Success and Failure in Equity Crowdfunding

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Introduction

In recent years crowdfunding has emerged as a new channel for entrepreneurs to finance their early stage ventures. Traditionally, many of these innovative projects would not have been funded because they were too risky for banks, their returns were too small and transaction costs too high for private equity and venture capital funds, and the capital needs of the ventures were too large for family and friends to step in as investors (Klöhn and Hornuf 2012, 238). Crowdfunding might therefore fill an important gap at the pre-seed and seed stage of the funding cycle.

Crowdfunding portals come in four different categories (Bradford 2012, 14–27), depending on what backers expect in return for their contributions. Under the lending model, which is also referred to as peer-to-peer lending, investors provide money in order to fund a consumer or business loan of which the principal is always expected to be repaid. On most lending portals, investors are also promised interest on the loans they fund. Pro-social lending portals like *Kiva* neither charge nor pay interest rates on their loans. Today crowdlending is the largest crowdfunding market segment, with *Prosper* and *Lending Club* being the two leading portals worldwide. Under the reward-based model, which often resembles a pre-purchase, backers receive either some form of compensation, like a supporter T-shirt for example, or the product that the entrepreneur intends to develop. After crowdlending, this is the second largest market segment, with *Kickstarter* being the global market leader. As the name already indicates, contributions under the donation model are purely philanthropic. Finally, under the equity crowdfunding model, investors are promised a share in the future cash flows of the start-up firm they are funding. While in most countries investors receive ordinary shares when participating in equity crowdfunding, corporate laws in some jurisdictions make transferring small company stakes practically impossible, because a costly notary has to be involved to reassign shares in a private limited liability company. In these countries equity crowdfunding is often referred to as crowdinvesting, as investments resemble some form of mezzanine financial contract that is structured in such a way that investors participate in the future cash flows of the firm, but do not have a say in fundamental corporate decisions. In these jurisdictions, frequently used equity crowdfunding instruments are profit-participating loans and silent partnership agreements. Finally, we observe that every sixth portal in Europe has implemented multiple crowdfunding models, most of them adopting two categories simultaneously (Dushnitzky et al. 2016, 65).

Over the last decade, research has mainly focused on crowdlending (Herzenstein, Dholakia and Andrews 2011a and 2011b; Lin, Prabhala and Viswanathan 2013; Lin and Viswanathan 2015) and reward-based crowdfunding (Agrawal, Catalini and Goldfarb 2015; Belleflamme, Lambert and Schwienbacher 2014; Burtch, Ghose and Wattal 2015). Equity crowdfunding has received little attention, mostly because investments by non-accredited investors were prohibited under US securities law until recently. In Europe, equity crowdfunding started with portals such as *Crowdcube* (United Kingdom) and *Seedmatch* (Germany), which launched their first successful campaigns in 2011 (Hornuf and Schwienbacher 2014). This development was supported by the favourable regulatory environment in the United Kingdom (Vulkan, Åstebro and Sierra 2016, 38), as well as far-reaching regulatory exemptions in Germany (Klöhn, Hornuf and Schilling 2016).

While equity crowdfunding expands the funding opportunities of start-up companies, which in turn can be an important driver of economic growth, some caution is warranted, as investors suffer from severe information asymmetries and the majority of start-up firms fail. In order to evaluate whether equity crowdfunding fills a gap at the lower end of the funding cycle, or whether

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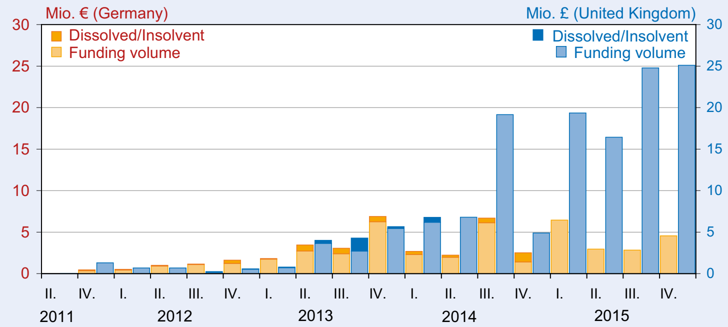
these ventures should not have received funding in the first place, we investigate start-up survival rates, as well as the occurrence of venture capital and business angel funding subsequent to an equity crowdfunding campaign. We focus on the markets in Germany and the United Kingdom, as they have proven the largest equity crowdfunding markets worldwide (Dushnitzky et al. 2016, 52).

