Peer-to-peer lending and real estate mortgages: evidence from United Kingdom

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Abstract

Purpose – This paper aims to collect data from a unique database provided by LendInvest and to study the key differences in the lending features for the two types of lending solutions.

Findings – Peer-to-peer (P2P) loans are prevalently short-term financing solutions (bridge financing), and the size of the loan is above average of the market. The loan portfolio is normally more geographically concentrated with respect to the average for the overall market and the main geographical areas for P2P lending are not just the main markets served by traditional lenders. Areas served by P2P lending have a lower population income than the national average and are characterized by below-average real estate price performance.

Research/limitations/implications – The results support the hypothesis of a complementary relation between conventional and P2P lending, showing that the latter represents a solution that is servicing areas that, because of the lower value of the collateral and lower average income, do not have easy access to the traditional mortgage market.

Originality/value – The paper is a first empirical contribution on the analysis of the market served by P2P real estate lending financing solution.

Keywords Mortgage, Lending market analysis, Peer to peer, Real estate lending

Paper type Research paper

1. Introduction

Crowdfunding is a new financing solution that is also being used in the real estate industry. It offers investors the opportunity to invest in real estate and hold pro rata rights on real estate assets, that is, equity crowdfunding, or on a portfolio of real estate loans, that is, debt crowdfunding or peer-to-peer (P2P) lending (Tomczak and Brem, 2014). P2P lending is analogous to two-sided real estate market and allows investors to lend money directly to individuals. The main advantage of P2P platforms is the disintermediation of traditional financial institutions and, thus, a reduction in borrowing costs (Carignani and Gemmo, 2007). In the last decade, the volume of outstanding P2P loans financing real estate...
investments has grown significantly year by year (Massolution, 2015). Even if the industry is still in an early stage, the new paradigm of direct online access to the mortgage market seems to be successful (Clayton et al., 2015).

The literature on P2P lending focusses on borrower characteristics and the usefulness of standard bank lending criteria in creating profiles of successful applicants. Empirical evidence shows that loan application acceptance is driven prevalently by standard criteria used in the banking industry to screen loan requests, but additional soft information can affect the probability of obtaining loans in the P2P market (Iyer et al., 2016). A comparison of traditional lending customers with P2P borrowers shows differences related to not only economic and financial characteristics but also gender and ethnicity (Barasinska and Schafer, 2014). The literature normally does not distinguish between the types of loans offered by the P2P platform, and there is no evidence of the differences between real estate lending offered by standard financial institutions and that offered by new Web-based lenders.

Literature on lending in the UK shows that the access to credit for some segments of standard lending market (personal loans) is not the same in all the country, and there are areas that are less served by traditional banks (Henry et al., 2017). This paper aims to compare the markets served by the traditional and new lending solutions, focussing only on residential real estate lending, to determine if there are any differences in the markets and customers served. The analysis considers quarterly data from 2013 to 2015 published by LendInvest, the main player in the UK market, and compares P2P and standard residential loans, focussing on portfolio concentration, the average income of the areas served and trends in the real estate market in which the platform is more exposed. The results show that LendInvest’s portfolio concentration is greater than that of the overall financial system, and the markets in which P2P lending has the greatest exposure are not always the main markets for standard lenders. This greater exposure is prevalently related to markets with lower average individual income, unstable employment categories and worse real estate market performance.

The paper is structured as follows: Section 2 presents a detailed review of the literature on P2P lending opportunities and risk. Section 3 presents data and methodology, and Section 4 presents the results of analysis on the UK market. Section 5 summarizes the main results and implications.

2. Literature review
P2P lending offers the opportunity for borrowers to obtain microloans from individuals without the intermediation of a financial institution. P2P platforms are currently considered a newcomer in the lending industry (Carignani and Gemmo, 2007). A P2P platform operates without the presence of a financial institution, except in the management of the platform, which, among other things, matches creditors with debtors under better conditions than those for traditional loans (De Buysere et al., 2012).

The industry was created in Anglo-Saxon countries, but the number of real estate P2P platforms has been increasing worldwide with the development of new algorithms that allow for the processing of big data and reduce the risk related to asymmetric information in the lending process (Srethapramote et al., 2015). The success of this new lending paradigm has been ascribed to both the increase in demand by individuals and start-up firms and the decrease in the amount of lending offered by standard lenders because of tighter regulations (Moenninghoff and Wieandt, 2013). The volume of loans offered for financing real estate properties has grown significantly during the last decade, but the growth of the business
has not been homogeneous worldwide and the number of European platforms is currently higher than the number of the US-based ones (Massolution, 2015).

