

The Rise of Peer-to-Peer Platforms and the Change in the Borrower's Rational Choice

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12/16/2013

Senior thesis submitted in partial fulfillment
of the requirements for a
Bachelor of Arts degree in Economics
at the University of Puget Sound

I. INTRODUCTION – The Financial Crisis and the Birth of Peer-to-Peer Platforms

The 2007-08 financial crisis had dire consequences on the United States' economy. Considered the worst crisis since the Great Depression, it led to the near-collapse of large, financial institutions, a bailout of banks by the government, and severe damage to stock markets around the world. Businesses failed, houses foreclosed, and consumer confidence plummeted. In particular, the US economy saw a drop in confidence within the financial sector. When the financial crisis hit, borrowers still had financial needs, but banks were unwilling to supply loans like before. Borrowers, unable to find loans through traditional means, began searching elsewhere—including the internet. Two recently formed lending platforms quickly gained borrower attention.

Prosper and Lending Club are peer-to-peer (P2P) lending platforms founded in 2005 and 2006, respectively. These platforms allow potential borrowers to apply for uncollateralized loans through an online application process.¹ If approved, these listings are posted in an online marketplace for investors. Listings contain objective information on the borrower, collected and verified by the platforms, and sometimes have borrower-volunteered information as well. Investors from around the United States browse and invest in these listings, investing as little as \$25.² Both the platforms and investors will be discussed in greater detail later. The online nature of P2P lending allows borrowers and lenders to anonymously connect, which reduces the chances of illegal discrimination interfering in the loaning process, making P2P lending the optimal choice for certain borrowers.

¹ "Personal Loans from Lending Club." Lending Club. <https://www.lendingclub.com/public/personal-loans.action>.

² "Earn Solid Returns." Lending Club. <https://www.lendingclub.com/public/steady-returns.action>).

Since its inception, P2P lending has grown tremendously. As of November 2013, Lending Club has funded approximately \$3 billion in loans and Prosper \$723 million.³ From August 2007 to the end of 2008 (the time of the crisis), Lending Club funded \$24 million in loans, over half of which were for debt consolidation or credit card debt,⁴ and Prosper funded a little over \$100 million.⁵ While this \$24 million pales in comparison to the amount of loans made by traditional banks, it represents a part of the population that chose P2P lending to meet their financial needs.

Recently, both platforms have made headlines, reflecting a growth in P2P popularity among borrowers and investors. In September 2013, Prosper raised \$25 million in financing with the help of BlackRock.⁶ In May 2013, Lending Club received a \$125 million investment from Google, who valued the company at \$1.55 billion.⁷ Lending Club is planning an initial public offering in 2014.⁸ With these expansions, it appears P2P lending is not just a new curiosity, but a possible alternative to traditional bank lending. However, the question now is, what is making borrowers choose P2P lending over traditional consumer lending?

Although other options existed to fill financial needs pre-2005, these options can hardly be considered viable alternatives to banks. Assuming an alternative needs to be a mutually

³ "P2P Lending Charts, Stats and Tools – Lending Club." Nickel Steamroller. http://nickelsteamroller.com/lendingclub_overview.

⁴ "P2P Lending Charts, Stats and Tools – Prosper." Nickel Steamroller. http://nickelsteamroller.com/prosper_overview.

⁵ "Prosper Stats." LendStats.com. <http://www.lendstats.com/loansearch/loanfilter.php?sdm=08&sdd=01&sdY=2007&edm=12&edd=31&edy=2008>.

⁶ De La Merced, Michael J. "Prosper Raises \$25 Million in New Round." The New York Times - DealBook. <http://dealbook.nytimes.com/2013/09/24/prosper-raises-25-million-in-new-round-adding-blackrock-as-a-backer/>.

⁷ De La Merced, Michael J. "Lending Web Site Gains a Shareholder in Google." The New York Times - DealBook. http://dealbook.nytimes.com/2013/05/02/google-to-invest-in-lending-club/?_r=0.

⁸ Ibid

exclusive option, certain lending services are excluded from consideration. Therefore, loan sharks and loans from family members are not included, leaving only two other options.

Payday lenders, such as Moneytree or Quicken Loans, provide small, short-term loans to borrowers. However, their exorbitantly high interest rates and short duration make them an impractical alternative. The closest alternative borrowers had were financial services companies, like Springleaf Financial Services or OneMain Financial. Like banks, these companies offer both collateralized and uncollateralized, fixed-interest rate loans.⁹ However, unlike banks, the interest rates for both these companies stay within a few basis points of 25%.¹⁰ The fact that these rigid interest rates apply to all borrowers means financial service consumer lending is not a good alternative for borrowers who want personalized rates.

II. AGENTS – Consumer Lending Pre-Financial Crisis

Disregarding these other options, in the early 2000s there were two primary participants in the consumer lending market: the bank and borrower. Shareholders control banks and expect their bank to be profitable. However, as the financial crisis revealed, a serious principal-agent problem exists between bank executives and shareholders. As several papers have found, banks increased risk-seeking behavior in the time leading up to the crisis, such as increasing risky segments of loan portfolios.¹¹ Since the financial crisis, banks have increased their risk-aversion (discussed later); therefore, it is necessary to distinguish pre-financial crisis (FC) banks from post-FC ones.

