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The new investment landscape: Equity crowdfunding

Central Bank Review (CBR)

Provided in Cooperation with:

Central Bank of The Republic of Turkey, Ankara

Suggested Citation: Yasar, Burze (2021) : The new investment landscape: Equity crowdfunding, Central Bank Review (CBR), ISSN 1303-0701, Elsevier, Amsterdam, Vol. 21, Iss. 1, pp. 1-16, <https://doi.org/10.1016/j.cbrev.2021.01.001>

This Version is available at:

<https://hdl.handle.net/10419/297931>

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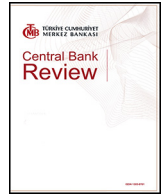
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The new investment landscape: Equity crowdfunding

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ARTICLE INFO

Article history:

Received 21 April 2020

Received in revised form

21 November 2020

Accepted 27 January 2021

Available online 10 February 2021

Keywords:

Alternative finance

Crowdfunding

Equity crowdfunding

Entrepreneurial finance

Crowdfunding platforms

ABSTRACT

Equity crowdfunding has emerged as a new landscape for financing ideas and innovations. While a number of countries has come a long way and developed equity crowdfunding platforms, a number of countries is taking it more slowly. This paper reviews how equity crowdfunding platforms function, the regulatory approaches around the world and academic contributions on signaling, success factors and social financing at equity crowdfunding platforms. The review suggests that further research may dive deeper into the socio-economic significance of equity crowdfunding and whether equity crowdfunding complements or substitutes traditional equity financing. Research contributions on the dynamics of equity crowdfunding in different geographical regions, motivations of funders, matching of funders and entrepreneurs, effects of regulations and evolution of potential campaign success factors are very critical for the development of the field. Despite debates about risks, equity crowdfunding seems to be a promising venue for financing entrepreneurs, democratizing demand and supply side of investments and contributing to economic growth.

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1. Introduction

Alternative finance market refers to capital raising activities outside the incumbent financial intermediaries, banks and traditional capital markets and has transformed the traditional fundraising landscape. The alternative finance market has developed mainly via a wide range of innovative instruments using artificial intelligence technology and online channels over the last decade after the credit crunch. Online alternative finance has started with online crowdfunding platforms (Fukuhara, 2020) but has rapidly grown with the development of new online capital raising activities such as peer-to-peer lending and initial coin offerings. On online crowdfunding platforms individuals, institutions or professional investors come together to fund creative projects, social projects or businesses. Crowdfunding has emerged as a combination of two familiar concepts: microfinance and crowdsourcing (Bradford, 2012). In crowdsourcing, contributions (ideas, content or services) are collected from many people to achieve a goal. Microfinance is lending very small loans to very poor people who may have difficulty accessing financial services.

Online alternative finance has grown and diversified significantly into investment, non-investment and lending models based

on what is promised to contributors in response to their contributions. Lending, investment and non-investment activities account for 96.4%, 3.0%, and 0.6% of global online alternative finance volume (OECD, 2020). Cambridge Centre for Alternative Finance (CCAF) has identified 14 different models which differ considerably in business models employed, target markets, market dynamics, regulatory framework, governance, financial risk, innovation and internationalization strategies (CCAF, 2020). This paper focuses on and reviews equity crowdfunding which constitutes a small share of the global alternative finance market but is expanding at speed. Even though the size of the equity crowdfunding is very small compared to debt based models, it receives increasingly more attention from regulators and policy makers. If equity crowdfunding market is properly regulated, it may potentially become a significant source of small and medium size enterprise (SME) funding (European Union, 2017). Public awareness, understanding of risks and supportive regulation may contribute to the development of this market and increase its share in the total global activity.

Equity crowdfunding has emerged as a market for founders where they can raise money from their close network including family, friends, customers and current shareholders as well as from a mass number of investors in return for an equity share in the business (Ralcheva and Roosenboom, 2019). Private companies can raise capital from the crowd through the sale of financial securities such as stock, debt, revenue shares and others without traditional financial intermediaries. Before equity crowdfunding, mostly

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Peer review under responsibility of the Central Bank of the Republic of Turkey.

wealthy and well connected investors like angel investors, venture capitalists and investors who are accredited could invest in start-ups. Equity crowdfunding might democratize the supply side of financial investments by providing the general public access to investing in innovative companies and potential financial returns. Furthermore, equity crowdfunding platforms provide a venue for individuals who want to make impact investments, see (Anirudh Agrawal and Hockerts, 2019; Yasar, 2021) for a review of impact investment. A distinctive characteristic of equity crowdfunding is that funders usually do not have professional investment experience and may have motivations other than pure financial return expectations (McKenney et al., 2017).

Equity crowdfunding may possibly reduce the barriers and democratize access to finance filling the growing equity gap following the global financial crisis after which traditional financing like venture capital investments and debt financing declined severely (Bruton et al., 2015; Fraser, 2012; M. Rossi, 2014; World Bank, 2013). It is now recognized as a financing alternative to traditional finance sources and gaining attention of entrepreneurs, policy makers and practitioners. Equity crowdfunding platforms provide an opportunity for entrepreneurs to reduce their reliance on their social network and overcome the geographical constraint (Kim, 2013; Younkin and Kashkooli, 2016). Moreover under certain circumstances, equity crowdfunding may help entrepreneurs raise capital at lower costs than conventional financing sources mainly for three reasons: 1) Improved matching of creators with funders who are most eager to invest in their startups 2) Bundling equity sale with additional rewards such as early access to products or recognition 3) To the extent that in equity crowdfunding information conveyed to investors is more in comparison to traditional sources. For example, information on other investors' interest, potential customers' product modification ideas and early research on market demand may increase investors' willingness to pay for the equity (Ajay Agrawal et al., 2014). Moreover, search costs for funds and communication costs are lower online. Higher competition in the supply of startup financing, may drive down the cost of capital for traditional sources of early stage financing.

On the other hand, entrepreneurs face other challenges in equity crowdfunding. First, entrepreneurs need to disclose information publicly on their product early on and this may increase the risk of product imitation. Another challenge is related to the investor management when there is a large pool of investors in the creator's campaign. Moreover, follow-on financing may be harder when there is a high number of small investors and venture capitalists may not like this dispersion. Since it is hard to control information disclosures of funders, another risk is related to the community dialogues of the highly dispersed funders (Ajay Agrawal et al., 2014). Platforms are aware of these challenges and work on designing structures and offerings to overcome them.

SMEs are choosing alternative financing more than ever (OECD 2020) and equity crowdfunding may become a critical funding source for SMEs/startups. In this respect research outputs are important to investors and policy makers. Since 2012, empirical research is progressing as a promising area of research under entrepreneurial finance but scholarly knowledge is still limited (Short et al., 2017; Block et al., 2018; Mochkabadi and Volkmann, 2020). Whereas equity crowdfunding has expanded exponentially in a number of countries such as United Kingdom, some countries such as Turkey and India, have been slow to adopt equity crowdfunding even though they had successful gift and reward crowdfunding (Bruton et al., 2015). Turkey recently passed regulation regarding equity crowdfunding principles and activities of platforms in October 2019 but equity crowdfunding is still illegal in India.

This paper contributes to our understanding of this promising

field of investment. In the next section, alternative finance models are summarized and compared followed by implications for businesses and regulatory developments across a number of countries. In the fourth section, functioning of equity crowdfunding platforms is discussed, followed by a review of equity crowdfunding literature on information asymmetries, quality signals, success factors and sustainability financing. Final section concludes the paper presenting debates over equity crowdfunding and future research avenues.

2. Online alternative finance models

Online alternative finance market has grown considerably and provided extensive funding, a total of \$304.5 billion for consumers, SME's, start-ups, entrepreneurs in 2018 based on data CCAF has collected from main actors in the alternative finance markets in 171 countries between March 2019 and September 2019 (CCAF, 2020). Table 1 lists the alternative finance volumes by region and model. China by itself constitutes 71% of the alternative finance market, with \$215.4 billion followed by the USA (\$61 billion) and the UK (\$10.4 billion) accounting for 57% of the total European market in 2018. About \$162 billion of the total volume is funded by institutional investors such as pension funds, banks, mutual funds and family offices. Around the world, average funding provided by institutions is 50% with some outliers such as the USA with 85% and Africa and Middle East with 17% and 12% respectively (CCAF, 2020). \$82 billion funding is undertaken by businesses with China leading the market with \$49.56 billion and the USA and the UK following with \$16.81 billion and \$5.96 billion respectively. Global transaction volume declined from \$419 billion in 2017 and this decline is mainly associated with the drop in the Chinese market. Excluding China, global alternative finance market grew by 48% from 2017 to 2018 (Fig. 1). Table 2 lists the alternative finance volumes per capita categorized by economic development levels of countries in 2018. The data suggests that alternative finance funding per capita differs significantly between developing and developed countries suggesting that the promise of democratizing access to finance has not been realized yet in places where it is needed the most (CCAF, 2020). USA, UK, Latvia, Estonia and the Netherlands are the top five countries on a per capita basis. Even though Latvia and Estonia are not high in total volume, high adoption and market penetration rate pull them to top ranks on a per capita basis. Non-European countries that are doing well on a per capita basis are Singapore, New Zealand, Australia, Israel and Canada. In some developing countries like Slovakia, Slovenia, Zambia and Nigeria, funds are raised via international platforms.