The business model of P2P platforms can be customized based on target investor types. The main choices (Maarbani, 2015) are combinations of real estate assets (residential, commercial or industrial), stages (development, off the plan or existing) and security (debt, equity or a hybrid). Normally, P2P platforms pre-source money from high net worth individuals, professional investors or government funds, and only once a pool of money exists, will they start offering loans to small investors or, in some cases, to other professional investors (Investment Property Forum, 2015).

Investors can access P2P platforms without any constraints on their level of financial literacy and experience, and therefore, there is a chance of misunderstanding the assumed risk. Regulators are currently evaluating the best practices to apply to the industry to protect investors and reduce the risk of unexpected losses for less financially skilled investors (Chaffee and Rapp, 2012). To reduce this type of risk and increase the demand for their services, P2P platforms offer automatic portfolio diversification services, transparency tools and user-friendly internet access. Investors are almost never allowed to provide a loan to only a single individual because, according to standard diversification principles, the risk related to a portfolio of borrowers financed is lower than the sum of the borrowers’ risk (Hollas, 2013). The selection of investment opportunities is normally based on detailed information disclosed on all applicants and, because of strict information requirements for potential borrowers defined by the platforms, adverse selection problems can be mitigated (Levine and Feigin, 2014). The recent development of user-friendly technology has made P2P platforms accessible to everyone and competition in the industry has increased interest in developing Web 2.0 social tools to increase donor and debtor visibility and the platform’s reputation (Johnson et al., 2010).

In residential real estate, P2P lending can focus on existing properties, such as conversions, single-family dwellings and apartments or new construction and the type of asset that can be financed has an impact on the risk assumed by the investors. The business models adopted by the main players in the P2P real estate industry can differ in terms of the type of real estate investment, the amount of exposure and fees; however, the literature does not provide optimal strategy or policy identification guidelines (Vogel and Moll, 2014).

Financial solutions offered by real estate P2P platforms can range from short-term (typically from 12 to 18 months) bridging finance to the longer term (e.g. three to five years) and sometimes borrowers can also obtain construction and development debt finance (Zhang et al., 2016). Debtors can choose between fixed and variable rates, with terms ranging from monthly to quarterly payments, or the financing solution can allow interest payments upon redemption (Boppart et al., 2016).

The main risk categories for investors are default exposure, liquidity risk and lack of regulation (Goins, 2014). The risk of default for the investment is determined by the debtor’s bankruptcy risk, which is mitigated for residential mortgages by the opportunity to recoup the initial capital through the sale of the real estate collateral (Qi and Yang, 2009). Some platforms mitigate credit risk through a provision fund that collects borrower fee contributions and which, in the event of borrower default, repays the investors’ capital and interest (Filotto, 2016). Liquidity risk is relevant because the secondary market for real estate P2P investments is still undeveloped; nonetheless, some platforms offer the opportunity to disinvest before maturity by selling exposure to another investor using the same P2P platform (Borello et al., 2014). Lacking regulation, investors can lose their invested capital because of lack of fund segregation, minimum capital and recovery
plans (European Banking Authority 2015), and the platform’s reputation is the main driver in attracting resources and new investors.

The P2P lending literature discusses the degree of substitution or integration between this new financing solution and the traditional financial system. In terms of consumer lending, the role of traditional intermediation is not expected to decrease over time if it can better collect and process information about borrowers, even if the high transaction costs typical of the industry could be an incentive to switch to the new financial solution (Berger and Gleisner, 2009). A standard borrower who decides to use P2P lending instead of traditional lending has distinctive characteristics that could impact the borrower’s risk profile, independent of the country and platform analysed (Meyer, 2007). Empirical analysis suggests that the substitution effect between standard lending and P2P is not symmetric, and riskier borrowers are those that can be more interested to switch to the new lending solutions (Wolfe and Yoo, 2018).

There are few empirical studies on the diversity in geography for borrowers and lenders in the P2P consumer lending that show a different capital allocation with respect to the traditional lending market and a net positive flow of capital to less relevant market areas in a country (Gray and Zhang, 2017). No study, however, has yet focussed on comparing P2P and traditional lending in the context of real estate mortgages, and because of this lending sector’s unique characteristics, the results for consumer loans cannot be considered representative of the mortgage market.

