

# A primer on peer-to-peer lending: immediate financial intermediation in practice

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*Peer-to-peer (P2P) lending markets are young but fast-growing. Furthermore, P2P lending competes with traditional bank lending. Several questions arise: How big are fintech credit markets currently? How do the most common P2P lending models work? What are the risks and who bears them? How do platforms try to mitigate information asymmetries between lenders and borrowers? Who is using P2P platforms? Will P2P lending replace traditional bank lending in the future? This article addresses these issues and summarizes the empirical research on the topic, with a particular focus on developments in Austria.*

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Peer-to-peer (P2P) lending – a subcategory of crowd funding – is a relatively new internet-based financial activity. Borrowers, usually individual consumers or small to medium-sized enterprises (SMEs), apply for loans on a lending platform. Lenders can screen listed loan requests as well as all the information provided by the borrower and then decide whether they want to lend money. Loans usually consist of small contributions from a large number of lenders and are often either short-term or medium-term as well as unsecured.

P2P lending does not involve traditional bank intermediation. Because of this exceptional feature, it has often been argued that P2P lending “disrupts” traditional finance.

Lending platforms advertise their services as having lower costs than traditional banks. The operators of lending platforms argue that they can therefore offer cheaper credit to borrowers while promising higher returns to lenders. The relatively low price for borrowers and high return to lenders constitute the main economic rationales for P2P lending.

However, unlike banks, lending platforms usually do not take on any credit risk. It is the participants in P2P transactions themselves who bear these risks. Thus, in contrast to traditional saving, P2P lending is essentially fixed-income investing with real risks to both capital and interest.

Fintech credit markets (of which P2P lending is just one form) are young, yet fast growing. In some European countries, the annual growth rates of these markets have exceeded 100% (CCAF, 2016d). Moreover, P2P lending competes directly with traditional bank lending. These observations raise numerous questions.

How big are fintech credit markets? How do the most common P2P lending models work? What are the risks and who bears them? How do platforms try to mitigate information asymmetries between lenders and borrowers? Who is using P2P platforms? Will P2P lending ultimately replace traditional bank lending, as some authors (e.g. McMillan, 2014) speculate? This article addresses these questions and summarizes the empirical research findings.

P2P lending is just one way of investing online. Further possibilities include various other forms of crowd funding, online real estate lending and invoice trading. Box 1 provides a short description of the different forms of fintech credit activities

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Box 1

### Definitions of various components of fintech credit markets

- *P2P consumer lending: individuals or institutions provide loans to individuals*
- *P2P business lending: individuals or institutions provide loans to businesses (often SMEs)*
- *P2P real estate lending: individuals or institutions provide loans secured against property to consumers or businesses*
- *Equity-based crowd funding: investors purchase equity issued by businesses*
- *Real estate crowd funding: individuals or institutions invest in real estate*
- *Reward-based crowd funding: contributors expect to obtain nonmonetary rewards*
- *Donation-based crowd funding: donors have philanthropic motives and do not expect any monetary or nonmonetary returns*
- *Profit-sharing crowd funding: investors purchase securities from a business and share in its profits*
- *Debt-based securities: individuals or institutions invest in debt-based securities at a fixed interest rate*
- *Balance sheet consumer lending: platform entity lends directly to consumers and holds loans on its balance sheet*
- *Balance sheet business lending: platform entity lends directly to businesses and holds loans on its balance sheet*
- *Invoice trading: businesses sell invoices or receivables to individuals or institutional investors at a discount*
- *Pension-led funding: SME owners/managers invest their accumulated pension funds in their own business*
- *Community shares: investment into community shares issued by cooperative societies, community benefit societies and community-based charitable organizations*
- *Mini-bonds: bonds marketed directly to investors and not listed on any stock exchange*

currently available on the market. The taxonomy essentially follows Cambridge Centre for Alternative Finance (CCAF) (2016a to 2016d) definitions.

This article focuses on P2P consumer and business lending since these segments of fintech credit markets compete most directly with traditional bank lending<sup>2</sup>. However, most of the statistics presented here also contain information about the other fintech credit markets in order to facilitate comparing P2P consumer and business lending with other fintech credit activities.

This article is structured as follows. Section 1 describes and compares the size and scope of fintech credit markets of major economies and economic areas. Section 2 compares traditional bank lending with P2P lending. Section 3 describes how lending platforms try to cope with problems of information asymmetry, which accompany any form of lending. Section 4 summarizes what is known about users of P2P platforms, and section 5 outlines the regulatory framework concerning fintech and P2P lending in Austria. The final section presents some thoughts on the future of P2P lending.