CCAF has identified 14 different models under debt, equity and non-investment models and major ones are listed in Table 3 (CCAF, 2020). Debt based models account for the majority of the global alternative finance activity around the world. China by itself made \$215.37 billion from debt-based models and is the leader globally. Lending on online platforms includes peer to peer (P2P) or marketplace lending, balance sheet lending, invoice trading and securities. Peer to peer (P2P) or marketplace lending includes unsecured/secured loans to consumers or businesses provided by individual or institutional funders. Balance sheet lending includes unsecured/secured loans to consumers or businesses provided by the platform entity. Invoice trading is the purchase of business receivables or invoices at a discount by individuals or institutions. Securities include bonds, debentures and 'mini' bonds purchased by individuals or institutions. P2P or marketplace consumer lending accounts for the largest part of the online alternative finance market as it is popular among borrowers who have difficulties accessing loans and those looking for lower interest rates. Another advantage of online lending is more accurate calculation of

Table 1
Alternative finance volumes by region and model in 2018, USD.

Region	Debt	% of Total Alternative Finance	Equity	% of Total Alternative Finance	Non-Investment	% of Total Alternative Finance	Total Alternative Finance Volume Billion
China	215.37b	99.99%	22.18m	0.01%	5.80m	0.00%	215.40
US	57.67b	94.67%	2.55b	4.19%	696.50m	1.14%	60.92
UK	9.31b	90.77%	870.19m	8.48%	76.60m	0.75%	10.26
Europe	6.60b	85.48%	883.32m	11.44%	237.75m	3.08%	7.72
Asia-Pacific (exc. China)	5.34b	87.22%	504.84m	8.25%	277.28m	4.53%	6.12
Latin America	1.70b	95.26%	45.61m	2.56%	39.05m	2.19%	1.78
Middle East	754.14m	94.20%	35.63m	4.45%	10.78m	1.35%	0.80
Canada	705.69m	77.71%	43.52m	4.79%	158.94m	17.50%	0.91
Africa	183.76m	87.86%	11.85m	5.67%	13.53m	6.47%	0.21

Adapted from CCAF (2020), "The Global Alternative Finance Market Benchmarking Report".

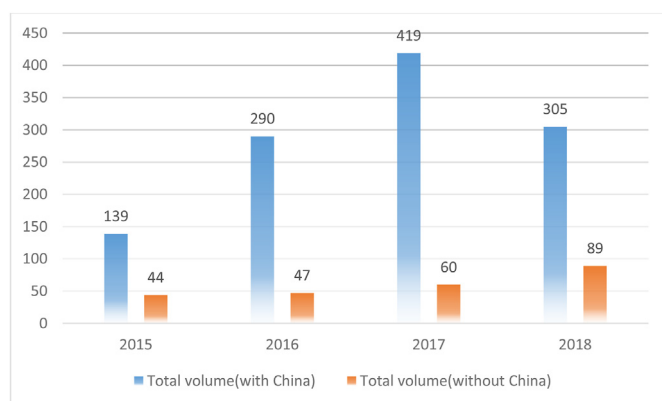


Fig. 1. Global Alternative Finance Volumes, billion USD.
Source: CCAF (2020), "The Global Alternative Finance Market Benchmarking Report"

credit risk default via use of machine learning and artificial intelligence than traditional finance (CCAF, 2020). Mini bonds' issue size is much smaller than the traditional bonds issued at capital markets. The alternative finance model that has raised the most funding is P2P/Marketplace consumer lending totaling \$195.29 billion and accounting for around 64% of the total global volume including

China and 36% excluding China. Then comes the P2P/Marketplace business lending with \$50.33 billion, balance sheet business lending with \$21.08 billion, balance sheet property lending with \$11.02 billion, balance sheet consumer lending with \$9.78 billion, P2P/Marketplace property lending with \$5.72 billion and invoice trading with 3.22 billion account for 17%, 7%, 4%, 3%, 2% and 1% respectively of the overall transaction volume including China and 9%, 17%, 12%, 11%, 4% and 3% excluding China.

Investment and non-investment models come after debt based models, but their volumes are far less compared to debt globally. Investment based models include equity crowdfunding, real-estate crowdfunding and profit sharing. Different from lending based crowdfunding, equity based crowdfunding is in effect business finance and more specifically finances SMEs (European Union, 2017). In equity crowdfunding, individuals or institutions fund businesses in return for a share in the company. In real estate or property crowdfunding individuals or institutions can provide equity or subordinate debt financing for real estate and obtain property share. In revenue/profit sharing, which is relatively a new model and popular in US and UK followed by Canada and Africa, individuals or institutions receive a share of profits or royalties in return for funding. Equity based crowdfunding amounts to nearly \$5 billion of the global online alternative finance market and real estate crowdfunding accounts for \$2.96 billion of this amount. Even though real estate crowdfunding is 60% of the total equity based

Table 2
Alternative finance volumes per capita around the world.

Top 20 Countries	High Income Country	On a per capita basis (USD)	Upper-Middle Income Country	On a per capita basis (USD)	Lower -Middle Income Country	On a per capita basis (USD)	Low Income Country	On a per capita basis (USD)
1	USA	186.88	Armenia	62.35	Moldova	16.66	Rwanda	0.93
2	UK	155.93	Georgia	51.73	Mongolia	11.91	Tajikistan	0.52
3	Latvia	132.12	Samoa	8.94	Indonesia	5.42	Uganda	0.39
4	Estonia	120.77	Botswana	6.84	Nicaragua	2.53	Liberia	0.18
5	Netherlands	104.83	Tonga	6.59	Zambia	2.35	Sierra Leone	0.18
6	Singapore	88.61	Albania	6.25	Philippines	1.09	Malawi	0.13
7	Israel	81.70	Bulgaria	5.75	Honduras	0.95	Togo	0.11
8	Finland	68.72	Peru	4.95	Timor-Leste	0.95	Haiti	0.10
9	New Zealand	56.54	Kazakhstan	4.76	El Salvador	0.73	Tanzania	0.10
10	Cyprus	53.32	Colombia	3.88	Kenya	0.68	Mali	0.07
11	Lithuania	48.92	Costa Rica	3.60	Cambodia	0.61	DRC	0.06
12	Australia	46.68	Brazil	3.21	Ukraine	0.60	Burkina Faso	0.04
13	Monaco	40.61	Paraguay	3.15	Solomon Islands	0.51	Madagascar	0.03
14	Sweden	29.27	Argentina	2.90	Zimbabwe	0.43	Mozambique	0.02
15	Denmark	24.97	Malaysia	1.96	India	0.40	Nepal	0.01
16	Canada	24.54	Macedonia	1.94	Cameroon	0.40	Benin	0.01
17	Slovenia	17.74	Mexico	1.85	Bolivia	0.30	Afghanistan	0.01
18	France	16.81	Guatemala	1.64	Kyrgyzstan	0.27	Burundi	0.00
19	Chile	15.44	Jordan	1.29	Senegal	0.23	Gambia	0.00
20	Germany	15.39	Romania	1.06	Vietnam	0.18	South Sudan	0.00

Adapted from CCAF (2020), "The Global Alternative Finance Market Benchmarking Report".

Table 3
Online alternative finance models.

Alternative Finance Model	Volume (billion USD) Including China	Volume (billion USD) Excluding China	Market Share Excluding China	% of Inst. Investors	% of no significant changes to business model	Cross Border Inflow	Cross Border Outflow	% of Banked
Debt Based								
P2P/Marketplace Consumer Lending	195.29	32.00	36%	83%	62%	49%	48%	85%
P2P/Marketplace Business Lending	50.33	7.60	9%	57%	59%	13%	10%	66%
Balance Sheet Business Lending	21.08	15.00	17%	68%	58%	22%	36%	70%
Balance Sheet Property Lending	11.02	11.00	12%	-	25%	-	-	-
Balance Sheet Consumer Lending	9.78	9.40	11%	93%	28%	17%	0%	47%
P2P/Marketplace Property Lending	5.72	3.90	4%	44%	74%	12%	3%	88%
Invoice Trading	3.22	2.50	3%	63%	59%	34%	28%	60%
Debt-based Securities	0.85	0.84	1%	31%	20%	38%	54%	89%
Mini-bonds	0.33	0.05	0%	-				
Equity Based								
Real Estate Crowdfunding	2.96	2.90	3%	16%	40%	7%	4%	93%
Equity Crowdfunding	1.50	1.50	2%	23%	33%	12%	9%	94%
Revenue Sharing	0.40	0.40	0%	70%	35%	2%	3%	70%
Non-investment Based								
Reward-based Crowdfunding	0.88	0.87	1%	3%	51%	6%	19%	-
Donation-based Crowdfunding	0.64	0.64	1%	18%	85%	11%	2%	-

Adapted from CCAF (2020), "The Global Alternative Finance Market Benchmarking Report".

crowdfunding activity, equity crowdfunding is more familiar among public. US leads the equity based crowdfunding model, UK is the second and Europe is the third with \$278 million (CCAF, 2020). Israel constitutes 96% of the Middle East market with \$34.3 million. The size of the equity crowdfunding is very small compared to debt based models but it receives more attention from regulators and policy makers. Public awareness, understanding of risks and supportive regulation may contribute to the development of this market and increase its share in the total global activity.