3. Data and methodology

3.1 Data

At the international level, the UK market is the most concentrated in terms of P2P lending among the different crowdfunding models, with real estate P2P lending having the highest expected growth rate (Zhang et al., 2016) in light of the fiscal treatment of investments in P2P lending platforms introduced by the UK Government[1]. The largest player in the UK market is LendInvest, which is growing very quickly compared to its competitors (Srethapramote et al., 2015). At the end of the first quarter of 2017, LendInvest ranked first among the thematic platforms in terms of volume of outstanding residential loans (Altfi, 2017). LendInvest is authorized and regulated by the Financial Conduct Authority (2016) and must therefore comply with minimum requirements on minimum capital adequacy, fund segregation and recovery plans.

The sample consists of LendInvest’s total loan book, which was publicly disclosed at the end of December 2015 and encompasses all properties financed between 2013Q2 and 2015Q3 (Table I)[2].

The average property value is £1,407,086 and the average loan is £742,067[3], with the average loan-to-value (LTV) ratio limited to 59.69 per cent (with a maximum allowable LTV of 75 per cent) and a median loan term of 13.17 months. The average size of the loan is significantly higher with respect to the median value of mortgage loans in the UK (£175,000) (UK Finance, 2018), and the difference is mainly driven by the high size deals of the P2P platform in London, South East England, East Midlands and West Midlands. The short duration of the mortgage loans offered could be explained by the type of service normally offered by LendInvest, which, in more than 75 per cent of cases, offers bridge financing solutions and only in 25 per cent of cases offers developing financing solutions. This type of policy is consistent with the approach adopted by other platforms worldwide (Vogel and Moll, 2014). Year-by-year analysis shows that the average LTV ratio increases over time (from 43 to 60 per cent), while the lending term does not show any clear change, and its highest average value (15.15) is reported for 2014. The best
represented market is, as expected, London and the best represented geographical areas are South East and East England. The results are consistent with aggregated data for the UK banking system.

To compare LendInvest’s geographical portfolio allocation with that of the UK mortgage market, we collect data from different national sources, as follows:

- The data for the distribution of residential loans to households by postcode area were obtained from the Council of Mortgage Lenders.
- The data for the population distributions among incomes and occupational categories by postcode area were obtained from the Office for National Statistics.
- The data on house prices paid by postcode areas were obtained from Her Majesty’s (HM) Land Registry.

This information was collected for the same time horizon (2013-2015) as that for which the loan book of the P2P platform is available.

### 3.2 Methodology

Following a standard approach in the literature (Benston, 1979), the first step is to perform a geographical analysis of household lending. The analysis examines the amount of loans by geographical area, considering both the standard lending market and P2P and using districts as a classification criterion[4] (Figure 1).

The first proxy constructed is the incidence of loans for each quarter during 2013-2015 at the UK postcode district level for both the full market and the LendInvest sample.
Area Share_{kt}^{All} = \frac{\text{Loans}_{kt}^{All}}{\sum_{k=1}^{n} \text{Loans}_{kt}^{All}} \tag{1a}

Area Share_{kt}^{P2P} = \frac{\text{Loans}_{kt}^{P2P}}{\sum_{k=1}^{n} \text{Loans}_{kt}^{P2P}} \tag{1b}

where the area’s exposure is computed as the amount of outstanding loans in quarter \( t \) for the geographical area with respect to the overall system \( \left( \text{Loans}_{kt}^{All} \right) \) and the P2P platform \( \left( \text{Loans}_{kt}^{P2P} \right) \).

The degree of concentration of the lending portfolio in a single geographical area is examined by considering the Hirschman–Herfindahl (Hirschman, 1945; Herfindahl, 1950) index for the full market and LendInvest samples.
\[ HH_{t}^{All} = \sum_{k=1}^{n} \left( \text{Area Share}_{kt}^{All} \right)^2 \]  
(2a) Real estate mortgages

\[ HH_{t}^{P2P} = \sum_{k=1}^{n} \left( \text{Area Share}_{kt}^{P2P} \right)^2 \]  
(2b)

Higher values of the index (near one) imply a greater concentration of activity in a few geographical areas, while lower values imply greater geographical dispersion. The analysis compares the concentration index for the full UK market with respect to the P2P lending data from the LendInvest platform.

