costs.

There are some following conclusions: ① Judging from the equity multiplier, it shows financial leverage of the enterprise. Z bank's data reflects the input of shareholders are increasing, financial leverage is smaller, the degree of indebtedness reduces and the interests of creditors have a better protection. ② Judging from the profit rate of net worth, the profit margins have a main effect not the asset turnover. The above analysis shows that the revenues of Z bank have a downward trend, but the costs of that are rising.

### 3.2. The Shortage of Z Bank Development

According to the currently available literature and the above conclusion, Z bank have the following shortages:

### 3.2.1. The Problem of Features

According to the survey, Z bank's online platform have completed in some ways. However, some of people still choose to deal with their businesses. The form of this phenomenon has many factors, but ultimately it is Z bank's features is imperfect.

### 3.2.2. The Shortage of Financial Inclusion

As has been said that 80% of wealthy in the hands of 20% people, financial institutions tend to send more services for former, which is not benefit to the development of financial inclusion. Although most

of banks vigorously promote the construction of financial inclusion, based on past experiences, in order to seek the banks' earnings stability commercial banks always provide better services for customers such as key accounts, VIP customers or some people like these. However, they often overlooks the effects of some end customers(The concept of "The Long Tail Effect" pointed by the editor of WIRED Chris. Anderson in October 2004, in order to describe the business and economic model of some companies like Amazon and Netflix. ).

Although Z bank began to establish and develop some financial inclusion businesses like other financial institutions, hindered for various reasons benefiting masses not as widely as expected. As Peterson K said: Although digital finance and financial inclusion has its advantages, it is not in the full penetration the majority of the crowd(The G20 Summit in 2013). That means that there is gap between the availability, accessibility and using of funds. An noticed area which the gap is widespread between digital financial inclusion, financial technological inclusion and digital finance, especially in financial technological suppliers. Relationships between these and the problems of financial inclusion have received little attentions[3,3].

### 3.2.3. The Problem of Regional Development Imbalances

Although the efficiency of financial department and digital finance shows a positive correlation, but it is against the developed areas[8,2]. Wenjin Tang used panel threshold model to make an empirical analysis reflected: The industry construction of Chinese eastern, central and western areas have a big difference, it shows a ladder shaped transformation; the level of digital finance development is the highest in the eastern region, central region followed and the lowest on the western region[13]. From the outlets distribution of Z bank, we can see the differences between eastern areas, central areas and western areas, more outlets converge on some prosperous regions. It shows the businesses of Z bank trend to eastern and central regions. The problem of regional development imbalances is an important reason of financial inclusion. The development of urban economic in the western region is not as good as eastern and central region, but more resources tend to these two regions, that influences on the process of financial inclusion.

### 3.2.4. The Problems of Assets Insufficient Used, Low Profitability and High Cost

According to the above analysis, Z bank's operating profit grow rate(12.88%) higher than increasing rate of main business revenue(6.32%). it shows that the overall costs of Z bank is exorbitant and the assets insufficient used, it can be improved.

According to the Du Pont system analysis in recent five years, it reflects that the degree of indebtedness reduces. Through the analysis of the profit margins, each of 1 income may be associated with more than 1 cost. The reduction of investment incomes and income from changes in fair values have the main effects on Z bank's yield.

## 4. Suggestions

Solving the above problems is a long-term process, and not just a few financial individuals' duties, it needs the whole financial industry works together. There are some suggestions to solve problems:

#### **4.1. To Solve the Problem of Features**

Z bank should adapt to the digital finance times, expanding the features and services of online platforms and promoting offline platforms business shift to online. Paying attention to the importance of artificial customer service, trying best to solve problems and improving work efficiency.

#### **4.2. To Solve the Shortages of Financial Inclusion and the Problem of Regional Development Imbalances**

The most important characteristics of digital finance is financial inclusion. Currently the combination of financial institutions and digital finance should improve, the convenience of digital finance is incomplete. From the outlets distribution of Z bank, we can see the differences between eastern areas, central areas and western areas. The developed areas should get more helps, for example more financial supporting, some preferential policies and so on.

#### **4.3. To Solve the Problems of Assets Insufficient Used, Low Profitability and High Cost**

To solve the problem of assets insufficient used, Z bank should continue to implement the centralized management of funds, reducing capital precipitation and improving the efficiency of funds using.

To solve the problem of low profitability, the main reason of that is the reduction of total revenues, the reduction of investment incomes and income from changes in fair values have the main effects. Z banks should analyze their own investment products over the five years to find the results.

To solve the problem of high cost, Z bank need to improve the financial management system and financial control system, strengthening the supervision and control of funds. According to the Du Pont system can be seen that the taxes and extra spending is the main reason of the increasing costs, but the opposite, it also means the ability of Z bank's selling is rising from the side.

#### **4.4. To Improve the Relevant Laws, Regulations and Policies**

The government should support the development of some industries, formulating relevant laws and policies positively. It can not only maintain financial market long-term stability, can also make various financial institutions carry out financial activities in terms of laws. Not because of imperfect laws and polices miss investment opportunities.

### **5. Conclusion**

This article uses the methods like analysis of revenue and the Du Pont system to analyze Z bank's operating incomes and ROE in recent five years, it knows that there are some chances and challenges in financial companies like Z bank. Form analyzing Z bank's announcement, the shortages of financial inclusion; the problems of assets not fully utilized, low profitability and high cost are more prominent. To solve there problems, Z bank should tighten their own regulations and analyze their investment products to improve profitability. Secondly, form the micro to the macro, there are some enlightenment to financial sector: the development of digital finance have some advantages and disadvantages to financial industry, because of the incomplete laws and policies, there were plenty of illegal activities like illegal B2B platforms a few years ago. The government should make relevant laws and regulations, to provide basis for financial sector under the new background. The conclusion is benefit to some financial institutions know themselves and points present financial market's incomplete frame, there are some important notices for our financial market.



As Yiping Huang in the article Revolution of Digital Finance in China: Experience, Impacts and Implications for Regulation said: Chinese financial revolution of promoting financial inclusion have global significance. So financial companies should help each other and promote financial sector development together.

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