Non-investment models include reward based and donation crowdfunding models in which funders do not receive a financial return. In reward based models, funders receive early releases of products or rewards. In donation based models, funders donate money for philanthropic or civic purposes to projects, individuals or companies. Even though these models constitute the smallest percentage of the global alternative finance market, reward based crowdfunding totals \$876.8 million globally and donation crowdfunding even less, they are critical for countries who are new to the alternative finance as these models mostly precede other models (CCAF, 2020). US leads the reward based crowdfunding market with a volume of \$385 million followed by the Asia-Pacific region, \$201.5 million excluding China, and Europe, \$175.4 million.

Internationalization has been increasing in terms of platforms operating in multiple countries and engaging in cross border activities. Inflow of funds refers to funds transferred from funders/investors abroad and outflows refer to funds which are transferred to fundraisers. Some alternative finance models such as P2P/Marketplace consumer lending (48% outflows and 49% inflows), debt-based securities (54% outflows and 38% inflows), invoice trading (28% outflows and 34% inflows) and balance sheet business lending (36% outflows and 22% inflows) are characterized by higher level of cross border activities as listed in Table 3. Internationalization level is lower for other models such as real-estate crowdfunding, P2P property lending and equity based crowdfunding that

require property as a security or local relations. The tendency to invest in companies in close proximity is a common phenomenon in equity investments and this local bias seems to hold for equity-based crowdfunding as observed in the low levels of inflow and outflow rates. Hornuf et al. (2020) confirm that local bias exists for equity based crowdfunding even after controlling for family and friends based on hand collected 20,460 investment decisions. Equity based crowdfunding seems to be mainly a domestic activity as investors may prefer to know the business owner to assess the risks of their investment. Moreover, equity investments are more regulated due to relatively higher risk and regulations may change from country to country. Investors may avoid cross-border investments because they feel more at ease and safer where they are familiar with the regulatory compliance.

One of the main research questions is whether alternative finance has democratized access to finance and can lead to greater financial inclusion. Financial inclusion is defined by the World Bank as people's access to financial products and services suiting their needs and has wide ranging benefits such as improving people's potential to earn income and decrease poverty (Demirguc-Kunt et al., 2018). Having an account at a financial institution or mobile service provider is an indicator of financial inclusion as it enables individuals to save, access loans and manage financial risk. One metric for financial inclusion is an individual's banking status and CCAF has asked the survey respondents to specify the number of customers who do not have access to traditional financial products and services or are unbanked. Based on the 36% response rate, they find that the highest percentage of unbanked customers is around 18% in Africa and Asia-Pacific excluding China. In the USA and Canada, the number of unbanked customers is minimal but the percentages of underbanked customers who have access to some financial products and services are 25% and 38% respectively. CCAF suggests that the promise of democratization of access to finance has yet to be fulfilled and this may be related to platforms' efforts to

get legitimacy and scale up first or the discrimination by institutions which are growing in numbers in alternative finance market as well. As seen in Table 3, banking status of customers also differs across alternative finance models. The equity based and real estate crowdfunding models have the highest percentage of banked customers whereas balance sheet consumer lending has the lowest percentage.

While there are papers investigating the promise of democratization in reward-based crowdfunding, research for equity crowdfunding is limited. Guenther et al. (2018) investigate whether equity crowdfunding democratizes access to finance for remotely placed entrepreneurs or whether investors in equity crowdfunding, similar to traditional investors, are sensitive to the geographic distance between them and the potential investment's location. Using a sample from one of the leading equity crowdfunding platforms in Australia, ASSOBS, the authors find that home country investors are sensitive to distance but overseas investors are not. Home country investors', both accredited and retail, likelihood to invest in equity crowdfunding projects decreases as the distance between them and the potential venture increases. Empirical evidence has shown that besides distant entrepreneurs, women have difficulties in accessing financing in capital markets. Vismara et al. (2017) investigate whether equity crowdfunding democratizes access to finance for women using a sample from one of the leading crowdfunding platforms in the United Kingdom, Seedrs, and show that gender diversity is greater in equity crowdfunding platforms than traditional entrepreneurial finance markets. On the other hand, another study shows that the likelihood of successfully raising funds in equity crowdfunding is not higher for women and minority entrepreneurs (D. Cumming et al., 2019). More research is needed on whether equity crowdfunding succeeds in democratizing the supply and demand sides of entrepreneurial finance. Future research can focus on other underrepresented or underserved groups (which vary in age, gender, socioeconomic status, ethnicity, geography or religion) in entrepreneurial finance markets. Further analysis can examine whether the funded ventures succeed and grow in a similar fashion to ventures raising capital via traditional channels.

3. Implications for businesses and regulatory developments

One of the priorities of many countries has been supporting small and medium size enterprises to get financing for their important contribution to innovation, creation of jobs and economic development (World Bank and CCAF, 2019). After the financial crisis, SMEs had difficulty obtaining financing since banks limited loans and venture/growth capital shrank. For this reason, accessible funding options became critical for them to pass the valley of death and grow (European Union, 2017). CCAF states that alternative finance has become a significant source of financing for SMEs (CCAF, 2020) and SMEs are choosing alternative financing more than ever, while straight debt usage has been slow (OECD, 2020). In the United Kingdom, start-ups and SMEs used 68% of the total funds raised via online alternative finance channels in 2017, and equity crowdfunding accounted for 12.9% of the total early and venture stage equity investment (Zhang et al., 2018). OECD notes that online alternative finance volumes for businesses are mainly concentrated in a number of countries but are growing in all Scoreboard countries (48 countries including both OECD and non-OECD countries). In 2018, inflation adjusted growth rate is 54% and the growth rates are high specifically in emerging and small economies (See Fig. 2). If this growth continues, SMEs can become more resilient in times of financial crisis, credit tightness and liquidity shortages during pandemics such as COVID-19 (OECD, 2020). While in developed markets such as United Kingdom and

Australia growth rates are starting to settle at 9% and 6%, in China which has the world's largest alternative finance volume (See Fig. 3), the market shrank by 57% after regulations for platform eligibility and operations were put in force to prevent fraudulent behavior and protect investors. The number of P2P Platforms decreased from 6000 in 2015 to 427 in October 2019. After some frauds at a number of active platforms in Korea, another developed market, the alternative finance market for businesses plunged by 77%. In terms of online alternative finance volumes as a percentage of GDP, China, the UK, Estonia and Israel are the leaders and surpass the median value of 0.0168% (see Fig. 4).

Like the rest of the economy, the pandemic may affect the development and growth of equity crowdfunding. A number of equity crowdfunding platforms collaborated with governments and some debt-based crowdfunding platforms provided the most critical funding to SMEs during the lockdowns (Kraemer-Eis et al., 2020). However, like the rest of the financial sector, crowdfunding platforms may be negatively affected by the uncertainty the pandemic has created and investors may refrain from making new investments. Some equity crowdfunding platforms have already reported losses and declines in the investment activity (Mason, 2020). On the other hand, social distancing and the shift to online communication during COVID-19 may spur more interest in crowdfunding platforms in comparison to traditional channels. Initial evidence on the impact of the COVID 19 pandemic on equity crowdfunding campaigns shows that the total amount raised in the first two quarters of 2020 is much higher than the amount raised in the same period based on a sample of Italian equity crowdfunding projects (Battaglia et al. n.d.). The study also reports that during the pandemic, backers are more likely to fund technological projects and projects with high amount of R&D expenditure. (see Fig. 4)

Equity-based models have accounted for only 8% of business financing in 2018 globally but equity crowdfunding is becoming a more significant source of equity finance in some countries for SMEs which are critical for job creation and economic growth (CCAF, 2020). In the United Kingdom, equity based crowdfunding has grown to £333 million in 2017 from £3.9 million in 2012 and provided significant seed and early stage funding (Zhang et al., 2018). In 2017, equity crowdfunding funding accounted for 12.9% of seed and early stage equity financing in the United Kingdom (Zhang et al., 2018). Countries around the world develop policies and make regulatory changes in the interest of investor protection to enable the crowdfunding channel which can complement traditional financing and broaden the financial system. For example, the European Commission's Capital Markets Union project adapted an action plan to integrate and strengthen the capital markets including the crowdfunding market in September 2015. Many countries have passed regulations on equity crowdfunding but the regulatory approaches seem to be highly dispersed in terms of limitations on the investor type, investment amount and platforms' solicitation methods (Estrin et al., 2018). Some regulatory approaches are very liberal and some are very protectionist. The disparity in approaches may be partly explained by differences in political-economical approaches to the state's role, economic structures and support to increase entrepreneurial activities in a country (Claus and Krippner, 2019).

