

Based On “Long Tail” Theory to Solve Finance Difficulties of SMEs with Internet Finance

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Abstract. Base on the “long tail” theory put forward by Anderson, this paper analyzes the availability of Internet finance to solve the financing difficulties of small and micro enterprises (SMEs). The SMEs mentioned above is the “long tail” demanded by finance. On the one hand, the application technology of big data in the Internet can be used to identify the financing needs of “long tail” SMEs. On the other hand, with the effects of external economy, the effects of scale economy and those of scope economy exerted on the markets of the financing of SMEs, the fund supply to SMEs will increase. In traditional financial markets, the SMEs, due to the “hyper-normal” credit rationing, were often rationed out of standard financial system. As a result, the financial supply curve bent backward. However, with the rapid development of Internet finance, the rationing degree of financial credit is relieved, the financing gaps in SMEs is offset to some extent, and the allocation of financial resources is optimized, providing a new idea to solve the financing difficulties in SMEs. Finally, this paper puts forward relevant proposals about Internet finance to solve the financing difficulties of SMEs.

Key words: Internet Finance; SMEs; “Long Tail” Theory; Credit Rationing; Allocation of Resources.

1. Introduction

The financing difficulties of SMEs are always hampering the further development of them. As the “long tail” needed by capital, SMEs are often excluded from traditional finance. As a result, SMEs often lacks financial channels. With the rapid development of Internet finance in recent years, not only is capital operation efficiency improved, but also economic development is promoted from both the macroscopic and microscopic aspects, which enables financial resources to gradually flow into SMEs and benefits inclusive finance more greatly.

Compared with China, the research on Internet finance in western countries started much earlier and many achievements had been gained. In terms of the concept of Internet finance, Claessens et al. (2003) put forward that as financial services more and more relied on the Internet (Claessens et al., 2003), the obvious features of scale economy owned by Internet economy would change the competitive landscape of financial industries (Claessens et al., 2003). In terms of the financing of SMEs, the conclusion is made in their study that for start-up businesses (Berger and Udell, 1998), the tighter the external financing was constrained, the narrower the financing channels were. Hawtrey put forward that although the supervision on finance was loosen, SMEs still couldn't gain benefits from the improved financial supply and that active measures should be adopted for encouraging SMEs to raise fund (Hawtrey, 2010). In terms of the risks of Internet finance, some researchers made survey on all the commercial banks in American financial markets and made a conclusion that for banks developing electric financial services, they have wide sources of debts, their income gradually transforming from interest income into intermediate business income (Berger and Udell, 1998). These studies all primarily aim at the innovation of Internet mode, the monitoring of risks and the prevention of risks. However, it's not enough to observe enterprises from a microscopic perspective.

The effects of Internet finance might be different within different countries and under different systems. However, there's an agreement that Internet finance can bring the benefits of long tail theory into full play. Besides, the limits of time and space can be overcome, online financial services can be acquired if necessary and the financing pressure of SMEs can be obviously lessened. There are still some shortcomings in the current literature, namely, the inadequate illustration of the

benefits of microscopic mechanism for Internet financial competitions and the focus on the advantages of Internet financial management instead of the problems in Internet financial management. To demonstrate that the benefits of microscopic mechanism for Internet financial competitions are not illustrated adequately, it is found that most current literature gives intuitive explanations from the macroscopic perspective, however, the illustration of the mechanism is not integrated and systematic. Therefore, on the one hand, this paper aims to further analyze the evolutionary principle of financial market and the advantages of Internet finance from the perspective of microeconomics as well as supply and demand theory for a complete description of the mechanism and the mode selection of Internet finance. On the other hand, to provide necessary enlightenment and beneficial references to the optimization of SMEs financing, this paper comprehensively sums up the financing difficulties in SMEs.

2. The Feasibility Analysis of Assisting SMEs with Internet Finance

2.1 “Long Tail” Theory

Anderson Chris initiated “long tail” to describe the commercial and economic modes of sales websites, such as Amazon. He pointed out that the tail shares of the goods with small demand but large quantity was almost equal to the head shares of those with large demand but small quantity. The theory mentioned above can be expressed with mathematic theory, that is, a very large number (long tail product) multiplied by a relatively small number (the sales quantity of every long tail product) still equals a very large number (gross sales).