To analyse P2P lending by postcode area with respect to the average UK lending market, we follow the approach proposed by Rae (2015) for constructing location quotients (LQs):

\[ LQ_{kt} = \frac{\text{Loans}_{kt}^{P2P} / \text{Loans}_{kt}^{All}}{\sum_{k=1}^{n} \frac{\text{Loans}_{kt}^{P2P}}{\sum_{k=1}^{n} \text{Loans}_{kt}^{All}}} \]  
(3)

where the LQ for the geographical area \( k \) at time \( t \) (\( LQ_{kt} \)) is computed as the ratio of the share of P2P loans to that of overall loans (\( \text{Loans}_{kt}^{P2P} / \text{Loans}_{kt}^{All} \)) and the share of P2P with respect to overall lending in the country (\( \sum_{k=1}^{n} \text{Loans}_{kt}^{P2P} / \sum_{k=1}^{n} \text{Loans}_{kt}^{All} \)).

Analysis of the LQ index identifies the districts in which the gap between the amount of loans offered by the P2P platform and that offered by the overall credit market is higher or lower than the national average.

The study of the types of geographical areas served by LendInvest is supplemented with data about the incomes and employment categories of the areas’ residents. The analysis classifies these areas into deciles based on the amount of loans outstanding in the quarter and by comparing the average incomes and types of jobs of the residents. This type of analysis shows whether the areas served more by P2P lending are characterized by below- or above-average incomes, more or less stable employment opportunities and an unemployment rate above or below the average.

The role of real estate market trends in P2P lending is examined by considering a transaction-based index at the postcode level to classify markets as strong or weak based on their growth rate with respect to average national trends. The analysis considers the percentage of outstanding exposure at time \( t \) with respect to strong and weak markets and compares this ratio with the aggregate statistics for the overall UK standard credit market.

The last analysis combines all the information previously considered for analysing a panel regression model of P2P lending to evaluate the role of different characteristics that justify the acceptance of a loan request. In equations, this can be stated as:

\[ \text{Loans}_{rt}^{P2P} = \alpha_t + \partial_t \text{Loans}_{rt}^{All} + \gamma_t \text{Income}_{rt} + \beta_t \text{RE}_{rt} + \varepsilon_t \]  
(4a)

\[ \text{Loans}_{rt}^{P2P} = \alpha_t + \partial_t \frac{\text{Loans}_{rt}^{All}}{\text{Avg(Loans)}_{rt}^{All}} + \gamma_t \frac{\text{Income}_{rt}}{\text{Avg(Income)}_t} + \beta_t \frac{\text{RE}_{rt}}{\text{Avg(RE)}_t} + \varepsilon_t \]  
(4b)
where the dependent variables are the amount of loans outstanding, in thousands of pounds, provided by the P2P platform \( P(\text{Loans}_{rt}^{P2P}) \) and a dummy variable \( P(\text{Loans}_{rt}^{P2P}) \) that equals one if, in quarter \( t \) and geographical area \( r \), a loan request through the P2P platform is granted and zero otherwise. The independent variables in equations (4a) and (5a) are the amount, in millions of pounds, of outstanding loans offered by the financial system \( \text{Loans}_{rt}^{All} \); the average population income, in thousands of pounds \( \text{Income}_{rt} \); and the real estate price index value \( \text{RE}_{rt} \) in area \( r \) at time \( t \). equations (4b) and (5b) use the same independent variables standardized with respect to the average value for the country at time \( t \) [respectively, \( \text{Avg Loans}_{rt}^{All} \), \( \text{Avg Income}_{rt} \) and \( \text{Avg RE}_{rt} \)].

Analysis of the coefficients of equations (4) and (5) reveals the area characteristics that most impact P2P lending: a \( \partial_r \) value above (below) zero indicates that the target markets are (not) the same as for traditional lending solutions; a \( \gamma_r \) value above (below) zero implies that wealthier (poorer) areas have greater access to this new financing solution; and a \( \beta_r \) value above (below) zero shows the platform has greater exposure to stronger (weaker) real estate markets. The comparison of the results for equations (a) and (b) shows whether the results are driven by the levels of the independent variables or by the difference between area and national values at time \( t \).

### 4. Results

As expected, analysis of the geography of the household lending portfolio shows that the degrees of concentration between LendInvest and the UK market are not comparable, and the most relevant geographical areas for lender exposure differ as well (Table II).

