Are Equity Crowdfunding Investors Active Investors? *

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ABSTRACT:
It is often assumed that entrepreneurs retain more control of their venture when they opt for equity crowdfunding as compared to venture capital, notably because crowd investors are passive. We study whether crowd investors are indeed passive by analysing the cash flow and control rights crowd investors receive in equity crowdfunding in Germany, where more flexible contracts are offered than in many other countries. We document that in Germany many of the rights used in venture capital investment contracts are also used in equity crowdfunding contracts. We find that crowd investors are asked to pay higher prices if they receive more cash flow and exit rights, consistent with the fact that these rights are valuable to the crowd. However, these rights have no meaningful economic impact, since they do not affect campaign outcome, the likelihood of securing follow-on funding, nor the likelihood of liquidation of the venture. These results are inconsistent with control rights theory that predicts positive impacts, in contrast to results documented for venture capital contracts. Rather, our results suggest that crowd investors are passive investors whose control rights are ineffective or not exercised.

This Version: September 29, 2019

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1. Introduction

It is often advocated that an important benefit of equity crowdfunding (ECF) is that entrepreneurs do not need to give up as much control as professional investors such as business angels (BAs) and venture capitalists (VCs) would request from them (Drover, Busenitz, Matusik, Townsend, Anglin, and Dushnitsky, 2017; Estrin, Gozman, and Khavul, 2018). While academics and practitioners alike often raise this argument[1], to the best of our knowledge, no study has yet examined which control rights entrepreneurs offer when they launch an ECF campaign, and whether crowd investors value these rights and become active investors. This study provides evidence on the impact of awarding different sets of control rights to crowd investors on the pricing of shares, campaign outcome, the likelihood of receiving follow-on funding, and ultimate survival of equity crowdfunded startups.

Venture capital contracts are characterized by the extensive use of covenants that allow investors to disconnect cash flow rights from control rights such as exit, voting and liquidation rights (Cumming, 2008; Kaplan and Strömberg, 2003). Cumming (2008) and Kaplan and Strömberg (2003) conclude that in the case of venture capital, agency theories (Holmström, 1979) and control theories (Aghion and Bolton, 1992) are useful to explain the allocation of these rights between investors and entrepreneurs. As will become clear below, in Germany ECF contracts include covenants similar to those of VC contracts, which allows crowd investors to actively intervene in the startup just like professional venture capitalists. However, while we know that venture capital funds are typically active investors that monitor extensively and advice their portfolio companies, equity crowd investors are per definition a large group of individuals who are often said to be passive. Thus, while crowd investors are likely to value cash flow rights and the participation in

[1] For instance, https://www.entrepreneur.com/article/269683.

the value of the startup, it is not clear whether control rights are also valued if the crowd is unlikely to exercise them. For example, Drover et al. (2017) argue that one weakness of ECF is ownership dispersion, which may lead to greater agency costs and consequently a lack of monitoring. Exploring how ownership dispersion affects venture outcome is important to advance our understanding of governance of entrepreneurial startups. Much of the existing studies on the topic consider venture capital investments, which are almost always characterized by highly concentrated ownership. Moreover, exploring the impact of these control rights on startup's outcome enables us to infer whether crowd investors are active or not. If they are truly passive as often said, allocating more control rights to them would have no impact. We use the German context to test this prediction, because the German market forced platforms founders to refrain from boilerplate corporate contracts.[2]

Control theory (Aghion and Bolton, 1992) predicts that awarding control rights to active investors will affect the entrepreneur's incentives and thus behavior, leading to different outcomes when both parties' interests are not fully aligned. Investors use their control rights to secure their interests and ensure the entrepreneur maximizes shareholder value. Thus, on the one hand, we expect actively-involved investors to pay more when they also receive more rights, since they are likely to exercise their rights if needed and thereby secure their interests. On the other hand, one may predict that the ultimate price of participation rights or shares may be lower since the request for more control rights is a sign of significant agency problems in the startup, leading to lower valuation. The overall effect of control rights is therefore ambiguous. In contrast, passive investors will not pay higher prices for control rights because they will not enforce these rights, leading to significant

[2] The reason why German equity crowdfunding platforms do not use standard participation rights of limited liability companies is that transferring shares of a limited liability company requires the involvement of a costly notary, which is too expensive in the context of ECF.

discretionary flexibility for entrepreneurs to impose their personal objectives (Pagano and Röell, 1998). Such discretion exists when investors face a free-riding problem because of dispersed ownership or because investors are fundamentally passive. To mitigate the free-riding problem, syndicate size in venture capital deals is therefore often small (Lerner, 1994). In ECF, individual investors make only small investments, leading to much larger investor groups. On average, there are 100-150 crowd investors participating in campaigns (see Ahlers et al., 2015, for evidence from Australia, Hornuf and Schwienbacher, 2018a, for evidence from Europe, Hervé et al., 2019, for evidence from France, and Vismara, 2018, for the UK).

To test how valuable control rights are in ECF and whether they have an economic impact on the startup—which would be the result of active involvement of crowd investors—, we hand-collect a representative sample of 256 contracts from 19 German ECF platforms and examine in detail the different rights that crowd investors are offered when making an investment. Our sample size is comparable to related studies on venture capital (n=213 for Kaplan and Strömberg, 2003, n=67 for Kaplan and Strömberg, 2004, and n=223 for Cumming, 2008). However, in contrast to these VC studies, our sample includes successful and unsuccessful transactions since the data was collected before campaigns started. In total, 17% of the campaigns were not successful. Also, our sample represents a comprehensive sample of the full population of German equity crowdfunding campaigns within the sample period. We categorize the contract terms into different classes of rights, which are subsequently aggregated into three main classes: cash flow rights, control rights, and exit rights. We further track over time each of the startups, to see if the startup was able to raise the requested funds, and—for those who had a successful campaign—what happened to the startups afterwards in terms of follow-on financing by professional investors and survival. This allows us to get a detailed view on how these startups have evolved until now. In particular, the two post-

campaign dimensions are commonly used indicators of startup success in equity crowdfunding studies, given the lack of more direct performance measures.