Figure 1

Development of the equity crowdfunding market in Germany and the United Kingdom 2011–2015

Market volume based on equity crowdfunding campaigns completed



Note: Bankless24, Bergfürst, Berlin Crowd, BestBC, Conda, Companisto, Crowdcube, Crowdnine, die-beteiligungsplattform, DUB, FundedByMe, FunderNation, Fundsters, GründerPlus, Innovestment, Lightfin, Mashup Finance, My Business Backer, Seedmatch, Seedrs, StartkapitalOnline, Startnext, Unternehmerich, Welcome Investment.

Source: Unternehmensregister; Insolvenzbekanntmachungen; Companies House; portal websites; authors' data.

Market developments in Germany and the United Kingdom

The equity crowdfunding markets in Germany and the United Kingdom started almost concurrently completing their first successful campaigns in autumn 2011. Over the period from 1 September 2011 until 31 December 2015 a total of 303 campaigns were started on 22 different equity crowdfunding portals in Germany. By the end of the observation period 13 of these portals had already closed down their businesses. Two portals (*Mashup Finance* and *Bankless24*) merged their operations with the Austrian portal *Conda*. Furthermore, out of the 303 equity crowdfunding campaigns started, 210 were successfully funded, 54 did not reach their funding goals and thus did not receive any capital, and for another 39 no information was publically available on the portal website. All of these 39 “dark” campaigns were running on *Deutsche Mikroinvest*, which appears to be the least transparent portal on the German market. Overall, successful campaigns in Germany received EUR 52 million. When contrasting the German market volumes with the two leading equity crowdfunding portals in the United Kingdom (*Crowdcube* and *Seedrs*), it turns out that the German market developed slightly faster until Q4 2013. From that point onwards, however, the equity crowdfunding market in the United Kingdom outpaced the German market substantially (Figure 1).

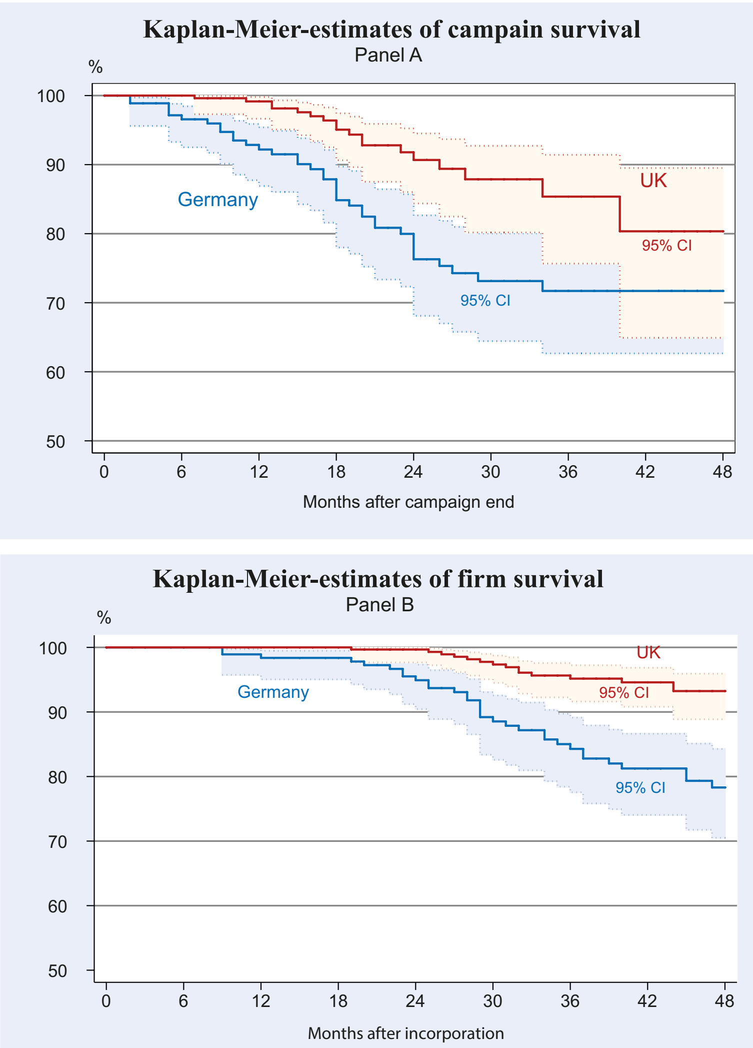
More recently, some German equity crowdfunding portals started to fund projects that do not imitate the future cash flows of a firm, but the future cash flows of real estate, environmental and movie projects. Most of these projects pay fixed interest rates and should therefore not be classified as equity crowdfunding, but rather as crowdlending. Overall, real estate, environmental and movie projects reached a cumulated funding volume of EUR 33 million by the end of 2015, paying an average annual interest rate of 6.5 percent. Even if these projects are considered as part of the German equity crowdfunding market, the United Kingdom remains the uncontested market leader worldwide.

