Exploring FinTech Lending: The Influence of Financing and Economic Factors on the Success of Peer-to-Peer (P2P) Funded Loans

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Abstract: This research intends to integrate financing and economic factors into a unified model to explore their influence on P2P lending successful fundraising. An innovative framework of the ARDL method was utilized to explore the short and long-term effects of the factors model to allow the P2P lending players to make informed decisions and develop effective strategies for sustainable FinTech lending practices. Information asymmetry is a persistent concern, and the quality of information provided by both internal and external sources plays a crucial role in determining lender decisions. It aims to offer a holistic understanding of how these elements interact and collectively influence P2P lending loan success, emphasizing the importance of transparency and efficient online lending practices.

Keywords: FinTech, P2P lending, ARDL

1. Introduction and Background

As a nascent microcredit market, the digital peer-to-peer (P2P) lending platform serves as a bridge for individuals seeking borrowing and investment opportunities. In this online P2P lending market, borrowers and lenders can easily engage in lending and borrowing activities upon verification of their information, resulting in a streamlined process that benefits both parties. Malaysia is recognized for its regulatory benchmarking in ASEAN alternative financing, offering opportunities for small business start-ups that face funding constraints. Notably, the emergence of new online lending methods, such as P2P lending, has raised concerns about information imbalances between borrowers and investors (lenders). In the context of P2P lending, information asymmetry occurs, wherein lenders lack as much information about the borrower's reliability as the borrower itself. In the context of P2P lending, borrowers seeking funds may possess more information about their financial situation, creditworthiness, and repayment capabilities than the lenders on the platform. To ensure the long-term sustainability of the platforms, it is essential for them to ensure competitive lending practices that involve efficient selection. Understanding various industry sectors and financial profiles (internal factors) is crucial when granting loans to mitigate the risk of default. During periods of financial instability, the stringent regulations imposed on traditional banks have led borrowers to explore alternative financing options like P2P lending. This choice is favored due to its quick processing, paperless procedures, higher returns, lack of impact on credit ratings, and greater flexibility.

The information encompassed platform interest rates offered for the campaign, loan tenure, and investment size. On the other hand, economic factors pertain to external influences that impact lenders' decisions when selecting their investment opportunities. The comprehensive examination of both internal and external factors in successful P2P fund lending yields a deeper understanding, as some factors may yield immediate effects on lending success, while others may take time to manifest their influence. Analyzing both short- and long-term impacts aids in assessing the risk associated with different factors. Certain factors may have significant short-term effects but might be less relevant in the long run, whereas others may play a crucial role in the platform's long-term viability. As far as our knowledge extends, this marks the first analysis of its kind in the Malaysian context since the inception of P2P lending in 2017.

Our focus is to establish a stable P2P successful fund lending model over the short and long-term period a combination of financing and economic factors. The current study relies on empirical data from P2P lending markets. We examine the success of P2P loans, focusing on two distinct themes that set our research apart from previous studies. Unlike earlier research that concentrated on internal determinants at one time, we combine them with other external factors and assess their short- and long-term impacts, representing a novel approach. Additionally, our research contributes to the emerging literature on P2P lending marketplaces by analyzing the transparency of information gaps among P2P players, studying lenders' and borrowers'
behaviors, and promoting platform development to address the issue of information asymmetry.

2. Literature Review

In the P2P lending research, empirical studies have primarily focused on either financing or economic factors in isolation, with limited attempts to integrate both aspects into a comprehensive model. This research intends to bridge this existing gap in the literature by combining financing and economic factors within a unified model. The aim is to create a holistic analytical framework that encompasses the interplay between financial and economic variables and their influence on fundraising in P2P lending. By merging these two critical dimensions, this study seeks to provide a more nuanced and accurate understanding of the multifaceted factors driving P2P lending success. It acknowledges that lending dynamics are inherently intertwined with both the financial aspects, such as interest rates and loan terms, and the broader economic conditions, including inflation and economic growth. Consequently, this research endeavors to shed light on how these factors interact and collectively shape the fundraising outcomes in the P2P lending environment.