We obtain the following results. First, ECF contracts in Germany resemble in many ways venture capital contracts, as many of the covenants documented in Cumming (2008) and Kaplan and Strömberg (2003) are also included in ECF contracts. Contracts include participation rights (cash flow rights), information rights, general control rights, termination rights, transfer rights, insolvency rights, follow-up funding and anti-dilution rights, and rights protecting against opportunistic behavior. This, however, is a specificity of the German market, so contract structure may not be generalized to other countries. However, it shows that in a regulatory environment that allows wide contractual freedom, contracts used turn out to be similar to venture capital deals that separate cash flow rights from control rights. Second, given the price that entrepreneurs request the crowd to pay for certain rights, we conclude that entrepreneurs expect crowd investors to value most of these contract terms. In particular, entrepreneurs require a higher price for giving away participation rights (cash flow rights) and exit rights. General control rights are negatively correlated with the crowd's willingness to pay, suggesting that the existence of more general control rights indicates the greater agency concerns. Since no negotiation is taking place in equity crowdfunding—in fact, entrepreneurs offer a take-it-or-leave-it contract to the crowd—, one can only observe ex post equilibrium outcomes and not causal relationships. Causal relationship requires looking at the effect of offering specific contractual terms on campaign success, which captures whether the terms offered by the entrepreneur attract sufficient interest. We therefore examine the effect of contract terms on campaign success too. However, we find no evidence that differences in cash flow and control rights affect campaign success, suggesting participation of crowd investors is not driven by the extent of cash flow and control rights offered to them. Finally, we examine the impact of certain contract terms on the likelihood that the startup is eventually

liquidated. If crowd investors are active, one would expect a significant impact. Estimating a hazard risk model allows us to investigate the impact that control rights held by crowd investors have on firm survival. We find that none of the control rights affect the liquidation likelihood in a significant way, consistent with the notion that crowd investors are passive. Moreover, control rights have no impact on the likelihood of receiving follow-on funding by professional investors, which is often considered a sign of further development of the startup.

This study contributes to a better understanding of whether awarding control rights to crowd investors affects campaign and startup outcome. First, we are able to assess whether crowd investors are effective, which has barely been studied in the literature so far. Existing studies on equity crowdfunding focus on a limited set of contractual features such as security type, while we cover the full spectrum of contracts used in Germany. This in turn offers insights into the question whether crowd investors are actively involved in the startups they finance when they are given the contractual options, or merely passive investors. These questions further enable a comparison with professional investors who are often active. From a theoretical perspective, we are able to link our findings to important theories such as agency and control theories. In particular, given the lack of findings on the impact of rights on startup outcome in our study, we conclude that crowd investors are passive, and thus control rights cannot contribute in solving agency and control problems highlighted by theory. Compared to the literature on venture capital, we further contribute by focusing on both: the entrepreneur's and the investors' perspectives. The former is used when examining the rights proposed in contracts, while the latter in the analysis of campaign outcome. Existing studies are not able to examine both perspectives due to a lack of an ex ante sample of successfully and unsuccessfully financed equity crowdfunding offers. Most notably, studies in venture capital only have deals that have been completed, but not those that did not get funded.

The remainder of the paper is structured as follows. Section 2 presents related literature on ECF and equity contracting. Section 3 describes our data and methods of measurement. The analysis is presented in Section 4. Finally, Section 5 discusses the results and implications.

2. Related Literature

Our study relates to several important strands of literature. The first closely related strand of literature concerns the published evidence related to crowdfunding, and especially ECF. Like other forms of crowdfunding, many studies deal with success factors of campaign fundraising, rather than the structuring of the deals. Early research on funding success in ECF find that updates by the startup that are used strategically (Block et al., 2018; Dorfleitner et al., 2018), the participation of more sophisticated investors (Hornuf and Schwienbacher, 2018b) as well as information cascades (Vismara, 2018) are important factors determining funding success. Other studies in that literature stream are discussed below. Hornuf, Schmitt, and Stenzhorn (2018), Signori and Vismara (2018), and Walthoff-Borm, Vanacker, and Collewaert (2018) study the ultimate outcome of equity-crowdfunded startups. Our study examines both, success factors and deal structure, and their impact on follow-up outcomes beyond the campaign introducing an important new explanation: the contract terms of the deal.

A few studies have examined specific contractual features of equity crowdfunding, but they have not examined the full range of contract details. Cumming, Meoli, and Vismara (2018) have examined share classes in the context of UK-based platforms, where some shares have voting rights and others not. Rossi et al. (2018) perform an international, platform-level analysis and find that individual voting rights are associated with lower chances of success of a platform. Hornuf and Schwienbacher (2018a) study the use of participating notes and find that they facilitate ECF fundraising. Wang et al. (2019) discuss co-investments with business angels as a solution to the

control problem in equity crowdfunded startups. Hornuf et al. (2018) provides a legal and descriptive analysis of the contract terms used in Germany. We build on their work to study how these terms affect crowd investors' participation, campaign outcome, and further development of the startup beyond the campaign. This then sheds light on the extent to which crowd investors are able through contractually obtained control rights to mitigate agency problems by being actively involved.

The second strand of literature we build on relates to the studies on venture capital contracts that attracted significant interest from empiricists and theorists in the past. On the empirical front, Cumming (2008) uses a set of European VC contracts to study exits, and find that VCs with stronger control rights lead to more trade sales. Kaplan and Stromberg (2003, 2004), use instead a sample of US contracts. The findings of both studies provide support for many theories of control allocation. Very recently, Ewens et al. (2019) find that allocation of control rights is crucial to maximize value of entrepreneurial firms. On the theoretical front, studies have examined benefits of convertible preferred shares that are widely used in VC contracts especially in the US, building on concepts such a double moral hazard and hold-up problems in startups (Bascha and Walz, 2001; Bergemann and Hege, 1998; Casamatta, 2003; Hellmann, 2006; Repullo and Suarez, 2004). An important underlying assumption is that investors are active and therefore will use their contractual rights. In a recent study, Ewens and Gorbenko (2019) investigate first financing rounds of startups and find that VCs use negotiate contracts to receive more investor-friendly terms compared to the value maximizing contract. They explain this result by the bargaining power of VC funds.

3. Data and Method

3.1. Data

In many jurisdictions, entrepreneurs offer common shares when running an ECF campaign (for example in the UK [Vulkan et al., 2016] and France). However, common shares leave less scope for financial contracting as basic governance features are already defined by corporate law and are not subject to bargaining by the parties. ECF in Germany provides a neat exemption to that rule, which we exploit in our analysis. Because transferring common shares of a private limited liability company requires the involvement of a costly notary, ECF through common equity is practically impossible in Germany due to excessive transaction costs. Issuers therefore often use subordinated profit-participating loans and silent partnership agreements, which nevertheless constitute equity in accounting terms because of the subordination and the fact that investors participate in the firm's profits. These agreements however leave more scope for financial contracting because less terms are predefined by corporate or securities law. Indiegogo—the main competitor of Kickstarter—has allowed startups to run ECF campaigns on its platform, some of which use similar financial contracts, such as profit participation rights (Hornuf and Schwienbacher, 2018a).