Insolvencies and liquidations

One way to identify whether equity crowdfunding closes an important funding gap is to look at insolvency rates. If they were comparatively high, that might count as evidence that these firms should not have received funding in the first place. Figure 2 shows Kaplan-Meier-estimates for the campaigns and firms funded. Panel A predicts campaign survival after the campaign was successfully funded. Panel B estimates firm survival after the date of incorporation, which we consider as proxy for the start of serious business activities. On average, firms started an equity crowdfunding campaign three years after establishing the firm. The estimates in Figure 2 reveal that equity crowd funded campaigns have somewhat higher survival rates in the United Kingdom as compared to Germany. Nevertheless, 70 percent of the German campaigns funded between 1 September 2011 and 31 December 2015 were still operating an active business four years after the campaign ended. When looking at the survival rates of firms subsequent to incorporation, we find that 85 percent of the equity crowd funded firms in Germany are still active three years after the date of incorporation. Compared to the 30 percent failure rate of German start-ups in general (KfW Research 2012, 53), equity crowdfunding apparently did not develop into a lemons market (Akerlof 1970), where only the riskiest start-ups seek funding.

Adverse selection is only one problem that investors confront when making an investment. After an investment is made, entrepreneurs may change their behaviour and exercise with less effort then previously promised. In order to resolve this moral hazard problem, venture capital funds commonly strike tailor-made contracts that include covenants and staged finance provisions. The boilerplate contracts used in equity crowdfunding campaigns do not define such instruments. Although firms sometimes run two to three consecutive equity crowdfunding rounds, the rounds are not conditional to company success benchmarks. Only recently, the German portal *Companisto* introduced a particular form of staging, whereby two-thirds of the funds collected during an equity crowdfunding campaign are paid out directly to the start-up and one-third is held back over a period of up to six months. After this period the crowd votes as to whether the remaining funds should then be paid out to the start-up or paid back to the investors. This mechanism could help to reduce fraud and financial losses in cases where the start-up runs into insolvency right after the end of the campaign. The Munich based venture *Vibewrite*, for example, which sought to develop a marketable pen that spell checks handwriting, collected EUR 560,250 on 27 September 2014. In early October 2014, however, the national health insurance already filed for the company's insolvency. If such a staged finance mechanism were to have been implemented, the total loss to investors would have been reduced by EUR 186,750.