## 1 Fintech credit markets

P2P lending began in 2005, when Zopa, the first P2P platform worldwide, started offering loans to U.K. consumers. In early 2006, the U.S. lending platforms Prosper

<sup>2</sup> *These are also the fintech credit market segments that are relevant for Austria; according to CCAF (2018), donation-based crowd funding in Austria amounted to EUR 300.000 in 2016, while some of the fintech forms mentioned in box 1 were non-existent.*

and Lending Club started business, with many others following. Ten years later, in 2015, there were more than 370 P2P platforms in China, over 140 in the U.S.A., over 90 in the U.K. and more than 220 in the rest of Europe (CCAF, 2016a to 2016d).

Fintech credit is a recent phenomenon. As a result, no detailed official statistics are available about fintech credit activities. Probably the most comprehensive data have been collected by the Cambridge Centre for Alternative Finance (CCAF). These data come primarily from responses to electronic surveys the CCAF sends out to P2P platforms. The CCAF carefully validates these self-reported data and uses secondary data sources and web scraping methods to verify and complement the reported survey data. Most of the statistics presented in this article have been compiled from various reports released by the CCAF.

Table 1 shows market volumes of fintech credit for China, the U.S.A., the U.K. (the three largest markets) and Europe (without the U.K.). All figures are for 2016, the most recent year for which comparable figures for all markets are available.

As table 1 shows, China is by far the largest fintech credit market, followed by the U.S.A. and the U.K. It is striking that in China, the volume of equity-based crowd funding is significantly smaller than that of funds available for P2P lending. In its 2017 Financial Sector Assessment Program, the IMF attributed this fact to regulatory gaps and recommended that securities regulators prioritize work on equity crowd funding.<sup>3</sup> Taken together, the European fintech markets (without the U.K.) had a volume of about EUR 2 billion in 2016 and were still considerably smaller than the U.K. market.

In all four economic areas, P2P consumer lending is typically the most important type of fintech credit. In the U.K. (albeit only there), P2P business lending is

Table 1

### Market volumes of fintech credit in 2016

	Europe	U.K.	U.S.A.	China
	EUR million			
P2P consumer lending	697	1325	17601	113897
P2P business lending	350	1396	1084	48532
P2P real estate lending	95	1300	834	5873
Equity-based crowd funding	219	308	458	384
Real estate crowd funding	109	80	673	67
Reward-based crowd funding	191	54	460	1685
Donation-based crowd funding	32	45	187	92
Profit-sharing crowd funding	8			75
Debt-based securities	23	90		209
Balance sheet consumer lending	17		2419	7883
Balance sheet business lending	59		5005	22923
Invoice trading	252	512		1919
Pension-led funding		27		
Community shares		50		
Other models			40	1919
Mini-bonds	10			
Total	2062	5188	28761	205455

Source: Cambridge Centre for Alternative Finance, authors' calculations.

slightly higher than P2P consumer lending in terms of volume. Balance sheet business and consumer lending, on the other hand, are important in the U.S.A. and China. Crowd funding activities and invoice trading also contribute substantially to the total volume of fintech credit.

Table 2 focuses on the European markets without the U.K. Overall, France is the biggest fintech credit market in continental Europe, followed by Germany and the Netherlands. Again, P2P consumer lending is the largest segment in many markets. Exceptions are the Netherlands and Spain, where P2P business lending is strong. Austria is another notable exception. In Austria, there is no classical P2P lending at all, and almost all fintech credit comes

<sup>3</sup> See IMF (2017), table 9: Detailed Assessment of Implementation of the IOSCO Principles.

Table 2

**Fintech credit volumes in selected European countries in 2016**

	France	Germany	Netherlands	Nordic countries <sup>1</sup>	Spain	Italy	CESEE <sup>2</sup>	Austria
<i>EUR million</i>								
P2P consumer lending	179.00	181.50	0.14	67.00	2.00	25.30	128.05	
P2P business lending	70.90	23.30	132.08	55.00	44.50	6.10	9.57	
P2P real estate lending							0.00	
P2P property lending				56.00			39.00	
Equity-based crowd funding	43.30	47.40	27.15	75.00	10.10	1.70	1.63	4.00
Real estate crowd funding	48.00	12.60		26.00	26.00		6.09	0.70
Reward-based crowd funding	51.70	31.70	9.40	22.00	13.60	20.00	9.32	3.90
Donation-based crowd funding	0.03	15.10	5.78	2.00	3.20	0.40	3.11	0.30
Profit-sharing crowd funding	0.37	0.29					0.00	7.70
Debt-based securities	6.70		14.98	0.30			0.80	
Balance sheet consumer lending					16.00		0.34	
Balance sheet business lending		10.00	4.00		0.10	40.00	0.40	5.00
Balance sheet property lending					1.00		0.00	
Invoice trading	45.00		0.67	19.00	14.40	33.60	17.74	
Mini-bonds	9.00						0.57	
Total	454.00	321.89	194.20	322.30	130.90	127.10	216.62	21.60

Source: Cambridge Centre for Alternative Finance, authors' calculations.

