

The Analysis of Internet Technology in Financial Industry

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Abstract: This paper analyzes Internet technology in the financial industry in recent years. This paper introduces Internet finance concepts, including the foundations of Internet finance, the development status of Internet finance, and Internet finance's influence on traditional finance. In the basic concepts of internet finance, this paper explains the Internet finance business models and the significant characteristics of Internet finance; in the foundations of Internet finance, this paper analyzes the theoretical basis of the development of Internet finance, including the technological and the power foundation for the development of Internet finance; in the development status of Internet finance, this paper analyzes the development status of Internet finance in the U.S., Europe countries, and China, and compares their Internet finance development; in the influence of Internet finance on traditional finance, this paper explains how the Internet finance influenced the business structure of conventional financial institutions.

1. Introduction

Since the 1990s, with the continuous development of science and technology, Internet technology has penetrated into all fields of social production, profoundly affecting and changing people's lifestyles. Modern information technology and Internet technology are also widely used in the economic and financial areas around the world. Many Internet-based financial service models have emerged, especially in recent years. Modern Internet information technologies (e.g., cloud computing, mobile Internet, big data) have become increasingly mature, providing great support for Internet financial development (Fig.1).

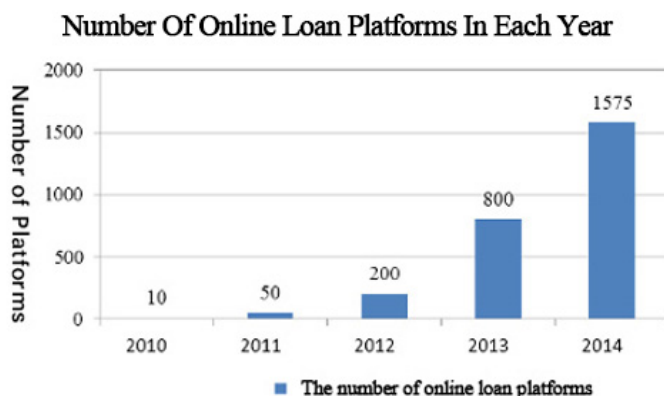


Fig.1 The Number of Internet Loan Platforms by Background

2. Basic Concepts of Internet Finance

Internet finance, a new financial model based on big data and cloud computing, uses the Internet as the main resource. And big data is the core resource of internet finance; cloud computing is the core

technology of internet finance. For the first time, Internet finance regards the Internet as a resource platform for financial activities rather than a technology platform (Yang). It relies on cloud computing and other big data processing technologies to form a financial-credit system based on big data. A data-driven financial service model to reduce information asymmetry has profoundly affected and changed the traditional financial service concepts and business methods and effectively improved the efficiency of financial resource allocation.

People's knowledge and understanding of the definition of Internet finance is still in continuous development, but it is generally believed that Internet finance is a brand-new field, which combines the traditional financial industry with the new technologies of the Internet. From a narrow perspective, the way in which financial services and others rely on the Internet can be referred to as Internet finance. From a broad perspective, any financial format that possesses the spirit of the Internet can be collectively referred to as Internet finance. In essence, Internet finance is an accumulation of the spirit of Internet technology and financial functions (Fig.2).

2.1 Internet Finance and Business Models

At present, the Internet financial model can be divided into seven significant models: third-party payment, Internet monetary funds, P2P network loan platforms, big data finance, crowdfunding, Internet financial portals, and information-based financial institutions.

2.1.1 Third Party Payment

In a narrow sense, third-Party payment means non-bank institutions with a certain strength and reputation guarantees. Under the support of communication, the Internet, and info-security technologies, they use the signing contracts with major banks to communicate between users and bank payment settlement systems. Establish a connected electronic payment model.

2.1.2 Internet Monetary Fund

Internet money fund is an emerging financial account and financial service. Users can deposit funds into the corresponding account to purchase corresponding money fund products and enjoy additional services such as income appreciation, quick cash withdrawal, and repayment shopping. According to the classification method of the main types of issuing institutions, Internet monetary funds are divided into four categories: “funds,” “banks,” “third-party payment systems,” and “fund agency sales systems.”

2.1.3 P2p Network Loan Platform

P2P (peer-to-peer lending) is the matching of capital lending through a third-party Internet platform. Those who need to borrow can find people who are able to borrow and are willing to borrow according to specific conditions through the website platform and help the lender and other lenders to share the loan amount to diversify the risk, and also help the borrower to choose an attractive lender-interest rate conditions derived from adequately compared information. There are already two modes. One is pure online mode; the other is pure online mode. The second is the combination of online and offline.