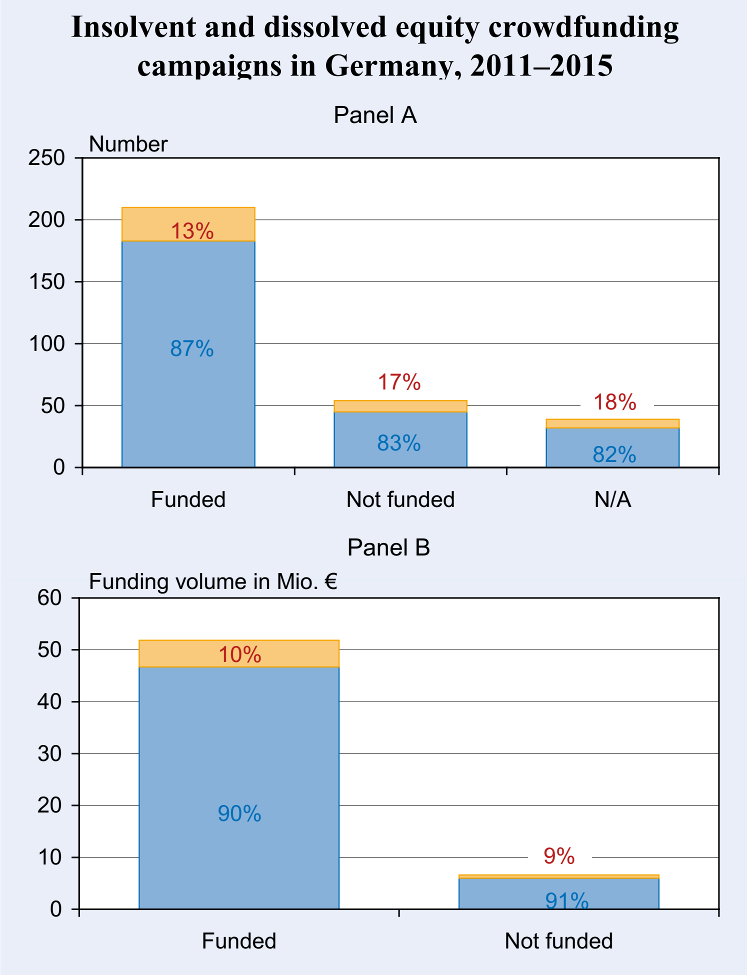
Figure 2



Note: We obtained the status of the firm as of 31 December 2015.
Source: Unternehmensregister; Insolvenzbekanntmachungen; Companies House; portal websites; authors' data and calculations.

In the light of prompt failure, one is tempted to ask whether the crowd is capable of selecting firms with a positive net present value that should have received funding but did not, because other sources of financing were not available. The evidence indicates that firms that received no funding through an equity crowdfunding campaign, did indeed launch an insolvency proceeding or were dissolved by their founders more frequently than firms that obtained funding from the crowd (Figure 3, Panel A). This slightly higher failure rate of non-funded start-ups might, however, reflect the fact that these firms lacked the capital to run their business. Interestingly, the highest failure rate is seen for those equity crowdfunding campaigns that were least transparent. Overall, for 18 percent of these campaigns the founders had to open an insolvency proceeding, in some cases even while the equity crowdfunding campaign was still running. Finally, when looking at the volume of the campaigns funded and the capital that non-successful campaigns had requested, the actual and hypothetical failure amounts do barely differ between

Figure 3



Note: Funding volume for non-funded campaigns is stated funding goal.
Source: Unternehmensregister; Insolvenzbekanntmachungen; Companies House; portal websites; authors' data.

the two groups (Figure 3, Panel B). This result is largely driven by the fact that successful campaigns have often been overfunded and therefore comparatively larger amounts failed in this group.

Venture capital and business angel funding

Venture capital funds and business angels use equity crowdfunding as a screening mechanism to identify valuable projects. By investing small amounts of money investors reveal their private information about project success. Moreover, many of the investors also constitute potential consumers, so that equity crowdfunding also uncovers information about potential future demand for the product (Strausz 2015). Venture capital funds and business angels use equity crowdfunding as a screening tool at multiple stages of the funding cycle. For example, German *T-Ventures* decided to invest a first round in *Smarchive* (today *Gini*), a semantic document analysis start-up, only a few weeks after the founders raised capital through an equity crowdfunding campaign. In other cases, like online lotto broker *Lottohelden*, the same venture capital funds encouraged the start-up to run an equity crowdfunding campaign after providing first round funding. In the case of *Lottohelden*, equity crowdfunding served as a mechanism for learning more about product demand and the prospects of funding a second round.

Table 1 shows the number and percentage of campaigns that received venture capital or business angel backing before, during and after the start-up received funds on an equity crowdfunding portal. In the United Kingdom, more start-ups receive venture capital before an equity crowdfunding campaign than in Germany. The early support by professional investors and the additional capital might be one explanation for the higher survival rates of equity crowd funded start-ups in the United Kingdom. In Germany, the portal *Innovestment* appears to have the largest percentage of venture capital or business angel backed firms before a campaign is placed on the portals website, which is reflected in slightly lower insolvency rates. Unlike in the United Kingdom, German start-ups barely receive venture capital funding while a campaign is active. Empirical research shows that the strategic release of information about venture capital or business angel funding has a positive effect on the number of investments by the crowd and the investment amount collected during an equity crowdfunding campaign (Block, Hornuf and Moritz 2016). German start-ups, however, are more successful in attracting venture capital and business angel support after an equity crowdfunding campaign. While German start-ups might become more profitable and attractive targets after an equity crowdfunding round, this pattern might reflect the fact that