⁹ "Personal Loans." Springleaf Financial Services. <http://www.springleaffinancial.com/personal-loans/personal-loans.html>.

¹⁰ "Looking for Something to Short? Here's a Suggestion." Coyote Blog RSS. http://www.coyoteblog.com/coyote_blog/tag/springleaf-financial.

¹¹ Brandao-Marques et al. 2013, Mehran et al. 2012, Aikins, S.K. 2009.

With regards to consumer loans, pre-FC banks, regardless of principal-agent problems, sought to maximize returns from loans while minimizing the risk of default. For this paper, their risk-aversion level pre-FC is X , which is less than the post-FC level of $X+I$. When a potential-borrower applies for a loan, the bank has three options. First, they can approve the loan without collateral. Collateral helps mitigate risk by making the loan secured. This means the bank has some security should the borrower default on the loan. Examples of collateral include paid-off vehicles and real estate. For the bank, the presence of collateral means the borrower has a stronger incentive to pay them back. However, it is important to note that while the value of the collateral may cover the balance of the loan, the process still is still costly to the bank. There will be costs associated with collecting and selling the vehicle and the bank may not always come out even.

Second, the bank can approve the loan without collateral. This may be necessary for borrowers without acceptable forms of collateral. Without collateral, banks must find other ways to account for risk, which is why uncollateralized loans tend to have higher interest rates.¹² To banks, uncollateralized loans are not necessarily worse than collateralized ones. If appropriately compensated for the risk through interest rates, uncollateralized loans can be worthwhile.

A banks' last option is to deny the application. This should happen if the potential-borrower does not meet the banks' lending criteria, making them too risky to lend to. If this happens, there are downsides to both the bank and borrower. The bank will have incurred some cost from having gone through the application process and come to a decision. The borrower will have the time cost from applying, as well as the credit cost from having an inquiry show on their credit report.

¹² John et al., 2003.

When evaluating a borrower's creditworthiness, all banks use some variation of the 5 C's of credit: capacity, collateral, capital, conditions, and character.¹³ These C's are applied to each borrower and guide the lender's decision-making process. Capacity refers to the borrower's ability to repay the loan. This means the borrower's revenues, expenses, cash flows, and credit history all factor into this C. As discussed before, collateral represents security provided to the lender. If the loan requires a certain level of collateral, the borrower must meet it, or be able to pay the rate to compensate for the increased risk from a lack of collateral. Capital refers to money invested by the borrower into the loan. A down payment would factor into capital, as it shows the borrower has a stake in the successful repayment of the loan. Conditions covers both the current macro- and microeconomic conditions affecting the loan, as well as the intended purpose of the loan. Lastly, character refers to the perceived trustworthiness of the borrower by the lender.

If a borrower fails to meet any of the C's, banks should immediately turn-down the application. Though banks have their own guidelines, within each C, the loan officer has room for discretion. This varies from lender to lender, and this subjectivity is partially connected to attitudes towards risk. Therefore, the financial crisis was able to change banks' lending behavior, while the process of the 5 C's remained the same.

The other agent in this pre-FC model, the borrower, is someone who has a sizable need and is unable to pay it back within a year. This means there are no borrowers interested in short-term loans, like payday loans, and smaller loans that could be paid-off ahead of schedule. In addition, the borrower has already decided to look for a loan. Unlike the bank, borrower's

¹³ "Financing for your Future -- The Five C's of Credit." PNC.
<https://www.pnc.com/webapp/unsec/ProductsAndService.do?siteArea=/pnccorp/PNC/Home/Small+Business/Financing+Your+Future/The+Five+Cs+of+Credit>.

objective is more subjective. The borrower wants to meet a financial need while incurring the least cost with respect to rates and term.

Interest rates and term have a positive relationship. Banks reward borrowers who are able to pay them back over a shorter period of time by charging lower interest rates. All else equal, a 5-year loan should have a lower rate than a 10-year one. The cost to the borrower is the payments they must make the bank each month. If they are unable to afford the monthly payment, the cost of taking out the loan is too high. If the payment condition is met, it is up to the borrower how they decide to balance rates and time. Because interest rates affect payments, a borrower may choose to pay more overall in order to receive a longer term and lower monthly payments. Minimizing the cost will vary based on the individual's situation, but they will always try to minimize their perceived cost.

