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SHOULD SECURITIES REGULATION PROMOTE CROWDINVESTING?*

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ABSTRACT

In this paper, we show that too strong investor protection may harm small firms and entrepreneurial initiatives, which contrasts with the traditional 'law & finance' view that stronger investor protection is better. This situation is particularly relevant in crowdinvesting, which refers to a recent financial innovation originating on the Internet and targets small, innovative firms. In many jurisdictions, securities regulation offers exemptions to prospectus and registration requirements. We provide an into-depth discussion of recent regulatory reforms in different countries and discuss how they may impact crowdinvesting. Building on a theoretical framework, we show that optimal regulation depends on the availability of alternative early-stage financing such as venture capital and angel finance. Finally, we offer exploratory portal-level evidence from Germany on the impact of securities regulation on small business finance.

Keywords: crowdinvesting, crowdfunding, small business finance, securities regulation, investor protection

JEL Classification: G20, G18, G38, K22

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'We need to have some experience with [crowdinvesting] before we take away the safety net … This is a new and dramatically different procedure with a high potential for fraud.'[1]

John Coffee Jr. (Columbia University)

1. INTRODUCTION

Securities regulation is a driving policy tool for ensuring strong investor protection and, thus, stock market development (La Porta, Lopez-de-Silanes, Shleifer and Vishny 1997, 1998; La Porta, Lopez-de-Silanes and Shleifer, 2006). Traditionally, stronger securities regulations emerged in response to financial crises, accounting scandals, corporate governance problems and financial innovations. For example, the United States (US) Congress adopted the Securities Act of 1933 and the Exchange Act of 1934 in response to the stock market crash of 1929 and the resulting Great Depression. These regulations were intended to mitigate the information asymmetries between securities issuers and investors, complementing former state-level legislation in place at the time. Similar actions were taken in other developed countries as a response to different financial crises. Moreover, many of the recent regulatory changes have been triggered by the financial crisis of 2008.

Securities regulation primarily concerns firms, which seek to place large security issues to the general public. More recently, fervent debate about reforming securities regulation has arisen from the emergence of crowdinvesting[2] (also referred to as investment-based crowdfunding[3], securities crowdfunding[4] or equity crowdfunding[5]),

[1] Source: Wall Street Journal, 1 May 2014.

[2] In this paper, we use the term 'crowdinvesting' (Klöhn and Hornuf, 2012; Hornuf and Schwienbacher, 2014a) to refer to Internet-based investments in startup firms by a large number of natural persons (i.e., the 'crowd')—sometimes accompanied by co-investments of legal persons (e.g., venture capital funds, angel investors or government grants)—with the intention to obtain the residual claim on the future cash flows of a firm. The investments offered can be in the form of equity shares, debt securities or mezzanine finance (e.g., profit participating loans).

[3] See the FCA Consultation Paper CP13/13 'The FCA's regulatory approach to crowdfunding (and similar activities)' as well as the European Securities and Markets Authority 'Opinion Investment-based crowdfunding'.

[4] See Knight, Leo and Ohmer (2012) and the US Securities and Exchange Commission, 17 CFR Parts 200, 227, 232 et al. Crowdfunding; Proposed Rule..

[5] See, for example, the JOBS Act, including the term 'crowdfunding', which refers to transactions involving the offer or sale of a security, or Ahlers, Cumming, Günther and Schweizer (2013), who define the term 'equity crowdfunding' as an investment model in which investors receive 'some form of equity or equity-like arrangements'.

which refers to a financial innovation in securities issuance that gives small entrepreneurs access to the general public. While transaction costs made it unlikely in the past that small amounts would be offered to the general public, the Internet now provides opportunities to do so. Crowdinvesting has therefore become a viable alternative form of external finance for entrepreneurial firms in countries that permit the solicitation of the general public without the issuance of a costly prospectus. In the US, this is still not the case due to delays in implementing Title III of the Jumpstart Our Business Startups (JOBS) Act. Currently, crowdinvesting in the US is restricted to accredited investors, which excludes the crowd to participate. However, in the last decade[6] crowdinvesting by means of soliciting the general public has emerged in Europe, as securities regulations happened to allow it in many jurisdictions. Thus, first lessons can be learned from the experience made in European countries so far. In this paper, we investigate the impact of securities regulation on crowdinvesting and, based on exploratory evidence so far, whether securities regulation should promote crowdinvesting in order to offer alternative source of finance to entrepreneurial firms. In doing so, we take a multi-disciplinary perspective by integrating ongoing discussions on this topic in law, economics and finance literatures.