In “long tail” theory, in consideration of cost and efficiency, people are used to focus on important persons or things. If normal distribution curve is used to describe these people or things, everyone will pay more attention to the “head” of the curve than the “tail” where the people or things in demand of more energy and cost are often ignored. Instead, they are used to focusing on the so-called “VIP” clients. In the Internet age, as attention cost decreases dramatically, the cost spent in focusing on the “tail” of normal distribution curve is also low. Additionally, the overall benefits brought by focusing on the “tail” can even exceed those brought by focusing on the “head”.

2.2 SMES—the “Long Tail” Demanded by Finance

Great contributions have been made by SMEs to the development of China’s economy. Besides, SMEs provided most jobs and create half of the total gross domestic product (GDP), with its tax revenue accounting for 40% of the total. However, during borrowing process, SMEs are always discriminated and excluded. As a result, it’s difficult for SMEs to raise fund. And due to huge financial gap, it’s more difficult for enterprises to acquire bank loans. Based on the facts that large SOEs as well as central enterprises are preferred by banks and that most SMEs can enjoy a small part of financial services, SMEs become the long “tail of finance.

Compared with large enterprises, such as large central enterprises and SOEs, SMEs in the shortage of fund are “niche markets”. Compared with the capital demands of large enterprises, the capital demands of SMEs are “niche products”. Providing financial services for SMEs, the “long tail”, is crucial for future competitions, based on the facts that Internet technology has been developing, the quantity of large enterprises has been limited and industry lifecycle has been extended. In the age of financial opening up and economic development, the competitions in financial industries are heating up. Owing that the competitions for customers between large enterprises have been severe enough, developing the potential customers in SMEs is the main issue of future financial services. With its inborn cost advantage and operational advantage, Internet finance can better adapt to the capital needs of “long tail”, improve the flow of resources and optimize the allocation of resources.

2.3 The Internet Screening Technology in “Long Tail” Market

Due to the large quantity and the uneven quality of SMEs in the “long tail” , how to effectively pick out high-quality enterprises and dig out their market value becomes a problem. Therefore, the concept of dynamic quality range is introduced. The dynamic quality range of most large enterprises is relatively narrow, generally between average quality and good quality. In contrast, the dynamic quality range of SMEs is wide, for there are both the worst enterprises and the best ones, among which the gap is deep.

In terms of the quality of enterprises, the accuracy of identification is guaranteed by Internet technology. In one word, the filtering and screening capacity of Internet technology extends the width and breadth of the “long tail market” of Internet finance.

2.4 The Effect Analysis of Applying Internet Finance to “Long Tail”

2.4.1 Scale Economic Effects

Traditional cost production curve is in the shape of “U”. In another word, as financial business volume is up to scale economy, the marginal cost illustrated by the short-term and long-term cost curve of financial industry is actually in the trend of rising upward, namely, the diseconomy of scale. During the whole management and operational process, the service objects of traditional financial industry are finitely in correspondent to the cost curve. In the Internet age, huge differences have been made in both the Internet finance and traditional finance. In terms of Internet finance, the research and development (R&D) of products, the development of software and the updating and purchase of machine constitute the fixed cost of the total cost. Besides, Internet finance provides virtual services, featuring the ability to overcome temporal and spatial constraints, high efficiency and large service capacity. Therefore, variable cost tends to become zero. As the amount of financial services increases, not only are the marginal cost curve of Internet finance and average cost in the trend of decreasing, but also strong scale economic effects are shown.

2.4.2 External Economic Effects

According to Adrian Metcalfe’s law, the square of the number of Internet users is positively correlated to net worth. With the further development of Internet technology and the increase of Internet users, the benefits of Internet become much more outstanding. The external influences of Internet can be demonstrated by a fact that customer’s utility of a product is proportional to other consumers utilizing the product. In terms of Internet financial activities, they are provided with immediate externalities and indirect externalities. At present, the popular Internet payment is a perfect interpretation of the external influences of Internet. As a result, more customers are attracted, their satisfaction with products enhancing. To sum up, Internet payment technology can better improve the R&D as well as the sales of financial products and promote the development of financial services. Besides, big data and the cloud computing technology at present to collect and analyze customers’ preference, habit and grade of consumption can be utilized by financial industries. Therefore, they can intentionally develop and push borderline products, better serving for customers and improving the convenience of financial services.

2.4.3 Scope Economic Effects

Internet finance is provided with inborn advantages, such as convenient and effective services and low marketing costs. Therefore, it can better promote the process of financial integration. In addition, the management of financial mixed industries can be achieved, various financial products to reduce manufacturing cost can be produced and synergy effect can be reflected. Based on the features of SMEs, Internet finance can provide distinctive financial product intentionally. Therefore, the cost of the financial product per unit can be greatly reduced, the scope economic effects can be shown and the scale of Internet financial market can be enlarged.