The review of the past research is categorized into three bases. Firstly, a review of the previous theoretical model on related past research. Secondly, there are a total of five independent variables which three variables namely platform interest rates, loan tenure and investment size reviewed under the financing factors. Finally, the remaining two variables (Based Lending Rates and inflation) are categorized under the economic elements. The roles of financing factor that contributes to the success of P2P lending has proven to be caused by several groups including the platform interest rate, loan duration, and investment size.

Theoretical Model Framework: There were only a few research covered the theory that relates to P2P loan success. A model developed by Zhang, Li, Hai, Li, and Li, (2017) categorizes influencing factors into four aspects: basic information, loan details, credit history, and social factors. These include a risk assessment as such considering the borrower’s age, gender, loan amount, annual interest rate, repayment period, and borrower descriptions. Using binary logistic regression, the study explores the factors affecting loan approval, with loan status as the dependent variable. Results indicate that annual interest rate, repayment period, description, credit rating, prior successful and failed loans, gender, and borrower credit score significantly impact loan availability. Higher interest rates, better credit ratings, more successful loans, being female, and a higher credit score enhance loan approval chances, while longer repayment periods, the absence of descriptions, and a history of failed loans reduce approval likelihood. Similarly, Kurniawan and Wijaya (2020), developed a model on factors such as the loan amount, loan duration, interest rate, gender, and loan history that influence loan approval in the context of Indonesian P2P lending. The findings of their study indicate that the loan amount, loan duration, and loan history exert the most substantial influence on borrowers’ decisions to secure loans, suggesting that these loan attributes convey pertinent information that guides loan approval processes. Conversely, both interest rate and gender were found insignificant effects on loan approvals. Hence, they suggest that loan funding decisions predominantly hinge on the meaningful signals provided by specific loan characteristics.

In addition, Gavurova, Dujcak, Kovac, and Kotásková (2018) highlighted a logistic regression model by only using platform information on a borrower (loan applicant) characteristic. The debt-income ratio emerges as the most influential variable, exhibiting a substantial negative impact, while the variable related to the type of home ownership records the highest negative effect. Out of the 48 factors under consideration, 28 exert a positive influence, while 20 factors demonstrate a negative impact. A recent study by Yunies Edward, Nur Fuad, Ismanto, Dorkas Rambu Atahau, and Robiyanto (2023) conducted Ordinary Least Squares (OLS) regressions to investigate how loan information, specifically loan rating, estimated profit share rate, and financing duration, impacts the level of funding garnered from multiple sources. These findings align with both theories, indicating that the information available about the loan serves as a signal influencing the success of project funding. Notably, the ranking and financing duration significantly affect the success of the P2P Sharia lending platform, whereas the estimated profit share does not exhibit a significant impact. Short-term loans tend to attract more funding, while the reverse holds for longer-term loans. Additionally, loan ranking provides lenders with immediate insights into borrowers’ creditworthiness, prompting lenders to steer clear of loans with low rankings to mitigate the risk of loan defaults.
Despite the isolation of the internal financing factors that lead to P2P lending success, the influence on the economic factors by the monetary control and transmission towards the P2P lending industry also should not be overseen. A rise in policy rates, for example, would trigger a transition towards borrowing through P2P platforms. The increased concentration of borrowers attracts more participants to deposit on the platform, subsequently boosting the advantages for borrowers who opt for the platform services (Wong & Eng, 2020). This results in greater liquidity availability, leading to a reduction in platform loan rates. Business investments and, consequently, the inflation rate increase despite monetary tightening measures. Moreover, an indirect effect of macroeconomic and the P2P platform interest rates shows that investors and borrowers in the evolving P2P credit market are keen to understand the connection between overall P2P interest rates and the broader economy. Additionally, they have affirmed that the diversity in P2P interest rates among different grade categories is influenced by three underlying macroeconomic factors: macroeconomic default rates, investor uncertainty, and the market's fundamental value (Foo, Lim, & Wong, 2017). Therefore, considering both factors in P2P lending loan success enhances risk assessment, loan pricing, decision-making, risk mitigation, and the ability to adapt to market changes, ultimately improving the overall lending experience for all parties involved.