Table 1

Percentage of equity crowdfunding campaigns that received venture capital or business angel funding before, during, and after the campaign, 2011–2015

	Before	N	During	N	After	N	Total
United Kingdom	5,2%	22	1,7%	7	1,7%	7	423
Crowdcube	6,2%	17	1,5%	4	1,5%	4	273
Seedrs	3,3%	5	2,0%	3	2,0%	3	150
Germany	3,3%	7	1,0%	2	9,5%	20	210
Companisto	4,4%	2	2,2%	1	22,2%	10	45
Innovestment	12,9%	4	0,0%	0	3,2%	1	31
Seedmatch	1,2%	1	1,2%	1	9,8%	8	82
Others	0,0%	0	0,0%	0	1,9%	1	52
Total	4,6%	29	1,4%	9	4,3%	27	633

Source: Portal websites; authors' data.

these start-ups need additional capital, as fewer of them received venture capital and business angel support before an equity crowdfunding campaign. Moreover, German venture capitalists may use equity crowdfunding more frequently as a screening tool and engage after a firm receives funding from the crowd. When comparing the three leading German portals *Companisto*, *Innovestment*, and *Seedmatch*, the former conjecture seems to be supported by the fact that firms receiving venture capital before or during the campaign need less capital thereafter. The start-ups funded on *Innovestment* received the most venture backing before the campaign and subsequently received much less, while for the other portals low venture capital funding before the campaign relates to a greater capital need after the crowdfunding campaign.

Exit opportunities

Until the end of 2015, seven German start-ups offered exit opportunities to their investors (Table 2). In all of these cases, repayment did occur not because the contractually pre-defined funding period had expired and the start-up was required to pay back its investors, but because venture capital funds or business angels became interested in buying a share in the firm or the founders decided the repay investors prematurely.

In the early years of equity crowdfunding, start-ups used the new financing channel equity crowdfunding in order to benefit from the publicity and media coverage that it generated. Even today, portals select one start-up out of 75 applicants that is later promoted on the portal website (Hornuf and Schwienbacher 2014, 25). Thus, portals are in a strong position to cherry pick the best start-ups from the market. After venture capitalists receive a signal about the firm value from a successful equity crowdfunding campaign, they sometimes offer further funding and acquire a share in the firm. Financial contracts in the German equity crowdfunding market almost exclusively constitute profit participating loans and silent partnerships, which give the crowd no say in case of major corporate events such as a venture capital round. However, some early versions of these contracts gave investors a say in matters such as the raising of capital, changes regarding the employment contracts of their executives or modifications regarding the purpose of the business.

As a result of these rights, the corporate decision-making process became very cumbersome, as it appeared almost impossible to obtain responses from all crowd investors in case of major corporate events. Moreover, dealing with a multitude of contractual relations constituted a legal risk, which professional investors were not willing to bear. As a result, venture capital funds interested in financing another round were eager to buy out the crowd. *Smarchive*, for example, offered the crowd a 25 percent return shortly after the end of the campaign if investors accepted the offer within a two-week period. Those investors who did not accept the offer within the stated timeframe obtained a 12.5 percent return. On average, investors received a 48 percent return on the German market if they identified the start-ups that provided early exit opportunities and accepted the offers made. However, given that it often took several years for an exit opportunity to open up, the annual return was much smaller.

In reality, it is not easy for investors to identify those start-ups that will later provide an exit opportunity.

Moreover, even if investors maintain a well-diversified portfolio and select an adequate number of successful firms, these firms might not pay out sufficiently high returns to make up for the losses from insolvencies and liquidations. To evaluate the attractiveness of equity crowdfunding as a new asset class, we calculated the returns for a naïvely diversified portfolio for the entire German equity crowdfunding market from its start in 2011. We therefore assume that a hypothetical investor devoted the same amount of money in each campaign and that the recovery rates of insolvent start-ups were zero. By the end of 2015 such investors would have earned a negative return of minus 23.2 percent. Arguably, this calculation does not take potential fixed interest payments or perks offered to investors into consideration, which might for some investors constitute a considerable return on the investment. Without these extra payments, the exit returns offered in the German market could not compensate for the losses from insolvencies. This is different on British portals like *Crowdcube,* where investors could have earned an annual return of 8.8 percent (Signori and Vismara 2016, 22–23).