3. The Optimization of the Allocation of Financial Resources with Internet finance

In the perspective of the “long tail” theory mentioned above, the paper has illustrated the availability of the financing of SMEs with the assistance of Internet finance. To the SMEs with “hyper-normal” credit rationing in traditional finance, a new supply of credit is provided and the efficiency of the allocation of financial resources is optimized, as Internet finance develops rapidly.

3.1 The Supply Curve in Traditional Credit Market is Bending backward

The law of supply told us that supply price and quantity were changed in the same direction, namely, supply curve was a curve tilting to the right in general. However, due to information asymmetry and frequent adverse selections in credit market, it is only an ideal state of the curve’s tilting to the right. Instead, the supply curve is actually a curve tilting to the right and bending backward, which is the same as the labor supply curve. Loan interest rate and loan risk size are two crucial indicators affecting the expected interest rate of a bank. If loan risk is not correspondent to interest rate and loan demand exceeds loan supply, profit will be greatly increased on the basis of the high interest rate in bank. In this situation, it’s difficult for credit rationing to come into being. However, when the bank can’t observe the investment behaviors of borrowers, the increase of interest rate will otherwise make low-risk people unwilling to lend again (adverse selection behavior) or lead borrowers invest in high-risk projects (moral hazard behavior). By leading borrowers invest in high-risk projects, the average risk of bank loan will increase and the expected income will reduce. Therefore, when the interest rate in bank exceeds a certain value, supply and demand gap will come into being, which can only be offset by credit rationing.

Insufficient supply caused by “hyper-normal” credit rationing is the key reason why it is difficult to raise fund in SMEs. The loan balance of SMEs is not in proportional to the quantity of SMEs, even the contribution of SMEs to economy. The root cause of this condition lies in the barriers to the lending behavior and efficiency of financial institutions caused by the asymmetric information between banks and enterprises. Once the level is below the normal, the funds for SMEs will be inadequate, as a result of excessive credit rationing. This situation is what we mention as “hyper-normal” credit rationing. Eventually, it becomes difficult for SMEs to raise fund. The “hyper-normal” credit rationing of financial institutions is the primary reason of the difficult financing in SMEs.

3.2 Internet Finance Influences Supply and Optimizes the Allocation of Resources

3.2.1 Peer-to-Peer (P2P) Network Financing Promotes the Financing of SMEs

P2P platform is one with small loans as its core. Since 2013, the year of Internet finance, network lending platforms have seen an explosive growth of scale, with the volume of financial transactions, the number of investors and that of borrowers escalating. Compared with traditional financial lending, P2P platform primarily features small dispersion. It can be seen that the projects with the loans less than 100,000 RMB account for over 90% of the total projects and that the scale of capital is concentrated at 10,000 to 100,000 RMB in general. Under the circumstance that network credit is getting tougher, million-dollar programs of large enterprises are under severe attack. Therefore, P2P network lending is truly defined as a useful supplement for traditional finance. From the aspect of the fund supply to network lending platforms, the investors in 2014 are more than the borrowers, as a result of which the fund supply is so plentiful that a large amount of money is left unused. Due to this fact, Internet finance has its own characteristics in comparison with traditional finance. As people are gradually familiar with P2P network lending, much more SMEs join in the P2P network lending with the improvement of Internet technology and risk controlling technology. As a result, a balance is reached between investment and the number of

borrowers. As a good financial matchmaker, P2P network lending platform improves the capital turnover efficiency to a large extent and optimizes the allocation of capital.

