



How alternative finance informs central themes in corporate finance

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ABSTRACT

This paper investigates three areas of corporate finance, and the role of alternative finance in contributing to our understanding of these areas. First, we look at disclosure, information asymmetry, and adverse selection, and how different alternative finance solutions are used to mitigate these issues. Second, we examine moral hazard and risk taking and how these behaviours are shaped by new types of alternative finance. Third, we consider the role of control rights, and show how their importance varies by context including types of alternative finance and the country-level institutional setting.

1. Introduction

Studies of alternative investments normally include the wide array of (typically) illiquid investments that are not “mainstream” studies of stock markets. Alternative investments include investments in private firms such by angels (wealthy individuals), venture capital, private equity, crowdfunding and other forms of fintech (Allen et al., 2021), as well as investments in real estate, art, wine, and other illiquid assets. Although the area comprises numerous topic areas, there are typically only one or two (if any) finance scholars in a business or finance department who study alternative investments (referred to here as alternatives). As expressed in Cumming and Vismara (2017), we believe the need for more work on alternatives is unfortunate and it may be more to do with lack access to data than the relative importance of the issues. When it comes to external financing, academic focus may be on stock exchanges because there is high frequency price and volume data and mandated public disclosure that make empirical analyses feasible. It is tougher to study alternatives because data are often not representative, self-disclosed voluntarily to data vendors, or obtained from primary sources making replication much more difficult. With the comparative need for research on alternatives, and the growing interest in financial technology (‘fintech’), the Journal of Corporate Finance co-sponsored a focused issue conference on topic at the University of Birmingham, U.K in June 2019. This paper overviews some of the papers in this focused issue and explains how alternatives alongside fintech alternatives (referred to here as alternative finance) fit within the broader area of, and contribute to, corporate finance research.

Alternative finance, or the alternatives market that intersects with fintech includes equity-based and reward-based crowdfunding, peer-to-peer finance, peer-to-business finance (Coakley and Lazos, 2021; Rossi et al., 2021). Alternative finance has been growing significantly over the past few years due to the recent advances in fintech (Fuster et al., 2019). Excluding China, the growth rate in the

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global alternative finance market in 2018 is 48% (from the US\$60 billion in 2017 to \$89 billion in 2018) (Cambridge Centre for Alternative Finance, 2020). China is the leading country in terms of the volume of fintech worldwide with \$215.37 billion generated in 2018; the US and UK comes in the second and third place with a volume of \$61 billion and \$10.4 billion in 2018 respectively. Despite the remarkable growth in the volume of the global alternative finance market, the volume of funds raised via platforms and other fundraisers declined by 27% from \$419 billion in 2017 to \$304.5 billion in 2018 (of which marketplace lending is 64%) (Cambridge Centre for Alternative Finance, 2020).¹ This decrease has led us to believe that establishing a clear understanding of the drivers of alternative finance is key. In the wake of the high level of political, regulatory and economic uncertainty along with recent developments in financial technology, climate change, clean technology and green finance, new contributions in alternative finance will significantly change the landscape of sources of finance for businesses.

Initially, as a result of its complex nature, limited regulations, and lack of liquidity, regulators worldwide sought to restrict investments in alternatives. It was thought that restrictions should be implemented to limit investments to sophisticated investors that include institutional investors and accredited, high-net-worth individuals. Familiarity with the new technology however has worked to significantly demystify the alternative finance industry, as new forms of alternative finance evolve and more investors, or rather, less sophisticated retail investors, have access, there is a need to develop a more nuanced understanding to the motivation beyond the innovative design of alternative sources of finance such as crowdfunding and peer-to-peer finance, and their influence on the dynamics of market participants.

The objective of this paper is to reflect on both theoretical and empirical research and challenges and opportunities of the developments and dynamics of alternative finance and its impact on the well-established Finance theories. In this paper, we introduce the issues raised in the Journal of Corporate Finance co-sponsored focused issue conference at the University of Birmingham, June 2019. We overview the dynamics of alternatives that intersect with fintech, or alternative finance, and whether it is consistent with the well-established theories of alternatives.

