Classification of Crowdfunding in the Financial System

Loriana Pelizzon, Max Riedel and Paolo Tasca

Abstract The emergence of crowdfunding has attracted attention from borrowers, investors, banks and regulators alike. This chapter reviews its historical development, distinguishes between different business models, and discusses its disruptive potential and future growth prospects. Focusing mainly on lending- and equity-based crowdfunding, it further presents insights related to participants' behavior on crowdfunding platforms and regulatory advancements in different countries.

Keywords Crowdfunding regulation · Equity-based crowdfunding · Peer-to-peer lending

1 Emergence of Social Financing in the Digital Age

Digital technology has become a prerequisite for, and a constant companion of, new developments in our daily life and business activity. Internet, information communications technologies, data-driven technologies, modern analytical methods and virtual infrastructures penetrate into the daily life of every single household by changing consumer and investment behavior worldwide. Nowadays, anyone with access to the Internet can participate interactively in digital spaces. Flexible and varied relationships are formed between people and their diverse identities, both in the online and offline worlds. We are already living in the so-called economy of Collaborative Commons characterized by the prevalence of sharing over ownership. This major structural

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change mainly applies to products and services that can be easily standardized and automated, similar to the broad spectrum of services offered by traditional banks.

The rapid development from the early days of the Internet in the 90s to its current advancement towards the Internet of Things[1] is partly attributable to the emergence of the so-called Web 2.0. The term Web 2.0 was coined soon after the launch of the worldwide first crowdfunding platform ArtistShare in the US in 2003 and about one year before the pioneering peer-to-peer (P2P) lending platform Zopa was founded in the United Kingdom in 2005. The year 2004 became a turning point for Internet users. Being largely consumers of content in the 'old Web', users transformed into content creators. User interactivity, collaboration and the resulting content creation were the main characteristics of Web 2.0. As documented by Schwienbacher and Larralde (2010), Web 2.0 especially broadened the capabilities of small firms by allowing users' content to inflow and create value for the company. This technological advancement enabled the first P2P platforms to utilize the emerging momentum and popularity of various online social networks, while especially lending platforms took the simplicity and efficiency of credit scores to their advantage and managed to deal with loan applications at a speed that is close to real time.

The novel financing segment for consumers and small businesses grew from a niche to a sizeable market not until the 2008 Financial crisis. Many households, hit by huge financial pain, lost trust and confidence in the traditional banking sector (Gritten 2011) and withdrew from financial markets while looking for alternative sources to obtaining funds. Banks reduced their lending activity and capital stopped flowing from those who had it to those who were able to use it to grow businesses and create jobs, thus, prolonging the Great Recession. At the dawn of the emergency program loans and public bail outs, the reputation of the bankers was already significantly undermined in most of the western countries and their traditional role as credit providers has been criticized and put under spotlight of the public opinion, (Rose 2010; Stiglitz 2010). The post-crisis period was characterized by a low-yield environment such that investors became creative in identifying alternative investments and allocating their funds in new financial products.

Under this general context, the focus of both capital holders and capital seekers turned to alternative market infrastructures that were able to provide direct, disintermediated credit-lending relationships for households and businesses without the need of a single point of control (or failure).

2 The Many Facets of Crowdfunding

Crowdfunding refers to the process of acquiring capital for a project by collecting relatively small amounts from many investors or backers. It represents a more specific form of the more general term crowdsourcing, which is the acquisition of

[1]The Internet of Things describes the a concept where physical devices are connected to the Internet and are able to identify themselves and exchange data.

any resource (services, creative content, funds, etc.) from a large group that is typically online. The term crowdfunding was first coined in 2006 by Michael Sullivan on Fundavlog, his video blogging project.

The actors associated with crowdfunding fall into three main roles: (i) the borrower or project initiator who presents her credit request or idea/project to be funded; (ii) individuals or groups (i.e., the crowd) who support the funding request; and (iii) a moderating organization (i.e., the platform) that brings the parties together to launch the idea or support the borrowing request.