Given their objective, borrowers can choose to either accept or reject the loan offered to them. If the borrower accepts, both the bank and borrower receive some payoff above 0 since both will benefit from the loan. The model assumes that pre-FC, banks were more impartial between uncollateralized and collateralized loans; banks believed rates compensated for increased risk from uncollateralized loans. In fact, research does suggest demand for collateral has increased amongst lenders.¹⁴ To the borrower, collateral does matter. First, collateralized loans are only available to those who own property. Even if a borrower would like the lower rate from a secured loan, if they do not have free-and-clear property to put up, there is no way they can get that rate. Second, there is the risk of the borrower losing their collateral. If, for some reason, the borrower is unable to pay, the bank can take their property. Losing certain types of collateral could seriously harm an individual. For this reason, borrowers will only be ok putting

¹⁴ Lopez et al., 2013.

up collateral if they believe the premium they receive for doing so outweighs their risk of default.

If the borrower rejects the loan offered, their payoff will be slightly worse than when the bank rejects an application. The bank will have a slight time cost from creating the offer, and the borrower will incur more time cost (in addition to the time spent applying) and still not have their need met.

When applying, the borrower has a few controllable factors. Since borrowers are price-takers, they can only hope to use what they can control to influence the price given. The borrower has little control over how the bank analyzes them under the 5 C's. Other than lie, the borrower cannot change their capacity. Quantitative data on their financial position and credit history are as stated. The borrower cannot change whether they own acceptable collateral, or whether they have the ability to provide capital. Economic conditions are out of an individual's control, as is the predetermined reason for the loan. There is only one area over which the borrower has control.

At the time of the application, the borrower has minor sway over their character. As mentioned before, character is a very subjective criteria for banks. Unlike quantitative data, character is primarily signal-based. To banks, the individual's characteristics signal what quality of borrower they are. For instance, a well-groomed, well-spoken man in a suit would be thought to signal a higher quality borrower than a profane, unkempt man in a dirty t-shirt. For a signal to be credible, it must be costly to the party providing it. Success and eloquence require hard work and time to develop, meaning they are difficult to fake.

Reading character signals causes problems for banks, due to the thin line between and character signaling and illegal discrimination. Borrowers may be able to control how they dress

or act, but their race or gender is difficult to hide. The Equal Credit Opportunity Act (ECOA) is a law that prohibits discrimination based on race, religion, national origin, sex, marital status, or age.¹⁵ Because of this, lenders must be careful that the signals they receive are not a result of any of the aforementioned characteristics. However, since face-to-face interactions provide banks with visual signals useful in determining character and lowering risk, banks will take the risk and continue this practice. Borrowers are aware that banks discriminate, especially racially,¹⁶ but, with no practical alternatives prior to 2005, borrowers were only able to go through banks for certain kinds of loans. With these two participants, the borrower's decision tree looks as follows:

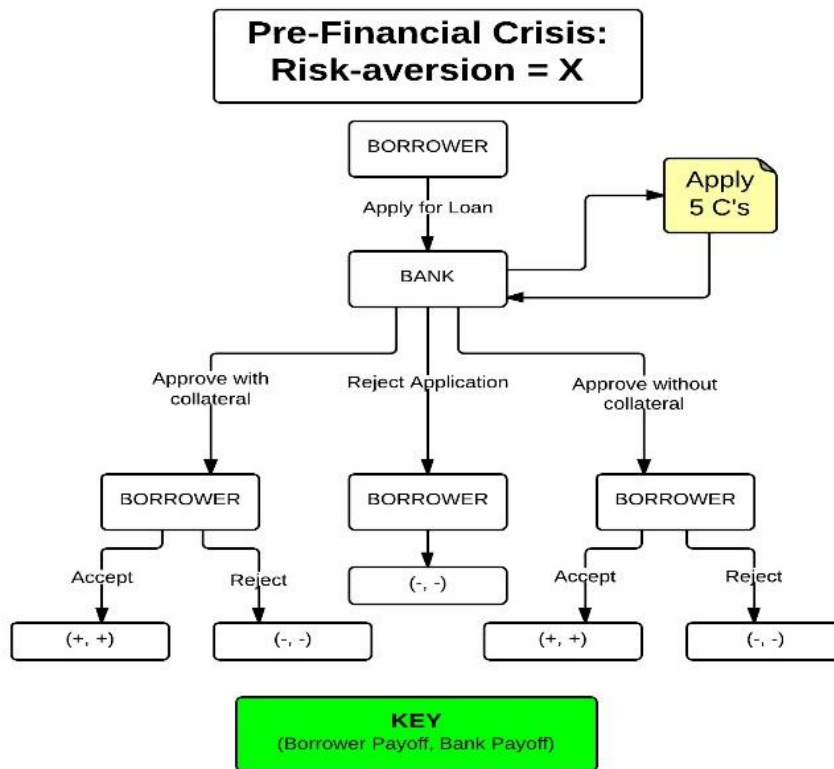


Figure 1. Consumer lending before the financial crisis and before the inception of Prosper, LLC, the first P2P lending site.

¹⁵ "Your Equal Credit Opportunity Rights." Federal Trade Commission. <http://www.consumer.ftc.gov/articles/0347-your-equal-credit-opportunity-rights>.

¹⁶ Block et al. 2008, Taylor 2011.

Rather than assume payoffs for each outcome, this model's payoffs are measured in overall effect. If the result is overall beneficial to a player, the payoff is "+". If it is detrimental, the payoff is "-". This paper is more concerned with the post-FC, P2P-inclusive model. In 2005, two more agents joined the consumer-lending model.