<sup>1</sup> Denmark, Finland, Iceland, Norway and Sweden.

<sup>2</sup> Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

from crowd funding and balance sheet lending. We turn to Austria in more detail in section 5. (For information on fintech markets in Central, Eastern and South-eastern European (CESEE) countries, see Stern (2017).)

How big is fintech credit relative to traditional bank lending? The third row of table 3 shows fintech credit volumes, outstanding bank credit to nonmonetary financial institutions and the size of fintech credit relative to outstanding bank credit to nonmonetary financial institutions in 2016 for France, Italy, Spain, Germany and Austria. The figures show that fintech credit markets, when compared this way, are extremely small. The same is true for the much bigger U.K. fintech credit market, where the market share of fintech credit in lending to the private sector is just 0.4% (Milne and Parboteeah, 2016).

The last row of table 3 shows P2P consumer lending volumes, bank credit to consumers and the size of P2P consumer lending relative to bank credit to consumers in percentage terms for 2016. The percentage values are, once again,

Table 3

**Fintech credit relative to bank lending as of end-2016**

	France	Italy	Spain	Germany	Austria
Total fintech credit (EUR million)	454	127.6	131	321.9	21.6
Bank credit to non-MFIs (EUR million)	2220649	1627141	1249381	2511991	308266
Relative size of fintech credit (%)	0.020	0.008	0.010	0.013	0.007
P2P consumer lending (EUR million)	179	25.3	2	181.5	0
Bank credit to consumers (EUR million)	152596	86526	69214	184273	18924
Relative size of P2P consumer lending (%)	0.117	0.029	0.003	0.098	0.000

Source: Cambridge Centre for Alternative Finance, ECB, authors' calculations.

extremely low, but for most countries, the relative size of P2P consumer lending compared to the size of consumer credit markets is somewhat bigger than the relative size of total fintech credit compared to the size of private sector credit.

## 2 Bank lending and P2P lending

As mentioned above, P2P consumer and business lending are the most important forms of fintech credit in most countries. This section explains P2P lending in more detail and compares it with traditional bank lending. We start by briefly discussing some important aspects of debt to better illustrate the main issues involved in lending and to identify the major advantages and disadvantages of P2P and bank lending.

Debt entails a promise to repay the principal amount and the interest on a loan. The fulfillment of such a promise is always uncertain, to some extent. Loan agreements include, *inter alia*, provisions on quantity, interest (fixed or variable), maturity, collateral, default events, seniority of the claim, transferability of debt as well as call provisions (early repayment). As a result, loan agreements are highly complex and inevitably incomplete, since not all possible circumstances can be covered (see Davis (1995) for an in-depth discussion).

As already mentioned, debt always involves a certain amount of risk. For instance, a borrower might default, or inflation might unexpectedly change the real value of repayments. Furthermore, lenders and borrowers have different priorities, with lenders wanting high returns, low risk and liquidity, and borrowers prioritizing low costs and long borrowing periods.

Moreover, there is always information asymmetry between borrowers and lenders. Lenders do not know whether a potential borrower is a low risk or a high risk. Interest rates reflecting the average quality of high- and low-risk borrowers may therefore attract too many high-risk borrowers. This is the problem of adverse selection. Furthermore, once the loan has been granted, the lender does not know whether the borrower is acting against the lender's interests. This is the problem of moral hazard in lending.

### 2.1 Traditional bank lending

How do traditional banks organize lending? They take advantage of economies of scale. Banks transform many small and often short-term funds made available to them (e.g. via deposits) into loans which are made available to borrowers for longer terms (i.e. maturity transformation). Funds and loans appear on banks' balance sheet, with funds being listed as liabilities and loans as bank assets. This way, banks take on credit risk. On the other hand, the risk for depositors is usually limited because deposits are typically insured (up to a certain amount).

Depositors and borrowers profit from maturity transformation. Depositors earn interest and can access their funds instantly, a possibility that creates liquidity. The provision of liquidity works because the daily inflows and outflows of funds become highly predictable for the bank when the number of deposits is high. The advantage for borrowers is that they have access to long-term loans. Furthermore, by pooling many small deposits, banks can offer borrowers much larger loans than any single individual depositor may wish to lend.

Banks also reduce the credit risk in lending through specialized knowledge and diversification. They employ specialized staff to assess the riskiness of loans and to

monitor borrowers after loans have been granted. Performing due diligence before selecting creditors helps reduce credit risk and thus increases the bank's expected profits. Moreover, besides increasing private profitability, due diligence also improves social welfare as it contributes to a more efficient allocation of capital within the economy. Banks usually require collateral to further reduce credit risk. This way, bank intermediation mitigates adverse selection and moral hazard problems. Banks also reduce risk via diversification, i.e. by lending to a large variety of borrowers with different risk characteristics; this is called risk transformation.