2.1.4 Big Data Finance

Big data finance is the collection of large amounts of unstructured data. Through real-time analysis, it can provide Internet financial institutions with comprehensive information about customers. By analyzing and mining customer transaction and consumption information, they can grasp customer consumption habits and accurately predict customer behavior. Financial institutions and financial service platforms have carried out targeted marketing and risk control. The information processing of big data is usually based on cloud computing. The operation mode of a big data service platform can be divided into two types: platform mode and supply chain financing model.

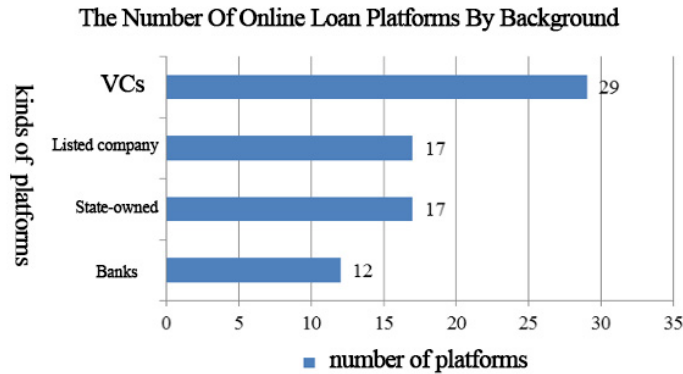


Fig.2 The Number of Online Loan Platforms by Background

2.1.5 Crowdfunding

Crowdfunding, as the name suggests, is mass fundraising or mass fundraising. It refers to the publication of fundraising projects through the Internet and the use of “group buying and pre-purchase” to raise funds from netizens. Crowdfunding platforms usually have four basic characteristics. The first is the low threshold; the second is diversity; the third is to rely on the power of the public; the fourth is to focus on creativity.

2.1.6 Internet Financial Portal

Internet financial portal is a platform using the Internet to sell financial products and provide third-party services for selling financial products. Its core is the “search and price comparison” model that uses the vertical price comparison method of financial products to place the products of various financial institutions on the platform, and then users select appropriate financial products (Purba) through comparison. The greatest value of Internet financial portals lies in their channel value.

2.1.7 Information-Based Financial Institutions

Information-based financial institutions are the financial institutions that use information technology to convert or reconstruct traditional operating procedures to achieve complete electronic operations and management (e.g., banks, securities, and insurances). Financial informatization is one of the greatest development trends of the financial industry, and informatized financial institutions result from the innovation of finance (Figure 3).

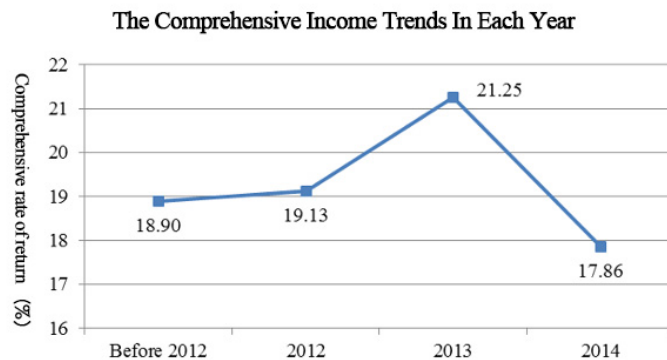


Fig.3 The Comprehensive Income Trends in Each Year

2.2 The Main Characteristics of Internet Finance

In the Internet finance model, supply and demand parties of funds are used for information screening, matching, pricing, and transactions without relying on traditional intermediaries, transaction costs, and monopolist profits (Chen). Compared with the traditional financial industry, the initial spending of platform finance is relatively low, which leads to an endless emergence of platforms with the same business and services. Platform finance with extremely low operating marginal costs, an extremely high degree of openness, and significant economies of scale has a tendency to win the market and integrate the market.

Internet financial services are mainly processed by computers, and the operating procedures are fully standardized. A new financial, ecological environment has been established. Users will not need to take time and wait, because business processing is faster, and users' experience is better. A platform with the best customer experience in several dimensions, such as convenience, safety, efficiency, and simplicity, can easily maintain customer stickiness and achieve sustainable development.

The high risk of Internet finance is mainly reflected in the risks caused by the imperfection of the Internet financial system itself and the risks caused by the lack of the corresponding regulatory system that has the policy and legal risks.

3. The Foundations of Internet Finance

3.1 The Theoretical Basis of the Development of Internet Finance

There are three theoretical bases for the development of Internet finance, namely Reputation Theory, Information Economics, and Network Economics.

Reputation is an effective institutional arrangement to alleviate information asymmetry and standardize market order in a market economy. Internet finance provides big data resources for reputation theory, builds reputation, and plays a role. “Big data” is the core information element for the development of Internet finance. Internet information has large externalities. Information asymmetry makes moral hazard as well as adverse selection, leading to offsetting and occurrence of risks in the financial market. The online information has a huge capacity and a wide variety of types, information noise is also more pronounced, and incomplete information and asymmetry are more prominent. Internet finance can use the law of increasing marginal efficiency in Internet activities to improve operational efficiency and make full use of Internet platforms to build the “long-run basis” of financial activities.