The paper is organised as follows. Section 2 presents an overview of the new insights for information asymmetry, disclosure, and adverse selection. We explain in section 2 how the new Journal of Corporate Finance research on alternative finance contributes to the information asymmetry and disclosure literature. Section 3 discusses moral hazard and risk-taking in corporate finance, and the new insights we can glean from the Journal of Corporate Finance papers in this focused issue. Section 4 discusses the allocation of control rights in the context of alternative investments, and the contexts in which they are relevant for the investment success and performance as seen in the new Journal of Corporate Finance papers on topic. Section 5 concludes with future research directions.

2. Information asymmetry and adverse selection

Information asymmetries arise when entrepreneurs know something that investors do not know, or vice versa. Signalling theory (Spence, 1973) offers a remedy to the information asymmetry problems in which the exchange of reliable and credible information between two parties involved in a particular financial transaction could mitigate the negative impact of information opacity to the less informed party. Viable signals are one that are not easily replicated by lower quality entrepreneurs. For example, a credible signal of quality is a third-party affiliation or endorsement or seal of approval, such as the approval of the Food and Drug Administration (FDA) or obtaining a patent (Stuart et al., 1999). Disclosure is therefore one of the fundamental remedies to the asymmetry of information problems in financial markets. In this section, we discuss information asymmetry and disclosure in different types of crowdfunding in subsection 2.1. Thereafter, we focus on disclosure in a unique type of crowdfunding - ICOs- in subsection 2.2.

2.1. Information asymmetry and disclosure in crowdfunding

Crowdfunding is one of the new contexts in alternative finance where matters of information asymmetry and disclosure have been extensively studied in recent years. Ahlers et al. (2015) use equity-based crowdfunding, and Courtney et al. (2017) use reward-based crowdfunding to show that entrepreneurs benefit by disclosing costly reliable information that could be used by potential investors to assess the credibility of that information and inform their decisions. In theory, signals are only viable if communicated properly by entrepreneurs and realized by investors Cao, 2018 (summarized in Table 1). For example, the quality of words that is revealing and not overstating is an important attribute of being able to signal effectively in crowdfunding (Johan and Zhang, 2020).

The dilemma of information asymmetry also has implications for both IPOs and SEOs. Chemmanur et al. (2010) find that SEOs are known to suffer from less information asymmetry problems due to the availability of information on SEOs compared with IPOs. On the other hand, Vismara (2018) claims that while information flow varies between retail and institutional investors on IPOs, the findings on the IPO literature could have implications and help interpret the information asymmetry problems on crowdfunding. In this focused issue, Coakley et al. (2021) ask an important question regarding seasoned equity crowdfunding offerings (SECOs) (summarized in Table 1). They find that information asymmetries associated with SECO campaigns are less pronounced as more information is available on start-ups performance through the initial equity crowdfunding campaign. Their data indicate that SECOs have a pronounced ability to better signal quality due to the entrepreneur's otherwise scant track record and the absence or other mandated disclosure requirements, unlike the context of IPOs and publicly traded securities.

While there is a well-established literature on disclosure in traditional finance and alternatives, little is known about the disclosure

¹ This is mainly due the decline in volume of global alternative market industry in China. <https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2020-04-22-ccaf-global-alternative-finance-market-benchmarking-report.pdf>

Table 1

Overview of papers in the journal of corporate finance focused conference on alternative finance.