## 2.2 P2P lending models

Most loans funded via P2P platforms are unsecured. Therefore, such loans are not backed by collateral or covered by deposit insurance. The P2P platform matches lenders and borrowers, and the lender directly enters into a loan agreement with the borrower, with no bank serving as an intermediary.

Most P2P lending platforms operate under one of the following business models: the original P2P lending model, P2P lending with bank funding or P2P balance sheet lending. The original P2P model prevails in countries like the U.K., where granting P2P loans does not require a banking license. Bank-funded and balance sheet P2P lending prevails in countries such as Germany and the U.S., where loan origination requires a banking license.

In the original P2P model, the lending platform matches borrowers and lenders, transfers money from lenders to borrowers after loan origination, and facilitates interest and redemption payments. As already mentioned, the P2P platform provides loan services for lenders and borrowers, but it does not take on any credit risk. The transaction fees it charges to lenders and borrowers are typically its main source of income.

In bank-funded P2P lending, the P2P platform also matches borrowers and lenders, but the loan is originated by a funding bank, with the borrower signing a promissory note to the bank. The bank originates the loan and immediately sells it to the platform, which on its part buys it with the money of the lenders. The borrower makes loan repayments to the platform, which then transfers the money to the lenders. In this case, the bank and the platform both act as intermediaries and do not take on credit risk. In the event of the borrower defaulting, the platform has no obligation to compensate the lender's losses.

Balance sheet lending comes closest to traditional bank lending. It differs from the two previously discussed strategies in that the P2P platform originates the loan and keeps the loan on its balance sheet. Thus, while the platform faces credit risk, it also profits from both the fee payments and the interest payments accruing over the life of the loan.

In their early days, P2P lending platforms often used some type of auction model, where the lenders themselves would determine the interest rate on a specific loan. This appears to have changed. Now, most leading P2P platforms set interest rates according to their own risk assessment of the borrower.

The innovation of these various P2P lending models lies in their direct alignment of borrowers and lenders, i.e. in the absence of a trusted third party. The platform acts merely as an exchange and does not perform either due diligence or any other intermediary functions, such as transformation of risk or maturities. Before the Internet enabled the existence of this technology, the transaction costs

of such an alignment process would have had a deterrent effect; even regulated exchanges such as stock markets relied on the services of brokers, who commissioned heavy fees. Searching for individual lenders, presenting a business case to each of them or providing any requested information in due time and in adequate quality would have given rise to additional expenses, thus exceeding the cost of traditional bank loans. Agrawal et al. (2014) argue that venture capital funding used to be geographically concentrated because proximity could help reduce related transaction costs. For potential lenders, the search for investment opportunities would have been much more time-consuming. Modern information technology allows a swift exchange of data and reduces search costs significantly. For lenders who are willing to do without deposit insurance, P2P lending offers an alternative to bank accounts. In the next section, we will discuss how P2P platforms try to reduce the risks for their lenders.

### 3 P2P platform strategies for mitigating risk and information asymmetries between borrowers and lenders

As outlined above, information asymmetries in lending create risks. In their capacity as financial intermediaries, banks apply their specialized knowledge in credit risk assessment and monitoring to manage such risks. To attract business and compete with traditional banks, P2P lending platforms must also offer ways to reduce adverse selection and moral hazard problems.

P2P platforms pursue various strategies to assess and reduce the risks for their customers. When a borrower contacts a P2P lending platform and applies for a loan, the platform usually performs its own credit risk assessment before listing the loan application. Such an assessment usually includes checks on the borrowers' identity, their credit references and any potential fraud history. The U.K. platform Zopa, for example, collects information about borrowers' credit history from two different credit reference agencies. Approval rates, as reported by the members of the Peer-to-Peer Finance Association (P2PFA, a U.K. self-regulatory body), are around 10% to 25% (Oxera, 2016). Austrian law<sup>4</sup> requires that P2P platforms publish the criteria according to which they select potential borrowers on their websites.

Most P2P platforms also provide “hard” information about borrowers as a way of supporting lending decisions. For instance, Prosper, the largest U.S. P2P lending platform, posts credit agency score information derived from its own scoring system as well as credit history, debt-to-income ratios and homeowner status of borrowers. Sharing information about borrowers' credit histories can be in the interest of competing lenders, as shown by Gehrig and Stenbacka (2007).