For the period from August 1, 2011, to December 31, 2015, we hand-collected data on 256 equity-crowdfunding campaigns. The analysis includes campaigns on 19 different German platforms and covers 81% of the investment contracts offered in the German market during that period. Furthermore, our dataset covers 91% of the market volume that was successfully issued. While previous studies on venture capital contracting have been restricted to those contracts that actually led to an investment (Cumming, 2008; Ewens et al., 2019; Kaplan and Strömberg, 2003), our analysis includes ECF contracts of successful and unsuccessful offers. Overall, 78% of the campaigns in our sample have been successfully funded, 17% did not receive funding from the crowd, and for 5% of the campaign outcome is unknown.

3.2. Variables

Dependent Variables

We use four different dependent variables in our study. First, we construct a variable that captures how much an investor had to pay to receive 1% of equity from the firm when investing as part of the ECF campaign. Because ECF in Germany takes place through mezzanine financial instruments, a virtual share—the so-called investment ratio—must be calculated to determine the cash-flow rights of the investor, which we calculate based on the actual contractual provisions. The investment ratio is determined through the pre-money valuation and the amount raised during the ECF campaign. For example, if the firm raised 100.000 EUR during the ECF campaign and the pre-money valuation was determined to be 1.000.000 EUR, the "post-money valuation" should be 1.100.000 EUR. To receive 1% percent of that value, the investor would have to invest 11.000 EUR. This variable is labelled *price for 1%*.

Second, we construct a dummy variable to capture whether the campaign was successful, which we denote *campaign success*. We classify campaigns as successful when they achieved the funding goal at the end of the campaign. Because all platforms in our sample use the all-or-nothing funding model, the entrepreneur gets nothing if the funding goal is not reached. Also, startups set an upper limit to the amount they want to raise. These restrictions make our binary variable suitable for measuring campaign success.

Third, to investigate whether contracts impact post-campaign outcome, we analyze whether a startup received follow-up funding by an outside BAs or VCs. This variable is a dummy variable that equals 1 if the respective startup received additional funding by either outside BAs or VCs after a successful ECF campaign, and 0 otherwise. We collected information about follow-up financing rounds from BvD Orbis, BvD Zephyr, Thomson Reuters Eikon, and Crunchbase. We

also systematically searched for press releases and additional information about follow-up funding on the websites of the ECF platforms, funded startups, and investing VCs, and supplemented our dataset accordingly.

The forth dependent variable measures whether a startup went into insolvency, was liquidated, or was dissolved. We collected the data from the German company register (*Unternehmensregister*). Since our analysis is based on duration models, we record the time between incorporation and failure for all failed startups. For startups that are still active, this variable is right-censored to avoid selection biases in the analysis. Data on follow-up funding, insolvencies and liquidations was constructed as of May 1, 2018.

Explanatory Variables

We construct our explanatory variables based on the contract terms that can be found in ECF contracts and what previous literature suggests. Individual contract terms are coded as dummy variables. Contract terms that resemble the same theoretical concepts have been aggregated to three indices (*cash-flow rights index*, *control rights index*, and *exit rights index*), which are themselves composed of different sub-indices. The variable *control rights index* is composed of *information rights index*, *follow-up funding and dilution rights index*, and *protection against opportunistic behavior index*. The variable *exit rights index* is composed of the *rights of termination index*, *transferability index,* and *insolvency index*. More details on the exact composition is provided below together with the summary statistics and in Appendix Table 1.

Control Variables

As control variables, we include the pre-money valuation, age of the startup at the end of the campaign, whether the startup's legal form is a limited liability company that requires the founder

to put down a legal capital of more than 1 EUR (*legal form with minimum capital*), and the funding goal. Startups that want to raise capital in an ECF campaign decide on the pre-money valuation of the startup in collaboration with the platform managers and decide how much capital they want to raise. The pre-money valuation and the capital requirements affect the funding goal. The age of the startup serves as a proxy for its maturity, although most startups were in the pre-seed or startup phase. We use this variable to proxy the development of the startup rather than pre-money valuation, because pre-money valuation is used to calculate the variable *price for 1%* and would be endogenous. The underlying assumption is that the price will increase with the development of the startup as measured by startup age. In terms of legal form, we include a dummy variable that captures whether the legal form has a minimum capital requirement, as this might serve as a screening device. For example, the traditional German limited liability company in the form of a *GmbH* requires founders to put down 25,000 EUR, 12,500 EUR of which have to be put down at the time of incorporation. The minimum capital of the legal form might indicate to investor that the firm is of higher quality, because founders have been willing to make a substantial *ex ante* investment in their venture. Finally, control rights might be less relevant if the founder team is larger as well as more sophisticated and the founders have more experience in running a startup. We therefore include two variables—*no. of founders* is the number of founders in the team and *entrepreneurial experience of team*, which measures whether at least one founder has previously participated in an entrepreneurial firm and thus has entrepreneurial experience.

The information on campaigns was continuously collected from the platform websites, which ensured that we are not lacking any information that was subsequently deleted from the platform after the campaign end, and the German Company Register (www.unternehmensregister.de).

Finally, we also control for unobserved heterogeneity by including several dummy variables. The timing of the campaign and general trends in the contracting standards is captured by *year dummies.*

Firms that received ECF on larger platforms might receive more sophisticated contracts relative to firms that received ECF from small platforms that still must develop specific contract terms. We therefore include a series of *platform dummies* variable. Moreover, because of the diverse nature of the business models and intellectual property in different industries, contract requirements might differ for firms operating in, for example, manufacturing and the service industry. We thus include multiple *industry dummies.* Appendix Table A1 describes the measurement of all variables in detail.

4. Analysis

4.1. Summary Statistics

Table 1 provides summary statistics of the full sample. The average startup had a funding goal of about € 66,000 and a pre-money-valuation of € 2.4 million. On average, startups were able to raise € 211,285 during campaigns, with an average price of € 27,468 for 1% of the venture's equity charged by the entrepreneur to crowd investors. However, there is strong variation for all these variables. Overall, 84% of the campaigns were successful.

[Table 1 About Here]

Table 1 also shows the relative use of different covenants in equity crowdfunded contracts. Notably web-based investors' meetings are contractually planned in only 2.3% of the contracts, which leaves investors to rely on annual and/or quarterly reports to oversee the venture. However, 56% of the contracts provide inspection rights to crowd investors under certain conditions. Veto rights are granted in 33.7% of the contracts. Veto rights consider, for example, changes in the business model, selling parts of company assets, signing of guaranties, changes in the legal form or CEO employment contracts.