**Financing Factors:** The significance of lending rates on P2P platforms is noteworthy when it comes to conveying the elements of a successful loan on the platform (Canfield, 2018; Nigmonov, Shams, & Alam, 2021; Yunies Edward et al., 2023). Canfield (2018), highlighted a significant finding on loan quality control represented by credit rating, influenced by the assigned interest rates. Higher interest rates were applied to borrowers with a higher risk of default to monitor loan quality. Borrowers with high-interest rates on their debts were generally perceived as problematic borrowers with a high risk of bankruptcy. P2P platforms employing bidding procedures tended to have lower maximum loan amounts, while those using public pricing systems had higher total loan volumes. The commonly used lending rate in the Malaysian market was the published pricing with a simple interest rate, calculated intuitively as a predetermined percentage and excluding the cumulative period. In contrast, the effective interest rate is considered the compounding period, often leading to higher borrowing costs by the end of the loan period. Internet lending has made accessing the capital market easier for potential participants, facilitating the matching of supply and demand for financial services. In this thriving industry, selecting market procedures to harmonize demands and desires for money, along with the parameters (price) of exchanges, is an important and contentious topic.

The loan duration plays a vital role in determining the interest rates applied during the lending process. In the P2P lending context, empirical evidence shows loan length is highly associated with loan approval, with shorter loan periods increasing the likelihood of credit authorization (Kurniawan & Wijaya, 2020). To mitigate risk, lenders in the P2P industry often prefer short-term loans, especially in emerging economies. Galak, Small, and Stephen (2011) stated that shorter loan durations result in lower borrowing risk and higher investment returns. Consequently, short repayment terms are commonly chosen to elicit higher bids from lenders on P2P lending platforms. In a Malaysian study, Khan and Xuan (2021), found that the length of the borrower’s loan positively affects the likelihood of successful online P2P lending. However, the distinctive types of financing offered in P2P lending resulted in contrasting findings where it turned to be insignificant in the long-term towards the loan success due to the condition and needs of the business entity Ofir, Tzang, & Radzyner, 2022). Differently, in China’s P2P lending, investors crucially select prospective borrowers with longer loan terms and substantial loan amounts (Tao, Dong, & Lin, 2017).

Investment size refers to the total amount of funds invested by lenders to create capital for P2P financing on the platform. In the Malaysian market, the cumulative investment size from investors can be categorized into various investor types, such as retail, sophisticated high net-worth enterprise (HNWE), angel, and sophisticated high-net-worth individuals (HNWI) investors (Securities Commission Malaysia, 2021). Investment size is sensible in the lending success operation as it creates credibility and financial stability from the perspective of lenders and P2P platforms (Risman, Mulyana, Silvatika, & Sulaiman, 2021). Over the past decade, fintech lenders have rapidly gained market share in different loan industries. However, it remains uncertain how traditional commercial banks will respond to the aggressive entry of fintech lenders (He, Jiang, Xu, & Yin, 2021). When banks and non-bank lenders offer complementary services, banks can strategically shift their investments into areas with less fintech lender activity. This is because the marginal value of investment increases due to the complementarity of fintech services. While there is limited direct
evidence of the impact of investment size by P2P investors on fund success in this study, the participation of investors in P2P lending is deemed significant. Luo, Xiong, Zhou, Guo, and Deng, (2011) emphasized the importance of data-driven investment decision-making, using specific investor profiles based on past returns, risk preferences, investing experience, and investor reliability to enhance P2P lending decision-making.

**Economic Factors**: As the related past research on the economic factors was scarce, the conceptual relationship between initial loan rates and P2P loan success is little. Nevertheless, a different concept of macroeconomic effects with the P2P default probabilities can be deduced from the standard operating procedures of the capital market. In economies with higher proportions, lenders prefer larger premiums, increasing the pressure on borrowers to repay the loan. Additionally, as actual borrowing rates and debt amounts rise, credit screening becomes more expensive. Consequently, higher interest rates reduce borrowers’ ability to meet loan agreements, leading to an increased likelihood of default. However, conventional investigations into the relationship between interest rates and loan defaults have produced inconsistent findings. Nigmonov et al., (2021), observed a substantial coefficient effect of lending interest rates, proxied by municipal rates, on P2P lending performance through the chance of default. The mixed effects over time of the BLR and inflation have been highlighted in previous empirical studies (Phuong Mai Le, Matthews, Meenagh, Minford, & Xiao, 2022; Wong & Eng, 2020; Zhao, Li, Wang, & Ma, 2021). Increased loan rates hinder borrowers’ ability to fulfill financial obligations, resulting in higher loan delinquencies that transform into non-performing loans. Furthermore, the testing results supported the hypothesis that loan success is positively correlated with high-interest rates.