Concluding remarks

Until now, there have been relatively few insolvencies and liquidations in equity crowdfunding, although figures have been rising recently. On the other hand, exit opportunities and absolute returns have been meagre, particularly when compared to the earnings of venture capital funds and the average profits of a well-diversified crowdlending portfolio. Unlike under the donation or reward-based model of crowdfunding, investors in equity crowdfunding are primarily interested in turning a profit and do not want to make a philanthropic contribution to an entrepreneur. If equity crowdfunding does not yield higher returns to crowd investors in the near future, many of them will possibly switch to the lending model. This is particularly true of Germany, where investors do not hold ordinary shares in the firms they have funded and are consequently at the discretion of a venture capital fund that is interested in acquiring shares and seeks to squeeze the crowd out of a mezzanine financial contract at the lowest possible cost. As a solution to this problem, many German equity crowdfunding portals have now installed a special purpose vehicle or established pooling contracts, which encourage the coexistence of crowd investors and venture capital funds.

Table 2

Exit opportunities on the German equity crowdfunding market, 2011–2015

Start-up	Portal	Incorporation	Campaign end	Number of investors	Month until exit	Round volume	Return	Deadline	Accepted (votes)
Smarchive	Seedmatch	27.07.11	02.12.11	144	11	100.000 €	25% / 12,5%	2 weeks	Yes
Bloomy Days	Seedmatch	28.03.12	04.06.12	175	22	100.000 €	30,00%	3 weeks	Yes
Companisto	Companisto	04.05.11	09.08.12	442	27	100.000 €	100,00%	1 month	No (Yes = 23.43%, No = 49.84%, n/a = 26.82%)
LeaseRad*	Seedmatch	16.12.08	13.08.2012 / 06.12.2012	174 / 263	35 / 31	100.000 / 220.000 €	three digits amount	n/a	Partially (around 25% accepted)
Refined Investment / Cashboard*	Seedmatch	30.05.11	15.11.2012 / 28.03.2013	136 / 339	30 / 26	100.000 / 350.000 €	48,50%	3 weeks	Partially (around 66% accepted)
5 CUPS and some sugar	Companisto	25.01.11	02.07.13	739	19	300.000 €	45,00%	2 weeks	Yes (Yes = 93,79%, No = 1,49%, n/a = 6.21%)
Lottohelden	Seedmatch	13.06.12	09.01.14	539	21	459.000 €	37,75%	n/a	n/a

* Start-ups ran two campaigns.

Source: Authors' data.

Moreover, the implementation of Title III of the *Jumpstart Our Business Startups (JOBS) Act* also made equity crowdfunding available to non-accredited investors in the United States. Americans have always had a higher affinity for investing in stocks and the US equity crowdfunding market might rapidly overtake European markets altogether. If European investors can easily invest in Silicon Valley start-ups via the internet, continental European equity crowdfunding markets might be relegated to a niche existence. The European equity crowdfunding industry should therefore consolidate and establish multilingual portals, which can act as counterweights to the emerging portals in the United States. This process has already started in the lending segment, where British *Funding Circle* recently acquired German *Zencap*. If European equity crowdfunding portals are not capable of bringing together a critical mass of investors and capital in order to fund larger projects at a faster pace, the most promising entrepreneurs might consider financing their ventures overseas.

Every attempt by equity crowdfunding portals to operate beyond the borders of their respective home jurisdictions, however, requires considerable legal work because national security laws remain fragmented and differ substantially (Dushnitzky et al. 2016, 58; Weinstein 2013, 437–449). In Europe, the total amount that can be offered without a prospectus varies between EUR 100,000 and EUR five million depending on the jurisdiction where the offer is made (Hornuf and Schwienbacher 2016). Portals that want to offer standardised contracts and run campaigns in different jurisdictions have to learn about various security laws written in several languages, which may prove an insurmountable task for a start-up company that cannot effort the services of specialised law firms. Moreover, many jurisdictions have recently changed their security laws with regard to equity crowdfunding (Hainz and Hornuf 2016), making it essential for portals to continuously keep track of the applicable legal rules. Under these circumstances it may be particularly tough for European equity crowdfunding portals to keep track of their competitors in the United States.

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