Down-round protection (anti-dilution rights) are included in 76.5% of the contracts. In contrast, vesting clauses for founders are almost never included (only in 1.2% of the contracts). This is remarkably low, compared to venture capital contracts that typically require founders' shares to be vested. For example, Cumming (2008) finds anti-dilution rights in 57% of his contracts and a broad range of exit rights. Kaplan and Strömberg (2003) find that founder vesting schemes are present in 41% of the VC contracts examined, and anti-dilution provisions in 95% of them.

We aggregate the different rights into three main indices, as defined in Appendix Table 1. The mean value of the *cash-flow rights index* equals 0.77, which means that most of the contractual components related to cash flow right are included in the average contract. Similarly, the mean values of *control rights index* and *exit rights index* are equal to 0.41 and 0.59, which can be interpreted in a similar way, given that all the underlying sub-indices are dummy variables. However, there is strong variation across contracts, as evidenced by the magnitude of standard deviations. Furthermore, Table 2 reports correlations between the main variables of interest. The correlations between the dependent and explanatory variables are in line with the multivariate results we will present in the next section. We find that a higher price for an equity share is associated with more cash flow right and exit rights, but less control rights. The positive relationship between cash flow rights and share prices is intuitive, because cash flow rights determine how much of the future value will be obtained by investors. The positive relationship with exit rights is consistent with the fact that exit rights allow investors to reduce losses by forcing early closure, before all the cash is gone in case of insolvency or liquidation. Indeed, exit rights pertain to rights of termination, transferability options, and the investor's position of investors in case of insolvency or liquidation. Third, the negative relationship of price and control rights is consistent with the view that the extent of control rights offered in the contract reflects the severity of agency costs, which negatively affects firm value.

[Table 2 About Here]

A last, important question before moving to the multivariate analyses is whether there is variation in contrast within the different platforms. If each uses a standard template for all campaigns, there will be no within-platform variation. In this case, platform-specific characteristics may explain entirely the variation observed, leaving no room for startup and founders characteristics. To ensure that this is not the case, we provide in Table 3 the platform-level mean and standard deviation of the three variables on cash flow, control and exit rights for the three main platforms in our sample. All other platforms are significantly smaller; also, the last column shows the same statistics for the full sample.[3] We find that there are strong variations across platforms as well as within platforms, with the exception of Innovestment where variation is quite small compared to the other platforms. In the multivariate analyses below, we will include platform fixed effects to ensure that platform-level differences are not affecting our results for startup and founders' characteristics.

[Table 3 About Here]

4.2. Multivariate Analyses

We now turn to the multivariate analysis. First, we investigate whether offering specific types of rights affect the price of equity, as measure by the price for acquiring 1% of the startup's equity (the variable *price for 1%*). This will allow us to test our prediction based on control theory and active investors. We further explore determinants of individual contractual characteristics. Since this analysis is based on contractual terms offered by entrepreneurs to potential crowd investors, it takes the perspective of entrepreneurs. It represents the tradeoffs confronted by entrepreneurs between the different rights when drafting the contract for the campaign. Second, we test the impact

[3] These are the same values as reported in Table 1.

of the different types of rights on campaign success to see whether it drives crowd investors to participate in the fundraising process. This offers an analysis of the investors' perspective, since we here focus on whether different contractual terms affect the participation of crowd investors in the financing of the startup. If crowd investors value these rights, we expect them to affect campaign outcome. And third, we examine whether allocating rights to crowd investors affect the ultimate outcome of the startup, which we measure as time to default and the likelihood of attracting follow-on finance.

Determinants of Contractual Arrangements

Table 4 provides results on the impact of contractual arrangements on equity price, based on the euro amount investors have to pay for 1% of total equity (the variable *price for 1%*). We include *startup age* to proxy for development, rather than *pre-money valuation*. The reason for this approach is because the pre-money valuation is used to calculate our dependent variable, so that there is a mechanical relationship between the two. We further include *funding goal*, *legal form with minimum capital*, *entrepreneurial experience of team*, and *no. of founders* as control variables. All the regressions include industry, platform, and year dummies, but their contribution to the R-squared are generally small. However, they capture many of the unobserved factors that could affect pricing.

[Table 4 About Here]

In Models (1)-(5), we first explore what affects individual contractual characteristics (Model (5) uses as dependent variable the sum of *control rights index* and *exit rights index*, which we denote *total rights index*). In Models (6)-(9), we test relationships between the different contractual terms with equity price. Since all these terms and the price are determined jointly, these should be interpreted as correlations and not causal relations. With regards to the first part, we find a clear

lack of predictability of any variable on the provision of terms, with the exception of equity price. There, equity price is higher for older startups and high funding goals. Both of these results are consistent with the fact that startups become more valuable as they get older and are more advanced in their development stage (which require more funds), leading to higher equity price for 1% of the equity. These same variables are however not affecting the extent of other rights that entrepreneurs give away in equity crowdfunding offers.

As for the second part (Models (6)-(9)), our multivariate results support the preliminary findings from Table 2. On the one hand, we obtain a positive and significant effect of cash flow rights and exit rights on equity price. More cash flow rights lead crowd investors to obtain a larger portion of the startup's value in case of a successful sale of the company; more exit rights ensure crowd investors ways to force an exit or obtain higher priority in case of a liquidation. On the other hand, control rights are negatively and significantly related to equity price, consistent with the fact that the presence of control rights is associated with increased agency concerns and thus a lower price of equity. Adding up both rights (our variable *total rights index*) however leads to no significant relationship anymore. We find no evidence that the size of the founder team or their previous entrepreneurial experience of the team affects the price investors have to pay.

Determinants of Campaign Success

The analysis done so far takes the entrepreneurial perspective, as the price derived for 1% of equity is the one determined by the entrepreneur. We know take the crowd investors' perspective and examine whether the provision of more rights make funding more likely; i.e., whether the funding goal is more likely reached. If more rights attract more investors, we would expect the campaign to be more likely successful. We therefore investigate the impact of the different types of rights on *campaign success*.

Table 5 reports the results. None of the three types of rights affect campaign success significantly, suggesting that the decision of crowd investors to participate is not driven by the contractual features. As pointed out in the theory section, the lack of findings can be explained by the passivity of crowd investors who are unlikely to exercise the rights even if needed. In unreported analyses, we also included the variable *price for 1%* which constitutes another possibly important determinant of crowd investor participation. The variable is however also affected by all the other variables already included, as evidenced in Table 4. Including that variable did not materially affect the results. We find the size of the founder team to affect campaign success, but not entrepreneurial experience of the team.

