

The Effect of Digital Platforms on Disintermediation of the Credit Market: Rise of Peer-to-Peer Lending

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ABSTRACT

The financial crisis of 2008 resulted in a loss of public confidence in traditional financial intermediaries like banks. People sought alternative business models to serve consumers' interests and create a fair financial system. Players driven by digital technologies started to emerge in the credit sector, including peer-to-peer (P2P) lenders. These companies operate technology platforms that connect lenders and borrowers, directly facilitating loan deals and disintermediating banks from the process. Since its origination, this subsector has experienced exponential growth and become a meaningful force in the industry and growing field of literature. However, scholars have not compared these new players to traditional banks to determine whether they facilitate an efficient lending process. I aim to investigate how the digital platforms used by P2P lenders affect underlying transaction costs resulting from information asymmetries in the credit market. To this end, a conceptual framework was developed with a focus on four key aspects: provision of liquidity, transformation of risk, diversification of investment and level of agency. Case studies of two UK P2P lending platforms, Zopa and Relendex, were analysed using the framework. The findings show that P2P lenders are superior to banks with regards to reducing transaction costs in three of the four key areas. Therefore, these new intermediaries do indeed promote the efficiency of the credit market by disintermediating the banking system.

Introduction

The economic crisis of 2008 destroyed consumer confidence in banks. Millions of borrowers were left with enormous debts and small businesses and individuals had no access to credit (Mateescu, 2015). The idea of disintermediation—the ability to access credit without banks—led to the creation of peer-to-peer (P2P) lending platforms. P2P companies operate digital platforms that connect lenders and borrowers, enabling them to execute loan deals. It started with groups of people on social networks facilitating credit between each other but eventually led to a complete subsector in the credit market. Although P2P is small concerning overall loan volumes, it is already a \$26-BN industry that is growing by 53% annually (Prableen, 2017).

P2P lending originated in 2005 with Zopa in the UK and in 2006 with LendingClub and Prosper in the US. Hence, it is a relatively new research field. Most research is focused on factors that influence loan request success and interest rate, including social factors (Freedman & Jin, 2008) and loan description (Lin, 2009). However, it is crucial to understand whether these new players increase consumer welfare by promoting the efficiency of credit markets. There

is a lack of comparison of P2P lending to traditional banking and examination into the effects of ITCs on the disintermediation of banks (Bachmann et al., 2011).

Research Question

The objective is to understand the effects of digital platforms on the disintermediation of the credit sector. I explore how digital platforms led to this disintermediation, fuelled the rise of P2P lending, and impacted information asymmetry and transaction costs.

Research Question: *How did digital platforms affect the disintermediation of the credit industry and lead to the rise of P2P lenders?*

Literature Review

Financial Disintermediation Theory

The economic models currently employed by policymakers around the world assume that the Modigliani and Miller (1958) theory holds. The theory states that the functioning of the financial markets can be fully summarised by efficient mechanisms of financial prices that encompass all available information in the market. However, such economic models do not hold in practice as they assume perfect information and neglect the importance of financial intermediaries.

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In financial markets, information asymmetry exists because borrowers naturally possess better information about their likelihood of repayment than lenders. Imperfect information theory (Akerlof, 1970; Rothschild and Stiglitz, 1976) holds that imperfect information between the parties in credit transactions leads to information and transaction costs. Diamond and Dybvig (1983) explain that financial intermediaries like banks exist due to their ability to reduce transaction costs. Depositors tend to be risk-averse and do not know exactly when they will need funds. Without an intermediary, they would be locked in long, illiquid investments and punished by reduced returns if they must liquidate early. Financial intermediaries can also reduce information costs by transforming the risk characteristics of assets. Economies of scale and evaluations of borrowers and investment projects enable them to effectively analyse risk. These factors enable banks to transfer information about borrowers to investors without giving away their information advantage at a lower cost than an individual borrower would be able to do (Leland & Pyle, 1977).

Diamond (1984) states that financial intermediaries exist because they reduce information and transaction costs through diversification. By being able to diversify investments over a range of assets, they reduce the effects of single defaults on the performance of the overall portfolio (Fisher, 1975). Thus, financial intermediaries are crucial players in financial and credit markets because they decrease the costs of directing capital from uninformed lenders and effectively allocate funds. However, the presence of asymmetrically-held information in financial markets shows that there is room for improvement in the market structure through disintermediation and re-intermediation by more efficient agents (Pflaum & Hateley, 2013).