The literature distinguishes between (i) lending-based crowdfunding, which consists of loans which are repaid with interest, (ii) equity-based crowdfunding in which investors receive shares of the startup company, (iii) reward-based crowdfunding that involves rewarding funders with a product that has actual monetary value, often an early version of the product or service being funded, and (iv) donation-based crowdfunding in which backers donate funds because they believe in the cause (Cholakova and Clarysse 2015).

As pointed out by Everett (2008), lending-based crowdfunding is a technology-enabled form of social lending. Indeed, the advent of modern social lending is attributed to the English Friendly Societies of the 18th and 19th century that arose spontaneously during the Industrial Revolution as clubs that helped their members pool resources and risk. The Friendly Societies allowed members to make deposits and receive loans, and also assisted family members in the case of negative shocks such as illness. What was a locally bounded phenomenon in the past has become nowadays a spatially unbounded opportunity to connect with socially inclined or profit oriented, mostly anonymous, individuals. Besides, one of the biggest challenges, accurate risk assessment, was facilitated with technological advances. Friendly Societies had little experience in risk management and about one third of them had failed in the 19th century (Covello and Mumpower 1986). An online platform, on the other hand, is not exposed to idiosyncratic risk of its borrowers per se but it provides the necessary tools to investors for controlling their risk exposure by (a) collecting, scoring, and disseminating credit qualifications for a pool of prospective borrowers, (b) the real-time reporting supply of lending bids, allowing investors to diversify across loans and spreading borrower risk across investors, and (c) the online servicing, monitoring, and credit history reporting of loan performance.

The equity-based model is a valuable alternative source of funding for entrepreneurs as the crowd takes the role of traditional investors in startups, such as business angels and venture capitalists. The project initiatives involve equity shares, revenue, or profit sharing with the funders.

In contrast to lending- and equity-based crowdfunding, the donation- and reward-based models do not guarantee a payoff to funders. Projects of this kind tend to raise smaller amounts of capital than those with equity participation. Still, both models experienced high popularity among backers. This might seem unreasonable since financial reward is practically non-existent and one might assume that project initiators depend solely on the goodwill of potential backers. This is not necessarily true as pointed out by Schwartz (2015). Funders can be incentivised to donate by experiencing a non-financial value while doing so. Their intrinsic motivation might be driven by factors such as personal entertainment, political expression, arts patronage, altruism, being part of a community, or having a feeling of being a creator.

Despite the growing popularity of the latter two models, it is mostly P2P lending and equity-based crowdfunding that pose a potential threat to the business models of traditional financial institutions. Consequently, the focus of this survey lies especially on these two models.

3 Evidence of Positive Disruption to Traditional Financing

How does crowdfunding relate to the financial system? Is it complementary or disruptive? In order to answer these questions it is advisable to consider first the size of this market.

In 2015, more than 400 crowdfunding platforms were operating in more than 35 countries and more than 100 social lending platforms were running business in 25 countries. To give a dimension of the market, one should know that in 2009 the crowdfunding volume was about USD 530 million worldwide. Almost doubling every year, it reached USD 16.2 billion by the end of 2014,[2] while growth projections for the year 2020 suggest an increase to USD 150–490 billion worldwide.[3]

In the United States, the top five P2P lending platforms originated USD 3.5 billion in loans in 2013, up from USD 1.2 billion in 2012.[4] As a comparison, households in the United States had around USD 858 billion in credit card debt outstanding as of December 2013, reflecting net new borrowing of USD 12.3 billion over the prior 12 months. Under the assumption that the USD 12.3 billion figure is a rough estimate of the growth in securitized consumer lending, this suggests that a relevant share of consumer lending net growth could be captured by P2P lending.

The effects of the growing alternative financing markets on the traditional financial system were not investigated yet. Classical economic literature, though, suggests that an increase in competition, in general, improves consumers' welfare because it minimizes deadweight loss. In fact, Fraiberger and Sundararajan (2015) show that sharing economies improve overall welfare benefits. A more crowdfunding-related study was done by Agrawal et al. (2011). They observe that online platforms eliminate economic frictions related to spacial distance, enhancing credit supply to artists.

[2]Source: Crowdsourcing.org; Massolution.