III. AGENTS – Consumer Lending Post-Financial Crisis

Founded in 2005, Prosper, LLC became the first P2P platform operational in the United States.¹⁷ Lending Club quickly followed in 2006.¹⁸ The concept was simple, but revolutionary: use an online platform to create a bridge between investors and borrowers around the US. Both institutional and individual investors from all over can use this platform to either partially or fully fund loans. On Prosper, Borrowers can take out loans as small as \$2,000, but no larger than \$35,000.¹⁹ Lending Club has the same maximum, but recently changed its minimum to \$1,000.²⁰ In addition to being marketplaces, these platforms also serve as the initial screen in the application process. Both Lending Club and Prosper have proprietary models they use to screen their loans.²¹ Initially, the only factors considered are loan amount, purpose, and yearly income. The objective of these platforms will change as these marketplaces grow in popularity. However, P2P platforms are businesses and their goal is to maximize profit.

The platforms have two options: to approve or reject. Currently, all loans made through P2P platforms are uncollateralized. The widespread borrower and investor base makes a

¹⁷ "Company Overview." Prosper. <http://www.prosper.com/about/>.

¹⁸ "About Us." Lending Club. <https://www.lendingclub.com/public/about-us.action>.

¹⁹ "Personal Loan Rates and Fees." Prosper. <http://www.prosper.com/loans/rates-and-fees/>.

²⁰ "Personal Loans from Lending Club." Lending Club. <https://www.lendingclub.com/public/personal-loans.action>.

²¹ "Why Invest with Prosper?." Prosper. <http://www.prosper.com/invest/>., "Earn Solid Returns." Lending Club. <https://www.lendingclub.com/public/steady-returns.action>.

collateral process unpractical and costly, and the multiple investors per loan dilutes risk, explaining why platforms do not implement the process. The platforms make their profit by charging both the borrower and investors fees. The borrower pays loan origination fees (1.11-5.00% for Lending Club) or closing fees (0.50-4.95% for Prosper).²² The lenders (investors) pay 1% of the principal balance as an annual servicing fee.²³ This does bring up the issue of incentive. P2P platforms operate online, meaning their overhead costs are low. In addition, each additional loan costs virtually nothing to host. The cost of upgrading servers is both inexpensive and infrequent. Since the investors fully assume the risk, it would seem the platform's logical decision would be to pass through as many loans as possible to investors. Contrary to this, Lending Club reports that less than 10% of their loan applications make it through their screening process. This can be easily explained from a game theoretical perspective.

If this were a one-shot game, the platform's optimal strategy would be to allow as many loans through as possible, thereby collecting the most fees. However, as mentioned before, P2P platforms have seen increasing growth and profitability. As long as projected future profits outweigh the one-time profit from the one-shot strategy, the platforms will have an incentive to keep treating it as a repeated game. This being the case, the platforms have an incentive to only approve higher-quality applicants in order to keep investors' trust. Higher-risk borrowers are not excluded so long as their risk has appropriate compensation for investors. If the risk is above feasible compensation (35.36% for Prosper and 28.69%), the platform is expected to block the application in the screening process. In this way, the repeated game serves to align investor and platform interests, reducing the principal-agent problem.

²² "Rates & Fees." Lending Club. <https://www.lendingclub.com/public/rates-and-fees.action>., "Personal Loan Rates and Fees." Prosper. <http://www.prosper.com/loans/rates-and-fees/>.

²³ *ibid*

In addition to the repeated game constraint, investor demand restricts the platforms' actions. By acting as the screener, P2P platforms control the supply of loans in the marketplace. However, there are a limited number of investors willing to lend. Allowing too many loans through will have the following consequences. First, the market will be flooded with postings. Too much information becomes inconvenient for investors, who must spend extra time sifting through each listing in search of their desired loans. Second, unless a larger number of high-quality borrowers start applying through the platforms, increasing supply means approving more loans from previously unacceptable applicants. This ties back to the repeated game constraint, where investors will punish the platforms once they find out the platforms pushed through subpar loans. The consequence will be an exodus of investors, causing a loss of profits from fees on both borrowers and investors. The payoff to the platform will be discussed in tandem with the investor's.

The second, new agent added is the investor. The investor's objective is to maximize return given a preferred level of risk. For the most risk-averse investors, a diversified portfolio of the platforms' safest loans may be the best choice and a return of 5-6% would be fine. However, more risk-tolerant investors may choose to include lower-rated loans in exchange for the chance of higher returns. Like the borrower, the investor is a price-taker, accepting whatever rate the platforms have determined and assigned. Risk is costly to investors, but the platforms allow investors to fund pieces of loans, which dilutes the risk among all investors of the loan. For this reason, the model assumes the investor will not be the sole funder of a loan. In addition, because of this P2P benefit of diluted risk, investors are willing to lend uncollateralized, and even reward borrowers in the form of lower rates. In this model, the investor has two options available. They can choose to invest in the loan or not. Should the investor decide to invest,

their payoff will be the loan's actual return. If they do not invest, the only cost is the time it took to determine the loan did not meet their criteria. This same cost is incurred in the event an investor funds a loan that fails final verification or does not reach the minimum funding threshold (though borrowers can choose to accept a lesser amount).