Digital Platforms

Digital platforms have become a key transformative force across industries. Parker and Van Aystyne (2005) define platforms as “enablers of interaction between different groups of surrounding consumers and complementors”. Therefore, platforms facilitate value-creating exchanges between parties (Cennamo & Santalo, 2013; Gawer, 2014). Their wide adoption can be explained through a reduction in all types of transaction costs. A platform reduces search costs by locating necessary information and negotiation and enforcement costs by establishing appropriate coordination mechanisms between participants (Cordella, 2006). However, due to the interdependencies between the various factors related to transaction cost, it may increase because disintermediation can cause information overload and re-intermediation instead is able to decrease transaction cost (Cordella, 2006). Therefore, platforms need to establish appropriate mechanisms if they are to become more efficient intermediaries than incumbents.

Network effects underpin platforms’ exponential growth and market dominance. They are defined as the “demand side economies of scale”, where the

subjective value of a platform for a particular user is dependent on the quantity of other users (Eisenmann et al., 2011). A high number of consumers on a platform leads to a significant increase in its perceived value. Platform markets are dominated by monopolies and winner-take-all dynamics because once the critical mass of adoption is reached, the platform enjoys exponential growth and a massive “user base advantage” (Eisenmann et al., 2011; Gawer, 2014).

To win the market, platforms must establish regulatory mechanisms to acquire users and facilitate interaction. Pricing is the most often covered mechanism, and the related literature suggests that the ‘correct’ price is the key determinant in competition among platforms (Parker & Van Aystyne, 2005; Cennamo & Santalo, 2013; Eisenmann et al., 2011). It relies on the principle that a platform owner establishes a price for each side based on its “relative network externality benefits” (Parker and Van Aystyne, 2005), like growth and willingness to pay, often subsidising one side and charging the other. However, Boudreau and Hagiu (2009) argue that “getting the price right” is not enough. Rather, platform owners should use a range of legal, technological and information mechanisms along with pricing to achieve a two-step strategy of maximising value created for the whole system and value extracted.

Some industries are more prone to platform revolution than others. Markets that are highly information-intensive and fragmented, characterised by extreme information asymmetries or those with unscalable gatekeepers are most likely to be transformed by digital platforms (Parker et al., 2016). Banks still hold significant power in the financial industry, and the platform revolution has not reached its full scale due to high regulatory control and costs of failure (Parker et al., 2016). However, digital platforms focus on specific products offered in a bundle by banks and outperform them in that particular area. Companies like PayPal are performing online transactions, TransferWise does foreign exchange and Zopa facilitates loans. Once the regulators catch up and new technologies prove to outperform old models, the financial industry will likely look very different.

P2P Lending

The failure of the banks and standard financial institutions has led to the accelerated growth of alternative finance solutions based on innovative business models and new technologies. The rise of digital platforms affected the credit sector and led to the creation of P2P lending platforms. The term “P2P lending” refers to “loan origination process between private individuals on online platforms where financial institutions operate only as intermediaries required by law” (Bachmann et al., 2011).

By directly connecting investors with borrowers, these platforms operate with lower operational cost than banks, enabling them to offer lower rates to borrowers and higher returns to lenders than banks. The intention is to cut out the middleman and make the whole process efficient, transparent, accessible and controllable by users (Mateescu, 2015).

To fully understand this industry, it is important to examine the stakeholders involved in the lending process (Freeman, 2010). Figure 1 (Bachmann et al., 2011) depicts the stakeholders in a typical P2P lending platform. Internally, a P2P lending platform is not much different than companies or banks in which management, employees and owners have respectful levels of influence. However, there are more external than internal actors.

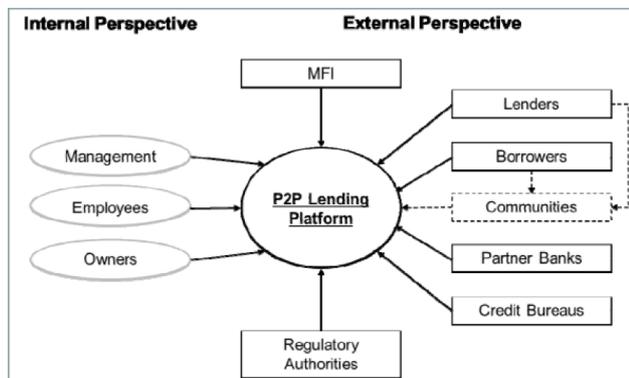


Figure 1. Stakeholders of a P2P lending platform

Regulations set by the UK FCA govern P2P lender operations. Companies must hold £50,000 in reserves, have partner banks for deposit holdings and fund transfers and credit bureaus that hold and verify valuable data about borrowers (Galloway, 2009).