The United Kingdom is known to have the most developed equity crowdfunding market and this does not come as a surprise given it has also deep capital markets (Groh et al., 2012; Vismara, 2016). The UK had the highest number of active crowdfunding startup platforms among the European countries by the end of 2014 (Dushnitsky et al., 2016). The Financial Services and Markets Act (FSMA) 2000 regulates all kinds of securities activities including crowdfunding. The Financial Conduct Authority (FCA), which is the regulatory body for crowdfunding, amended rules governing

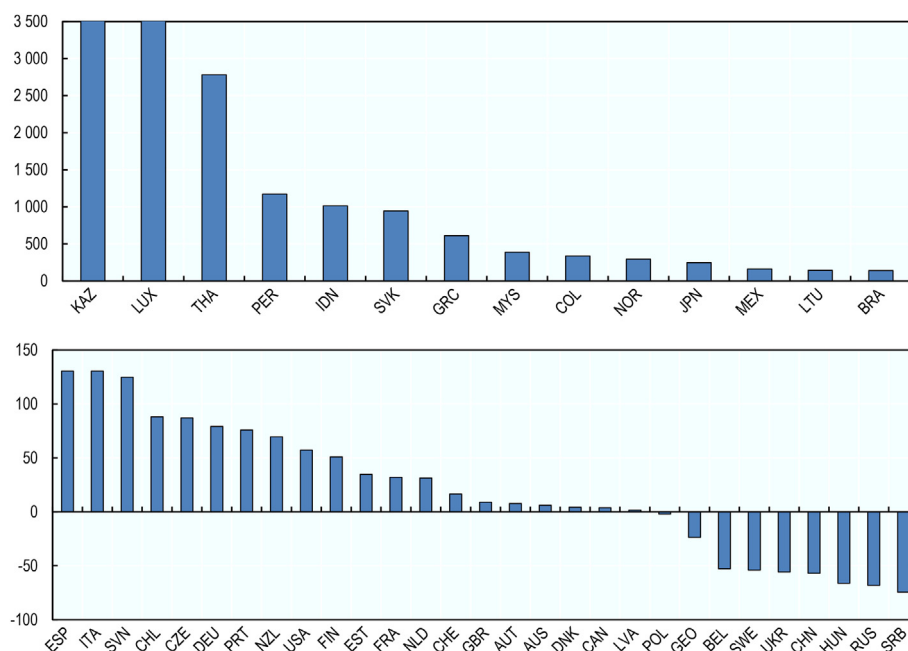


Fig. 2. Annual percentage growth in the online alternative finance market for businesses, 2018.
Source: OECD Scoreboard (2020), "Financing SMEs and Entrepreneurs 2020"

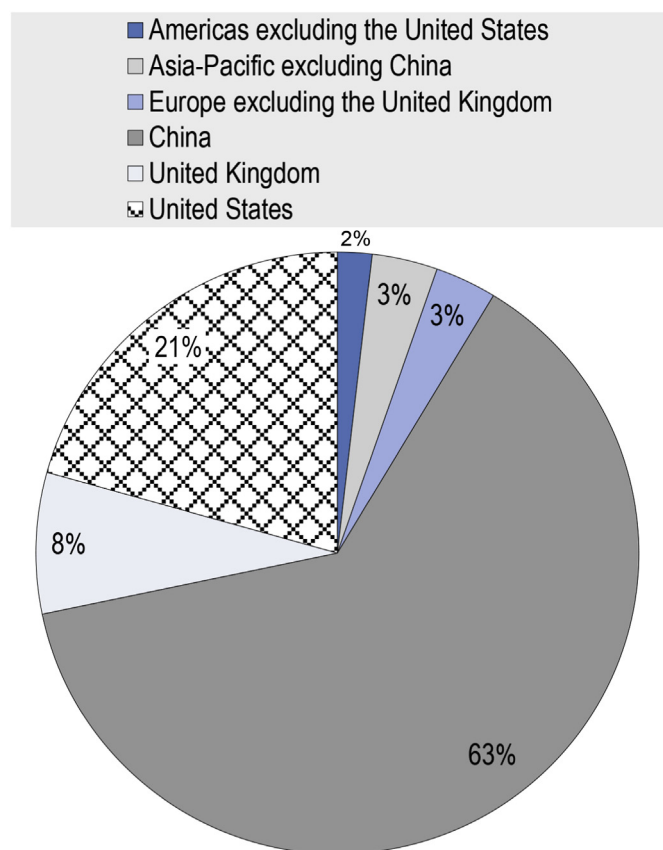


Fig. 3. The online alternative finance market for businesses by region, 2018
Source: OECD Scoreboard (2020), "Financing SMEs and Entrepreneurs 2020"

crowdfunding in April 2014 to ease the development of crowdfunding. Key objectives of the FCA were protecting consumers and

promoting active competition for their interests. In 2012, the UK government also gave tax incentives to seed stage startups to spur investments in them. Tax relief and capital gain tax exemption were given to businesses with fewer than 25 full time employees and which raised no more than 150,000 pounds. Investors may tend to take on risks if there exists tax incentives for investing in startups. Empirical evidence shows that investors invest more money in firms eligible for such tax incentives and sophisticated investors invest even more (Chen et al., 2018).

United States was slower to pass on the regulations which were not put into force until 2015 and 2016. Before equity crowdfunding, the privilege to invest in startups belonged to mostly wealthy venture capitalists and angel investors. These were accredited investors whose net worth, excluding their houses, exceeded one million dollars, or those who earned more than \$200,000 over the past two years. The Jumpstart Our Business Startups Act that enabled equity crowdfunding was passed by President Barack Obama in 2012. The intention was to boost funding of small businesses in the United States. However, the two regulations weren't implemented until 2015 and 2016. Regulation Crowdfunding was passed in 2016 and allowed non-accredited investors to invest as little as \$100 in startups and founders to advertise their fundraising campaigns and raise up between \$50,000 and \$1,070,000 each year through equity crowdfunding. Regulation crowdfunding allows investors to invest 5%–10% of their net worth or income each year through an equity crowdfunding platform, a dealer or a broker. Companies can also raise capital from investors under Regulation D, Rule 506b and Regulation A+ at equity crowdfunding platforms in the USA. Investors can raise unlimited dollars under Regulation D and Rule 506b campaigns, however, only accredited investors can invest in these campaigns and the founders cannot advertise Regulation D campaigns. Regulation A+ campaigns suit the needs of later-stage companies as they can raise up to 50 million dollars publicly.

Turkey passed the regulation for crowdfunding in October 2019. In order to be listed as an equity platform, joint stock companies which have minimum TRY 1,000,000 paid-in capital can apply to

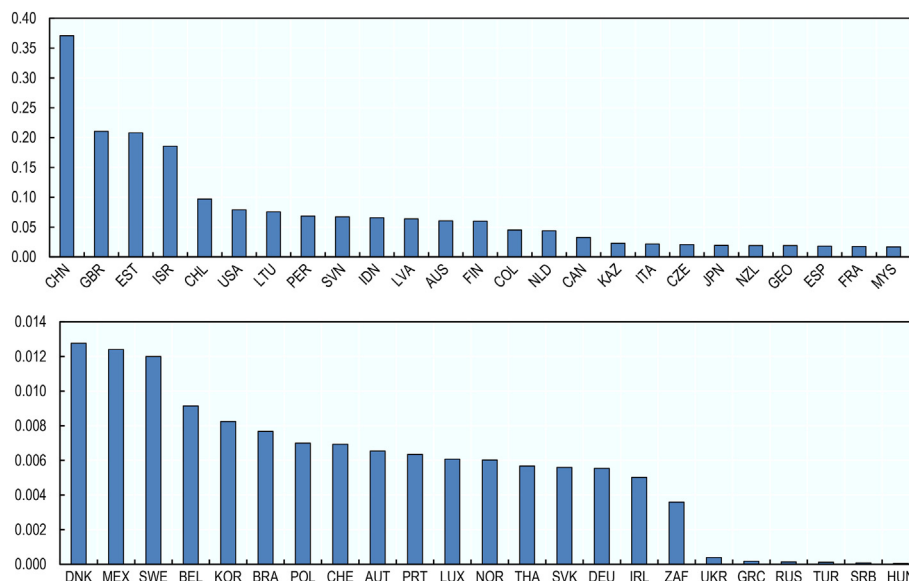


Fig. 4. The online alternative finance market for businesses as a percentage of GDP, 2018
Source: OECD Scoreboard (2020), "Financing SMEs and Entrepreneurs 2020"

the Capital Markets Board of Turkey. Individuals who are not accredited investors can invest as much as TRY 20,000 in a given year through equity crowdfunding. However, they can also invest as much as 10% of their declared yearly income as long as it does not exceed TRY 100,000. Start-ups that will raise capital through equity crowdfunding are required 1) to conduct technology and/or production activities 2) be established within the last 5 years as of the date of information form 3) have an actual registered website that they regularly monitor and control. The following companies cannot collect funds through equity crowdfunding: 1) Public companies 2) Companies whose management control belongs to another legal entity 3) Companies in which the Capital Markets Board of Turkey holds shares with a significant influence.¹

Among Association of Southeast Asian Nations (ASEAN), the earliest country to pass equity crowdfunding regulation was Malaysia. Securities Commission Malaysia (SC) released the regulatory guidelines and requirements for registration and governance of equity crowdfunding platforms in December 2015. Since then Malaysia's alternative finance has grown progressively and as of May 2019 ten equity crowdfunding platforms were registered (World Bank, 2019). In Asia, China has the greatest potential in crowdfunding capital as it is expected that household investments will be around US\$50 billion per year by 2025 (World Bank, 2013). The Securities Association of China issued first draft of equity crowdfunding regulations in 2014. China Securities Regulatory Commission issued an Implementation Plan in October 2016 to limit the prohibited activities and it did not include other aspects of equity crowdfunding platform licensing and prospectus requirements (Lin, 2017). Since then there is no sanction on ECF platforms which behave like investment and fund managers (Lin, 2017).