<table>
<thead>
<tr>
<th>Quarter</th>
<th>UK’s financial system (%)</th>
<th>P2P lending (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-02</td>
<td>1.21</td>
<td>100.00</td>
</tr>
<tr>
<td>2013-03</td>
<td>1.21</td>
<td>54.31</td>
</tr>
<tr>
<td>2013-04</td>
<td>1.21</td>
<td>54.59</td>
</tr>
<tr>
<td>2014-01</td>
<td>1.22</td>
<td>54.59</td>
</tr>
<tr>
<td>2014-02</td>
<td>1.22</td>
<td>22.53</td>
</tr>
<tr>
<td>2014-03</td>
<td>1.22</td>
<td>18.62</td>
</tr>
<tr>
<td>2014-04</td>
<td>1.23</td>
<td>14.14</td>
</tr>
<tr>
<td>2015-01</td>
<td>1.23</td>
<td>10.01</td>
</tr>
<tr>
<td>2015-02</td>
<td>1.24</td>
<td>8.65</td>
</tr>
<tr>
<td>2015-03</td>
<td>1.24</td>
<td>7.55</td>
</tr>
</tbody>
</table>

**Table II.**

Hirschman–Herfindahl index on geographical concentration of lending portfolio for the overall financial system and P2P

**Source:** Council of Mortgage Lenders and LendInvest data processed by the authors
(from 100 per cent in 2013:Q2 up to 7.55 per cent in the 2015:Q3), showing that P2P lending is not intended to serve only the areas selected but can address a more diversified demand for loans.

LendInvest’s portfolio is characterized by a high concentration in a few areas that have LQs significantly greater than one (Table III). The average LQ is around 0.5 (from 0.44 per cent in 2013:Q2 up to 0.61 per cent in 2015:Q3), but independent of time, some areas are characterized by a significantly above-average LQ. The percentage of areas with above-average exposure concentration in the LendInvest portfolio is increasing over time, and by the end of the time horizon, 15.70 per cent of the overall area has an LQ greater than one.

Analysis of ten areas with the highest LQs shows that LendInvest is mostly exposed not only to the London market (east, north, north west, southeast, southwest and west) but also to smaller markets such as Canterbury, Coventry, Harrow, Ipswich, Kingston upon Thames, Norwich, Plymouth, Slough, Swindon, Taunton, Tonbridge and Watford.

Analysis of the income and employment types of the residents in areas served by P2P and ordinary lenders reveals interesting differences in the types of customers who are more appealing to the two types of business (Table IV).

Areas served by P2P lending have a lower average population income than that of those served by the overall financial system. Although a positive linkage between the area’s average income and amount of outstanding loans for the overall system can be identified, the supply of P2P loans does not seem to be clearly related to the area’s income. Analysis of the type of employment show that areas served by P2P lending have above-average incidences of managers and professionals, unemployed individuals and those in non-standard types of jobs, whereas, for all the other categories, the share of city districts served by the lending platform is lower. Analysis of the city areas with the greatest exposure (10th percentile) shows that the areas in which the highest amounts of funds are offered are those characterized by above-average unemployment rates and non-standard types of jobs. The areas with the fewest loans offered by the P2P platform (first percentile) show above-average relevance to not only the unemployed and those with non-standard jobs but also managers and professionals. The results support the hypothesis that LendInvest’s customers differ from the rest of the system because the platform targets areas characterized by higher incidences of poverty and unemployment and the mortgage supply is also relevant in areas characterized by a less homogeneous wealth distribution.

The last aspect considered in evaluating the differences between the areas served by P2P lending and those by the traditional financial system is the housing value trend over time, to determine whether LendInvest’s credit supply is affected by expected trends in collateral value (Table V).

Since the start, P2P lending has been prevalently focussed on above-average performing real estate markets, and this market specialization has been maintained by P2P lenders with portfolio growth. Comparison with the overall financial market shows that, in a similar period, traditional lenders reduce their exposure to low-performing markets in favour of high-performing ones, even if the portfolio is almost balanced and the portfolio allocation in each type of market is always in the range from 40 to 60 per cent.

Analysis of the contribution of loan concentration, average area income and real estate market trends on the amount and probability of obtaining financing through P2P lending solutions can determine the contribution of each characteristic to P2P lending (Table VI).