Industry has evolved since its pure P2P origins. Many players have now moved towards a P2P marketplace lending model, whereby institutions buy loan portfolios from P2P platforms (Mateescu, 2015). Some platforms have started to acquire loan listings from loan originators, like micro-financing institutions that perform underscoring and collection themselves.

Conceptual Framework

Financial intermediation theory (Claus & Grimes, 2003) explains the existence of financial intermediaries as a result of information asymmetry. Intermediaries reduce information and transaction costs to efficiently channel funds between lenders and borrowers. This helps us understand why these intermediaries are being disintermediated by efficient agents who can further reduce costs. I employ a conceptual framework grounded in financial intermediation theory called the “Financial Disintermediation Framework” (FDF).

It is important to break down how intermediaries in the credit market decrease information and transaction costs. There are four main components in the literature that inform the FDF:

1. *Provision of liquidity*, allowing lenders to exit investments at any time, reducing transaction costs
2. *Transformation of risk* characteristics of assets through specialisation, reducing information costs
3. *Diversification of investment*, leading to a reduced risk of default and monitoring costs

Many transaction costs arise from principal-agent problems (Jensen & Meckling, 1976). Therefore, the level of agency is the fourth component of the FDF, as depicted in Figure 2:



Figure 2. Financial disintermediation framework

The FDF is used to analyse the effects that digital platforms had on the credit industry. The P2P lenders in the identified case studies are analysed and compared to banks in four aspects to show whether and by how much these new agents reduce information and transaction costs, leading to the disintermediation of current players.

Research Methodology

I use a qualitative method to gain an in-depth understanding of complex and socially constructed phenomena such as financial intermediation in credit markets (Denzin and Lincoln, 2005). Given that P2P lending is a relatively new field of study with limited prior theory available an inductive approach was chosen due to its capacity to remove limitations imposed by a research hypothesis and include a diverse range of data sources (Saunders, 2012).

A case study was followed as part of the research design due to its ability to provide a deep understanding of the research context, as shown by Eisenhardt and Graebner (2007). This is of great importance when the research requires a study of a complex environment such as the evolution of the credit industry. Further, such an approach is also particularly suited towards combining various methods of data gathering leading to a richer information base to perform analysis on. I utilised a multiple case study approach to achieve replication with purposive sampling of two case companies that allowed for in-depth research. (Yin, 2009; Neuman, 2005). Zopa is a P2P lending platform that created the entire industry while Relandex is an innovative property P2P lender that offers secured loans.

I utilise primary (six non-standardised interviews; Appendix 1) and secondary data (information displayed on corporate websites, blog posts, historical operational data and financial industry reports by Morgan Stanley and P2pbanking.com). Data was analysed in accordance with Eisenhardt’s (1989) comparative case study analysis. I categorised the chosen companies’ data using the novel financial disintermediation framework presented in this paper. Then I performed cross-case analysis to draw correlations between two case companies and draw initial conclusions about the whole credit industry. As a final step, I analysed each of the framework’s four components in depth to determine whether it reduced transaction costs.

Findings and Analysis

This subsection is dedicated to the cross-case analysis of the case companies. The differences and similarities between Zopa and Relendex are expressed in terms of: 1. Provision of liquidity, 2. Transformation of risk, 3. Diversification of investment and 4. Level of agency.

1. Provision of liquidity: The initial concept of P2P lending by Zopa was similar to that of bonds, with regular interest repayment and the ability to receive full principal at the end of the loan lifetime. Zopa's team quickly realised that: "ability to access funds at their discretion is of crucial importance to the savers on the platforms". Now both Zopa and Relendex offer the option to prematurely exit an investment through 'secondary market' features, although with a slight difference in how liquidation is performed. Zopa automatically and almost instantly performs re-sales of loans to other lenders once there is enough demand. Conversely, Relendex gives lenders the option to auction off their outstanding loans to other lenders. Although the execution of the 'secondary market' feature varies across companies, managers of P2P lending platforms realise that the ability to conveniently liquidate investments is important to investors.

2. Transformation of risk: P2P lending platforms pay close attention to their ability to choose creditworthy borrowers, effectively assess risk and communicate this information to lenders. Both platforms employ a combination of credit analysts and statistical models to give 'internal credit scores' to borrowers based on underlying levels of risk. Zopa has six credit bands based on expected default rate while Relendex has four credit classes and pays attention to loan-to-value and interest cover ratios. P2P lending platforms seem to universally use credit classes to price loans and communicate the level of risk of a particular loan to lenders. However, a credit band is not a measure of absolute risk. Rather, it is a subjective measure that indicates whether information asymmetry exists in the market.