Title	Author(s)	Data	Main Findings
Information Asymmetry and Adverse Selection Information Frictions in New Venture Finance: Evidence from Product Hunt Rankings	Ruiqing Cao	Microdata from Product Hunt, an online platform covering a large number of technology start-ups' product launches	Start-ups with pronounced information asymmetries are more affected by online product rankings. Information asymmetry is more pronounced depending on physical distance, and where teams have at least one female maker.
Seasoned equity crowdfunded offerings	Jerry Coakley Aristogenis Lazos Jose Linares-Zegarra	709 UK equity crowdfunding (ECF) firms conducting a first seasoned equity crowdfunding offering (SECO) campaign over the 2011–2018 period	The paper investigates the impact of information asymmetry between initial (ECF) and seasoned equity crowdfunding offering (SECO) in the UK. The study finds a consistent results with the literature on IPOs and SEOs that higher success rate of the first SECO campaign is associated with the annualised valuation gains between the ECF and SECO campaigns. The paper also finds that platform shareholder structures is a main determinant of a successful SECO campaign as it mitigates possible moral hazard problems.
Naïve or Sophisticated? Information Disclosure and Investment Decisions in Peer to Peer Lending	Xiao Chen Bihong Huang Mohamed Shaban	Renrendai, one of the leading P2P lending platforms in China	The paper investigates how investors make their decisions and the way they assess the voluntary (non-standard) information disclosed by borrowers on the Renrendai P2P platform in China. The paper finds an increase in the likelihood of both funding and default where borrowers – particularly those with lower credit scores- voluntarily disclose more information on the platform. The paper highlights the need for disclosure related regulation to mitigate potential information manipulation on the P2P platforms.
Confidence and Capital Raising	Winifred Huang Silvio Vismara Xingjie Wei	Surveys, where participants are asked to assess the confidence of the management teams of 515 initial coin offerings (ICOs) by appraising their pictures.	The paper investigates the relationship between confidence in ICOs management team and companies' ability to raise external funds. Using an experimental research design on the pictures of ICOs management teams and other visual traits, the paper finds a positive and significant relationship between confidence and the amount of external fund raised. The results emphasise the role of soft information as a key communication channel between investors and entrepreneurs.
Moral Hazard and Risk Taking in Alternative Investments Debt Financing of Small OTC Firms Reporting to the SEC	Rebel A. Cole Claire Y. C. Liang Rengong (Alex) Zhang	Small firms trading on the over-the-counter (OTC) market that filing annual reports with the SEC	Although small firms traded on the OTC market are smaller in size, younger, have more R&D intensity and lower profitability compared with those listed on NYSE and NASDAQ stock exchanges, they are found to be more reliant on debt finance. The paper also finds a key role of diversified debt finance in funding small firms and non-profitable research-intensive ventures.
What Does Peer-to-Peer Lending Evidence Say About the Risk-taking Channel of Monetary Policy?	Yiping Huang Xiang Li Chu Wang	Loan application-level data collected from one of the leading P2P online lending platforms in China.	This paper investigates the possible risk-taking channel of monetary policy using loan level data. The study provides an empirical evidence of the impact of monetary policy on the risk-taking of non-bank financial institutions. The study also finds that the search-for-yield is the main driver of risk-taking and that higher probability of lending to a risky borrowers is associated with easing monetary policy.
Crowdfunding as Gambling: Evidence from Repeated Natural Experiments		Data were collected from different sources namely the multi-state lotteries (Powerball	Drawing on the sensation seeking personal trait, the paper investigates the main

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Table 1 (continued)

Title	Author(s)	Data	Main Findings
	Tolga Demir Ali Mohammadi Kourosh Shafi	and Mega Millions); State lotteries in California, Texas, New York, and Florida; Prosper and Kickstarter platforms.	motivations for bids made in Peer-to-Peer lending and whether investor excitement from risk-taking could explain the contributions to crowdfunding. The paper finds that the excitements of winning a large jackpot lottery satisfies lenders' sensation seeking desire. The paper contributes to the literature on the main motivations for crowdfunding.
Control Rights in Alternative Investments What drives the active involvement in business angel groups? The role of decision-making style, investment-specific human capital and group professionalization	Vincenzo Capizzi Cristophe Bonnet Laurence Cohen Aurelien Petit Peter Wirtz	A novel survey-based dataset by the members of two large and homogeneous business angel groups located in France and in Italy respectively namely "Savoie Mont Blanc Angels" and "Club degli Investitori".	This study investigates the mechanisms, internal structure and operations of business angel groups and their competencies. The paper develops a new framework based on human capital and business angels' decision-making process. The main finding is that business angels are more involved in investments related activities of an angel group where control-oriented decision-making style is prevailed.
The relevance of investor rights in equity crowdfunding	Lars Hornuf Tobias Schilling Armin Schwiendbacher	Hand-collected data from 18 German platforms of 256 ECF campaigns.	The paper examines whether investors on equity crowdfunding platforms in Germany exercise cash-flow, control, and exit rights and the effectiveness of these control rights. In contrast with the literature on venture capital contacts and the theory of control rights, the paper finds that equity crowdfunding campaign outcomes (the probability of securing a follow on funding and venture insolvency likelihood) are not impacted by offering those control rights. However, the results are consistent with the unique institutional environment in Germany.