[Table 5 About Here]

Determinants of Startup Failure and Follow-on Financing

Ultimately, it is important to understand whether different contract terms affect the ventures' outcome, because otherwise they may not be worth to be allocated to crowd investors. It is only rational for the crowd to pay a higher price if they can affect the ultimate outcome of the startup positively. Given the lack of data on financial returns—also because most startup have not offered an exit possibility to investors yet—, we use two different measures of outcome. The first is based on failure (insolvency, liquidation, or dissolution), where we measure the duration in days between incorporation and failure. Using the Cox proportional hazard model, we can then estimate the likelihood of failure, while controlling for the right-censoring of the event. The second measure is a dummy that equals 1 if the startup secured follow-on funding from either a venture capital fund or a business angel. This measure of success has been used in other studies on ECF (Hornuf et al., 2018) and captures the fact that the venture continues to be promising, which triggered the decision of professional investors to offer more funds.

Results are provided in Table 6. Panel A shows the effect of the three main categories of rights on the likelihood of failure. So far, 67 out of 157 startups have failed, which reflects the high level of risk inherent in these investments. The coefficients of cash flow and control rights are not statistically significant at the commonly used level of 5%. In contrast, exit rights increase failure rate. This positive effect may be due to the fact that exit rights enable investors to more quickly trigger bankruptcy as a mean to avoid inefficient cash spending by the entrepreneur. If prospects of a startup become negative, crowd investors may force liquidation before any remaining value is lost, thereby increasing liquidation value. This is possible because of the exit rights they have secured.

[Table 6 About Here]

Panel B shows the results on follow-on funding, based on Probit regressions. We use the same specification as in Panel A. As reported in the table, 42 out of 162 startups have obtained follow-on funding at the time of data collection. We find that none of the rights affects the chances of obtaining follow-on funding, except again for exit rights at the 10% level. While the results here are shown for either VC or business angel, redoing the analysis on each type of investors separately yields the same conclusions. Also, including year dummies or any other fixed effects does not lead to any significant results. One control variable that is statistically significant is pre-money valuation, suggesting that startups that are valued more are more likely to secure follow-on funding. Possible reasons are that these startups are already more developed and thus require larger amounts of funding (i.e., a level closer to what venture capital funds typically invest), and that they are at the same time the most promising ones (attracting broader interest by the community of professional investors, similar to Colombo and Shafi, 2016, for reward-based crowdfunding).

5. Discussion, Implications, and Concluding Remarks

In this paper, we studied equity crowdfunding contracts and provide evidence that many covenants found in venture capital contracts are also used here. However, control right do not seem to matter to attract more funding, nor do they affect startup outcome post-campaign. Consistent with prediction of Drover et al (2017), this suggests that crowd investors are passive. Passivity may either come from free-riding due to dispersed ownership (as suggested by Drover et al., 2017) or lack of skills by crowd investors to actually exercise their rights.

While our results indicate that awarding crowd investors control right is ineffective, an open question is whether they are nevertheless exercised. Until recently very few ECF investments allowed investors to make use of their exit rights. Hornuf and Schmitt (2016) counted seven extraordinary exit opportunities before the end of the investment term, which offered exit returns ranging from 12.5% to 100%. Exits events were often triggered by VCs funding a new round and trying to squeeze-out crowd investors. For example, in one of the first exit cases a large law firm helped the startup Smarchive (today Gini) to squeeze all 144 crowd investors out to enable an investment by Main Incubator, T-Venture und Check24. In case of an extraordinary exit event, investors often had to decide within very short periods of 2 to 4 weeks whether to accept the exit offer or hold up the contract. Sometimes investors had to vote whether to accept the exit offer, with only some accepting it.[4]

Investor rights are also relevant in case of insolvencies, which have recently taken up. Three months after the ECF campaign the startup Vibewrite failed. Investors have complained that quarterly reports were not published and that the founder earned a too high wage. The founder and CEO Falk Wolsky worked as an external consultant for the firm and pocketed € 600 per day.[5] Moreover, the money raised during the ECF campaign was apparently used to repay previous debt

4 Among them were Companisto, LeaseRad, Refined Investment / Cashboard, 5 CUPS and some sugar.
5 See https://www.gruenderszene.de/allgemein/vibewrite-insolvenzverschleppung-anzeige?interstitial_click.

that was not made transparent, which would clearly have violated the contract terms. The founder was subsequently sued for a delayed filing of insolvency.[6] Thus, real-world cases hint to major difficulties for crowd investors to enforce their exit and control rights in practice, consistent with our conclusions that they are ineffective and not priced.

[6] See https://www.gruenderszene.de/allgemein/vibewrite-insolvenzverschleppung-anzeige/2?interstitial.

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TABLE 1: Summary Statistics

Variables	No. Obs.	Mean	Median	Std. Dev.	Min	Max
Pre-money valuation	212	2.416	1.500	2.630	0.310	20.000
Funding goal	244	65.589	50.000	52.743	10.000	500.000
Funding limit	254	334114.2	150000.0	571458.6	40000.0	5000000.0
Funding amount	233	211285.3	100000.0	315326.9	1300.0	3000000.0
Price for 1%	212	27468.4	17000.0	30340.5	3850.0	250000.0
Cash-flow rights index	256	0.765	0.667	0.219	0.333	1.000
Control rights index	255	0.408	0.365	0.175	0.031	0.771
Exit rights index	255	0.593	0.627	0.117	0.187	0.715
Startup age at end of campaign (years)	236	2.167	1.258	3.903	0.000	33.788
Legal form with minimum capital	255	0.847	1.000	0.361	0.000	1.000
Entrepreneurial experience of team	268	0.183	0.000	0.387	0.000	1.000
No. of founders	268	2.060	2.000	1.004	1.000	6.000
Cash Flow (Participation) Rights:						
Fixed interest payment	256	0.582	1.000	0.494	0.000	1.000
Due date of fixed interest payment	149	0.161	0.000	0.268	0.000	1.000
Profit participation	256	0.924	1.000	0.224	0.000	1.000
Share in enterprise value	256	0.828	1.000	0.378	0.000	1.000
Participation in exit proceeds	256	0.742	1.000	0.438	0.000	1.000
Loss participation	256	0.516	1.000	0.501	0.000	1.000
No additional funding obligation	256	1.000	1.000	0.000	1.000	1.000
Cash-flow rights index	256	0.765	0.667	0.219	0.333	1.000
Information rights:						
Quarterly report	256	0.703	1.000	0.458	0.000	1.000
Annual financial statement	256	0.807	1.000	0.350	0.000	1.000