The amount of outstanding loans for each geographical area seems positively related to the credit supply offered by traditional lenders, the area’s income and real estate market trends, but exposure is greater for areas with above-average levels of loans outstanding and below-average real estate market performance. Analysis of the probability of obtaining a
<table>
<thead>
<tr>
<th>Quarter</th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
<th>% areas with LQ &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-02</td>
<td>0.44</td>
<td>0.00</td>
<td>53.42</td>
<td>0.83%</td>
</tr>
<tr>
<td>2013-03</td>
<td>0.40</td>
<td>0.00</td>
<td>28.90</td>
<td>1.65%</td>
</tr>
<tr>
<td>2013-04</td>
<td>0.40</td>
<td>0.00</td>
<td>29.57</td>
<td>1.65%</td>
</tr>
<tr>
<td>2014-01</td>
<td>0.39</td>
<td>0.00</td>
<td>29.08</td>
<td>1.65%</td>
</tr>
<tr>
<td>2014-02</td>
<td>0.44</td>
<td>0.00</td>
<td>18.59</td>
<td>7.44%</td>
</tr>
<tr>
<td>2014-03</td>
<td>0.47</td>
<td>0.00</td>
<td>17.29</td>
<td>9.92%</td>
</tr>
<tr>
<td>2014-04</td>
<td>0.55</td>
<td>0.00</td>
<td>14.80</td>
<td>10.74%</td>
</tr>
<tr>
<td>2015-01</td>
<td>0.58</td>
<td>0.00</td>
<td>11.88</td>
<td>14.88%</td>
</tr>
<tr>
<td>2015-02</td>
<td>0.59</td>
<td>0.00</td>
<td>8.98</td>
<td>14.05%</td>
</tr>
<tr>
<td>2015-03</td>
<td>0.61</td>
<td>0.00</td>
<td>8.69</td>
<td>15.70%</td>
</tr>
</tbody>
</table>

City areas classified on the basis of the LQs

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>8th</th>
<th>9th</th>
<th>10th</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-02</td>
<td>E London</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2013-03</td>
<td>SE London</td>
<td>E London</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2013-04</td>
<td>SE London</td>
<td>E London</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2014-01</td>
<td>SE London</td>
<td>E London</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2014-02</td>
<td>N London</td>
<td>Kingston</td>
<td>SE London</td>
<td>E London</td>
<td>Swindon</td>
<td>Coventry</td>
<td>Plymouth</td>
<td>SW London</td>
<td>W London</td>
</tr>
</tbody>
</table>

Source: Council of Mortgage Lenders and LendInvest data processed by the author
## Employment category and City areas classified by percentile of outstanding loans (amount)

<table>
<thead>
<tr>
<th>Employment category</th>
<th>Overall (%)</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; (%)</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; (%)</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; (%)</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; (%)</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; (%)</th>
<th>6&lt;sup&gt;th&lt;/sup&gt; (%)</th>
<th>7&lt;sup&gt;th&lt;/sup&gt; (%)</th>
<th>8&lt;sup&gt;th&lt;/sup&gt; (%)</th>
<th>9&lt;sup&gt;th&lt;/sup&gt; (%)</th>
<th>10&lt;sup&gt;th&lt;/sup&gt; (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P2P</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High grade management and professionals</td>
<td>12.81</td>
<td>11.78</td>
<td>12.57</td>
<td>12.45</td>
<td>8.71</td>
<td>9.54</td>
<td>13.37</td>
<td>15.61</td>
<td>13.73</td>
<td>13.54</td>
<td>15.63</td>
</tr>
<tr>
<td>Small employers and own account workers</td>
<td>8.23</td>
<td>9.00</td>
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<td>10.48</td>
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<td>10.75**</td>
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<td>9.10**</td>
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<tr>
<td>Lower supervisory and technicians</td>
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<td>7.69**</td>
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<td>7.81**</td>
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<tr>
<td>Average annual income (£000)</td>
<td>22.11</td>
<td>21.39**</td>
<td>21.51**</td>
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<td>22.22</td>
<td>23.47**</td>
<td>25.12**</td>
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</tr>
</tbody>
</table>

**Notes:** **Average difference with the respect to national average statistically significant at 95 confidence level; and *average difference with the respect to national average statistically significant at 90 confidence level.