Like the bank, a rational investor will have a set of criteria when looking to lend. However, the differences between the bank and platforms change the way the 5 C's can be applied. The online-based platforms reach borrowers anywhere with internet access in the United States, and they are able to keep costs low by not having physical branches. As mentioned before, this means collecting collateral is difficult and not cost effective. In addition, P2P platforms do not account for capital through the use of down payments. The reasoning could be to allow as many investors to invest as much as possible.

The platforms collect and display the information listed in *Chart 1*, but they do not collect information on a borrower's monthly expenses, such as gas, utilities, childcare, etc. Banks factor in these expenses and like to have a buffer (amount of disposable income left after accounting for loan's monthly payments) of a certain amount,²⁴ whereas P2P platforms do not ask. This could be because this information is typically an estimate, or it could be falsified, and the platforms like to be as accurate as possible. However, this budgeting technique does help the lender determine capacity, and the fact that P2P platforms do not account for this is a potential weakness in the system.

The bank is more interested in the loan conditions than the platforms. While the banks typically ask questions about the intended use, the platforms only require a category selection,

²⁴ "Business Owner's Toolkit." What Banks Look For When Reviewing a Loan Application. <http://www.bizfilings.com/toolkit/sbg/finance/getting-financing/what-banks-look-for-reviewing-loan-applications.aspx>.

such as debt consolidation, home improvement, car financing, vacation, etc. The platforms say they verify the information given on a loan application before the funds are dispersed, but the process itself is undisclosed. All the potential investors see is a category and perhaps an informative title for the loan (given by the borrower). This is a weakness in the P2P system, since a lack of detail creates an asymmetric information problem between the investor and borrower. Typically, banks charge borrowers a risk premium because of this problem, but the dilution of risk among investors allows P2P platforms to keep rates low.

The character aspect is the greatest difference between the bank and investors' lending process. With face-to-face interactions, banks use visual cues as signals for character and trustworthiness. As mentioned before, this type of signaling has the dangerous potential to become discrimination. Simply appearing trustworthy has been found to increase the probability of obtaining a loan and result in lower rates.²⁵ P2P platforms remove the possibility of visual bias in two ways. First, the initial application process does not require photo ID of the applicant. The preliminary models use only objective data. Applicants do not use a picture or a name, thereby removing the chance of discrimination associated with visual bias. Furthermore, the platforms maintain this anonymity when posting the loans for investors. Determining character from this anonymity requires other methods of analysis. For instance, the lender may rely on credit score, past delinquencies, and public records on file to create a character profile of the borrower.

	Prosper	Lending Club
<i>Platform grade</i>	X	X
<i>Loan purpose</i>	X	X
<i>Amount</i>	X	X
<i>Interest rate</i>	X	X
<i>Term</i>	X	X

²⁵ Duarte et al., 2012.

<i>Gross income</i>		X
<i>Income range</i>	X	
<i>Home ownership</i>	X	X
<i>Length of employment</i>	X	X
<i>Job title</i>		X
<i>General employment position</i>	X	
<i>Location</i>	X	X
<i>Debt-to-income ratio</i>	X	X
<i>Individual platform rating</i>	X	
<i>Credit score range</i>	X	X
<i>Date of earliest line of credit</i>	X	X
<i>Open credit lines</i>	X	X
<i>Total credit lines</i>	X	X
<i>Revolving credit balance</i>	X	X
<i>Revolving line utilization</i>	X	X
<i>Inquiries within the last 6 months</i>	X	X
<i>Accounts now delinquent</i>	X	X
<i>Delinquencies within the last 2 years</i>	X	X
<i>Months since last delinquency</i>		X
<i>Public records on file</i>	X	X
<i>Months since last record</i>		X
<i>Months since last major derogatory</i>		X
<i>Ability to ask borrower questions</i>		X
<i>Payment history with the platform</i>	X	

Chart 1. Information on the borrower available to investors on Prosper and Lending Club.²⁶

Both platforms have very similar criteria, with two major differences. Lending Club allows its investors to ask the borrower questions, and Prosper shows the borrower's payment history statistics with the platform. The borrower is not required to answer, but it allows investors the chance to reduce the information asymmetry. These two new participants are not the only changes to the pre-FC model. The borrower and bank have also changed since the financial crisis.

While providing the same service and faced with the same options in the post-FC model, the bank's assumptions have changed slightly. One result of the financial crisis was an increase in risk-aversion amongst banks due to increased default rates.²⁷ This higher risk-aversion changed lending attitudes and banks responded by tightening terms and increasing their demand for collateral (previously mentioned). The model accounts for this using $X+1$.

²⁶ The loan criteria listed comes from each platform's listing.