Ad hoc information	256	0.523	1.000	0.500	0.000	1.000
Overview of earnings	256	0.680	1.000	0.468	0.000	1.000
Investors' meeting	256	0.023	0.000	0.152	0.000	1.000
Right of inspection	256	0.564	1.000	0.486	0.000	1.000
Information rights (Index)	256	0.550	0.667	0.259	0.000	0.833
Veto rights:						
Veto rights (Index)	256	0.338	0.000	0.452	0.000	1.000
Follow-up funding and dilution protection:						
Dilution	256	0.266	0.000	0.443	0.000	1.000
Protection against misuse	256	0.906	1.000	0.292	0.000	1.000
Subscription rights	256	0.266	0.000	0.443	0.000	1.000
Down round protection	256	0.766	1.000	0.424	0.000	1.000
Follow-up funding (Index)	256	0.551	0.500	0.295	0.000	1.000
Protection against opportunistic behaviour:						
Purpose limitation	256	0.572	1.000	0.481	0.000	1.000
Non-competition clause	256	0.066	0.000	0.249	0.000	1.000
Post-contractual competition prohibition	256	0.063	0.000	0.243	0.000	1.000
Managing directors' compensation	256	0.648	1.000	0.478	0.000	1.000
Secondary employment restriction	256	0.176	0.000	0.381	0.000	1.000
Sales prohibition (lock-up)	256	0.012	0.000	0.108	0.000	1.000
Pre-emptive rights	256	0.012	0.000	0.108	0.000	1.000
Vesting clauses	256	0.012	0.000	0.108	0.000	1.000
Prot. opp. behav. (Index)	256	0.195	0.125	0.142	0.000	0.625
Termination rights:						
Minimum term	256	0.613	0.597	0.152	0.000	0.875
Extraordinary termination right of investor	256	0.762	1.000	0.337	0.000	1.000
Period of notice	256	0.767	0.750	0.225	0.000	1.000

Termination rights (Index)	256	0.714	0.748	0.147	0.167	0.958
Transferability rights:						
Transferability	256	0.606	0.750	0.186	0.000	0.750
Partial transferability	256	0.000	0.000	0.000	0.000	0.000
Transf. rights (Index)	256	0.606	0.750	0.186	0.000	0.750
Position of investors in case of insolvency:						
Subordination clause	256	0.000	0.000	0.000	0.000	0.000
Qualified subordination clause	256	0.016	0.000	0.124	0.000	1.000
Risk of insolvency of SPV	256	0.906	1.000	0.292	0.000	1.000
Pooling of risks in SPV	256	0.918	1.000	0.275	0.000	1.000
Insolvency rights (Index)	256	0.460	0.500	0.144	0.000	0.750

Table 2: Correlation Matrix

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
[1] Price for 1%	1.0000								
[2] Cash-flow rights index	0.3483*	1.0000							
[3] Control rights index	-0.2477*	-0.4840*	1.0000						
[4] Exit rights index	0.1514*	0.3520*	-0.0396	1.0000					
[5] Startup age	0.3088*	-0.0594	-0.2249*	-0.0207	1.0000				
[6] Legal form with minimum capital	0.1442*	0.1382*	-0.1589*	0.0882	0.1376*	1.0000			
[7] Pre-money valuation	0.9944*	0.3298*	-0.2309*	0.1467*	0.3359*	0.1447*	1.0000		
[8] Funding goal	0.6328*	0.2153*	-0.1225	0.1085	0.1374*	0.1184	0.6136*	1.0000	
[9] Entrepreneurial experience of team	-0.0498	0.0640	-0.0514	0.0486	-0.1170	0.0117	-0.0540	0.0546	1.0000
[10] No. of founders	0.0318	0.1556*	-0.0556	-0.0841	-0.0504	0.0383	0.0303	0.0450	-0.2594*

Significance level: * < 5%

Table 3: Variation within platforms (mean, std. dev.)

	Seedmatch (88)	Innovetsment (48)	Companisto (47)	All platforms (255)
Cash-flow rights index	0.852 (0.229)	0.663 (0.024)	0.943 (0.127)	0.766 (0.219)
Control rights index	0.487 (0.186)	0.573 (0.034)	0.254 (0.061)	0.408 (0.175)
Exit rights index	0.651 (0.031)	0.619 (0.044)	0.577 (0.104)	0.593 (0.117)

TABLE 4: Impact on Contractual Rights and Equity Price

Dep. Var. ===>	[1] Price for 1%	[2] Cash-flow rights index	[3] Control rights index	[4] Exit rights index	[5] Total rights index	[6] Price for 1%	[7] Price for 1%	[8] Price for 1%	[9] Price for 1%
Cash-flow rights index						31492.8***			
Control rights index							-32833.2**		
Exit rights index								34642.3*	
Total rights index									-19761.5
Startup age	2376.717**	0.000	-0.002	0.000	-0.002	2336.366**	2323.626**	2336.471**	2367.721**
Funding goal	499.624***	0.000	0.000	-0.000	0.000	505.333***	506.213***	504.080***	501.048***
Legal form with minimum capital	2314.380	0.036	-0.024	0.003	-0.021	1357.070	1499.136	2233.148	1870.043
Entrepreneurial experience of team	-5012.189	0.006	-0.006	-0.004	-0.010	-5214.316	-5127.413	-4932.372	-5127.070
No. of founders	-1023.291	0.003	-0.005	-0.002	-0.007	-1077.276	-1174.615	-914.637	-1176.350
Industry dummies incl.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Platform dummies incl.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies incl.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No of obs	208	233	233	233	233	208	208	208	208
R-squared	0.608	0.778	0.814	0.840	0.869	0.619	0.615	0.612	0.611

Significance level: * < 10%; ** < 5%; *** < 1%.

TABLE 5: Impact of Contractual Rights on Campaign Success

	[1]	[2]	[3]	[4]
Cash-flow rights index	-1.153			
Control rights index		2.096		
Exit rights index			-0.466	
Total rights index				0.601
Startup age	-0.004	0.001	-0.002	-0.001
Funding goal	-0.001	-0.001*	-0.001*	-0.001
Legal form with minimum capital	0.148	0.146	0.149	0.136
Entrepreneurial experience of team	0.087	0.089	0.081	0.097
No. of founders	0.113**	0.105**	0.108**	0.108**
Industry dummies incl.	Yes	Yes	Yes	Yes
Portal dummies incl.	Yes	Yes	Yes	Yes
Year dummies incl.	Yes	Yes	Yes	Yes
No of obs	119	119	119	119
Pseudo R-squared	0.222	0.229	0.212	0.217

All regressions are estimated with the Probit model. Reported coefficients are marginal effects. Significance level: * < 10%; ** < 5%; *** < 1%.