3. Diversification of investment: P2P lenders aim to incorporate investment diversification into their technological platforms by splitting invested money across a range of loans to minimise the effect of a single default on expected ROI. Zopa offers bundled products of certain portfolios that are predetermined by their system that calculates an optimal diversification strategy depending on the investment amount and risk appetite of the lender. Relendex does not offer any specific features to integrate diversification into its platform. However, Relendex generally has loans secured by assets with high monetary value making them significantly less risky than an average P2P loan. According to Relendex, their average lender profile consists of 40-50 years old experienced investors, who 'understand the concept of diversification quite well'. Both platforms pay attention to the importance of diversification, although to a lesser degree due to the nature of their products and target customer demographic.

4. Level of agency: P2P lenders offer technological platforms that create environments and tools for

borrowers and lenders to execute transactions. They act as intermediaries but do not execute significant agency because funds are allocated according to lenders' choices. The degree of choice and level of platform involvement varies across platforms. Zopa has tighter control and higher agency because it creates investment portfolios and only offers lenders a marginal choice regarding the level of risk they are willing to take. Conversely, Relendex offers live auctions for loans and leaves the choice of what to invest completely to the discretion of lenders. The two platforms have distinctly different levels of control and execute agency according to their respective beliefs and strategies.

Placement in Industry Context

P2P lenders were compared to banks and other financial institutions regarding the four components of the FDF to evaluate whether they actually provide a reduction in transaction costs that contributes to the disintermediation of the industry.

Provision of Liquidity

One of the key sources of transaction cost reduction in credit markets is the provision of liquidity by intermediaries. Because markets are unstable and most lenders are bad at predicting when they will need capital, the ability to liquidate an investment makes investors more likely to invest and increases the efficiency of fund transfers. Banks are huge hierarchical institutions that provide savings accounts to customers who are looking to earn fixed interest on their deposits. Given their scale and reserves, banks can provide depositors with the ability to withdraw funds at any time without having to collect funds from debtors. P2P lenders also pay fixed interest on deposits, but they offer a different product than savings accounts. Most P2P platforms have a 'secondary market' feature that enables lenders to exit investments at their discretion before the maturity date, although not instantly. The delay varies across platforms. It can be seen that P2P platforms are inferior to banks in this regard. However, as illustrated by Zopa, we can expect the platforms to catch up with banks as the sector grows.

Transformation of Risk

The ability to understand and transform risk impacts the capacity of financial intermediaries to effectively allocate funds. These institutions can better understand underlying levels of risk in assets like loans or investment projects than individual lenders. Banks have departments dedicated to risk management and many risk analysts. They primarily rely on information from credit bureaus and use standard FICO models. There is some level of automation, but many processes are manually performed with 'unscalable gatekeepers' (Parker et al., 2016). Further, the risk is not translated to lenders because investment strategy is completely at the discretion of banks.

Conversely, P2P lending platforms specialise in using new risk models, employing 'big data' and machine learning. The processes are automated, and the model

improves as the business grows, giving businesses the ability to effectively understand risk. Further, this superior knowledge is passed on to lenders in the form of risk classes that are used to communicate underlying levels of risk. Although information asymmetry still exists, it is clear that P2P lenders decrease such market inefficiency, contributing to a reduction in information costs.

Diversification of Investment

Since the time of Fisher (1975), investors and financial institutions have known that diversification is crucial to hedging risk and reducing the effects of unsuccessful investments. In credit markets, intermediaries like banks can diversify across a range of loans by utilising their scale while increasing their specialisation debt monitoring. These practices reduce transaction costs by enabling lenders to avoid such activities. However, this diversification occurs on the bank’s balance sheet, so individual lenders do not know how diversified their personal funds actually are and they could lose all of their investments.

P2P lending platforms integrate the concept of diversification into their product offerings by splitting the money of individual lenders across a range of loans to ensure that lenders only lose a portion of their portfolios when borrowers default. The collection process is usually outsourced to specialised collection agencies. Therefore, from the institutional perspective, banks can be seen as more diversified than P2P platforms, but from the individual perspective, P2P platforms offer better diversification of individual portfolios than banks and communicate this information, greatly reducing transaction and information costs. As the P2P sector matures and goes cross-border, we can expect further market efficiency improvements.