This table summarizes various papers that focus on alternative finance including the titles, authors and main findings.

on the niche alternative finance marketplace, lending platforms. Disclosure on equity and reward crowdfunding may be distinguished from marketplace lending due to investor and borrower expectations (Adhami et al., 2019) and online lending criteria have been found to be different from the traditional robust ones e.g. business characteristics (Kgoroadira et al., 2019). Decisions on lending platforms rely on a range of hard and soft information (e.g., the number of friend endorsements or the self-reported purpose of the loan and applicant's appearance; Pope and Sydnor, 2011). The latter is essential for applications assessments of lower-quality borrowers (Iyer et al., 2016). Loan default rates on the popular lending platform Prosper are found to be associated with how the description texts were written by applicants in terms of readability, clarity and positivity (Gao and Lin, 2015). Other factors are found to impact the creditworthiness and the outcome of application e.g. typos in description text, text length and the use of emotional keywords (Dorfleitner et al., 2016; Figueredo and Varnhagen, 2005). In a more recent work, Chen et al. (2021) (summarized in Table 1) find that voluntary disclosure on a Chinese platform, Renrendai, plays a key role for investment decisions and loan applications assessment – in particular for low credit score applicants.

The literature also documents that several different criteria and information sets are used to determine interest rates imposed by Fintech lenders Cumming et al. (2019b). To raise funds, investors and entrepreneurs may focus on other subjective criteria e.g. appearance, photo, credit scores, employment status among others. Buchak et al. (2018) argue that Fintech borrowers are provided with more convenience rather than cost saving and hence they are charged -on average- a premium of 14–16 basis points. Lin et al. (2013) find that not only are borrowers with friends identified on the Prosper platform more likely to get the funds sought but also they are likely to be charged lower interest rates. Moreover, online friendships of borrowers – as a proposed signal of credit quality by lenders- is found to lower the ex post default hazard.

Duarte et al. (2012) find that appearance has a significant impact on borrowers on Peer-to-Peer (P2P) platforms. P2P lending involves individuals lending to borrowers, whereas marketplace lending includes institutions to lending money alongside individuals. Duarte et al. (2012) find consistent result with the trust-intensive nature of lending, that higher probabilities of funding, better credit scores and less probability of default are linked with borrowers' appearance being trustworthy. They argue that it could be hard or costly to manipulate the signal of reputational capital of borrowers and that trustworthiness itself has a common biological foundation (Cesarini et al., 2008). Relatedly, Vismara (2018) finds that crowdfunding offers could be more appealing to early investors where public profiles of borrowers are shared.

Unfortunately, discrimination has been shown to play an important role in investment decisions in traditional and alternative finance. For example, black entrepreneurs are less likely to get funded, and if they are funded then are charged higher interest rates

compared with white with similar credit profiles (Pope and Sydnor, 2011). Gender equality issue is also found in P2P lending as female loan listings are not likely to get funded as for male in China (Chen et al., 2020).

2.2. Information asymmetry and disclosure in ICOs

Financial markets have witnessed unprecedented growth in digital assets over the past decade. One of the main features of digital alternative finance as a decentralized fundraising model is its reliance on blockchain technology which is more efficient. The growth in digital technology has led to a significant reduction in transaction costs compared with traditional financial intermediaries; indeed the role of financial intermediaries will be redefined in the digital finance era with technology companies considered as a substitute. Howell et al., (2020) classify digital assets into three different non-mutually exclusive types namely cryptocurrencies,² security tokens (recorded and exchanged on blockchains) and utility tokens (allows the holder consumptive rights to access a product or service e.g. ICOs). ICOs are one of the recent advances in raising capital which is common among early stage start-ups (Philippi et al., 2021). ICOs raised around \$31 billion between 2016 and 2018 (Howell et al., 2020). The token markets have a daily average trading volume of \$3 million during the first 30 days of trading and that over 1000 start-ups have raised capital via ICOs amounted to \$12 billion since January 2017 (Benedetti and Kostovetsky, 2020).

Compared with the traditional routes of alternative finance, ICOs are unique and have several advantages e.g. less transaction and regulatory costs, rapid liquidity, tool for funding the developments of decentralized networks among other advantages (Catalini and Gans, 2018; Howell et al., 2020). This indeed help mitigates traditional alternative finance frictions e.g. asymmetry of information and agency problems. Companies raising funds via ICOs are much younger, smaller in size and at earlier stages of their life cycle compared with IPOs. More importantly, ICOs do not normally rely on underwriters; this in turn reduces transaction and legal costs significantly (Howell et al., 2020; Benedetti and Kostovetsky, 2020).