²⁷ Guiso, 2012.

In addition, the borrower needs to be redefined to fit the model. The post-FC borrower has a similar assumption. Now, the borrower is more distrustful of banks than pre-FC, believing banks over-charge for loans.²⁸ The objective of the post-FC borrower is the same as the pre-FC borrower. The borrower still wants to meet a financial need while incurring the least amount of cost with respect to rates and term, but this model looks at what things matter to them in their decision-making process.

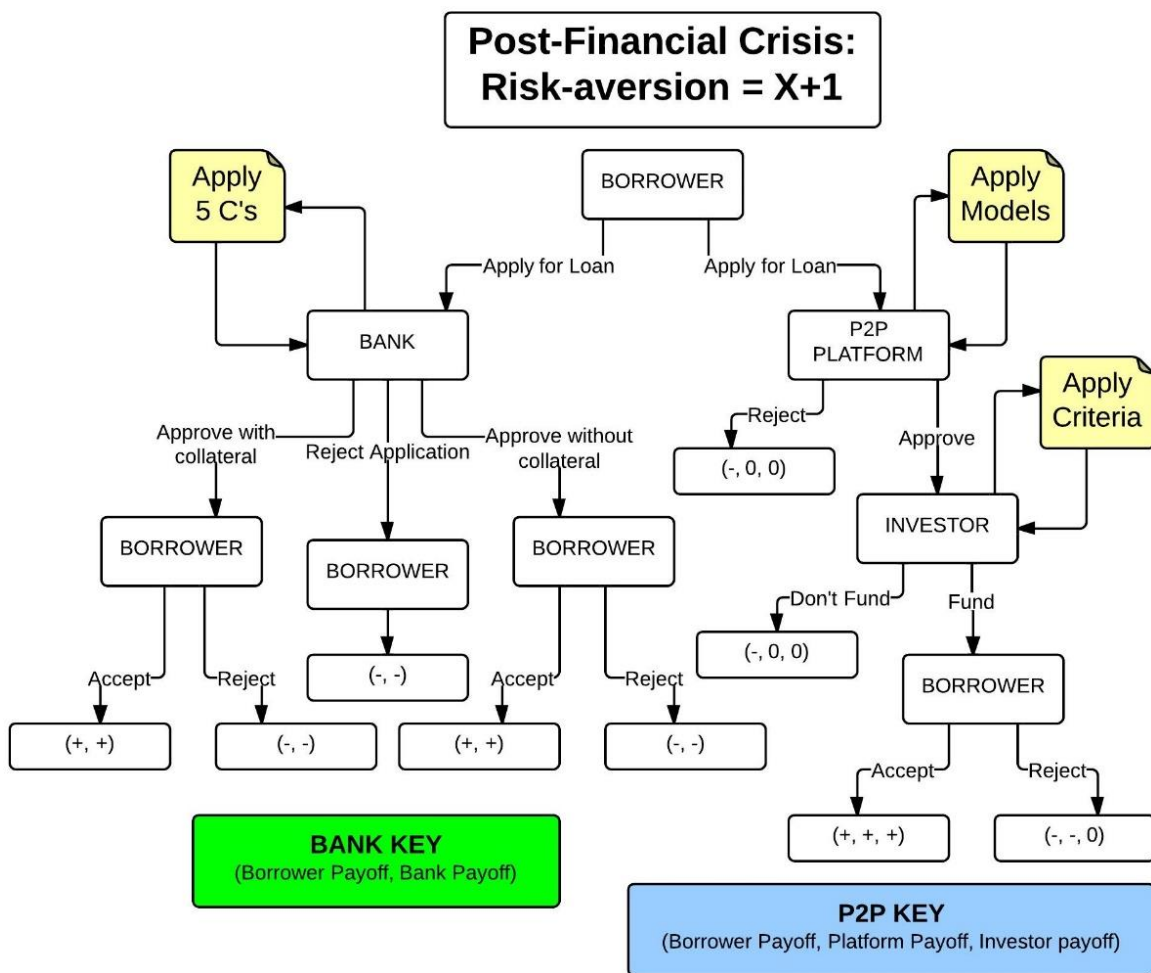


Figure 2. Consumer lending after the financial crisis and addition of P2P platforms. Risk-aversion amongst banks has increased.

²⁸ Ibid

The decision tree changes with the addition of these two agents and the assumption revisions to the previous two. In addition to the borrower’s decision tree, the model needs a way to compare and contrast the two systems.