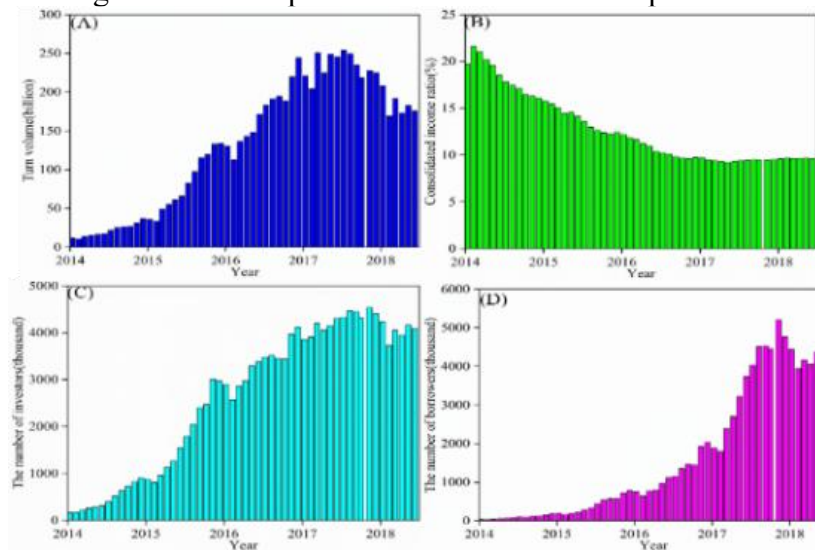


Figure 1(A)Turn volume(billion);(B)Consolidated income ratio(%);(C)The number of investors(thousand)(D)The number of borrowers(thousand) change with year.

The efficiency of P2P’s deal making is excellent. The financing cost of SMEs is dramatically reduced as a result of the features of Internet finance, such as its adaptability at any time and space, fast and convenient transactions as well as various modes. The nominal interest rate on P2P network lending platform is maintained between 8% and 18%. Although the interest rate is relatively high, the opportunity cost and time cost of enterprises raising fund through network lending platforms are low. Therefore, with the overall financing cost of SMEs reduced, P2P lending platforms are favored by SMEs. Besides, SMEs often raise fund for projects by means of bidding. Due to the fast full standard rate, the high efficiency and convenience of Internet can be shown. As a result, the efficiency of financing is fairly high, which means that investors are aware of and willing to invest in P2P network lending platforms.

3.2.2 Electronic Business Finance Widens the Financing Channels for SMEs

Electronic business finance can provide capital to SMEs, becoming another financing channel for SMEs and one of the typical modes of current financing. Occupying a large number of resources in small and micro field, electronic business finance itself enjoys a rich customer base. Besides, the potential small and micro credit demand of electronic business finance is broad. According to relevant data and with alixiaodai.com as an example, the alixiaodai.com lent 170 billion RMB in total from the second half of the year 2010 to February of 2014 for serving more than 700,000 SMEs. Especially, in 2013, the new loans had been up to 100 billion RMB. (Zhu, 2014) During this period, non-performing loan rate maintained a level, obviously less than that in traditional financial SMEs. In conclusion, the alixiaodai.com provided a solution to solve financing difficulties in SMEs.

The risk control for small and micro credit relies on the technology of big data. Due to the disorder of risk identification in SMEs, traditional financial institutions are not active to invest in SMEs. Traditionally, SMEs mainly relied on the performance report as well as the work experience and decision making ability of credit personnel to identify risks. The performance report usually reflects operational conditions of enterprise in a certain stage. However, the work performance can be polished in purpose. Therefore, the work performance can’t be viewed as a criterion to judge the development and repayment ability of enterprise. Often, it’s subjective and partial to make a comment on the working experience of credit personnel. Therefore, it’s difficult to make scientific and effective decisions. The conditions mentioned above are all against the principles of controlling risks in SMEs.

It’s difficult for SMEs to obtain loan from traditional institutions. Due largely to asymmetric information, the uncertainty of financial institutions is increased. Usually, SMEs are small in scale

and weak in asset strength. In the early stage, SMEs own a small amount of real property, with their mortgage guarantee ability being weak. Besides, SMEs are imperfect in terms of governance structure, most of which are in “home” management mode. When raising fund, most SMEs are unable to provide qualified and reliable financial information. In addition, with uncertainty in the future, SMEs only survive for a short period of time, Due to the asymmetric information between banks and SMEs, banks will face great risks. For banks, the difficulty in obtaining enterprise information and the amount of obtained enterprise information are two criteria to choose credit targets. Relying on the technology of big data and cloud computing to pick out information, electronic business finance can effectively establish risk controlling system to greatly alleviate the problem of asymmetric information and reduce the non-performing rate of credit assets. The primary concept of traditional finance is compensation achieved by means of raising interest rate and mortgage guarantee. Besides, traditional finance relies on monitoring and analyzing the operational condition of enterprises and the potential in the future to assess the repayment ability of enterprises. Relying on the Information processing system as well as monitoring and feedback system with big data as the core, financial service process is simplified and service efficiency is improved. As a result, the demands of loans in SMEs are met and the Internet is promoted to better serve for the supply of “long tail”.