Level of Agency

Financial markets face principal-agent problems, wherein intermediaries act in their own interest rather than that of their depositors, creating transaction costs. The level of agency that banks exercise is high because lenders have almost no control over or knowledge of where their capital goes and rely on banks to receive their returns. Conversely, digital P2P platforms create a transparent environment and tools for lenders to create individualised investment strategies or follow platform suggestions. This gives them a significantly high level of control and transparency, decreasing agency problems. However, it can be argued that because P2P lenders do not lend their own funds, they are more likely to take risky credit. The business of the lenders is dependent on trust in the platform, which is driven by low default rates, so to them, the risk assessment and ability to pay back interest to lenders is at least of the same importance as to banks. Therefore, it becomes evident that the overall level of agency executed by P2P lenders is quite low, leading to a reduction in transaction costs.

Discussion

It is important to close the gap in the literature by comparing P2P lenders and traditional banks.

As shown by Cordella (2006), the introduction of ICTs can lead to the disintermediation of current players due to decreased transaction costs if they employ proper mechanisms to avoid information overload. Therefore, I assumed that the use of digital platforms by P2P lenders would lead to a reduction in transaction costs and promote the efficiency of the credit market. Compared to banks, these new agents indeed reduce transaction costs in three out of the four areas identified in the framework. P2P lenders do not provide superior liquidity because the borrower can instantly withdraw funds from banks but not P2P platforms. However, P2P platforms perform better than banks regarding the transformation of risk due to employment of superior risk analysis models and the communication of that information to lenders in the form of credit classes. The findings are shown in Figure 3:

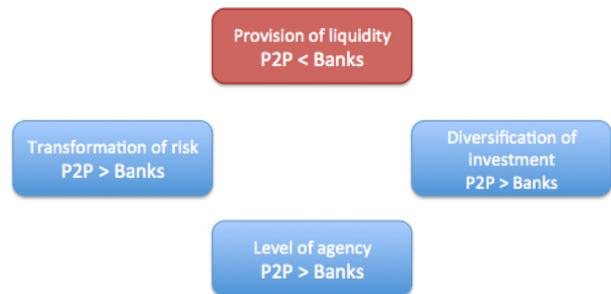


Figure 3. Results of financial disintermediation framework

In line with findings of financial intermediation research (Diamond and Dybvig, 1983; Lelan Van Alstyne d and Pyle, 1977; Diamond, 1984), new players are more efficient intermediaries as they reduce information asymmetry and transaction costs, promoting the efficient functioning of the market. As the P2P lending sector matures, the ability of P2P companies to provide liquidity and investment diversification will increase in relation to size, further promoting efficiency.

Limitations

Despite a significant effort put into a choice of the most appropriate research design, there are several limitations to research that remain and need to be addressed. The main limitation is that the paper is focused on the economic perspective of the effect of digital platforms on the credit industry. Using transaction costs as a primary concept and drawing on the literature from financial intermediation and economics stream of digital platforms it does not pay significant attention to technological and managerial issues that also had an impact on disintermediation. Therefore, although data was acquired from a variety of sources in different felids, the findings concentrate on economics perspective for disintermediation of the credit industry.

Moreover, the paper is written based on the assumption that ICTs, such as digital platforms leads to a decrease in transaction costs. However, although the findings support the assumption, there are cases when ICT can lead to a decrease in efficiency and rise of transaction costs. Therefore, it is imperative

to examine the evidence rigorously and look for evidence that might disprove the findings. Further research under the opposite lens might prove useful to ensure the validity of the finding.

Further, due to a complex nature of the phenomenon under study, in-depth nature of the research question as well as time and resource limitations on data gathering the research focused on two cases studied limiting potential data saturation. Purposive case study sampling was aimed at maximising external validity, but due to a limited number of cases, the generalizability of research findings is restricted. Finally, this research paper offers snapshot finding, yet, the research question involves a study of the industry and implies that longitudinal data can be valuable. Future research on the topic involving a higher amount of case companies performed over longer periods of time can contribute to the field.

Conclusion

To understand the effects that digital platforms had on the disintermediation of the credit industry and the rise of P2P lending, case study analysis of two P2P lending platforms was performed and findings were compared to data about regulated banks. Under information asymmetry in financial markets, transaction costs create intermediaries that aim to reduce them and improve market efficiency. Therefore, disintermediation occurs when new players using ICT significantly reduce transaction costs.

The findings of this paper show that P2P lenders are superior to banks regarding reducing transaction costs in the diversification of investment, the transformation of risk and level of agency. These new intermediaries are promoting efficient fund exchanges. These findings show the significance of P2P lending in transforming credit markets to be consumer oriented. Due to the limited number of case studies and time constraints, this study is limited regarding generalisability. However, it can act as a catalyst for other academics to contribute to the field and practitioners to look closely at the new players enabled by digital platforms.

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