The literature on ICOs has investigated pricing dynamics (Catalini and Gans, 2018), ICO underpricing (Benedetti and Kostovetsky, 2020); risk sharing (Chod and Lyandres, 2020); disclosure quality and governance mechanisms (Deng et al., 2018); how entrepreneurs' incentives vary between ICOs and traditional sources of alternative finance (Garratt and van Oordt, 2019); signal quality of tokens (Davydiuk et al., 2020); smart beta in crypto assets (Li and Yi, 2019); and success factors for ICOs (Amsden and Schweizer, 2018) among others.

There are also challenges facing ICOs in the new era of disintermediation e.g. fraud, scam and lack of trust (Cumming et al., 2015; Cumming et al., 2019c; Cumming and Johan, 2019). For instance, ICOs usually issue tokens (cryptographically secured digital assets) and not traditional securities. Where tokens are regarded as promised payment instruments to be redeemed for the products and services, there is a great uncertainty whether products or services will be developed and hence the stability of tokens is a great concern by ICOs investors. Cryptocurrencies and ICOs investors are also subject to a greater uncertainty with respect to price volatility. Also, investors are subject to a greater risk as they are not adequately protected by laws and regulations in case of default (Howell et al., 2020). For instance, ICOs could avoid country-specific regulations on disclosure and prospectus requirements (Bellavitis et al., 2020).

In more recent research, Huang et al. (2021a) (summarized in Table 1) investigate the influence of managerial confidence on firm's ability to raise ICOs. They find a positive and significant link between confidence and the amount of capital raised. This strand of the literature also provides evidence of the importance of images and pictures of management teams of ICOs as a signal of communication in the new era of digital alternative finance. Images that communicate management confidence to investors can mitigate the high level of information asymmetry in capital raising for blockchain-based ventures.

3. Moral hazard and risk-taking

While problems of information asymmetry and adverse selection are pre-investment problems, moral hazard and risk taking are post-investment problems. Financial markets clearly exhibit costs of moral hazard and risk taking which have been extensively investigated in the finance literature. The literature also suggests mechanisms to mitigate the classic problems of moral hazards. One way to reassure marketplace investors and entrepreneurs is monitoring by informed lenders which is defined as the "skin in the game" (Gorton and Pennacchi, 1995; Hildebrand et al., 2017; Holmstrom and Tirole, 1997).

Consistent with the well-established finance literature, Cole et al., 2019 (summarized in Table 1) finds evidence that smaller and younger firms on the over-the-counter (OTC) market have higher R&D intensity and lower profitability than NYSE and NASDAQ listed firms. Cole et al. (2019) also show a significant reliance on debt finance by these smaller OTC firms, consistent with the significant use of debt by private firms in the U.K. (Cosh et al., 2009) and the U.S. (Robb and Robinson, 2014). The use of debt can exacerbate agency problems among smaller tech firms due to risk shifting and underinvestment (Cumming and Johan, 2013).

The growth in fintech and the developments of new sources of finance have new insights for agency problems. Crowdfunding for instance could suffer more from free riding problems and multiple monitoring costs due to the large number of investors and

² The total market cap for cryptocurrencies as at 4th Dec 2020 is \$352 billion (<https://coin.dance/stats#marketcap>). According to a survey on cryptocurrency companies across 38 countries conducted by the Cambridge Centre for Alternative Finance during September 2016 to January 2017, there are four key cryptocurrency industry sectors namely exchanges (higher employment rate compared with any other industry sectors), wallets (5.8 million – 11.5 million active wallets), payments (79% of payment companies have formal relationships with financial institutions) and mining (geographically dispersed around the world, however, mainly concentrated in few Chinese provinces). <https://www.crowdfundinsider.com/wp-content/uploads/2017/04/Global-Cryptocurrency-Benchmarking-Study.pdf>

entrepreneurs competing for funding (Guenther et al., 2018). And there are different types of agency problems that arise with different forms of crowdfunding (Strausz, 2017; Cumming and Johan, 2019; Cumming et al., 2019b). Rewards-based crowdfunding involves risks tied to product development and delivery. Equity-based crowdfunding and peer-to-peer crowdlending involves conflicts between shareholders and debt-holders, including underinvestment, risk shifting, and asset stripping, among other forms of moral hazard. For example, it has been reputed in China that many crowdlending platforms have been closed in 2019 apparently due to borrowers raising money through crowdlending and then taking the funds to invest in the stock market (Cumming and Johan, 2019); of course, that strategy pays off only in upward trending markets.