3.3 Financial Innovation Enables the Supply Curve Bending Backward to Move to the Right

According to the analysis above, it can be seen that Internet finance is beneficial for the asymmetric information of SMEs, the improvement of risk controlling ability and the reduction of SMEs’ financing costs. Besides, Internet finance enables the supply curve to move to the right. With the development of Internet technology, advanced technologies, such as big data technology and cloud computing technology are applied to Internet financial industries. As a result, the information processing speed and quality in general become quicker and better, the management costs are effectively controlled and the financial risks are spread, which cause the supply curve bending backward to move to the right and the excessive distribution of credit to reduce. Analyzing from both the supply and demand sides, we can see that, to the supply side, diversified financial services and various Internet innovative modes help to increase the asset, while to the demand side, the financing of SMEs becomes the long tail needed by capital. Relying on the ability to overcome the constraints of space and time and being flexible and convenient, Internet will better adapt to the requirements of the operational modes in long tail market. By combining the supply side to the demand side, the availability of SMEs’ financing is effectively enhanced and the scale of credit transactions is enlarged. The analysis above is also in line with the conclusion drawn by Anderson that “long tail” relies on new technologies and new tools to reduce the cost of supply and demand chain, to push the supply and demand curve to move to the right and to broaden the scale of the supply and demand in the whole market.

4. Results and conclusions

4.1 Improve the Laws and Regulations on Internet Finance and Strengthen Monitoring and Control

As an emerging mode, Internet finance emerges and develops quickly, putting forward higher requirements for traditional financial supervision. Above all, the departments cooperating with traditional financial supervision should be specified and strict regulatory laws and regulations should be made. Especially in terms of information disclosure, deposit management and regulatory filling, a more comprehensive system should be introduced. In July, 2015, the government enacted Guiding Opinions on Promoting the Sound Development of Internet Finance, in which the future operational direction of Internet finance was pointed out and the criteria for the development of Internet finance were better regulated, namely, encouraging Internet finance to blaze new trail on the basis of compliance. In August, 2016, more powerful regulations on the development of

Internet lending industries were made in Interim Measures for the Management of Business Activities of Intermediary Agencies with Internet Lending Information. And in it, financing standards were required to be real and effective, clear demands were made that funds should be deposit in banks, thirteen laws were forbidden to touch, platforms were required to implement filling access and small diversification was demanded by investment targets.

4.2 Complete the Construction of Credit System

Personal credit information document should be created in accordance with the condition of personal credit. According to the credit data of central bank, a complete credit system can be established by making use of cloud computing technology to acquire the big data information of internet business. With the credit system, precise principles for credit evaluation can be further listed. Against the background that the credit system of traditional financial industries is relatively complete, it's necessary to make an effective integration between Internet finance and traditional finance. Besides, it's necessary to make a further connection between the fundamental credit data of traditional finance and the big data of electronic business, such as Ali's sesame credit score for identifying the daily credit situation. With the big data of social media, such as Tencent, the credit level can be judged comprehensively. By combining with the features of Internet financial enterprises themselves, a set of relatively complete credit monitoring and controlling indicators and systems to better adapt to competitions can be worked out, the occurrence of credit risks can be reduced and the principle of financial inclusion can be better achieved.

4.3 Make Information Disclosure Strict

Due to the adverse selections and moral hazards caused by asymmetric information in every industry, especially financial industry, the most severe problem faced by financial industry is bad debt rate. To make a more strict information disclosure system than traditional financial industry, the management information and the management condition of Internet financial industry evaluated by professional audit institutions should be provided online for the public on a regular basis, in order to avoid the disputes caused by asymmetric information. To prevent the credit defaults between borrowers and investors or between investors and Internet financial platforms, the disclosure of information should be implemented effectively. The principle of information disclosure should be set as a threshold for industry access. Besides, the disclosure of information should be regular, immediate and real.

4.4 Develop Diversified Financial Products to Meet Multiple Levels of Demands

There are a variety of Internet financial products, of which different types are in correspondence with different levels of risks. Technologically, Internet financial products and services are exclusive. For better understanding and enjoying the benefits of Internet finance, relevant financial background information is needed. Relatively, people in countryside or remote areas lack knowledge of financial risks and financial operational capacity. Therefore, it's difficult for them to enjoy financial services. From the macroscopic aspects, it can be seen that Internet finance is still accepted by a small group of people. However, the external economic effects and the scale economic effects of Internet finance decide that it will be accepted by more people. Therefore, diversified products should be developed to satisfy multiple levels of investment demands. For investors, people having different preference for risks have different levels of investment demands and diversified financial services.

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