TABLE 6: Impact of Contractual Rights on Liquidation Probability and Follow-on Financing

Panel A: dep. var. = Time in days until liquidation is announced

	[1]	[2]	[3]	[4]	[5]	[6]
Cash-flow rights index	0.463					
Control rights index		0.237				
Exit rights index			6.058*			
Termination rights				7.474		
Transf. rights					1.867	
Insolvency rights						3.584
Startup age	0.000	0.003	-0.011	0.003	-0.004	-0.007
Pre-money valuation (in € million)	0.040	0.044	0.043	0.050	0.038	0.048
Funding goal (in € thousand)	-0.003	-0.003	-0.002	-0.003	-0.002	-0.003
Legal form with minimum capital	0.385	0.417	0.473	0.513	0.378	0.526
Entrepreneurial experience of team	-0.517	-0.504	-0.521	-0.491	-0.526	-0.512
No. of founders	-0.120	-0.115	-0.132	-0.117	-0.124	-0.135
No of obs	157	157	157	157	157	157
No of failures	67	67	67	67	67	67
Wald Chi-squared p-value	0.00	0.00	0.00	0.00	0.00	0.00

Fixed effects for year, industry and platform are included in all the specifications. All regressions are estimated with the Cox proportional hazards model. Reported coefficients are hazard ratios. Significance level: * < 10%; ** < 5%; *** < 1%.

Panel B: dep. var. = Dummy for VC or Business Angel Follow-on Finance

	[1]	[2]	[3]	[4]
Cash-flow rights index	0.218			
Control rights index		-0.248		
Exit rights index			1.348*	
Total rights index				0.152
Startup age	0.000	0.000	-0.002	0.000
Pre-money valuation (in € million)	0.011	0.011	0.011	0.012
Funding goal (in € thousand)	-0.000	-0.000	0.000	-0.000
Legal form with minimum capital	-0.004	-0.004	0.009	0.009
Entrepreneurial experience of team	0.077	0.076	0.090	0.081
No. of founders	0.026	0.025	0.032	0.029
No of obs	162	162	162	162
No of Follow-on Finance	42	42	42	42
Wald Chi-squared	0.137	0.137	0.151	0.135

Fixed effects for year, industry and platform are included in all the specifications. All regressions are estimated with the Probit model. Reported coefficients are marginal effects. Significance level: * < 10%; ** < 5%; *** < 1%.

APPENDIX TABLE 1: Variable Definitions

Variable	Description	Source
Pre-money valuation	Pre-money valuation of the start-up as indicated in the contract.	ECF contracts
Funding goal	Minimum amount of money that must be raised for the funding to be successful. If the funding goal is not reached during the pre-defined funding period, the funding is not successful and ECF investors receive their pledges back.	ECF contracts
Funding limit	Maximum amount that can be raised in the crowdinvesting campaign as indicated on the platform website at the end of the funding campaign (after potential increases).	ECF website
Funding amount	Total amount of money raised during the ECF campaign.	ECF website
Legal form with minimum capital	Dummy variable equal to 1 if the firm uses a legal form that requires a legal capital larger than 1 EUR (*GmbH* and *AG*) and 0 otherwise.	ECF contracts and www.unternehmens-register.de
Price for 1%	Identifies how much ECF investors had to pay for 1% of the cash-flow rights, which is calculated as (pre-money valuation + funding limit) * 0.01.	ECF contracts and website
Startup age	Age of the startup at the time end of the crowdfunding campaign.	ECF contracts and www.unternehmens-register.de
Entrepreneurial experience of team	Dummy variable equal to 1 if at least one of the founders has entrepreneurial experience prior to founding this startup, and 0 otherwise	ECF website, startup website, LinkedIn, Xing
No. of founders	Number of founders	ECF website, startup website, LinkedIn, Xing
Cash-flow rights index	An index aggregating the cash-flow rights we define below. The index adds the following variables (1) fixed interest payment, (2) profit participation, (3) share in enterprise value, (4) participation in exit proceeds, (5) no loss participation, (6) no additional funding obligation and is subsequently divided by six. The index ranges from zero to one.	Own calculations

Control rights index	An index aggregating three sub-indices and one additional variable we define below. The index adds the following indices and variable (1) information rights, (2) veto rights, (3) follow-up funding and dilution rights, (4) protection against opportunistic behaviour, and is subsequently divided by four. The index ranges from zero to one.	Own calculations
Exit rights index	An index aggregating three sub-indices we define below. The index adds the following indices (1) rights of termination, (2) transferability, (3) position of investors in case of insolvency, and is subsequently divided by four. The index ranges from zero to one.	Own calculations
Total rights index	The sum of *Control rights index* and *Exit rights index*.	
Cash-flow rights		
Fixed interest payment	Dummy variable that equals 1 if investors receive fixed interest payments as part of the investment contract and 0 otherwise.	ECF contracts
Profit participation	Dummy variable that equals 1 if investors participate in company profits on an annual basis in an unrestricted manner, 0.5 if the profit participation is limited to a certain percentage of the amount invested and 0 if there is no profit participation.	ECF contracts
Share in enterprise value	Dummy variable that equals 1 if investors participate in an increase of the value of the startup at the end of the investment period and 0 otherwise.	ECF contracts
Participation in exit proceeds	Dummy variable that equals 1 if investors participate in exit proceeds in the case of an extraordinary exit event and 0 otherwise. Extraordinary exit event can take place before the end of the investment period, for example, if BAs or VCs buy the startup.	ECF contracts
No loss participation	Dummy variable that equals 1 if investors do not participate in losses of the startup and 0 otherwise.	ECF contracts
No additional funding obligation	Dummy variable that equals 1 if investors are not obliged to make additional capital contributions beyond the original investment in case of losses and 0 otherwise.	ECF contracts
Control rights		
Information rights	A sub-index aggregating the information rights we define below. The index adds the following variables (1) quarterly report, (2) annual financial statement, (3) ad hoc information, (4)	Own calculations