The South Korean P2P platform Popfunding has implemented a voting process. Over a period of a few days, investors can vote whether a borrower can be expected to repay the requested loan. The platform then makes the voting outcome available to investors. Yum et al. (2012) find that the voting process has a big impact on the probability of funding where there is no available credit history. Where historical information is available, however, voting does not have any significance, because then lenders rely predominantly on their own judgement of “hard” information.

<sup>4</sup> See *Alternative Financing Act (Alternativfinanzierungsgesetz)*, Article 5 para 3.

Borrowers themselves may also provide specific information to lenders. Such information typically consists of descriptions of the loan purpose, personal information and pictures. On Prosper, borrowers can also join social media groups. Information of this kind is “soft” and cannot be easily verified.

The question of whether “soft” information is useful for investors has provided impetus for empirical research. The results are mixed. Using data from Prosper, Iyre et al. (2016) have investigated whether “soft” information helps in screening borrowers’ creditworthiness, finding that it contributes to predicting their probability of default.

Also analyzing Prosper data, Freedman and Jin (2017) conclude that Prosper’s social networks may help in screening and monitoring loans, but lenders seem to have difficulties in distinguishing between high- and low-quality social networks. They find that borrowers with social ties obtain funding more easily and at lower interest rates but default more often than borrowers without social ties.

As mentioned above, borrowers can post their pictures as a means of underscoring trustworthiness. Duarte et al. (2012) find that trustworthy appearance matters because it raises the chance of obtaining a loan and of paying lower interest rates. The authors also find that more trustworthy-looking borrowers have better credit scores and lower default rates on average.

In an experiment, Gonzalez and Loureiro (2014) tried to find out which attributes of a picture determine whether a loan request is successful. The results suggest that age plays a key role. Older persons are perceived to be more competent than younger persons, who tend to be penalized. Persons that are more attractive are also penalized by lenders of the same gender, resulting in a “beauty is beastly” effect<sup>5</sup>. There does not appear to be a gender effect when receiving funding (Barasinska and Schäfer, 2014), but Pope and Sydnor (2011) have found discrimination against black people on Prosper.

Dorfleitner et al. (2016) analyze how “soft” information contained in the descriptions of loan applications on two large German P2P platforms, Smava and auxmoney, affects both the probability of successful loan funding and the default probability on existing loans. They find that investors appear to be able to identify creditworthy borrowers with “soft” information when little or no “hard” information is available. Where such “hard” information is available, however, “soft” information becomes unimportant. Furthermore, in contrast to the findings of Iyre et al. (2016), “soft” information and default probabilities seem to be largely unrelated.

As diversification reduces risk, P2P platforms advise investors to lend smaller amounts to numerous individuals or projects. Zopa, for instance, offers a computerized strategy where a single investment is broken down into smaller units that are then spread over multiple loans. Repayments can be either automatically reinvested in new loans or withdrawn. On Prosper, investors can either decide themselves or set criteria for automatic investment, such as Prosper ratings and loan terms. The invested sum is then spread over multiple loans using computerized matching. The German platform auxmoney offers a Portfolio Builder software

<sup>5</sup> *This negative beauty premium has been empirically corroborated in labor economics and behavioral finance; it is based on the statistical discrimination models developed by Edmund Phelps and Kenneth Arrow in the 1970s. People who have to make a decision based on insufficient observable information seem to take any additional available information into account, regardless of whether or not it is relevant.*



that automatically diversifies an invested amount over certain auxmoney score classes based on a strategy defined by the investor.

A number of P2P platforms have a buffer fund, which is financed by a small amount of money going into it each time a P2P agreement is concluded. Such funds are meant to help compensate lenders for losses arising from default. Buffer funds mitigate risk but also reduce the returns for lenders. Furthermore, under adverse economic conditions, a buffer fund may be depleted and may not be able to cover all losses. In such a case, the lender faces credit default risk, although in some arrangements, default risk is shared among all investors.

As already mentioned, P2P lenders face a liquidity risk because loans usually have a duration of several years. As a result, some platforms provide a secondary market where investors can sell their loan obligations if they need liquidity. Liquidity does not come for free, of course. Platforms charge for secondary market access, and investors may also face losses in times of unfavorable interest rate developments. Oxera (2016) reports that secondary markets are rarely used by P2P lenders in the U.K.

Lenders also bear the risk of the lending platform failing and going out of business. In the U.K., for instance, platforms need to ensure that the fees they charge are sufficient to cover the costs of servicing loans. Resolution plans that describe how remaining loan repayments will be collected in case of failure must be in place, and minimum capital requirements specified by the regulators must be fulfilled. The specific regulatory requirements that apply in Austria are discussed in section 5.

