Filling the Credit Gap: The Inclusive Potential, Risk Challenges and Governance Framework of Big Data Finance

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Abstract. The data-driven credit scoring model is not an all-singing, all-dancing panacea. First of all, it does not eliminate the traditional bank's huge amount of documents; a large number of micro entrepreneurs and village farmers fall into the abyss due to this 'credit gap'. At the same time, Internet finance represented by Alipay faces difficulties in obtaining loans and starting businesses for independent people who cannot be mortgaged or used as proof of income — but still require them from traditional bank ideas about credits — while converting ordinary people's daily behavioral tracks into real credit signals through big data, process substitution, and artificial intelligence technology. It changes what? It also turns the user's 'invisible property' into true credit values so that their value can return within some limits after being abandoned by most banks. I use these discoveries to examine how Internet finance solves the problem of the missing middle-income strata between China's ultra-poor and super-rich. Finally, I argue that technology-aided risk evaluation has altered our perspective on credit with increasing emphasis placed on behavioral values instead of security/pledge values.

1 Introduction

According to the report of the World Bank Group and EBRD in 2024, about 65 million micro, small and medium-sized enterprises (40% of the officially registered business entities in the developing economy) cannot get bank credits, forming a credit gap of $5.2 trillion per year, accounting for 19% of the GDP. In 2022, based on more than 70 emerging countries' data, the World Bank carried out empirical research. The study shows that every additional $100 million of funds will create an average of 16 new jobs after two years. Combining them, closing the $5.2 trillion credit gap can add up to 8.32 million new employment opportunities. Bringing such jobs into the labor market of a middle-income country would not only increase wages and consumption but also promote GDP and social welfare through increased taxes and downstream effects. It can be seen that "credit gap" is not just a credit gap, it reflects huge development potential and millions of lost jobs. First bottleneck: information asymmetry and non-transparency of repayment ability under the traditional credit model;

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Second one: high cost and physical restriction leading to low access to financial services. The emergence of internet finance stems from the deep integration of information technology and financial services. The traditional view holds that financial services must establish physical branches and perform manual operations. Internet finance uses mobile internet, big data, cloud computing, etc., to provide services in a wide range and challenges the traditional idea that there must be physical branches or staff to offer financial services. Alipay, WeChat Pay, etc., form a cashless payment environment on the basis of the large-scale use of smartphones and mobile payments since the middle of the last century. [1] At the same time, the new types of financial business models represented by P2P loans, online banking, and online insurance have emerged in various industries. This reduces financial service barriers, especially beneficial to micro-enterprises and individuals who are not included in traditional banks. And this is reflected in risk design - on one hand, behavioral data including transaction frequency and relationship network, replaces traditional financial documents, on the other hand, eliminating intermediaries reduces cost and credit limit. Users create massive amounts of real-time data using Alipay through a mobile payment platform, combining machine learning, a dynamic adjustment model with different scenarios, so as to theoretically achieve financial coverage and give all without credit history quantified financial identity [2].

2 Literature review

The text of your paper should be formatted as follows: A growing body of empirical literature demonstrates the enabling role of technology-mediated data for SME finance. For instance, Berg et al. uncover better default prediction for German e-commerce borrowers with their digital footprints; Yang and Zhang document that using FinTech increases households' average spending power by $167 per month through relaxing liquidity constraints; Huang et al. report that big-data models outperform standard scoring for Chinese SMEs; Frost finds that infrastructure quality and regulatory openness are prime-country determinants of FinTech adoption.

3 Case study: Alipay’s big data lending model

Alipay and online store banks abandon the old guaranteed credit authorization mode, manual due diligence conducts a big data credit evaluation system according to merchants' behavior in e-commerce, payment, and supply chain business activities. Based on collecting tens of thousands of characteristics including purchase quantity, buyer comments, capital flow, inventory circulation, etc., instantly calculate the credit limit and dynamically supervise the capital used based on machine teaching models. Not only can it effectively solve the problem of pre-loan selection and post-loan morals but also bring out huge inclusive effect. Up to now, by the end of 2023, the online merchant bank has served up to 53 million small and micro-enterprises; among the 3 million new loan customers in 2023, the first-time operating loans account for 72%, and more than 60% customers enjoy an interest rate lower than 100 RMB/month. The average borrowing amount is only 72 thousand yuan. Alipay's mobile application processed 185.147 billion transactions in China in 2023, totalling 55.533 trillion yuan (CNY), increased by 16.81% and 11.15%. Combined with WeChat Pay, the proportion of its share in the market on the retail side of the mobile payment market continues to remain above 94%. Such a huge trading scale as well as steady growth trends have seriously destroyed the collection, payment, settlement, cash, and liquidity advantages of traditional banking, causing huge fee income and reduced low-cost liabilities. Banks are forced to increase deposit prices to offset such income and close off-line stores to reduce costs [3].