The earliest country in Europe to pass equity crowdfunding legislation is Italy and the Decreto Legge went into effect on October 20, 2012 (Hornuf and Schwenbacher, 2017). However, the legal procedures were too restrictive and inhibited the growth of the equity crowdfunding market. The estimated value of the market was only €1,600,000 while it was worth nearly €50 million in

neighboring France in the same year (European Crowdfunding Network, 2016). Until the regulatory change in 2017, only 'innovative startups' were allowed to raise capital in the equity crowdfunding market in Italy. Since the regulation opened up the equity crowdfunding market to all SMEs, the market has been growing and the total volume in 2018 was three times higher than the volume in 2017 (Ziegler et al., 2019). The tax relief was increased to 40% in 2019 and this is also expected to spur growth. France passed the first regulation for equity crowdfunding on October 1, 2014 and significantly amended it on October 28, 2016 (ECN, 2018). Canada approached equity crowdfunding on a provincial level rather than a nationwide level and each province has its own regulation (Vismara, 2016). This has significantly inhibited the growth of Canada's equity crowdfunding market as it is difficult for a platform in British Columbia to list a startup registered in Ontario (Rose, 2019). Table 4 lists the top countries in equity crowdfunding volumes and major regulatory developments. The development of the equity crowdfunding market varies across countries and this variation may be related to differences in regulations besides the development of the financial markets, institutions and culture. Further research can look into how regulatory approaches affect the growth of equity crowdfunding markets.

4. How equity crowdfunding platforms function

Equity crowdfunding platforms, like other types of crowdfunding platforms, are two-sided markets which match founders with funders. However, unlike other crowdfunding methods, in equity crowdfunding, investors take on higher risks and expect a financial return. Besides backers' monetary return goals, three critical differences between equity and rewards based crowdfunding are: (1) pledged amount is significantly higher (2) average campaign goal is considerably higher (3) projects are valued before the funding (Vulkan et al., 2016). Hence, equity crowdfunding is regulated more heavily than rewards based crowdfunding. Founders are restricted on information they share with the general public and they must make certain disclosures and follow certain rules. Platforms distribute the campaign information but they do not often verify the information disclosed in updates that entrepreneurs share (Dorfleitner et al., 2018).

¹ Turkish Official Gazette dated 3 October 2019 and numbered 30,907.

Table 4
Regulatory developments and equity-based crowdfunding volumes (million USD).

Region	Country	Regulatory Developments/Year	2015	2016	2017	2018
Europe Total	United States	Title II of the JOBS Act/2012	590	550	240	510
	United Kingdom	Title III of the 2012 JOBS Act/2016				
		Financial Services and Markets Act/2000	361	336	450	484.7
		Tax incentives/2012				
		Amendment/2014				
			176.9	242	237.9	278.1
	Finland	Finnish Crowdfunding Act/2016	6.2	28.8	50.7	67.9
	Spain	The Law on Promoting Business Finance/2015	5.3	10.1	21.2	48.4
	Germany	Retail Investors Protection Act	23.7	47.4	19.7	37
		(Kleinanlegerschutzgesetz)/2015				
Asia-Pacific Total (exc. China)		Amendments to the Investment Products Act (Vermögensanlagegesetz)/2017				
	France	Regulation Crowdfunding/2012	75.1	43.3	48.4	
		Amendment/2016				
	Sweden	No specific regulation	6.5	46	34	
	The Netherlands	Crowdfunding Regulation/2014	17	27.15	17.82	
		Amendment/2016				
	Italy	Regulation Crowdfunding/2012	5.4	1.7	4.8	
	Turkey	Regulation Crowdfunding/2019				
				98.6	100.9	162.1
	Hong Kong	No specific regulation	0			38.3
	South Korea	Amendments to Capital Markets Act/2015	0.24	0.73	13.82	31.3
	Australia	Regulation Crowdfunding/2017	56	10.51	2.04	28.3
		Amendment/2018				
	China	Regulation Crowdfunding/2014	1450	460	220	10

Companies that can raise capital through equity crowdfunding are private companies. In other words, public companies listed on stock exchanges cannot raise additional capital via equity crowdfunding platforms. Entrepreneurs that are selected by the platforms can make an open call to raise funds and investors decide taking into consideration the provided information on the campaign page. Some platforms e.g. Crowdcube and Seedrs do not let entrepreneur pitches to go public before a certain investment threshold is reached. The purpose is to ensure sufficient time to secure entrepreneurs' lead investments and provide the close network of family, friends, customers and business contacts to invest before everyone else. Founders set a minimum funding goal and there are two models used in crowdfunding platforms. The founder keeps all the money if he/she reaches his/her funding goal in the 'all or nothing' model and nothing otherwise. In the 'keep-it- all' model, the founder keeps all the money raised.

Compared to traditional angel or venture capital investments, investments in equity crowdfunding are considerably smaller most of the time. While some platforms accept investments as low as €5 or \$5, some platforms resemble virtual business angel networks limiting investments to accredited investors who have either high income and/or wealth (Hornuf and Schwienbacher, 2016). Investing is rather easy on the platforms as investors just hit the invest button, specify the amount of their investments and transfer the money to the escrow account if their application for investment is approved (rarely investments may be rejected or reduced to a lower amount). There are numerous payment options such as credit cards, bank accounts, wire transfers and Bitcoin. Once the campaigns are over, standardized investment contracts that the crowdfunding platforms provide are signed online. The platforms facilitate payment settlements and charge a certain percentage of what is raised.

The duration of campaigns are determined in the beginning and usually runs for 30–60 days. There are two opposing views on campaign duration in terms of signaling confidence in the project and quality. A number of papers suggests a negative relation between campaign duration and reward based funding performance (Marelli and Ordanini, 2016). In contrary, other research suggests

that funders appreciate more time to effectively screen and analyze projects and show that campaigns which are longer than 30 days may have higher probability of success in donation or reward based platforms (Gordon et al., 2013; Lagazio and Querci, 2018; Zheng et al., 2014). Equity fundraising round sometimes lasts around three weeks and closes at the announced deadline but it may close earlier if the funding target is met. If there is more money provided than the initial funding goal, in other terms, if the round is "over-subscribed", then the investors may be waitlisted. In such cases, it is most often first come first serve basis but founders have the option to choose which investors to accept and they may prefer the ones who can be of most help to their startups. Investors can help founders, by introducing them to networks, giving feedback on products, giving business advice and transferring knowhow. Investors cannot directly reach founders and all of the communication is conducted via the platform website.

Cancellation of investments is rare but both investors and founders have the right to do so. The cancellation of investment is usually possible when the funds are still in the escrow account but the cancellation is less likely when the round is officially closed and the funds are transferred to the startup.² However, in equity crowdfunding, investors can sell their shares in a company after a year to an interested buyer. The high number of investors create liquidity in the market unlike older times when only accredited investors were able to invest and the market was not large enough to provide liquidity. A number of initiatives has been taken to develop secondary markets for equity but none has been particularly successful. Blockchain technology can offer a more cost-efficient solution and France has adopted a decree in December 2017 to ease the records and transfers of financial securities using this technology (Schwienbacher, 2019).

Funders may have different motivations for engaging in crowdfunding platforms and these incentives can be: 1) Access to investment 2) Community participation 3) Support for an idea, product or service 4) Formalization of contracts especially for

² www.wefunder.com.

money raised from family and friends (Ajay Agrawal et al., 2014). Investors' equity investments in campaigns are mainly driven by financial or utility expectations rather than by nonfinancial motivations (Cholakova and Clarysse, 2015). On the other hand, there is a number of risks in equity crowdfunding that may demotivate funders. First, there is the risk of fraud and fake campaigns even though there are regulative efforts to minimize these and reputation turns out as an important tool for establishing trust online (Cabral, 2012; Teo and Liu, 2007; Walczuch and Lundgren, 2004). Liang et al. (2019) provides evidence that trust significantly affects investors' intentions to finance startups at crowdfunding platforms. Second, creators who are listing their campaigns may be incompetent and fail to meet the milestones. Third, projects may fail and startups may not create equity value. Other risks are illiquidity risk and the potential failure of equity crowdfunding platforms.

A large number of investors on equity crowdfunding platforms are non-professionals and they lack the expertise and do not allocate the time for due diligence on startups that have started campaigns. Most of the investors on the platforms are free-riders of investment decisions and support the campaigns that have the greatest number of backers (Vismara, 2016). When only a few investors conduct due diligence, the platforms are more likely to be bundled with low quality projects. All the above mentioned risks may be exacerbated as the information asymmetry levels are heightened at equity crowdfunding platforms (Ajay Agrawal et al., 2014). These risks are heightened for investors who have weak incentives to perform due diligence especially when its cost is perceived high for small investments.

To develop equity crowdfunding markets, one of the initial steps is to build the trust of investors. Equity crowdfunding platforms need to screen startups to be listed cautiously, bearing in mind that this will affect their reputation for quality. Hence, platforms may also set their own investor selection criteria even though countries have passed regulations and enacted restrictions on equity crowdfunding investors (Schwienbacher, 2019). Platforms' due diligence processes include credit checks, account monitoring, site visits, background checks and third party proofs. Cumming et al. (2019) find that these due diligence efforts alleviate information asymmetries between entrepreneurs and prospective investors, positively affect the campaign funding success and increase the total amount of money raised. Further research on which platform business models work best for equity crowdfunding and reduce information asymmetries is required for market development (Moritz and Block, 2016).