Inflation has a significant impact on the actual cost of outstanding debt repayment. There is a negative association between inflation and loan success, as rising prices can lead to increased household spending and reduced employability, known as the Phillips curve. Additionally, inflation diminishes the actual value of income due to "wage stickiness," thereby limiting the cash available to borrowers. As a result, loan repayment terms become more stringent, leading to a decrease in loan portfolio quality. Empirical evidence shows that inflation is a crucial economic indicator that substantially affects the P2P lending sector (Foo et al., 2017; Naysary & Daud, 2021; Nigmonov et al., 2021; Wong & Eng, 2020). However, standard financial market analysis has produced conflicting results, showing inconsistent relationships between inflation and loan performance. Inflation distorts lending-borrowing activity and saving decisions, leading to restrictions on borrowing operations in financial markets or within financial institutions. However, there is a research gap regarding the relationship between the inflation rate and the success of alternative funding for small businesses adopting fintech characteristics within an economy. An empirical financial literature review reveals that many researchers have examined the effects of inflation on borrowing decisions in conditions of P2P loan default rather than its success.

3. **Model Specification**

In evaluating the impacts of financing and economic factors determinants on the success of P2P lending in Malaysia, encompassing both long-term and short-term effects, the analysis is grounded in available time-series data and employs the Ordinary Least Square (OLS) methodology. The initial application of the OLS technique establishes the relationship between independent and dependent variables. Nonetheless, utilizing differenced variables in regressions might lead to the omission of long-term characteristics or insights into the equilibrium relationship among the variables. To tackle this, we employ the autoregressive distributed lag (ARDL) bound test model to explore the long-term repercussions (Pesaran, Shin, & Smith, 2001). However, according to Narayan (2005), the critical values identified by Pesaran et al., (2001), might potentially introduce a biased conclusion about the series' cointegration. Narayan (2005), has substantially reduced the impact of these critical limitations.

Pesaran et al., (2001), highlighted that the presence of a long-term association is tested with two independent statistics. The F-test was used to compare the null hypothesis [all coefficients in the factor model are jointly equal to zero \(H_0: \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0\)] to the alternative hypothesis [all coefficients in the level variables are jointly non-zero \(H_a: \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0\)], where the Wald test was adopted in the equation. The Wald test evaluates the short-term effects of accumulation in the influence of financing determinants on P2P funding success.
According to equation 1, $\alpha$ is constant, $P2P_{i,t}$ is the total of successful P2P lending fundraised at time $t$, $Pir_{t}$ is the average of platform interest rate, for a time of $t$, $LT_{t}$ is lending tenure, for a time of $t$, $ISZ_{t}$ is an average of investment size, for a time of $t$, $BLR_{t}$ refers to the based lending rate, for time of $t$, $INF_{t}$ is the inflation rate, for time of $t$, $\varepsilon_{t}$ is the margin of error, while, the sequence of $p,q,r,s,t$, and $u$ are optimum lag orders based on the least AIC or SIC value. The process of applying linear ARDL involves sequential steps, commencing with the stationary test. Stationary unit root tests ascertain that all variable series are integrated at levels less than I(1). The effectiveness of this technique is negated if any variable is found to be integrated at I(2), as determined by the F-statistic used for evaluating long-term relationships.

$$P2P_{i,t} = \alpha + \sum_{i=1}^{p} \alpha_{1i} P2P_{j,t-1} + \sum_{i=0}^{q} \alpha_{2i} Pir_{t-1} + \sum_{i=0}^{r} \alpha_{3i} LT_{t-1} + \sum_{i=0}^{s} \alpha_{4i} ISZ_{t-1} + \sum_{i=0}^{t} \alpha_{5i} BLR_{t-1} + \sum_{i=0}^{u} \alpha_{6i} lnfs_{t-1} + \varepsilon_{t}$$

(1)