[3]Source: Morgan Stanley Research.

[4]Source: Fitch Ratings. https://www.fitchratings.com/gws/en/fitchwire/fitchwirearticle/P2P-Lending's-Success?pr_id=851174.

Theoretical and empirical results show that traditional banks have little incentive for screening small borrowers and practically they invest little effort in doing this. Iyer et al. (2010) find that the screening process in P2P markets incorporates 'soft', i.e. non-standard, information. They point out that lenders are able to infer one-third of the information regarding borrowers' credit score by utilizing such information benefiting in particular small borrowers. Since traditional lenders use only 'hard', standard information on estimating creditworthiness, they argue that Prosper, a lending platform in the US, acts like a complementary lending institution that improves small borrowers' overall credit access. On the negative side, not all lenders have financial and screening expertise giving a comparative advantage to institutional investors over individual investors in selecting profitable loans. Butler et al. (2010) reports that borrowers with relatively better access to traditional bank financing are willing to borrow at a lower rate at Prosper. This suggests that P2P markets add to overall credit supply efficiency.

Morse (2015) points out that the main driver of the crowdfunding disrupting force is the increasing role of big data. Data analysis has become a crucial part in business relations and an integral component of social network businesses. Despite the fact that big data brings forth also all sorts of uncertainties such as privacy, monopoly power, or discrimination, P2P platforms might be able to offer pricing and access benefits to potential borrowers if they manage to unearth soft information not accessed or used by intermediated finance.

By considering all the above elements, if asked whether crowdfunding has the possibility to positively disrupt consumer finance, it seems that this is potentially the case. Due to the complexity of some businesses (e.g., collateralized loans requiring repossessions and foreclosures, and long maturity lending without forcing mechanisms), this will probably be not the case across all markets.

4 Insights on Social Behavior in P2P Lending Markets

P2P markets provide an academically interesting setting where social interaction, investment and borrowing decisions can be studied simultaneously. The following survey will provide an overview of recent behavioral and financial insights.

One string of literature focuses on identifying statistical as opposed to taste-based discrimination in P2P markets. The former occurs when distinctions between demographic groups are made on the grounds of real or imagined statistical distinctions between the groups. The latter takes place when agents' personal prejudices or tastes against associating with members of a particular group affect their treatment of those individuals (Becker 1971). Pope and Sydnor (2011) observe racial discrimination through borrower pictures on Prosper. In particular, pictures of the black, the elderly and people with an unhappy facial expression are significantly discriminated against in terms of loan funding and high interest rates. Ravina (2008) observes that personal characteristics significantly affect the probability of having a loan funded. Beautiful borrowers are favored while black borrowers are relatively less likely to get a loan as opposed to white. They conclude that the way borrowers present themselves affects the likelihood of getting a loan and more favorable loan terms. Overall, beauty seems to be related to taste-based discrimination while blacks are subjected to statistical discrimination.

Successful loan funding also appears to be related to various signals of trustworthiness. Duarte et al. (2012) finds that borrowers who appear to be more trustworthy have a higher likelihood of getting loan and being charged a relatively lower interest rate. However, trustworthy-looking borrowers, in fact, default at a lower rate and have a relatively better credit rating. Freedman and Jin (2014) observe that also having a social network is beneficial for borrowers as it increases the probability of being funded and lowers the interest rate on the loan. According to Hildebrand et al. (2010), group leaders, who are rewarded for successful loan listings, have an incentive to signal borrower quality to lenders. This alleviates information asymmetries that can be mitigated if group leaders invest a substantial amount in the loans themselves.

Studies show that some investors do not process all available information optimally. Gelman (2013) finds that small investors, in particular, ignore valuable borrower information that is conveyed in a borrower's loan verification status on Lending Club. Thus, such investors show risk seeking behavior while professional investors act more rationally and in a more risk averse manner. Furthermore, Freedman and Jin (2014) find that lenders on Prosper do not understand the relation between social ties and unobserved borrower quality. Some borrowers use their social network to their advantage of getting the best deal. Lenders learn about such gaming behavior from their investment mistakes only gradually over time and adjust slowly. Contrary to this finding, Lin et al. (2009) observes that friendships of borrowers signal credit quality to lenders.