At the end of this section, we turn to the issue of herding behavior in P2P lending. Herding effects occur when lenders imitate the investment behavior of other lenders. Such behavior may be caused by a desire to minimize search costs, but even more so by a pronounced information asymmetry between borrowers and lenders, as is the case in P2P lending. The main problem with herding is that lending decisions may largely cease to be based on borrowers' riskiness. A herding strategy can sometimes yield success, but it also means that an overall careful screening of borrowers is foregone, which may lead to higher default rates and generally to more financial instability (Käfer, 2018). Although herding behavior may be rational from the perspective of the individual investor, in aggregate it undermines the information-generating and -processing capacities of financial markets assumed in the efficient market hypothesis. Even if viewed from a purely theoretical perspective, in the case of herding, prices do not reflect all the information available in the market but merely the prevailing sentiment of market participants.

Herding behavior can occur at both the micro-listings level and at the platform level, as demonstrated by empirical studies. Wang and Tu (2016) examine data from the large Chinese P2P platform PPDai, finding herding effects in the choice of both borrowers and listings. Liu et al. (2015), also using PPDai data, find that herding works in part through online friendship opportunities offered by the platform. Using data from the U.S. platform Prosper, Greiner (2013) finds that herding existed as long as the platform used an auction model but diminished with the switch to a fixed-price model, where interest rates are pre-determined.

Jiang et al. (2018) examine data from 127 Chinese P2P platforms, finding that herding also exists at the platform level. Platforms with a larger number of initial

investors tend to attract more subsequent investors, too. Interestingly, the authors also find that government regulatory events in 2014 led to a subsequent decrease in herding. Furthermore, they conclude that platform attributes such as operation time and the composition of participants reduce herding behavior, whereas accumulated investment amounts and market share increase herding behavior at the platform level.

## 4 Users of P2P lending platforms

The impressive growth rates of credit granted via P2P lending platforms indicate that these platforms are indeed attractive for both lenders and borrowers. But do platform users differ from traditional bank customers?

### 4.1 Lenders

A CCAF report from 2017 (CCAF, 2017a) contains survey results concerning U.K. lenders. Over 2.5 million individuals and about 2,500 institutions (e.g. banks, asset managers, pension funds, mutual funds, etc.) in the U.K. used P2P platforms in 2016. About half the investors used two or more P2P platforms. Around one-quarter of lenders were female. The main motive reported by investors is financial returns, while control of the money's destination, support of alternatives to big banks and other social motives appear to be far less important.

U.K. online investors appear to be well educated, with the majority having an undergraduate degree or higher. Older lenders use P2P platforms more often than younger lenders. About 67% of U.K. online business lending and about 66% of P2P consumer lending in 2016 came from lenders aged 55 or over. Only in real estate crowd funding and equity-based crowd funding was the majority of lenders under 55.

The time spent on selecting a deal in investment-based crowd funding is between 20 minutes to one hour per week. In contrast, lenders spend little time on P2P consumer lending. Most lenders rely on computer-based selection models. If no such model is available, a mere 13% spend 20 minutes or less per week to invest in consumer credit.

Institutional investors have become important in P2P lending. In European markets, the share of institutional funding in P2P consumer lending went up to 45% in 2016, and P2P business lending rose to 29% in 2016 (CCAF, 2018). In 2016, figures for the U.K. were 32% in P2P consumer lending and 26% in P2P business lending (CCAF, 2017a). In the U.S.A., the share of institutional P2P funding is even higher. In 2016, institutional funding shares in P2P consumer lending and P2P business lending were 70% and 67%, respectively (CCAF, 2017b).

### 4.2 Borrowers

Currently, there is little empirical research on the characteristics of online borrowers. De Roure et al. (2016) use data from the largest German platform, auxmoney, to compare P2P lending with traditional consumer lending. They find that online borrowers are riskier for lenders than bank borrowers. Auxmoney's interest rates, which are above bank interest rates, reflect this higher risk. Moreover, auxmoney tends to lend more where banks would lend less. The authors conclude that auxmoney attracts mainly high-risk borrowers that are not served

by banks. Using data from the Lending Club platform, Jagtiani and Lemieux (2017) obtain similar results for U.S. borrowers. According to their findings, online borrowers have significantly higher debt-to-income ratios than U.S. consumers overall. Lending Club borrowers are also less likely to own a home. Just like auxmoney, Lending Club tends to provide credit to borrowers who cannot easily obtain bank credit. Lending Club interest rates are higher for such borrowers, but the authors find that these rates appear to properly reflect the related credit risk. In contrast, in an earlier study, Emekter et al. (2015) found that Lending Club interest rates were too low to compensate for higher probabilities of credit default.

Wiersch et al. (2016) focus on U.S. SMEs that try to borrow online. The authors use the results from the Federal Reserve's 2015 Small Business Credit Survey (SBCS) to compare U.S. small businesses that use P2P platforms to obtain credit with small businesses that use traditional bank credit. They find that businesses that try to borrow online are typically smaller, younger and less profitable than those that borrow from banks. The main reasons for these businesses borrowing online are coverage of operating expenses and refinancing of debt.