Platforms differ in terms of governance mechanisms and with respect to voting rights offerings. In equity crowdfunding, voting rights are mostly not offered to smaller investors because venture capitalists may avoid investing in later rounds due to the trouble of collecting all those signatures from the investors. Among platforms that transfer crowdfunding investors voting rights, some transfer them directly, some operate a nominee structure (pooled voting rights) and some engage accredited investors for the offerings (A. Rossi et al., 2019). Some platforms also offer "pooled investment" opportunities to investors to ease follow-on financing as venture capitalists find it more convenient when the startup does not have many small investors. In these investments, crowd's contributions are first collected in a financial vehicle and then the total amount is invested as a single shareholder (Schwienbacher, 2019). For example, WeFunder Platform provides the investors the option to pool their capital in the WeFund Special Purpose Vehicle, which then invests as a single entity in the startup. Some equity crowdfunding platforms participate in the post-campaign stage and support successful campaigns via assistance for exits and other follow on services. Research suggests that when platforms increase such services the annual funding success rate increases.

Table 5 lists the number of crowdfunding platforms identified by the European Commission across the EU (European Union, 2015). As of December 31st, 2014, there are 510 active alternative finance platforms of which 117 are equity crowdfunding platforms. The United Kingdom has the highest number of platforms in the EU accounting for 28% of the total number of platforms in 2014. Following the UK, France, Germany, the Netherlands and Italy comprise 47.5% of the total platforms. Non-EU platforms that are active in the EU are from Canada, Australia, New Zealand, China and the USA. The number of platforms active in the EU increased by 23.2% in 2014, 47.3% in 2013 and 49.5% in 2012. Equity (23%), rewards (30%) and donations (18%) together constitute 71% of all platforms in the EU in 2014. In Greece, Hungary, Portugal, Cyprus, Croatia and Czech Republic there were no equity or debt based platforms but only donation or reward based platforms as of 2014. The UK had the highest number of equity crowdfunding platforms followed by Germany and France. The majority of the amounts raised in equity projects in 2013 and 2014 are €500,000 with the average at €215,000 and €260,000 respectively (European Union, 2015). Only a low proportion of equity activity, around 2%, is cross border in nature within the EU, mostly due to differences in regulations over equity based crowdfunding in member countries. More recent data that shows the distribution of local and foreign based alternative finance firms that have responded to the CCAF (2020) survey around the world is presented in Table 1 in the Appendix. China has the highest total alternative finance volume and based on survey responses 429 firms are domestic and 9 firms are foreign based. USA follows with 84 domestic and 16 foreign based firms. In developing countries reward and donation based platforms seem to dominate and precede the investment based platforms in the market.

The leading equity crowdfunding platforms are WeFunder, StartEngine and Republic in the U.S and are Crowdcube and Seedrs in the UK. Other leading equity crowdfunding platforms in Europe are FundedByMe in Sweden, WiSEED in France, Seedmatch and Companisto in Germany, Invesdor in Finland (See Table 2 in the appendix for other equity platforms). In equity crowdfunding platforms, there is also diversification to assets such as mini bonds and real estate (Schwienbacher, 2019). Some reward based crowdfunding platforms extend into equity crowdfunding, for example, Indiegogo. In China, crowdfunding platforms differ from the west: while western platforms are independent entities, Chinese crowdfunding platforms are run by giant eCommerce companies such as Alibaba, Xiaomi and JD.com. A number of equity crowdfunding platforms are formed as public benefit companies e.g. WeFunder. A public benefit company has the mission of benefiting the society and does not just aim to maximize shareholder value. In company decision making, all the stakeholders, such as investors, employees and the society at large are taken into consideration. Since the mission is written in the charter of the company, the company can be sued if it does not follow its mission.

Similar to other developing countries, the initial models employed in Turkey were reward and donation based crowdfunding models. The first reward based crowdfunding platforms are CrowdFON (Priorly Projemefon, 2010), FonlaBeni (2013), FonGoGo (2013), FonBulucu (2015), ArıKovanı (2016) platforms and the donation based platform is Buluşum (2015). Projects are mainly from technology, environment, photography, movie, literature, theatre, art, music and literature. In 2017, Technology Development Foundation of Turkey created Ideanest, a crowdfunding platform, to support technology product ideas and research projects. Since 2016, Crowdfunding Foundation seeks to increase public awareness and contribute to the development of regulatory framework in Turkey (Çubukçu, 2017). Between 2011 and 2017 the number of projects listed on crowdfunding platforms was 867 and the funding

Table 5
Number of identified crowdfunding platforms in EU.

Country	Equity		Loan		Rewards		Donation		Total Number of Platforms
	Number of Platforms	% of Total	Number of Platforms	% of Total	Number of Platforms	% of Total	Number of Platforms	% of Total	
Austria	2	25%	1	13%	2	25%	3	38%	8
Belgium	2	33%	2	33%	1	17%	1	17%	6
Cyprus	-	-	-	-	1	100%	-	-	1
Czech Republic	-	-	-	-	3	75%	-	-	4
Germany	22	34%	13	20%	20	31%	9	14%	65
Denmark	-	-	2	29%	3	43%	1	14%	7
Estonia	-	-	4	80%	1	20%	-	-	5
Greece	-	-	-	-	-	-	1	100%	1
Spain	8	24%	7	21%	9	27%	5	15%	33
Finland	2	33%	3	50%	1	17%	-	-	6
France	17	22%	14	18%	27	35%	10	13%	77
Croatia	-	-	-	-	-	-	1	100%	1
Hungary	-	-	-	-	2	100%	-	-	2
Ireland	1	14%	2	29%	2	29%	2	29%	7
Italy	8	19%	2	5%	19	45%	13	31%	42
Netherlands	9	16%	9	16%	17	29%	20	34%	58
Poland	3	19%	6	38%	5	31%	2	13%	16
Portugal	-	-	-	-	2	100%	-	-	2
Romania	1	17%	-	-	4	67%	1	17%	6
Sweden	4	57%	-	-	2	29%	-	-	7
Slovakia	-	-	1	20%	1	20%	2	40%	5
United Kingdom	35	24%	41	29%	30	21%	22	15%	143
EU28	114		107		152		93		502
Non-EU	3		-		3		1		8
Total	117		107		155		94		510

Adapted from European Commission (2015). "Crowdfunding: Mapping EU Markets and Events Study".

sought totaled around 20 billion Turkish Liras (Ünsal, 2017). The average amount of money raised is \$144 and funding success rate is 29.18% based on statistics from CrowdFON, Fongogo, and Fonlabeni online platforms (Sakarya and Bezirgan, 2018). The funding success rate varies across categories and ranges from as low as 13% for technology projects to 50% for movie and video projects. These numbers suggest that Turkish crowdfunding market is in its infancy and has the potential to grow larger. High level of awareness of crowdfunding models and intention to raise or provide funds at the platforms among university students can contribute to the growth (Sirma et al., 2019).

Even though the first crowdfunding platform opened in 2010, crowdfunding gained popularity after 2016 with governmental efforts and private companies' initiative in Turkey (Oba et al., 2018). With the amendment of the Capital Markets Law on December 5th, 2017, financial returns on investments such as equities are made possible. Crowdfunding platforms need to obtain a license from the Turkish Capital Market Board before establishment and are subject to interim audits to continue operations. Initial equity based crowdfunding platforms in Turkey are Startupfon and Fongogo Pro platforms. There is no regulation yet for debt based crowdfunding models in Turkey. However to support entrepreneurs and increase funding options for entrepreneurs, development of lending based models is critical (Doğan and Vural, 2019).

5. Extant literature on crowdfunding

Extant literature has examined the information asymmetries, quality signals, success factors for campaigns, sustainability orientation and post-campaign funding success. However there are still contrary results and empirical evidence on developing countries is limited. Future research can investigate whether the current findings also hold in other platforms and developing countries.

5.1. Information asymmetry and quality signals

On the ground of the theory of signaling (Spence, 1973) startups that deliver positive information about their company to potential investors using credible and effective signals should perform better in terms of fundraising (Connelly et al., 2011). Information asymmetry is the main foundation of signaling theory (Stiglitz, 2002) with information quality and intent as the most important key elements (Yasar et al., 2020). Investors in equity crowdfunding platforms collect information mostly from the platform and information asymmetry is higher than face-to-face data retrieval from founders. This puts them at a disadvantage when they are conducting due diligence to assess startups' financial risk and return potential. In this respect, in equity crowdfunding platforms information asymmetry problem is greater than other crowdfunding platforms. The concern is mainly on whether the creator will be able to deliver the product in other platforms, whereas in the equity crowdfunding there is also the concern of whether the entrepreneur will be able to create equity value (Ajay Agrawal et al., 2014). Signaling or communicating observable indicators of unobservable qualities arises as an important instrument for campaign starters to deal with inherent information asymmetries in equity crowdfunding.

In equity crowdfunding, establishing personal relationships is impossible and communication is replaced by pseudo-personal communication. Founders deliver soft facts about their campaigns by pseudo-personal communication via videos, social media messaging and investor relations channels (Moritz et al., 2015). Third parties such as other crowd investors and external stakeholders affect investment decision making and decrease the effect of founders' pseudo-personal communications (Moritz et al., 2015). Entrepreneurial finance has tried to identify the potential information disclosures that affect investment decision making at the platforms. In equity crowdfunding context the level of information

asymmetry is higher when evaluating new ventures and entrepreneurs can use updates about their campaigns to send signals to potential funders about the startups' value (Ahlers et al., 2015). The number of updates positively and significantly affects the number of investment and total money raised (Block et al., 2018). Another finding is the significant positive relation between simplicity of language in updates and the number of investors. Polzin et al. (2018) investigate whether funders whose ties with entrepreneurs vary in terms of strength, use different information. They find that for funders who have strong ties with the entrepreneurs, information about the person is more important than information on financials and risks. Further research examine how the contents of videos, audios and images affect the success rate of projects.

