Electronic Commerce Research and Applications 11 (2012) 469–483

Contents lists available at SciVerse ScienceDirect

Electronic Commerce Research and Applications

journal homepage: www.elsevier.com/locate/ecra

From the wisdom of crowds to my own judgment in microfinance through online peer-to-peer lending platforms

Haewon Yum [a], Byungtae Lee [b,*], Myungsin Chae [c]

[a] Monitor Group, CCMM Buidling F9, Yeodo-dong 12, Yeongdongpo-gu, Seoul, Republic of Korea
[b] College of Business, KAIST, 85 Hoegiro, Dongdaemun-gu, Seoul, Republic of Korea
[c] Dept. of Business Administration, Seoul University Venture and Information, 405 Bongensa-ro Kangnam-gu #402, Seoul 135-090, Republic of Korea

ARTICLE INFO

Article history:
Available online 30 May 2012

Keywords:
Digital intermediation
Economic analysis
Financial services
Information asymmetries
Intermediation
Microfinance
Peer-to-peer lending
Transaction histories
Wisdom of crowds

ABSTRACT

Information asymmetry is one of the fundamental problems that online peer-to-peer (P2P) lending platforms face. This problem becomes more acute when platforms are used for microfinance, where the targeted customers are mostly economically under-privileged people. Most of the prior empirical studies have been based on data from Prosper.com or similar sites that compete in traditional consumer loan markets. Our study examines P2P lending in microfinance for which borrowers are unbankable so that signals on creditworthiness of new borrowers are very limited. In addition, microfinance customers have more incentive to repeatedly seek loans from the market. Under this microfinance setting, we examine how lenders change their decisions as creditworthiness inference becomes increasingly possible through the accumulation of transaction history. Our findings confirm that lenders seek the *wisdom of crowds* when information on creditworthiness is extremely limited but switch to their own judgment when more signals are transmitted through the market. Different information sets are utilized according to the structures of decisions. Due to the possibility of a repeated game, it is also shown that borrowers try to maintain a good reputation, and direct communication with lenders may adjust incorrect inference from hard data when their creditworthiness is questioned.

1. Introduction

Peer-to-peer (P2P) *lending* is a new platform of financial transactions that bypasses conventional intermediaries by directly connecting borrowers and lenders. This new digital intermediary was created on the basis of microcredit principles (Magee 2011) and has rapidly grown in recent years.[1] As of March 2008, over US$500 million in loans originated from over twenty P2P lenders worldwide (Ashta and Assadi 2010a,b, Bruene 2008, Cain 2008, Magee 2011). This exponential growth seems to have continued in the United States (Pengo 2011, Renton 2011) and the United Kingdom (Bachmann et al. 2011). According to Gartner (2010), by 2013, the industry will soar to US$5 billion. Renton (2012) reported that the combined monthly loan volume of Lending Club (www.lendingclub.com) and Prosper.com (www.prosper.com) exceeded US$50 million in February 2012, representing a more than 100% annual growth rate. Some experts expected that P2P online exchange will become an alternative platform for traditional saving and investment (Slavin 2007). One prediction is that, within the next few years, such social banking platforms may have a market share of 10% of the worldwide market for retail lending and financial planning (Gartner 2008). The roots of the emergence of this crowd-sourced funding platform are both economic and philanthropic (Wang and Greiner 2011).

Due to the sudden popularity of this new kind of financial intermediation, P2P lending has garnered significant attention from the mainstream media and academia (Light 2012). P2P lending has quickly emerged as a popular research area in several disciplines (Wang and Greiner 2011, Bachmann et al. 2011). New digital intermediation and the reintermediation of earlier intermediaries offer new benefits as well as new challenges (Hawkins et al. 1999, Chircu and Kauffman 2000, Berger and Gleisner 2009). What has made the P2P lending platform so popular?

1.1. The benefits of P2P lending platforms

There are many benefits of P2P lending platforms compared to loan transactions made through traditional lending institutions. Perhaps the most widely advertised benefit of P2P lending is that borrowers can get loans at a lower rate without collateral, while

* Corresponding author. Tel.: +82 2 958 3604.
E-mail addresses: hyum@monitor.com (H. Yum), btlee@kaist.ac.kr (B. Lee), mlee31@naver.com (M. Chae).

[1] P2P-banking.com lists the largest P2P lending platforms at www.wiseclerk.com/group-news/countries/germany-state-of-selected-p2p-lending-companies.

1567-4223/$ - see front matter © 2012 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.elerap.2012.05.003

lenders can obtain a higher return on their investments (Magee 2011). Though the evidence for high returns on investment from microfinance has been questioned, P2P lending nevertheless has lured investors who have been discouraged by the stock market returns and lower interest rates offered by banks (Brennan 2009). The *Wall Street Journal* has reported that the leading P2P firms have provided investors with 10% or higher annual returns at a time of historically low interest rates. They also have attracted big institutional investors such as hedge funds and wealth-management firms (Light 2012).

The value proposition for P2P lending to borrowers is twofold. First, unbankable borrowers or ones with low credit scores will be attracted to P2P lending platforms, since technology now makes it possible to implement microfinance approaches that rely upon social collateral (Bruett 2007). According to Packer (2010), amid the recession triggered by the global financial crisis, the market for microfinance grew rapidly in 2009, building on the past success of traditional microfinance institutions. The second value proposition for borrowers is that they can acquire loans with lower rates of interest (Wang et al. 2009). Disintermediation of the expensive middlemen associated with traditional financial firms by a more cost-effective online platform has created lower operations costs for the online P2P firms (Klafft 2008a,b). In addition, the increased outreach they achieve through online media has created new economies of scale, and the lower financing costs have contributed to cost reductions for the micro-lending sites (Ashta and Assadi 2010a,b, Magee 2011). Sviokla (2009) reported that the best interest rate at the Lending Club was 7.3% while the bank rate for the same credit was over 13% on average in 2009.