4 Challenges and risks of internet finance

As a new force confronting the "credit gap" of traditional financial institutions, ten years ago, internet finance was born. For example, Alipay has provided options for user groups without credit ratings with big data, artificial intelligence, and mobile payments to evaluate risk. For example, by analysing user consumption behaviour and relationship, Sesame Credit evaluates users' credibility and provides convenient conditions for people who cannot get loans originally. Not only can it promote the development of inclusive finance but also create new opportunities for China's financial industry, form competition within the financial field partially breaking away from the credit evaluation model of traditional financial systems such as Bank of China and Industrial and Commercial Bank of China, and bring new vitality to the financial market.

However, at the same time, the new trends and new challenges brought about by efficiency and inclusiveness not only bring new development opportunities to internet finance but also mean that they will produce new systemic risks themselves. The existing operation mode of internet finance is confronted with three structural contradictions and risks: firstly, the dilemma between regulation and technology, and how to achieve unity between technological innovation and protection of consumers' rights is unknown; conflicting laws and regulations such as GDPR (the EU General Data Protection Regulation) and China's Personal Information Protection Law have introduced ambiguity around the rules governing cross-border data, meaning these activities could be seen as legal or illegal under each country's law separately; moreover, training algorithm bias can cause platform discrimination. Secondly, platform risks caused by technical failure—such as outages faced by Ant Financial in 2020—or high entry barriers in Southeast Asian markets, which make it difficult to implement cross-market marketing; meanwhile, the digital literacy gap between the elderly group living in villages imposes higher requirements on user education. Lastly, transformation pain in the change of traditional banks; facing dual pressures from the flexibility and low cost of Fintech platforms—the idleness of offline branches and the delay of online service during the process of digital transition—affecting customers and causing churn. Therefore, in the future, we should pay attention to exploring the dynamic balance between the innovative benefits and systemic stability of internet finance [4].

5 Governance recommendations

Four solutions were proposed for the Internet finance policy problems of multiple aspects in the era of big data economy: First, build a relationship and use various forces. In terms of supervision, we should expand the supervisory sandbox, construct cross-border data rules, and pay attention to protecting data sovereignty; secondly, on the platform side, we should strengthen information security certification, pay attention to collecting minimal data, closely cooperate with traditional banks to create new platform products, etc., which are banking sides, such as implementing open API services, adopting third-party risk control model docking, establishing BaaS service modes

Internet finance not only breaks the boundary of traditional financial services, but also brings some new risks and governance problems. We need regulators, platform companies and commercial banks to innovate along the "sandbox-compliance-openness" road, forming a dynamic and flexible institutional contract conducive to innovation and a stable financial system. The three-level cooperation framework in this paper is an important link between the vitality of innovation and the stability of the financial system. Its value lies not in providing ready-made solutions, but in establishing a stable and adjustable dialogue mechanism in practice, so as to continuously adjust and improve data governance, risk prevention and control technology and policy supervision. Looking ahead to the future, as artificial intelligence, cross-border data flow and digital currency are increasingly combined with each other, the complexity of the financial world will continue to increase, bringing us more opportunities for exploration. This article makes its own efforts to contribute to academic research and government departments by proposing such a feasible, expandable and perfect concept that can be achieved with win-win results in the inclusive and safe digital FinTech ecosystem. In addition to these efforts, several recent empirical studies provide new insights into the fast-moving FinTech universe: Fuster et al. provide wide loan-level evidence showing how algorithmic appraisals are revolutionizing US mortgage origination [5]; Babina et al. find that mandated customer-data portability (open banking) fosters FinTech entry and venture capital investment thus expanding access to both credit and personal financial advice [6]; Cornelli et al. show that firms applying for admission to the UK's Regulatory Sandbox raise 15% more funds post-admission, survive longer and exhibit greater patenting activity, suggesting that proportionate regulation might promote innovation [7]. Complementing firm-level findings, Didier et al. examine worldwide patterns of FinTech activities and demonstrate that infrastructure quality and favorable legal environments represent the two biggest enablers in over 100 developing economies [8]. Finally, at the policy level, Carstens argues that well-designed central bank Digital Currencies could preserve monetary sovereignty while promoting competitive and interoperable payment systems [9], and Khan et al. find that FinTech adoption reduces profit margins for GCC banks yet encourages improvements in risk management structures, especially among large and well-capitalized banks [10].

6 Conclusion

To summarise, Internet credit technologies hold great promise for bridging the SME credit gap. With access to behavioral data and algorithmic risk scores in near real-time, Alipay could approve tens of millions of tiny-dollar loans, extending formal credit to those whom finance had written off altogether. But these social opportunities come with costs that require reducing systemic and customer risks; adaptive regulation, responsible data use, and more collaborative problem solving between aspiring FinTech entrepreneurs and entrenched banks alike. There is much more work to be done on how digital finance platforms perform and whether or not they deliver better results and are fairer for all affected by their growth.

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