	Banks	P2P Platforms
<i>Capacity analyzed</i>	Yes; by loan officer	Yes; by preliminary model and by investors
<i>Collateral accepted</i>	Yes; collateral is in higher demand since FC	No
<i>Capital accepted</i>	Yes; capital is viewed similarly to collateral	No
<i>Conditions</i>	Determined and verified by loan officer	Broad categories, selected by borrower and verified by platform
<i>Character</i>	Subject to loan officer’s personal judgment	Determined by multiple investors, based only on information in listing
<i>Loan amount</i>	Varies	Between \$2,000 (\$1,000 for Lending Club) and \$35,000
<i>Rates</i>	Determined by loan officer	Determined by preliminary models
<i>Duration</i>	Determined by loan officer	Set by borrower, approved or denied by platform; only 36 or 60 mo. available
<i>Speed</i>	Fast; can receive funding within the day	Medium; must pass preliminary models and receive funding from investors
<i>Interaction</i>	In-person; borrower at least needs to meet face-to-face to sign documents	Anonymous; borrowers and investors never see each other’s photos or names
<i>Accessibility</i>	Physical branches; often online services available	Online only; accessible anywhere internet is

Chart 2. Comparison between post-financial crisis banks and P2P.

IV. RESULTS – Is P2P Lending a Better Choice for Borrowers?

This model finds that P2P lending is a better choice than banks for certain borrowers. Particularly, it attracts borrowers who are able to benefit from the anonymous nature of the platforms. P2P greatly reduces the possibility of illegal discrimination, making it the better choice for groups who face such discrimination from banks. Though racial discrimination tends to be the most prevalent, banks have been known to discriminate based on gender and marital status as well.²⁹ As discussed before, character affects both the probability of getting approved

²⁹ Pager and Shepherd 2008, Marlow and Patton 2005.

and the loan's rate. Since P2P platforms do not display any information that could be used to violate the EOCA, these types of borrowers will be more attracted to P2P.

The anonymity borrowers enjoy brings up one concern regarding the possibility of a misappropriation of funding. Borrowers could list anything under the loan purpose, and instead use the funding for something else. However, the probability of this occurring is reduced by the platforms and investors. The platforms verify the information provided on each loan before funds are released. If, at any time, the borrower fails the verification, the loan is delisted and investors are refunded their money. Furthermore, P2P platforms report to the credit bureau just like banks, meaning borrowers risk damaging their credit by their dishonesty. Also, since many investors analyze each loan, listing peculiarities (e.g. asking for \$20,000 to consolidate \$8,000 of debt) result in insufficient funding for the loan.

In addition to anonymity, P2P platforms attract borrowers who prefer uncollateralized loans. All else equal, an uncollateralized loan is better than a collateralized one. The increase in demand for collateral from banks makes P2P the better option for those unable or unwilling to put up collateral, especially if a lack of collateral means higher rates at a bank.

Lastly, the possible lower rates offered by P2P platforms appeal to most lenders. The dilution of risk, direct investor-to-borrower funding, and lower costs allow platforms to pass the savings on in the form of lower rates to borrowers. This paper assumes borrowers will only pick one path and stay on it. Realistically, borrowers would be smart to get rates and terms from both and choose which one best fits their needs.

V. IMPLICATIONS – The Future of Consumer Lending

These results have interesting implications for all agents in the post-financial crisis model. First and foremost, it shows P2P as a viable contender and attractive option in the consumer lending market. Although P2P loans originate only a fraction of the loans banks do, the recent growth in P2P lending demonstrates the survivability of the system. P2P platforms should not try to become a perfect substitute for banks. A large part of these platforms' success and profitability comes from the fact that they are hosted online, keeping costs low and potential users high. Looking forward, P2P marketplaces will only continue to prosper as more borrowers learn about the platforms' existence and begin to view them as trustworthy. However, P2P still has room for improvement.

The platforms are subject to a delicate balance in the number of borrowers and investors who choose to use P2P. If the number of borrowers increases too quickly, the overall number of platform-approved borrowers should also increase. This creates the problem of too many listings and not enough investors. A lack of funding hurts the platform, causing it to lose out on the profit from fees, and borrowers, who incur a time cost and are unable to meet their financial needs. On the other hand, if the amount of investors increases too rapidly, loans will be funded quickly and there will not be enough listings to invest in. Again, this situation would hurt the platform, but it also hurts the investors, who will go elsewhere to earn returns. In order to grow, the platforms need to find a way to increase supply of one agent to meet the demand of the other. Mostly, this is a small issue, as the platforms are still new. If the P2P platforms' success continues, P2P lending will gain recognition among borrowers and investors and the supply of both will increase.

An increase in the supply of investors will also help with P2P's speed and loan amount-cap issues. At a bank, a borrower can apply for a loan, get approved, and receive the funds within a day. P2P takes significantly longer. The approval process is fast (according to Lending Club, it takes minutes), but funding can take up to two weeks with a possibility of never being funded.³⁰ If a borrower has a time sensitive financial need, this aspect will discourage them from applying. More investors will mean faster funding. Though it will not eliminate the time drag, the increase in supply should reduce it considerably.

More investors also means a greater dilution of risk. The platforms' cap of \$35,000 comes from a lack of funding supply. Previously, Lending Club set a max of \$25,000 for loans, but increased it as the platform gained popularity.³¹ These larger loans actually have a better return on income on both platforms.³² As more investors join the platforms, the maximum limit on loans should increase.