Findings from a survey of business borrowers on the U.K. platform Funding Circle (CEBR, 2016) suggest that the main influencing factors for SMEs borrowing online are speed (31%), simplicity (28%) and competitive interest rates (11%).

## 5 The regulatory framework for P2P lending in Austria

In Austria, P2P lending and, more generally, online funding play a minor role (see table 3). The total market volume of all online alternative funding was a mere EUR 3 million in 2014, but grew to EUR 22 million in 2016 (CCAF, 2018). One of the reasons for this increase in online finance can be found in the 2015 legal changes, e.g. the enactment of the so-called Alternative Financing Act (Alternativfinanzierungsgesetz – AltFG). The new law aims to allow for more P2P lending via online platforms without compromising investor protection.

Under the Capital Market Act (Kapitalmarktgesetz – KMG), any issuer is obliged to prepare a prospectus if he wants to raise capital of more than EUR 250,000 in a public offering. The prospectus should contain all the information considered relevant for investors. The costs of a prospectus for the issuer have been stated at approximately EUR 50,000, which is a rather prohibitive sum for most SMEs. These costs include the fees for control and approval as well as for legal, accounting and tax consulting services.

Several studies have observed the lack of an appropriate market for risk capital in Austria (for an overview, see Jud et al. (2013)). In December 2014, several market participants and interest groups published a common position paper with proposals for improving the legal framework for alternative SME financing in Austria. Among these proposals was the lowering of the legal threshold for preparing a prospectus (for other proposals on alternative finance, see box 1 in OeNB, 2018).

The AltFG's enactment in September 2015 reflects the government's intention to simplify the rules for P2P lending to SMEs while at the same time upholding the high standards of investor protection, especially retail investor protection. The AltFG redefined the contents of prospectuses for smaller issuances, established new rules for investor protection and specified the requirements applicable to online P2P lending platforms.

Now, to raise less than EUR 1.5 million, SMEs are no longer required to prepare a prospectus, but have to prepare a document that must include information about the issuer (address, legal form, majority owners, type of business, etc.), the issued financial instrument (legal form, price, maturity, fees, etc.) and certain clauses for investor protection. For issuances between EUR 1.5 million and EUR 5 million, the AltFG obliges issuers to publish a prospectus as defined in Annex F of the KMG, a so-called “prospectus light,” which contains less information than a fully-fledged prospectus and is not subject to approval by the supervisory authorities; hence, its preparation is less costly. The local authorities are responsible for the enforcement of these rules. If more than EUR 5 million are to be raised via an online platform, the issuer has to publish a fully-fledged prospectus.

If the financial instruments issued by an SME are bonds or stocks, the prospectus is still subject to the approval of the Austrian Financial Market Authority (FMA). In addition, the issuing SME has to publish an annual financial statement (which is not always obligatory for smaller SMEs). The threshold for the requirement to publish a prospectus as defined in Article 2 KMG for the issuance of equities and bonds is EUR 250,000.

In April 2017, the Austrian Supreme Court of Justice ruled that any issuing of alternative financial instruments is subject to some obligatory publication of information, and that this obligation also applies to subordinated loans, as most investments via P2P platforms are conducted in the form of subordinated loans.

With respect to investors, the AltFG defines two groups: the professional investor who is highly experienced in financial markets and who has significant net assets, and the ordinary retail investor. The law treats institutional investors as professional investors because their experience and their liquidity should enable them to assess and bear the risks implied by their investment.

On the other hand, the legislators consider the capacity of retail investors to bear the risk of P2P lending with respect to both loss absorption and liquidity (see section 3) to be more limited. Therefore, any investment by retail investors is limited to 200% of their monthly net income or 10% of their net financial assets. It should be noted that these limits not only protect investors but also serve the interest of SMEs searching for a stable investor base, which would be negatively affected if their investors were very vulnerable to liquidity shocks.

Online P2P platforms that match investors with issuing SMEs are legally obliged to have general liability insurance, and they must identify the real issuers to prevent money laundering. P2P platforms must publish information on their legal form and their ownership structure as well as on their fees and their selection criteria for potential issuers. The platform’s operators must not issue their own financial instruments via the platform, and they are obliged to inform any investor that the investment bears the risk of total loss.

According to the Austrian Federal Economic Chamber, 13 domestic P2P platforms are currently active in Austria. The majority offer crowd funding for startups or SMEs, with some also funding real estate projects and a few focusing more on donation-based NGO projects. Additionally, four international platforms are active in Austria, operating under a reward-based P2P model.