P2P lending is mainly concentrated on the consumer credit market that has two different distinctive features. P2P lending platforms are not subject to capital requirement constraints imposed by regulatory bodies on deposit-taking institutions. Moreover, P2P lending is wholly automated with minimum or no human capital intervention in the whole process (Fuster et al., 2019). The Fintech share of originated personal loan balances -up till the end of the first half of 2017- represents 32% of the total personal loan balances.³ The literature has focused on three policy questions: do P2P platforms lend to riskier borrowers, do only P2P platforms reduce frictions (borrowing time and transaction costs), and do P2P platforms encourage pronounced risk-taking?

Fuster et al. (2019) investigate how fintech lending reduces frictions in mortgage lending market in the U.S. e.g. the duration of the process and refinancing constraints. They find that mortgage applications process time is 20% faster by fintech lenders and this does not impact default rates. The latter is found to be 25% less compared with traditional lending. Tang (2019) investigates the growth in consumer credit market and whether P2P platforms and banks are substitutes or complements. The study finds that banks and P2P platforms are substitutes on the US unsecured consumer loan market and that only inframarginal bank borrowers could benefit from the credit supply brought by P2P lenders. Tang (2019) also finds that the quality of the aggregate P2P borrowers deteriorates when low quality bank borrowers migrate to P2P platforms. However, the study also finds evidence that where P2P platforms provide small loans, they complement banks as P2P platforms usually have lower fixed costs of originating loans compared with banks and hence, they are regarded as complements to banks in the small loan market.

Buchak et al. (2018) find that fintech lenders are more active in the refinancing market and that they tend to serve more credit-worthy borrowers; hence, this shows evidence of fintech complementarity with banks in the residential lending market. The remarkable growth of fintech has led to a dramatic increase in the market share of shadow banking in residential mortgage origination. Buchak et al. (2018) find that shadow banks market share in residential mortgage origination nearly doubled from 2007 to 2015. They argue that shadow banks could fill any gaps where traditional banks face higher regulatory constraints. However, crowdfunding type of lending is more active and dynamic in terms of serving more creditworthy borrowers. The growth of shadow banking due to imposing tougher regulatory constraints in mortgage lending and the rise in fintech is 60% and 30% on average respectively (Buchak et al., 2018).

On the other hand, extant literature well documents the risk-taking channel of monetary policy in financial institutions. Where monetary policy is expansionary, credit supply is expected to increase and credit quality drops (Kashyap and Stein, 2000). Searching for high yields, financial institutions tend to enter long-term contracts in return for a particular nominal rate of return. To achieve this target, financial intermediaries tend to invest in more risky instruments where monetary policy eases as the level of nominal rates of returns drops. A logical question to ask therefore is related to risk-taking channels for marketplace lending. Understanding the risk profile of online lending institutions has indeed implications for the regulatory bodies from the Marco prudential perspectives. Huang et al. (2021b) (summarized in Table 1) provide a new empirical evidence on the risk-taking channel of monetary policy. They find that the main motivation for risk-taking in P2P lending is the search for yield mechanism. They argue that the level of risk tolerance of P2P platforms increases, and a higher level of riskier loans is associated with monetary policy easing.

A different but equally interesting and well-established strand of the traditional finance literature has documented that one of the main motivations to invest in financial markets is investors' sensation seeking (Barberis and Huang, 2008; Zuckerman, 1994). Demir et al. (2019) (summarized in Table 1) extend this idea to the alternative investment context by drawing on sensation seeking personal traits. They investigate the main motivations for bids made in P2P lending platforms. They find that investor excitement and having fun are some of the primary explanations for P2P crowdlending decisions.

4. Control rights

There is an extensive body of financial contracting literature in traditional finance (see, e.g., Hart and Moore, 1999). In the alternatives area, there has been work that studies the allocation of control rights in venture capital depending on agency problems (e.g., Kaplan and Stromberg, 2003) and expected exit strategies (Cumming and Johan, 2008). And there is evidence that indicates financial outcomes are in fact subject to the allocation of control rights (Cumming, 2008).