Startups are young and have limited past record of performance and investors, faced with huge uncertainty about their quality, rely heavily on information shared by them. Information on the management team, startup's alliances and patents appear as key signals that venture capitalists use to identify promising startups (Baum and Silverman, 2004; Florin et al., 2003). Experiment based evidence has shown that early investors respond to information on the founding team the most (Bernstein et al., 2017). Since equity crowdfunding emerged as an important financial tool for startups, the effect of human capital characteristics such as prior startup experience and management experience at micro organizations and signals to potential investors are utmost important (Lim and Busenitz, 2020). Empirical evidence shows that if ventures can communicate the commitment, experience and knowledge of the management team to investors, the likelihood of success is higher. Based on Australian platform data, Ahlers et al. (2015) present the positive impact of human capital on crowd participation and amount of funding. The effect of entrepreneurial experience and business education is confirmed using a sample of nearly 300 Italian entrepreneurs (Piva and Rossi-Lamastra, 2018).

Kolympiris et al. (2018) suggest that signals from entrepreneurs may be more valuable and relevant to distant than nearby investors. They analyze two signals, venture patent activity and founder team's entrepreneurial experience, and find that these are more valuable in long-distance transactions. In equity crowdfunding, geographic dispersion of investors is broad and information asymmetries may be more pronounced. In this respect, signals on value-relevant information may carry more value to potential online investors. One such signal entrepreneurs can send is retaining larger equity in their own startups and this signal is positively linked with funding success (Löher et al., 2018; Vismara, 2016). Theoretical foundation of this signal is that entrepreneurs who expect potential future gains tend to put in higher portion of the early capital themselves (Leland and Pyle, 1977). If entrepreneurs raise a larger proportion of required capital from outside, then investors may assume the startup to be a lemon (Akerlof, 1970) and refrain from backing these startups.

In addition to investment signals, third party signals about the market from prominent customers and about the product from expert intermediaries, increase interest to the campaign (Bapna, 2019). Running a field experiment in the context of technology startups, Bapna (2009) shows that a signal about product characteristics unlocks the value of market or investment characteristics signals. Entrepreneurs may also share financial information pertaining to revenue and profit performance and forecasts in their campaigns. Literature has shown that, sharing financial provisions is perceived as a quality signal and positively affects funding success (Ahlers et al., 2015; Mollick, 2014). If entrepreneurs have patent holdings they can also use these to decrease informational asymmetries and convey their quality. However early empirical evidence finds that patents do not statistically significantly affect the success of equity crowdfunding (Battaglia et al. n.d.; Ralcheva

and Roosenboom, 2019).

Besides signals from entrepreneurs and third parties, platforms also play a critical role in overcoming the information asymmetry challenge in equity crowdfunding. Platforms may act as gatekeepers, conduct due diligence and select businesses to be listed on their websites for reputational concerns. Empirical evidence shows that they are working hard to show investors the quality of the listed investments by co-investing in them or only listing firms that have already received venture capital investment (Younkin and Kashkooli, 2016). Platforms may also use a rating or reputation mechanism to address the adverse selection problem. Ding et al. (2019) show that lenders appraise borrowers' past performances and reputation mechanism works effectively in lending based crowdfunding platforms. They find that borrowers who have better historical performances are more likely to raise the funding that they seek and at a lower cost. Similarly based on 2014–2015 SME loan data from Zencap1, the largest lending based platform in Germany Cumming and Hornuf (2020) investigate the effectiveness of simple risk ratings that platforms use. They find that investors pay more attention to platform credit ratings than disclosed financial information such as assets, liabilities and revenues. Such a platform rating mechanism may also work for equity crowdfunding particularly for investors who are not sophisticated, lack experience or avoid due diligence because of associated costs. Equity crowdfunding platforms can assign risk ratings for businesses listed on their websites after conducting due diligence and crowd investors can make use of these ratings in their investment decisions. Platforms can also highlight the businesses that have raised prior funding since these are regarded to have 'stamp of approval' decreasing information asymmetry for crowdfunders (Kleinert et al., 2020). Platforms may also choose to structure syndicated deals in which professional investors and crowd invest together. Information asymmetry may be lower in such deals because lead investors do the due diligence and value the investment professionally on behalf of other investors (Ajay Agrawal et al., 2016). Future research can investigate syndicated equity crowdfunding and the effects of different crowd compositions of platforms.

5.2. Factors of success in equity crowdfunding

Identifying success factors has been a popular research area in the entrepreneurial finance literature. Entrepreneurs may prefer to avoid a public campaign failure than not raising the much needed capital because it may have a significant impact on founders' reputation and future funding attempts (Ralcheva and Roosenboom, 2019). The first challenge in starting an online equity crowdfunding campaign is deciding on the target amount of money to be raised. Campaign owners set the funding goals at the beginning and can collect the amount raised during the campaign if the initially set target amount is reached in 'all or nothing' model. A number of studies has shown that unrealistically high goals may discourage funders from participating at equity and rewards based crowdfunding platforms (Lagazio and Querci, 2018; Mollick, 2014; Vulkan et al., 2016). By contrast, Ahlers et al. (2015) show that target amount does not affect the number of funders. Belleflamme et al. (2014) use a unified model and show that entrepreneurs prefer reward based campaigns for small capital requirements and prefer equity crowdfunding otherwise. The second challenge is to decide on the percentage of equity to be sold since it affects the ownership percentage and has important implications for retaining control and claims on future earnings. Future research can look into when and why entrepreneurs prefer equity crowdfunding.

Social capital is another determinant of equity crowdfunding success. In line with social network theory, social networks help to increase investor traffic to the campaign and decrease information

asymmetry (Vismara, 2016). However, because of data constraints, there is no conclusive evidence on whether the entrepreneur is creating the crowd or there is already a crowd evaluating investment opportunities (Cummings et al., 2020). Equity crowdfunding provides a perfect setting to observe and analyze how entrepreneurs convert their existing social connections into resource providers. In equity crowdfunding, prospective investors can easily see other people who have already invested in the project and such information is likely to affect their investment decisions as well (Baech et al., 2014). Vismara (2018) shows that besides early backers, the presence of sophisticated investors who have public profiles in social media or other websites attracts other investors to the campaign and affects the crowdfunding campaign success. The author finds that compared with average investors on platforms, these sophisticated investors have higher levels of education, industrial experience relevant to the project and longer history of platform investment. Kim and Viswanathan (2019) support the finding that early investors are critical for a campaign's success and non-expert investors follow investment decisions of reputable investors. Startups who successfully raise external financing through such investors send a signal of quality and financial capability increasing their likelihood of equity crowdfunding success. In this respect, if they have raised previous funding, startups can use this as another quality signal which may increase investors' confidence in the potential of the startup.

Entrepreneurial finance literature has shown that investors in startups tend to be local because the ease and cost of collecting value-relevant information about, monitoring progress of and providing support to ventures are sensitive to distance (Ivkovic and Weisbenner, 2005; Mason, 2007; Sorenson and Stuart, 2001). Coval and Moskowitz (2001) suggest that geographical distance affects the accuracy of relevant information and show that mutual funds' local investments perform better than their distant investments. In an online setting, at a crowdfunding platform where musicians raise capital to finance their albums, geographic distance does not seem to have a significant role on financing decisions (Ajay Agrawal et al., 2011). The authors analyze whether geographic distance affects crowdfunding success after controlling for entrepreneur's pre-existing social networks and find that distance does not affect investment patterns. On the other hand, a more recent study shows that equity crowdfunding investors' likelihood to invest in projects decreases as the distance between them and the potential ventures increases (Guenther et al., 2018).

Rossi et al. (2019) find that platforms' voting right delivery choices affect crowdfunding campaign success i.e. platforms that deliver individual voting rights have lower number of successful campaigns. Future research can look into the different governance mechanisms of equity crowdfunding platforms. Ralcheva and Roosenboom (2019) use information such as retained equity, accelerator presence, external funding before the campaign and team information to develop a forecasting model. Further research can examine determinants of success for equity crowdfunding and develop forecasting models to improve fundraising on equity crowdfunding platforms.

5.3. Sustainability and equity crowdfunding

COVID-19 pandemic has drawn attention to the climate change as the greenhouse gas emissions may fall to levels not seen since the Second World War (Zambrano-Monserrate et al., 2020). Global climate emergency is slower than COVID-19 but may have more serious environmental, social and economic consequences (Hepburn et al., 2020). Social entrepreneurs are trying to find solutions to world's deepest challenges and the United Nations has called investors to channel funds towards these initiatives. Equity

crowdfunding has become one of these channels where impact oriented investors can finance social entrepreneurs. Compared to traditional entrepreneurs, social entrepreneurs have a harder time raising capital because they neither fit into traditional for-profit nor into non-profit models. Moreover, the markets they serve may have limited potential and they may not generate satisfactory financial returns for traditional investors. In this respect, crowdfunding emerges as an attractive fundraising option for social entrepreneurs. Media and academicians are paying attention to this topic but literature is still fragmented and results are contradictory.