1.2. The countervailing risks that P2P lending platforms experience

While risk may be managed by taking advantage of a portfolio that consists of a large number of microloans with diverse risk levels, there is an inherent risk of default on loans made via the online medium to strangers without collateral. In addition, evaluating a large number of small loans can be time-consuming (Slavin 2007). As online P2P lending platforms play a role in microfinance, the loans that are made have additional risk factors derived from borrower characteristics on top of those from the online environment. Most borrowers in traditional microfinance markets are poor and self-employed (Schreiner 2000). Earlier studies on P2P lending have shown that there is not much variance in borrower characteristics, especially in terms of financial strength and efforts to make a request (Herzenstein et al. 2008, Pope and Sydnor 2011). This is because microfinance serves predominantly disadvantaged customers. In the online P2P lending market, the traditional role of screening to determine whether borrowers are trustworthy is left to individual lenders rather than financial institutions. Thus, there is always the possibility of misrepresentation for borrowers in terms of their creditworthiness. The existence of information asymmetries in the financial market is well known (Sufi 2007), but the information asymmetry between a borrower and potential lenders in the P2P lending market is even more acute. As Cheung (1989) has argued, the sustainability of any economic institution is subject to transaction costs associated with the organization. In dealing with the risks that information asymmetry engenders, it seems that the creators of P2P lending platforms have aspired to the often-cited success story of the Grameen Bank, which reported a continuous and relatively low default rate on loans.

How to deal with the possibility of adverse selection in microfinance is a central theme of research in this area since the long-term success of this new platform depends on the lenders' willingness to place bids continuously when requests are made by risky borrowers in the online environment (Weiss et al. 2010). The prior studies focused mainly on how lenders screen the trustworthiness of borrowers and the effectiveness of different mechanism design features to mitigate the risk of information asymmetry. Many studies have addressed one distinguishing feature of the online P2P lending setting: the utilization of *soft information* by lenders. They show that unverifiable disclosures by borrowers, and the richness of the dialogues between lenders and borrowers tend to affect the loan outcomes, at least in terms of the likelihood of funding (Iyer et al. 2009, Larrimore et al. 2011, Sonenshein et al. 2011, Herzenstein et al. 2011b, Michaels 2012). These studies, as a whole, indicate that lenders combine objective and subjective information available on the market to assess the extent of their uncertainty with respect to the trustworthiness of potential borrowers.

Traditional microfinance institutions have relied upon social networks to overcome adverse selection in their lending practices. To replicate this in the online context, the new P2P lenders have attempted to foster artificial social relationships. The effectiveness of social features in online P2P lending platforms, including friendship, endorsement, and group affiliation – has been intensively studied also (Freedman and Jin 2008, Lin et al. 2011, Berger and Gleisner 2009, Collier and Hampshire 2010, Aghion and Morduch 2000). They claim that social networking built on the online platform has helped to overcome information asymmetries between lenders and borrowers (Herrero-Lopez 2009, Greiner and Wang 2007, Freedman and Jin 2008). Most studies on the social aspects of P2P lending have focused on the group lending feature of Prosper.com. *Group lending* is a mechanism that has been used by many traditional microfinance institutions as a way of monitoring borrower information to reduce information asymmetries and to enforce the rules for repayment (Everett 2010, Bruett 2007). The absence of group liability in the online platform makes it less effective in this market though (Michaels 2012). Wang and Greiner (2011) have claimed that Prosper discovered that the benefits of Grameen Bank's approach to lending, by involving offline groups, does not transfer very well to e-market settings.

There is clear evidence to suggest that an individual lender's capacity to infer from borrower information and group affiliation alone are not sufficient in dealing with the uncertainty associated with the trustworthiness of borrowers. This is partly due to the herding behavior that borrowers demonstrate (Puro et al. 2011, Shen et al. 2010, Zhang and Liu 2012, Herzenstein et al. 2011a). Through herding, lenders not only can interpret information provided by borrowers, but they also can try to infer the creditworthiness of borrowers from observing peer lending decisions. Plott (2000) has shown that markets perform tasks to gather information distributed across a system that describe beliefs, sentiments and opinions, and also aggregate and publish them. As a result, market participants can learn from the market. There is indirect evidence that learning takes place in online P2P lending markets also. Freedman and Jin (2008) have shown that there is a gap between group and individual borrower loan returns, but it is shrinking over time. This can be partially attributed to lender learning. The authors also revealed that the average funding rate on Prosper.com rose from 2005 to 2008, as the market matured. Puro et al. (2011) also have presented evidence about bidder learning. The time to when a loan is funded has become shorter and the dispersion of interest rates has increased. These developments indicate that bidders have improved confidence in evaluating potential borrowers. They also have observed different bidding strategies on the part of lenders over time. They did not elaborate on how lenders learn from different kinds of information though. This study aims to provide an explanation of the how lender learning occurs.

In the absence of effective social ties, it appears that the P2P platforms are continuing to experiment with various new mechanisms and features to internalize transaction costs by encouraging