Two papers build on this literature. First, Capizzi et al. (2019) (summarized in Table 1) study the relation between control-oriented decision making and active involvement in angel group activities. They show that control gives rise to more active participation in investments. Also, their data and analyses provide insights into group dynamics alongside the allocation of control rights. This work is unique in looking at control decisions and outcomes in angel groups.

A second paper by Hornuf et al. (2020) (summarized in Table 1) investigates the relevance of cash-flow, control, and exit rights awarded to crowd investors in Germany. Many of the rights used in venture capital investment contracts are similar to those used for

³ <https://newsroom.transunion.com/fintechs-taking-larger-share-of-personal-loan-market-while-increasing-portfolio-risk-return-performance/>

crowd investors. They find that while crowd investors are asked to pay higher prices if they receive more cash-flow and exit rights, these investors' rights are ineffective in driving exit outcomes. This finding could be also unique where a redemption clause with crowdfunded securities has been mandated. A redemption right allows the investor to sell shares back to the entrepreneur. Such a redemption right is a powerful disciplining tool (Kaplan and Stromberg, 2003; Cumming and Johan, 2008; Cumming, 2008). In countries that do not have a legislative redemption right for crowdfunded securities, such as the UK, the allocation of control rights does significantly affect investment outcomes (Cumming et al., 2019a).

5. Conclusions and future research

It is notable that since 2011, the growth of crowdfunding finance is gaining remarkable momentum as an important source of external finance for entrepreneurs and firms. In the UK for instance, equity crowdfunding was ranked the second (after Private Equity and Venture Capital finance) in terms of the number of equity deals (British Business Bank, 2019). This momentum creates unique sets of information asymmetry challenges for start-ups, in particular, between entrepreneurs and potential funders e.g. the short time scale for campaign, additional uncertainty associated with fintech (Courtney et al., 2017).

There is an impressive body of methodological, theoretical and practical research that has contributed to the knowledge in advancing understanding of the "funding gap" faced by entrepreneurial enterprises. Not only are firms increasingly looking beyond the more traditional sources of external finance but financial services are also undergoing a transformation that has reshaped banking and the financial markets rather profoundly. The advent of enabling technologies and innovative models to manage new firm demands and consumer behaviours are arguably the key drivers of the evolution of alternative finance.

The above discussion reveals that there are implications for the growth in P2P and marketplace lending in terms of agency relationships, asymmetry of information, adverse selection and moral hazard problems. The paper raises the question about the need for further integrating alternative investments and fintech related instruments into traditional corporate finance theories. For instance, more attention could be directed at the similarity and variations in alternative fintech sources and their price efficiency mechanisms. This is an important policy question that could potentially lead to a gradual transition from IPOs to ICOs/STOs over the coming decade. Therefore, studies on ICOs and tokens pricing, underpricing of ICOs, underperformance, volatility and stability will shape the future strand on digital alternative finance.

Another important strand of the literature is on the nature of tokens and whether they represent a utility value or considered tradable investments securities. Also, more thoughts are required on a need to regulate such tokens to be traded in a similar manner as traditions securities. The literature well documents the positive role of marketplace lending in supporting entrepreneurship (Cumming et al., 2019d). We believe that the influence of ICOs on entrepreneurship and how fintech would lead to substantial enhancements to access of funds for SMEs and private equity funds is also an important policy question.

The departure of CEO of LendingClub in 2006 raises concerns about the integrity of the lending process after the company was accused of misleading its investors (Thakor, 2020). Integrity and ethical standards and regulating fintech are other key topics that need more attention from researchers over the coming years. Possible research questions could also include investor and consumer protection and the role of regulations in enhancing and promoting crowdfunding. We argue that there is a need for new perspectives on regulating fintech related instruments and the future of the traditional financial intermediaries given the growth in disintermediation and blockchain-based alternative finance. Those are other important areas of research due to the growing concerns of fraud in the virtual world.

Future research is also needed on the risk-shifting and risk tolerance of traditional financial institutions and its economic impact as the result of the unprecedented growth in marketplace lending and how fintech could impact the banking industry. We also argue that more research is needed on the implications for information asymmetry in particular for both crowdfunding and seasoned crowdfunding and also the dynamics and diversity of fintech industry and its economic and social implications, including but not limited to whether or not fintech substantially improves financial inclusivity worldwide.

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