In June 2018, the Austrian government proposed changes to the AltFG. According to these proposals, P2P lending via online platforms should become available to all companies, not just SMEs, and the thresholds for the obligatory

Table 4

**Volume and growth rates of P2P consumer and business lending in selected countries**

		2013	2014	2015	2016		
France	P2P consumer lending	<i>EUR million</i>	43	80	134,7	179	
		<i>Growth rate in %</i>		86,0	68,4	32,9	
	P2P business lending	<i>EUR million</i>	0,2	8,1	28,2	70,9	
		<i>Growth rate in %</i>		3950	248,1	151,4	
	Germany	P2P consumer lending	<i>EUR million</i>	36,4	80,4	136,4	181,5
			<i>Growth rate in %</i>		120,9	69,7	33,1
P2P business lending		<i>EUR million</i>		6,1	48,7	23,3	
		<i>Growth rate in %</i>			698,4	-52,2	
U.K.		P2P consumer lending	<i>GBP million</i>	287	547	909	1169
			<i>Growth rate in %</i>		90,6	66,2	28,6
	P2P business lending	<i>GBP million</i>	139	749	881	1232	
		<i>Growth rate in %</i>		438,8	17,6	39,8	
	U.S.A.	P2P consumer lending	<i>USD billion</i>		7,6	18	21,1
			<i>Growth rate in %</i>			136,8	17,2
P2P business lending		<i>USD billion</i>		0,976	2,6	1,3	
		<i>Growth rate in %</i>			166,4	-50,0	
China		P2P consumer lending	<i>USD billion</i>	3,85	14,3	52,44	136,5
			<i>Growth rate in %</i>		271,4	266,7	160,3
	P2P business lending	<i>USD billion</i>	1,44	8	39,6	58,2	
		<i>Growth rate in %</i>		455,6	395,0	47,0	

Source: Cambridge Centre for Alternative Finance, authors' calculations.

publication of a prospectus and “prospectus light” should be raised in accordance with the new EU prospectus regulation. As the legislative process is still ongoing at the time of writing, we cannot assess the effects of these changes.

## 6 Outlook

For several reasons, any statements about the future of P2P lending must remain highly speculative at this point. First of all, the industry is still very young. After an initial boom phase, it now appears to be in a state of consolidation.

In the U.K., for instance, the number of new platforms entering the market has declined sharply since 2014, and 35 platforms are now most probably inactive. Furthermore, some (often smaller) platforms have failed. The most likely reasons for this development are problems with risk assessment processes leading to unacceptable default rates, difficulties in finding quality borrowers and the inability to comply with regulatory rules (see Oxera (2016) for further details). A similar trend of declining entry rates of new platforms can be observed in the U.S. market (CCAF, 2017b).

More generally, growth of P2P credit volume has slowed down in many important markets. Table 4 summarizes the development of growth rates in P2P consumer and business lending for the U.S.A., the U.K. and selected large European economies.

Another factor that makes predictions difficult is the rather special economic environment in which most P2P platforms started. Many central banks responded to the last, extraordinarily deep economic crisis by setting extremely low or even zero nominal interest rates. Moreover, banks consolidated their balance sheets, which reduced credit supply, even in the case of acceptable credit risks. In such an environment, P2P platforms were able to promise attractive rates of return to lenders. Whether lending platforms are able to compete with traditional banks in “normal” times remains to be seen. It also remains to be seen whether P2P lending is mainly just a substitute for bank credit in times of crisis (Havrylchuk et al., 2018) or whether it truly expands credit to more risky borrower classes that would not be served by banks otherwise.

Another great unknown is the performance of credit scoring models used by online lenders over the credit cycle. Only very few P2P platforms (i.e. Zopa, Lending Club, Prosper) were already in operation during the last crisis. Moreover, at that time, they operated at a small scale and in borrower segments that may not represent important future borrower segments. The historical experience is thus very limited.

More generally, there are issues related to scalability (i.e. profitability and efficiency at growing lending volumes). Will there be enough lenders to make, or keep, P2P lending profitable when economic conditions worsen and credit risk increases? In a similar vein, will the costs of funding in P2P lending remain competitive when interest rates rise and adverse selection becomes more severe?

Which trends are visible at the moment? As already mentioned, institutional investors increasingly use P2P platforms to connect with borrowers. Furthermore, balance sheet lending is becoming more common. This usually requires the platform to have a banking license, but in that case, income is generated not just from fees but also from periodic interest rate payments. Hence, the original P2P lending concept seems to move more in the direction of traditional bank lending with more sophisticated interfaces available to borrowers.

A possible scenario for the near future may be that P2P platforms engage mostly in bank-type balance sheet lending, with banks cooperating with lending platforms or running platforms themselves and with pure P2P platforms serving certain niche markets.

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