Once the integration orders for all variables are determined, equation (2) can be computed using the Ordinary Least Squares (OLS) method. Subsequently, an optimal lag period is determined based on the Akaike information criterion (AIC) and Schwarz information criterion (SIC), thus finalizing the comprehensive definition of the ARDL model. After establishing the long-term equilibrium relationship among the determinants, the investigation delves into examining the enduring associations for the determinants of P2P lending platforms using the ARDL dynamic estimation in equation (1). The computation of enduring correlations among the independent variables in the model for successful P2P fundraising is depicted in equation (2). Following the determination of the long-term relationship and coefficients, the short-term Error-correcting Model (ECM) is calculated. The ARDL-centred approach for evaluating the components of efficacious P2P fundraising is presented in equation (3). In this context, the Expected Coefficient of Adjustment (ECT) is anticipated to display both a negative value and statistical significance. A robust long-term correlation is suggested when the ECT exhibits negativity, and this coefficient is expected to possess a negative sign and bear statistical significance.

$$P2P_{i,t} = \alpha - \lambda ECT_{t-1}$$

$$+ \sum_{i=1}^{p-1} \beta_{1i} \Delta P2P_{i,t-1} + \sum_{i=1}^{q-1} \beta_{2i} \Delta Pir_{t-1} + \sum_{i=1}^{r-1} \beta_{3i} \Delta LT_{t-1} + \sum_{i=1}^{s-1} \beta_{4i} \Delta ISZ_{t-1} + \sum_{i=1}^{t-1} \beta_{5i} \Delta BLR_{t-1}$$

$$+ \sum_{i=1}^{u} \beta_{6i} \Delta lnfs_{t-1} + \varepsilon_{t}$$

(2)

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In addition, to ensure the credibility of the model, validation involves conducting diagnostic tests encompassing serial correlation, normality, functional form, and heteroscedasticity. Moreover, for assessing the steadfastness of the model coefficients, Brown, Durbin, and Evans, (1975) have suggested a cumulative sum (CUSUM) and cumulative sum of squares (CUSUMQ) stability tests with the outcomes presented in graphical representations to be executed.
4. Conclusion

The primary objective of this paper is to explore the interplay between financing determinants and economic factors in both the long and short run concerning the decision-making process for the success of P2P funds in Malaysia. Through a comprehensive analysis of these interrelated variables, the study offers valuable insights that illuminate the P2P lending landscape. The research highlights the pivotal role of factors like loan tenure, investment size, platform interest rates, BLR, and inflation rate in influencing P2P lending success. The interactions among these factors emphasize the complex array of forces that shape the outcomes of P2P lending ventures. Additionally, the paper underscores the importance of comprehending both short and long-term effects to obtain a nuanced understanding of the underlying dynamics.

It is anticipated that there will be a long and short-run cointegration between the financing and economic factors toward P2P successful fund lending. An estimation of a positively significant correlation in the case of loan tenure, expecting that in the long term, the magnitude of investments channeled into P2P platforms contributes to the growth of P2P lending. This aligns with the operational dynamics of P2P platform providers, where the relationship between lenders and borrowers hinges on the equilibrium of funds supply and financing demand. Consequently, a higher invasion of investor funds into the P2P platform results in an increased number of available loans. On another note, the long-term estimation equation involving economic determinants expects that an increase in the Base Lending Rate (BLR) will enhance P2P fundraising success due to the indirect impact of the conventional lending market. However, inflation's influence is anticipated to manifest in a different direction. In the short term, the positive effect of loan tenure implies that the incorporation of longer loan durations within the model aims to mitigate the risk of default in repayment. Meanwhile, the roles of platform interest rates for both time frames expecting an inconclusive relationship, attributed to the varying mechanisms employed across different platforms. Based on statistical data, individuals continue to engage with P2P platforms despite the imposition of high-interest loans, in pursuit of expeditious business financing.

Finally, the insight gleaned from this paper offers a foundation for future research and exploration in the domain of P2P lending. This study offers evidence regarding determinants that offer an additional perspective on the influence of factors affecting the success of P2P funding. It is worth noting that the absence of credit score data in the model could be supplemented in future studies, potentially enhancing the insights further. Additionally, a promising direction for future research lies in investigating the resilience of the P2P lending sector amidst economic crises, assessing how platform effectiveness compares to conventional bank lending to ensure the platform's continued viability.

References