A research question that has been gaining popularity is how sustainability orientation affects funding performance. Calic and Mosakowski (2016) investigate the role of sustainability orientation on fundraising capability of entrepreneurs at rewards based platforms. They find a positive link between sustainability orientation and funding performance. Third party certifications and project creativity mediate this relation. In contrast, Hörisch (2019) analyzes the impact of environmental orientation on funding success but does not find any significant effect and similar results hold for cleantech projects (D. J. Cumming et al., 2017). However, if cleantech entrepreneurs use soft information such as videos, photos, detailed and well-written project descriptions to decrease informational asymmetries, then they are more likely to have successful campaigns. Using a large sample from Kickstarter, one of the leading reward based platforms in the world, a recent study shows that projects tagged as 'public benefit', 'environmental' or 'LGBTQIA' are more likely to be successful compared to projects without tags (Yasar and Yilmaz, 2020). Unlike prior researchers, Vismara (2019) uses equity crowdfunding campaigns to analyze the link and finds that sustainability orientation does not significantly affect funding performance. However, the author finds that in comparison to professional investors, a bigger pool of restricted investors who are more sensitive and committed to community values investment in such campaigns. How social or environmental orientation of a venture affects funding success in equity crowdfunding requires further investigation in the literature.

5.4. What happens after equity crowdfunding campaigns

A strand of literature has focused on what happens after equity crowdfunding and analyzed the success rate and follow-up funding after the campaigns (Hornuf et al., 2018; Signori and Vismara, 2018). Based on 212 successful campaigns on Crowdcube, Signori and Vismara (2018) find a failure rate of 18% and note that most of the companies get follow on financing after the campaign. If platforms offer a greater number of post-campaign services then the annual number of successful campaigns increases (A. Rossi and Vismara, 2018). Startups that reach their initial capital goals quickly, tend to come back to platforms to offer follow-on crowdfunding investment. On the other hand, startups that have raised capital by a large pool of investors do not tend to sell additional shares. Hornuf et al. (2018) also explore what factors spur follow-up financing subsequent to a campaign based on hand-collected data from a total of 13 portals in the UK and Germany. They find that startups that have more high-ranking managers and initially received venture capital investment are more likely to get another round of funding.

Campaign characteristics such as funding goal and minimum investment allowed also affect funding success (Lukkariinen et al., 2016). Prior research has documented gender differences in investor behavior and equity crowdfunding platforms provide a new setting to test these differences. In line with prior research, females tend to invest in older firms, non-technology firms and low equity offerings (Mohammadi and Shafi, 2018). More research in equity crowdfunding is required to understand investor and

entrepreneur motivations, investment dynamics, and matching of entrepreneurs and investors. Further research can examine the various services offered by platforms and their effects on success rate of campaigns.

6. Conclusion

Equity crowdfunding is growing comprehensively in the world as a significant financing tool for young start-ups by bringing a new group of investors to venture financing. By providing early stage capital that is crucial to support innovation and funding worthy ideas that might otherwise remain unfunded, equity crowdfunding is expected to contribute to job creation and economic growth. At the same time, there are concerns related to potential fraud, unrealistic expectations of investors, inexperienced entrepreneurs, and opportunity cost of foregone professional advice from angel or venture capital investors (Ajay Agrawal et al., 2014) who could bring experience, industry expertise, and connections (Hsu, 2004). Future research can shed light on the debate on benefits and costs of equity crowdfunding. The field will benefit from data collection and analysis on equity crowdfunding's socio-economic significance, impact on the business environment and the promise of democratization.

A popular question is whether crowdfunding will replace traditional financing sources. Will equity crowdfunding compete directly with the venture capital industry and pose a threat or an opportunity? Equity crowdfunding platforms provide venture capitalists a venue to identify promising start-ups and gather crowd's reviews about future prospects of the business (Erblich,

2012). Erblich (2012) notes that some venture capital firms have already invested millions of dollars into crowdfunding platforms while some are planning to launch their own equity crowdfunding platforms. Further research can look into how venture capitalists are affected by equity crowdfunding and the effect on the startup ecosystem. Comparison of equity crowdfunding with traditional entrepreneurial financing methods in terms of order of preference, building and maintaining relationship as well as associated costs can provide valuable insights. Interactions of investors on equity crowdfunding platforms is another topic that requires further research.

Countries have passed regulations regarding activities of crowdfunding platforms, investor criteria as well as the use of the collected funds. Some countries have used very liberal approaches and some used very protectionist approaches. Further research can examine how regulatory approaches, institutions and culture affect the development of equity crowdfunding markets. Such research will be useful for countries which are yet to form equity crowdfunding platforms as well as countries that aim to improve the existing equity crowdfunding markets. Earlier research has studied the determinants of success of raising capital on the platforms and identified information disclosures related to human capital, risks involved, financial projections and social network positively affect project funding success. Further research can look into the already identified as well as potential success factors in other platforms and developing countries.

Appendix

Table 1
Distribution of Domestic & Foreign Alternative Finance Firms by Country

Country	Domestic firms operating in country	Foreign based platforms operating in country	Country	Domestic firms operating in country	Foreign based platforms operating in country	Country	Domestic firms operating in country	Foreign based platforms operating in country
China	429	9	Romania	2	11	Japan	10	6
US	84	16	Uganda	3	10	Nigeria	5	10
UK	63	27	Ireland	1	11	Czech Republic	6	8
Germany	41	22	Israel	6	6	Latvia	7	7
India	49	9	Chinese Taipei	5	7	South Korea	9	5
Brazil	44	12	Turkey	3	9	Vietnam	5	9
France	37	14	UAE	2	10	Zimbabwe	1	5
Italy	33	18	Bulgaria	1	10	Palestine		6
Mexico	31	20	Cambodia		11	Paraguay	3	3
Netherlands	25	20	Greece	1	10	Puerto Rico	1	5
Canada	24	15	Russia		11	Sri Lanka		6
Spain	20	19	Slovakia	2	9	Uruguay	2	4
Colombia	23	13	Slovenia	2	9	Venezuela		6
Indonesia	17	16	Costa Rica	1	8	Gambia		2
Australia	18	14	Croatia	3	6	Albania		5
Switzerland	14	17	Ecuador		9	Armenia		5
Austria	11	16	Guatemala	3	6	Bangladesh		5
Singapore	17	10	Hong Kong	1	8	Bolivia		5
Poland	7	17	Hungary	2	7	Cyprus		5
Finland	11	12	Luxembourg		9	Honduras		5
Philippines	8	15	Senegal		9	Malawi		5
Sweden	8	15	Tanzania	1	8	Mauritius	1	4
Norway	12	10	Ukraine		9	Mongolia	2	3
Peru	5	16	Ghana		8	Morocco	1	4
Chile	12	8	Jordan		8	Nepal		5
Denmark	5	14	Pakistan	2	6	Nicaragua		5
Estonia	9	10	Panama	1	7	Sierra Leone		5

(continued on next page)

Table 1 (continued)

Country	Domestic firms operating in country	Foreign based platforms operating in country	Country	Domestic firms operating in country	Foreign based platforms operating in country	Country	Domestic firms operating in country	Foreign based platforms operating in country
South Africa	8	11	Rwanda		8	Bosnia & Herzegovina		4
Thailand	9	10	Cameroon	1	6	Cote d'Ivoire		4
Belgium	6	12	Egypt	1	6	Dominica Republic		4
New Zealand	6	12	Lebanon	1	6	Ethiopia		4
Kenya	4	13	Zambia		7	Iran	3	1
Lithuania	7	10	Congo D. R.		6	Kosovo		4
Malaysia	9	8	Georgia		6	Liberia		4
Portugal	5	12	Kazakhstan	1	5	Macedonia		4
Argentina	9	7	Malta	1	5	Botswana	1	2

Adapted from CCAF (2020), The Global Alternative Finance Market Benchmarking Report.

Table 2
Equity Platforms in the World

Country	Platform Name	Platform Website
Austria	Conda Austria	www.conda.at
Belgium	Spreds	www.spreds.com
Denmark	InSpring	www.inspring.dk
Estonia	Funderbeam	www.funderbeam.com
Finland	Invesdor	www.invesdor.com
	Privanet	www.privanet.fi
France	Finple	www.finple.com
	WiSEED	www.wiseed.com/fr
Germany	Danube Angels	www.danubeangels.com
	Aescuvest	www.aescuvest.de
	Conda Germany	www.conda.de
	Companisto	www.companisto.com
	Seedmatch	www.seedmatch.de
Ireland	Spark	www.sparkcrowdfunding.com
Netherlands	Symbid	www.symbid.com
Sweden	FundedByMe	www.fundedbyme.com
Switzerland	Bloomio	www.bloomio.com
United Kingdom	Seedrs	www.seedrs.com
Mexico	Expansive	www.expansive.mx
	Play Business	www.playbusiness.mx
USA	WeFunder	www.wefunder.com
	AngelList	www.angel.co
	SeedInvest	www.seedinvest.com
	Startengine	www.startengine.com
	Crowdfunder	www.crowdfunder.com
	EquityNet	www.equitynet.com
	NextSeed	www.nextseed.com
	CircleUp	www.circleup.com
	Republic	www.republic.co
	MicroVentures	www.microventures.com
	LocalStake	www.localstake.com
	Netcapital	www.netcapital.com
	TruCrowd	www.us.trucrowd.com
	Wunderfund	www.wunderfund.com
New Zealand	Snowball Effect	www.snowballeffect.co.nz
Argentina	Sesocio	www.sesocio.com
Brazil	Wiztartup	www.wiztartup.com
Chile	FounderList	www.founderlist.la
Colombia	Farmfolio	www.farmfolio.net
UAE	Eureeca	www.eureeca.com
Kenya	Agrikaab	www.agrikaab.com

Source: <https://p2pmarketdata.com>

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