3.2 The Technological Basis for the Development of Internet Finance

The combination of cloud computing and big data can obtain a large amount of customer credit data and transaction data, which greatly reduces the transaction costs and friction costs of Internet finance. Mobile Internet allows the Internet to enter a new industry cycle (Fig. 4). The form of Internet access terminals has changed and has become a basic element of the industry. Moreover, mobile payment is a new payment method that integrates mobile terminals, the Internet, supply and demand parties, and financial institutions. It uses mobile communication technology to enable businesses and individuals to conduct transactions anytime, anywhere.

The Distribution Of Loan Product Amount

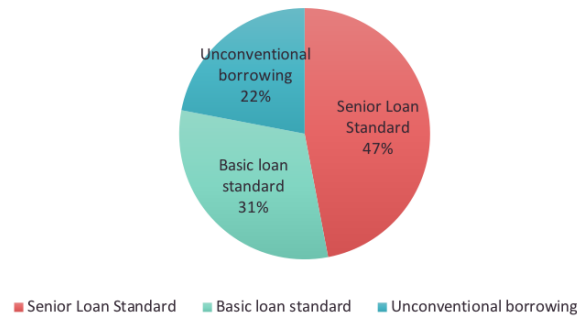


Fig.4 The Distribution of Loan Product Amount

3.3 The Power Foundation for the Development of Internet Finance

Internet finance became a necessary product of financial development in the Internet era and an important trend in financial innovation. In financial development history, financial innovation became one of the most significant forces for the development of finance. The rise and vigorous development of Internet finance are not only due to the rapid development of information technology, but more importantly, the current development of Internet finance has a strong driving force for innovation.

4. The Development Status of Internet Finance

Within countries such as European countries and the U.S., where finance is more developed, the concept of Internet finance is widely popularized, and the degree of networking of traditional banks is relatively complete. The emerging online financial industry represented by P2P lending, pure online banking, crowdfunding models, and third-party payment are in scale and significant developments.

4.1 The Development Status of Internet Finance in the United States

There are three main models for Internet banking development in the U.S. today: a pure online banking development model, a development model dependent on traditional banks, and a development model dependent on non-bank institutions. Despite rapid development, Internet banking still has some obstacles that cannot be ignored.

Internet securities mainly mean that securities companies use the Internet and other communication technologies to provide investors with real-time quotations of securities transactions, various financial and market analysis services related to investors, and help investors open online accounts, commission, and conduct online accounts through the Internet-the whole process of securities transactions such as trading, delivery, and clearing. The U.S is the first country to develop online securities trading, and it is also a country with the greatest and developed securities trading system.

The U.S. Internet insurance business mainly includes the agency model and the online direct sales model. Both of these models are independent network companies that intervene in the Internet insurance market through a certain range of cooperation with insurance companies. There are also some differences. The agency model is mainly formed by forming with insurance companies-close cooperative relationship to realize online insurance transactions and obtain economies of scale. In contrast, online direct sales models are more conducive to improving the image and benefits of enterprises and can help insurance companies develop new marketing channels and customer service methods.

4.2 The Development Status of Internet Finance in Europe

Currently, the penetration rate of online banking in Europe is lower than that in the United States. European online banking is developed from an early self-service bank, and its business is relatively developed. From the perspective of the overall and EU average, the utilization rate of online banking has been increasing year by year, but the growth rate has gradually slowed after 2010.

Deutsche Börse Group is the world's leading exchange, which provides access to the global financial market with a large number of investors, financial institutions, and companies. Its business covers all the trading chains of securities: other platforms and service providers, including Frankfurt Stock Exchange, etc. Next, in Europe, network insurance is developing very fast. For example, AXA Insurance Company of France; RAS Insurance Company of Italy; Swiss Reinsurance Company; Lloyd's of England, etc. Then, in Europe, network insurance is developing very fast. For example, AXA Insurance Company of France; RAS Insurance Company of Italy; Swiss Reinsurance Company; Lloyd's of England, etc.

As of the end of 2012, the European crowdfunding financing market accounted for about one-third of the global market. Approximately 50% of the crowdfunding activities in the European market belong to the remuneration category, the donation category, and the equity category each account for less than 25%, and the remaining share belongs to the loan category.