**Source:** Council of Mortgage Lenders, LendInvest and Office of National Statistics data processed by the authors.
A loan from the P2P lending platform confirms the results of outstanding loan analysis, demonstrating that the probability of success of a loan application is positively related to the amount of loans outstanding and information on the geographical area and negatively related to real estate market trends; however, the results are statistically significant only for areas with above-average levels of outstanding loans and real estate markets with below-average performance. The results seem to support the idea that P2P lending can substitute for standard loans because market areas characterized by higher levels of standard loans
offerings are also target areas for the new financial solution and the relevance of the instrument is greatest for markets experiencing a decrease in real estate market value.

The table presents results of a panel linear regression on the outstanding amount (in thousands £) of P2P loans [equations (4a) and (4b)] and panel logit regression on the existence of at least one P2P loan outstanding in the area [equations (5a) and (5b)]. The independent variables for each geographical area are the amount of outstanding loans offered by traditional lending market \((\text{Loans}_{rt}^{All})\) in millions of pounds, the average income in thousands of pounds \((\text{Income}_{rt}^{All})\) and a transaction-based index on real estate prices \((\text{RE}_{rt})\). All the dependent variables are considered as growth amount and the ratio with respect to the gross amount and the country average at time \(t\) (respectively, \(\text{Avg (Loans}_{t}^{All})\), \(\text{Avg (Income}_{t}^{i})\) and \(\text{Avg (RE}_{t}^{i})\).

5. Conclusion
The analysis of the allocation of real estate loans in the portfolio of the main player in the UK P2P market with respect to the overall UK financial market from 2013 to 2015 reveals distinctive characteristics of this lending market. LendInvest offers prevalently short-term financing solutions (bridge financing), and the size of the loan is above the average of the market. Its loan portfolio is more geographically concentrated with respect to the average for the overall market, and the main geographical areas for P2P lending are not just the main markets served by traditional lenders. Areas served by P2P lending have a lower population income than the national average and are characterized by below-average real estate price performance.

The results support the hypothesis of a complementary relation between conventional and P2P lending (Milne and Parboteeah, 2016), showing that the latter represents a solution that is servicing areas that, because of the lower value of the collateral and lower average income, do not have easy access to the traditional mortgage market (Jimenez and Saurina, 2004). Traditional lending market players must consider that these new players are interested in serving markets that are currently only marginally financed by the banking system, and if the lending policy for such types of markets does not change in the future, the newcomers could significantly increase their market share in these areas and among such market customers. The higher levels of P2P lending to riskier markets in which real estate assets perform worse than the average expose the lenders to a greater risk of loss in the event of default. Therefore, specialization in these areas can be considered reasonable only if the P2P platform has adopted an effective screening process to reject all high-risk borrowers’ applications. In fact, if the higher exposure to riskier markets is not properly managed by P2P market players the increase of credit supply to these markets may be only a consequence of a regulatory arbitrage opportunity available for P2P lenders and may increase the instability of the market in the event of market crisis (De Roure et al., 2018).

Given the effect of real estate value and income levels on loans originating from a P2P platform, further research could analyse other factors to explain debtor’s perceptions and use of this financial technology solution. The literature shows that a broader range of demographic variables (Pope and Sydnor, 2011), the degree of information asymmetry (Wang et al., 2015) and borrower behaviour (Wen et al., 2016) affect access to the P2P industry, but there is still no evidence on the contribution of these characteristics for P2P platforms specialized in real estate lending. A deeper analysis of the borrower behaviour in applying for loans may allow evaluating if the P2P lending in the real estate is a second-best solution as for small business loans (Schweitzer and Barkley, 2017) or it could represent the first choice for households in some geographical areas.
Notes
1. Investments in P2P lending platform are eligible to be held in individual savings accounts (HM Treasury, 2017), and P2P lending investors can benefit from tax relief on unpaid loans (HM Treasury, 2016).
2. The time horizon of the analysis is constrained by the data because, after the third quarter of 2015, the loan book was no longer disclosed.
3. In some countries’ areas, the average size and overall amount of loans are the same because the P2P platform financed only one borrower in the time horizon considered.
4. For a full list of the UK postcodes by district, see http://www.royalmail.com (accessed 30 May 2018).

References


Herfindahl, O.C. (1950), Concentration in U.S. Steel Industry, Columbia University, mimeo.

Hirschman, A.O. (1945), National Power and the Structure of Foreign Trade, University of CA Press, Berkley.


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