Mach et al. (2014) show that small business applications are more than twice as likely to be funded than other loans. Berger and Gleisner (2014) observe that market participants who were paid to act as intermediaries on Prosper and screen loan listings had a positive impact on lowering borrowers' credit spreads by reducing information asymmetries.

There is also presence of herding behavior among lenders. Zhang and Liu (2012), Herzenstein et al. (2011) and Ceyhan et al. (2011) observe that bids for a single loan do not occur uniformly over time. In particular, bids are concentrated at the end of a listing's lifetime and tend to be more concentrated for listings that are close to being fully funded.

From a more theoretical perspective, Paravisini et al. (2009) estimate investors' risk preference parameters and their elasticity to wealth. They find that wealthier investors exhibit lower absolute risk aversion and higher relative risk aversion and that for a given investor, the relative risk aversion increases after experiencing a negative wealth shock.

To sum up, despite some inefficiencies observed by researchers, P2P lending markets overall positively affect credit supply to individuals.

5 Recent Developments in Equity-Based Crowdfunding

Equity crowdfunding is a mechanism that enables individuals to collectively invest in startup companies and small businesses in return for equity.[5] In terms of funding volume, equity crowdfunding is a relatively small category. During the last years it counted only for about the 5 % of the total funds channeled via crowdfunding platforms (Wilson and Testoni 2014). The reason behind this low level lies in the fact that equity crowdfunding is heavily penalized by different legislative approaches that in general tend to protect investors from its high risk profile. Some significant evidence is that, although the US lead the overall crowdfunding, when it comes to the equity-based market, it is Europe who holds the leading position thanks to its accommodating policy environment. But the situation in US might improve because of the recent approval of Title III of the JOBS Act in 2015. In practice, this law will unlock the possibility for every US citizen to invest in equity crowdfunding. This could indeed represent a sizable positive shock for the US market.

Difference Compared with other types of crowdfunding, equity crowdfunding exhibits some unique characteristics along with peculiar investment attitudes. Ahlers et al. (2015) compare four types of crowdfunding (donation-based, reward-based, lending-based and equity-based) by positioning them in a two dimensional map where, on one side is the level of complexity (legislation and information asymmetries) and on the other side is the level of uncertainty. With no doubt, equity crowdfunding reaches the highest level along both dimensions. Accordingly, investors of equity crowdfunding are the least risk averse. From an incentive point of view, the investors in equity crowdfunding tend to pursue a long-term monetary return. In terms of funding scale, equity crowdfunding is in general smaller than private equity, venture capital and even angel investments. This characteristic makes equity crowdfunding a proper instrument that is able to fill the 'equity gap' for early stage projects. Traditionally, small businesses in seed funding raise funds from the three 'f' (friends, family and fools). However, friends and family financing is often an insufficient source of funds and in order to achieve scale, larger sources of risk capital are often required. During the recent years, business angels and venture capitalists—the traditional sources of risk capital after the three 'f', have increasingly been moving their investment activity upstream, making larger investments into more developed companies (Collins and Pierrakis 2012). To have a sense of the dimension, according to Wilson and Testoni (2014), most of the equity-based projects raise an amount of funds ranging between USD 50,000 and USD 100,000. Instead, many angels tend to consider only businesses that are looking to raise amounts larger than USD 100,000.

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[5]Financial Conduct Authority (2016, April 6). The FCA's regulatory approach to crowdfunding over the internet, and the promotion of non-readily realisable securities by other media. Retrieved from http://www.fca.org.uk/static/documents/policy-statements/ps14-04.pdf.

Funding From the funding side there are many factors that could influence the performance of equity crowdfunding. Compared to venture capital funding, which is lead by professional experts, the influential factors of equity crowdfunding could be detrimental when funding decisions are taken by small investors without a strong financial background. An empirical examination in this field is applied by Ahlers et al. (2015). After having investigated 104 equity crowdfunding offerings published on ASSOB (one of the largest equity-based crowdfunding platform), the authors present several key factors that could lead to an investment bias. Namely, factors that are not necessarily linked to performance but that are instead perceived as such by the investors: the quantity of the board members, the levels of members, education, their professional network, the clarification for the exit scenario (IPO, or trade sale) and the time that the firm has been in the business (experience).