4.3 The Development Status of Internet Finance in China (Domestic)

Internet finance is essentially a change applying Internet technology to financial services and the use of Internet concepts to change financial services. In June 2013, there are 591 million Internet users in China, having an Internet penetration rate of 44.1%. Internet users of online shopping, online payment, and online banking were 271 million, 244 million, and 241 million, respectively, that was 45.9%, 41.3%, and 40.8% of the gross population of internet users (Meskanen). Among them, the Internet payment business of payment institutions is growing rapidly, and the mobile payment business is in the stage of accumulating development. In terms of regional distribution, third-party payment companies have covered 28 provinces and cities, including 53 in Shanghai, 47 in Beijing, 21 in Guangdong, 15 in Jiangsu, and 14 in Zhejiang. The number of payment companies accounted for 2/3 of the total. The third-party payment industry's development speed far exceeds the economic development speed, and the third-party payment industry is still in a period of market expansion.

The characteristics of P2P lending are: First, the extensive participation of both P2P lenders and borrowers. Both lenders and borrowers are in a scattered network of many-to-many forms and are targeted at specific topics. Second, transaction conditions are flexible and efficient, which greatly meets both borrower's and lenders' needs. Diversified needs. P2P lending refers to the financing of funds between individuals through the Internet. According to statistics, the number of domestic P2P platforms has increased from 9 in 2009 to 110 in 2012. As of the first quarter of 2013, there were at least 132 P2P lending institutions, of which more than 20 were more influential (Fig. 5).

The characteristic of the crowdfunding model is that social networks and the “many people are autonomous, and few” fundraising methods overlap each other, and it has the color of using the Internet to fund dreams. Due to low entry barriers and extensive financing channels, crowdfunding models are very popular in my country (Chen). Domestic crowdfunding platforms are roughly divided into three types: certificate type, membership type, and angel type. For various reasons, the number, quality, amount of funds raised, and user scale of the projects on my country's crowdfunding platform is still at a low level, unable to form a scale effect, and their influence in the financial market needs to be further improved.

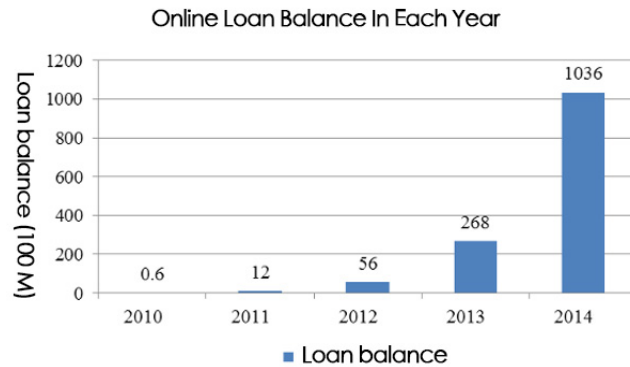


Fig.5 The Online Loan Balance in Each Year

4.4 Overall Comparison of Internet Finance Development At Domestic and Abroad

The differences in the development of Internet finance between China and foreign countries stem from the differences in the financial environment. There is a phenomenon of financial repression in China, and a large number of financial needs cannot be met, which provides the greatest impetus for the rapid development of Internet finance. Different from China's financial system, developed countries in Europe and America have a complete and multi-level financial system. There is a phenomenon of financial repression in China, and a large number of financial needs cannot be met, which provides the greatest impetus for Internet finance's rapid development. Different from China's financial system, developed countries in Europe and America have a complete and multi-level financial system.

5. The Influence of Internet Finance on Traditional Finance

Internet finance successfully influenced the global business structure of traditional financial institutions. Also, Internet finance defined the relationship between users and financial institutions; meanwhile, Internet financial institutions are everywhere and everywhere, building a new financial environment. Internet finance has changed the operating mode of traditional financial institutions (Fig. 6).

The emergence and development of Internet finance will surely have many influences on traditional monetary and banking theories. In the context of Internet finance, economies of scale are no longer the most important means for banks to improve their production and competitiveness; the central bank's original monopoly of currency issuance is also increasingly being challenged.

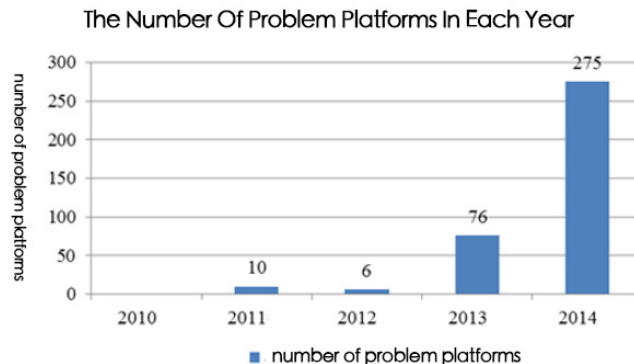


Fig.6 The Number of Problem Platforms in Each Year

Internet finance caused an unclearness between financial institutions and between financial institutions and non-financial institutions. The development trend of financial business integration

continues to strengthen. This has led to the traditional division of the financial industry into banking. The practices of the securities and insurance industries have lost their practical significance.

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