Lastly, the platforms could benefit from adding more term options. Right now, borrowers are forced to choose either 36 or 60 month loans, and investors only have the option of 36 or 60 month investments. While this prevents the problem of too many choices, it also limits these two agents in their objectives. Adding more options would benefit both borrowers and investors. For instance, a borrower may want a 12 month loan with higher payments and a lower rate, but is forced to take a 36 month loan by the platforms. Since the borrower can afford higher payments and does not like the interest associated with the higher rate, they will pay off the loan early. Technically, the borrower will have met their financial need, but not with their ideal rates and term. Consequently, investors of that loan will not receive their maximum expected return.

³⁰ "Personal Loans from Lending Club." Lending Club. <https://www.lendingclub.com/public/personal-loans.action>.

³¹ Renton, Peter. "Three Myths Investors Have About P2P Lending." Lend Academy. <http://www.lendacademy.com/three-myths-investors-have-about-p2p-lending/>

³² *ibid*

As expected, the same logic applies for longer terms than 60 months. An increase in options will definitely appeal to borrowers who desire additional term choices.

Investors can also benefit from multiple term options. So far, the platforms only attract investors who want to make 3- or 5-year investments. Since investors have term preferences for their investments, an increase in options would lead to an increase in investors. Of course, this is still conditional on a sufficient supply of borrowers.

For investors, the rise of the P2P platforms represents lucrative opportunities. As an example, the online P2P stats site *Nickel Steamroller* shows a return on investment of 11.86% (default rate of 0.88%) on all Lending Club debt consolidation loans from January 1, 2013 to October 31, 2013.³³ This rivals some of the best mutual funds and ETFs in the world.³⁴ In addition, both Prosper and Lending Club now offer IRAs,³⁵ further increasing P2P's appeal. In time, even wary investors will find it difficult to pass up such great returns.

The findings of this paper reveal a possibly bleak future for traditional banks. If these P2P marketplaces continue to thrive and expand, banks are in danger of losing market share as certain groups of borrowers choose P2P. However, identifying the banks' strengths and weaknesses will allow banks to adapt and fight back. Decreasing illegal discrimination and changing the public perception of banks is vital to retain and reclaim lost borrowers. In addition, banks need to consider lending through P2P platforms. Since these platforms perform the application screening and verification, banks can avoid these costs by using the platforms, while still earning good returns, and the adjustable fund amount allows banks to diversify. As of June

³³ "P2P Lending Charts, Stats and Tools." Nickel Steamroller.
http://nickelsteamroller.com/lendingclub_overview.

³⁴ Cable News Network. "Money 70: Best mutual funds and ETFs." CNNMoney.
<http://money.cnn.com/magazines/moneymag/bestfunds/>.

³⁵ Cunningham, Simon. "How to Retire Wealthy with a Lending Club or Prosper IRA." LendingMemo.
<http://www.lendingmemo.com/lending-club-or-prosper-ira/>.

2013, Titan Bank and Congressional Bank have joined investors on Lending Club.³⁶ Without these changes, traditional banking will see a loss in profit.

In the future, borrowers will benefit from a P2P alternative to consumer lending. Newer, more tech-savvy borrowers will enter the consumer lending market and discover P2P. Eventually, borrowers will view it as a normal option when considering a loan. At the very least, the speed of the application process gives a fast quote and allows borrowers to shop around for the loan that best meets their objective. In this case, simply having another option makes borrowers better off.

VI. CONCLUSION

Less than a decade has passed since the founding of the first P2P platforms in the United States, but this new concept is already challenging and changing the way people view consumer lending. The traditional lending model gave borrowers only one viable borrowing option—the bank. In wake of the financial crisis, distrust of these traditional financial institutions prompted borrowers to look elsewhere. The nature of the P2P platform made it well-poised to deal with the fallout.

Lending Club was recently named #12 on Forbes' list of "America's Most Promising Companies" and projects \$2 billion in loans issued this year.³⁷ This success is due, in no small part, to the borrower's rational choice. While P2P loans are not the best choice for every borrower, the platforms have managed to provide an alternative to banks that certain borrowers have been searching for. It is unlikely traditional consumer lending will ever disappear. Banks

³⁶ "Community Banks Join Lending Club." The Wall Street Journal. <http://online.wsj.com/article/PR-CO-20130620-905342.html>.

³⁷ Colao, J.J. "America's Most Promising Companies: The Top 25." Forbes. <http://www.forbes.com/sites/jjcolao/2013/02/06/americas-most-promising-companies-the-top-25/>.

still have advantages over P2P platforms, such as the ability to use collateral and the speed of the loan process, and part of the P2P platforms' success comes from the cost-savings of not having these features. However, banks must recognize the P2P platform as a lasting player in the consumer lending world. The presence of P2P platforms means banks will lose borrowers, but it also gives them the opportunity to increase returns through diversified lending on the platforms.

All in all, P2P lending appears to be a permanent addition to consumer lending. With backers like Google and BlackRock, these platforms have very promising futures. As long as the platforms continue to approve high-quality applications, they will continue to attract an ever-growing number of borrowers and investors, grateful for the alternative.

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