Investment As for as investment is concerned, the valuation of a startup is the great challenge, especially when it comes to small investors. In donation-based crowdfunding, the pricing problem does not exist at all, as the motivation for donation is not based on financial return. For lending-based crowdfunding, investors could receive their interest periodically, thus the pricing model could at least refer to Discounted Cash Flow techniques. But when it comes to equity crowdfunding, there does not exist an unassailable text-book model. Usually, the valuation could be either based on the asset value, on the expected cash flow (or return) or a mix of both. In terms of asset valuation, for startups in early-stage, the most important asset is probably the intellectual property, which is intangible and therefore subjected to an arbitrary valuation. On the other hand, the forthcoming expected return could also be of great uncertainty. Indeed, it is very common to happen that no cash flow is generated in the first 5–7 years for a seed or early-stage company. If any, it would anyway be reinvested into the business again. So, investors generally do not have a sufficient set of track-records to use in order to extrapolate future cash flows or returns on investment (Wilson and Testoni 2014). And due to information asymmetries, entrepreneurs and investors probably have a different view on equity pricing because they have a different information set. In fact, the information asymmetry problem is hardly avoided especially for startups still in their seed stage. There exists a tension in equity crowdfunding (but not only) as entrepreneurs have to bear the risk to disclose more business details to the crowd but at the same time they need to protect their ideas and business strategies that could be copied easily by other companies. In this field Innovestment, a German crowdfunding platform, provides an innovative solution. In Innovestment, pricing of equity is based on auction. Investors bid for the equity of a startup according to their own internal valuation and entrepreneurs can at the end decide whether to accept or refuse the funding amount.

Regulations Investment in seed-stage companies is essentially a high-risk activity because, as presented above, it deserves some level of competence. Indeed, according to Zhang et al. (2014), the majority of investors are professionals or high-net-worth individuals. Thus, governments tend to be very cautious with regard to regulation of retail equity crowdfunding. Although still in evolution, in the following, we briefly present the status of the legislation for some of the biggest crowdfunding markets. In the US, for a long time equity-based crowdfunding has only been opened to accredited investors. According to the Security and Exchange Commission an accredited investor, in the context of a natural person, includes anyone who earned income in excess of USD 200,000 in each of the prior two years, or has a net worth over USD 1 million. This restriction is expected to be lifted up soon. However, in October 2015, the SEC approved the Title III of the JOBS Act, which will allow non-accredited investors to invest in equity-based crowdfunding. When the rules will come into effect, the US equity crowdfunding market will be open to all citizens. Also in UK, equity crowdfunding is considered a risky investment. It is fully monitored and regulated by the Financial Conduct Authority which considers any share in equity-based crowdfunding as a non-readily realizable security. In general, the market is only open to some qualified investors whose wealth or income has surpassed a certain pre-defined standard. According to a rule approved in 2014, retail investors and normal citizens must explicitly confirm that they will not invest more than 10 % of their net investable assets in equity crowdfunding products. In other EU countries, the investment environment is relatively loose. In July 2013, Italy, became the first country in Europe to implement a complete retail equity crowdfunding regulation. After few months, in reviewing existing rules, Italy enlarged the category of suitable crowdfunding target companies. Now, it is no longer limited only to startups but it is extended and applied to a broader definition, provided that crowdfunding companies are innovating and launching new products. In Germany equity crowdfunding has been legal for years but only limited to silent partnership, which means investors could only share the profit but have no voting rights. In France, equity crowdfunding is also allowed but the regulation places some constraints. For example, crowdfunding platforms need to maintain a minimum capital requirement of EUR 730,000.

Looking at the past, it becomes clear that regulators are willing to facilitate the flow of capital between market participants. However, most countries are still in the ongoing process of defining an appropriate legal framework for the crowdfunding segment.

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