	overview of earnings, (5) investor meeting, (6) right of inspection and is subsequently divided by six. The ranges from zero to one.	
Quarterly report	Dummy variable that equals 1 if investors receive quarterly reports and 0 otherwise.	ECF contracts
Annual financial statement	Dummy variable that equals 1 if investors receive annual financial statements automatically, 0.5 it investors receive annual financial statements upon request, and 0 otherwise.	ECF contracts
Ad hoc information	Dummy variable that equals 1 if investors receive ad hoc information on important events and 0 otherwise.	ECF contracts
Overview of earnings	Dummy variable that equals 1 if investors receive an earnings overview on a regular basis and 0 otherwise.	ECF contracts
Investor meeting	Dummy variable that equals 1 if the contract stipulates annual web-based investors' meetings, and 0 otherwise.	ECF contracts
Right of inspection	Dummy variable that equals 1 if the contract provides the investor with a right of inspection, 0.5 if a special purpose vehicle is provided with a right of inspection in case of indirect investments, and 0 otherwise.	ECF contracts
Veto rights	Dummy variable that equals 1 if contract contains a catalogue of corporate actions requiring investor approval, 0.5 if approval by a special purpose vehicle or the platform is required, and 0 otherwise.	ECF contracts
Follow-up funding and dilution rights	A sub-index aggregating the follow-up funding and dilution rights we define below. The index adds the following variables (1) no dilution, (2) protection against misuse, (3) subscription rights, (4) down round protection, and is subsequently divided by four. The ranges from zero to one.	Own calculations
No dilution	Dummy variable that equals 1 if the investor's investment ratio is not reduced because of capital measures of the startup, and 0 otherwise.	ECF contracts
Protection against misuse	Dummy variable that equals 1 if the contract provides protection mechanisms to avoid abusive dilution to the detriment of investors, and 0 otherwise.	ECF contracts
Subscription rights	Dummy variable that equals 1 if the contract provides anti-dilution clauses (such as subscription rights) to prevent dilution of the investment rate, and 0 otherwise.	ECF contracts

Down round protection	Dummy variable that equals 1 if the contract provides down round protection clauses to prevent dilution of the investment rate in the case of down rounds (that is new financing round at a lower valuation than the preceding round), and 0 otherwise.	ECF contracts
Protection against opportunistic behaviour	A sub-index aggregating the rights against opportunistic behaviour we define below. The index adds the following variables (1) purpose limitation, (2) non-competition clause, (3) post contractual competition prohibition, (4) managing directors' compensation, (5) secondary employment restriction, (6) sales prohibition (lock-up clause), (7) pre-emptive rights, (8) vesting clauses and is subsequently divided by eight. The ranges from zero to one.	Own calculations
Purpose limitation	Dummy variable that equals 1 if the contract limits the use of funding to specified purposes and otherwise provides an extraordinary termination right, 0.5 in case of a purpose limitation without sanction mechanisms, and 0 otherwise.	ECF contracts
Non-competition clause	Dummy variable that equals 1 if founders and/or managing directors are subject to a non-competition clause, and 0 otherwise.	ECF contracts
Post contractual competition prohibition	Dummy variable that equals 1 if founders and/or managing directors are subject to a post contractual non-competition clause, and 0 otherwise.	ECF contracts
Managing directors' compensation	Dummy variable that equals 1 if the contracts provides restrictions regarding managing directors' compensation, and 0 otherwise.	ECF contracts
Secondary employment restriction	Dummy variable that equals 1 if the contracts provides restrictions regarding secondary employment of managing directors and/or founders, and 0 otherwise.	ECF contracts
Sales prohibition (lock-up clause)	Dummy variable that equals 1 if founders are subjected to a temporary ban on selling shares, and 0 otherwise.	ECF contracts
Pre-emptive rights	Dummy variable that equals 1 if the contract provides pre-emptive rights in favor of investors (that is a right to purchase additional shares in the company prior to shares being made available for purchase by others), and 0 otherwise.	ECF contracts
Vesting clauses	Dummy variable that equals 1 if contract provides vesting clauses to bind founders to the start-up, and 0 otherwise.	ECF contracts

Exit rights index

Rights of termination	A sub-index aggregating the rights of termination we define below. The index adds the following variables (1) minimum term, (2) extraordinary termination right of investor, (3) period of notice, and is subsequently divided by three. The ranges from zero to one.	Own calculations
Minimum term	Minimum investment term investors locked in the ECF contract. Number of days standardised (1-x/y), where y is the longest minimum term of all contracts in the sample.	ECF contracts
Extraordinary termination right of investor	Dummy variable that equals 1 if contract provides investors with an extraordinary termination right and specifies conditions of termination, 0.5 if the conditions for termination are not specified and 0 if an extraordinary termination right is not provided in the contract.	ECF contracts
Period of notice	Period of notice regarding the ordinary right of termination. Number of months standardised (1-x/y), whereas y is the longest period of notice of all contracts; 1 if fixed-term contract (no period of notice); 0 if termination only after approval of all investors (contract *Fundsters*).	ECF contracts
Transferability	A sub-index aggregating the transferability rights we define below. The index adds the following variables (1) transferability, (2) partial transferability, and is subsequently divided by two. The ranges from zero to one.	Own calculations
Transferability	Dummy variable that equals 1 if investment can be transferred without restrictions; 0.75 if investors must notify the start-up of the transfer; 0.5 if investors must obtain approval of the start-up; 0 if transfer is prohibited.	ECF contracts
Partial transferability	Dummy variable that equals 1 if parts of the investment can be transferred; 0 if the investment must be transferred in total.	ECF contracts
Insolvency rights	A sub-index aggregating the rights of termination we define below. The index adds the following variables (1) no subordination clause, (2) no qualified subordination clause, (3) no risk of insolvency of SPV, (4) no pooling of risks in SPV and is subsequently divided by four. The ranges from zero to one.	Own calculations
No subordination clause	Dummy variable that equals 1 if in the event of the insolvency of the start-up, claims of the investors are not subordinate and, thus, are not satisfied after the claims mentioned in § 39 par. 1 Nr. 5 Insolvency Statute (InsO) and 0 otherwise.	ECF contracts

No qualified subordination clause	Dummy variable that equals 1 if the contract contains no clauses to prevent over-indebtedness of the start-up (§ 19 par. 2 clause 2 Insolvency Statute (InsO)) and the opening of insolvency proceedings and 0 otherwise.	ECF contracts
No risk of insolvency of SPV	Dummy variable that equals 1 if the investment is direct and the investor takes no risk of insolvency of a special purpose vehicle, and 1 otherwise.	ECF contracts
No pooling of risks in SPV	Dummy variable that equals 1 if in the case of indirect investment one special purpose vehicle is used only for the respective startup, and 0 otherwise.	ECF contracts