Securities legislation affects the level of investor protection. Traditional research on securities regulation, such as that by La Porta et al. (1997; 1998), who focus on the impact of legal rules on stock markets and economic growth, considers measures of investor protection that mostly apply to large and publicly traded corporations.[7] In most jurisdictions, securities legislation offers exemptions that allow firms to issue securities outside these legal rules. Such issuances do not offer the same level of investor protection, so that inclusion of more exemptions implies weaker investor protection in general. Most notably, these exemptions allow firms to issue securities to the general public without a formal prospectus that requires compliance with strict information disclosure rules and approval by the national regulator. For large firms, exemptions are irrelevant. Our approach here is different, because we concentrate on smaller firms, which typically outnumber large corporations in the economy (Metrick,

[6] Some of the first campaigns on formal portals started in the year 2007 (Hornuf and Schwienbacher, 2014b).

[7] For a taxonomy of 'open' or 'public' versus 'closed' or 'private', 'listed' or 'publicly traded' versus 'unlisted', and 'closely held' versus 'widely held' corporation, see Armour, Hansmann and Kraakman (2009). In what follows, we rely on the definitions provided there.

2007) and are most likely to benefit from available exemptions. Moreover, securities regulations differ across countries along the minimum issuance size that requires compliance with prospectus and registration requirements, as we evidence subsequently. Such differences enable us to explore the impact of exemptions and, thus, investor protection for smaller issuances on crowdinvesting.

This paper aims to understand how securities regulation affects crowdinvesting, in particular the exemptions to prospectus and registration requirements. In a first step, we therefore provide an overview of the legal regime as well as regulatory reforms that have recently taken place in seven different jurisdictions, namely Austria, Belgium, France, Germany, Italy, United Kingdom (UK) and the US. We examine how securities regulation differs across these jurisdictions and in which form the recent reforms have lowered the level of investor protection to promote crowdinvesting.

In a second step, we present a theoretical framework based on small firms deciding between raising their funds from professional investors (venture capital funds, business angels) and launching a crowdinvesting campaign. We assume that registration and disclosure of a prospectus reduces the risk of value diversion by the management of a firm, but comes at compliance costs. Issuing a formal prospectus requires informing investors about the firm as well as how funds will be used in the future. It makes management directly liable for future actions (see, for instance, Article 6 of EU Prospectus Directive 2003/71/EC)[8]. Escaping registration within the permissible exemptions leads to less investor protection and therefore to higher

[8] Article 6 (Responsibility attaching to the prospectus) of the EU Prospectus Directive states: '*1. Member States shall ensure that responsibility for the information given in a prospectus attaches at least to the issuer or its administrative, management or supervisory bodies, the offeror, the person asking for the admission to trading on a regulated market or the guarantor, as the case may be. The persons responsible shall be clearly identified in the prospectus by their names and functions or, in the case of legal persons, their names and registered offices, as well as declarations by them that, to the best of their knowledge, the information contained in the prospectus is in accordance with the facts and that the prospectus makes no omission likely to affect its import. 2. Member States shall ensure that their laws, regulation and administrative provisions on civil liability apply to those persons responsible for the information given in a prospectus*.' Moreover, Article 5 (The prospectus) states: '*1. Without prejudice to Article 8(2), the prospectus shall contain all information which, according to the particular nature of the issuer and of the securities offered to the public or admitted to trading on a regulated market, is necessary to enable investors to make an informed assessment of the assets and liabilities, financial position, profit and losses, and prospects of the issuer and of any guarantor, and of the rights attaching to such securities. This information shall be presented in an easily analysable and comprehensible form*.'

agency costs. In contrast, professional investors are assumed to have the ability to monitor actively and inefficiently contract away agency problems at a certain cost. This simple framework generates the following implications: [a] stronger investor protection in form of fewer exemptions can hurt small firms, while more exemptions offer small firms access to larger crowdinvesting campaigns; [b] some small firms may not issue any securities in the absence of sufficient exemptions; and [c] at the country level, benefits that arise from crowdinvesting are highest in the absence of sufficiently well developed venture capital and business angel markets. These predictions are useful to understand how exemptions in securities regulation affect crowdinvesting.

Our approach in modeling the tradeoff is consistent with the arguments made by Hazen (2012), who stresses that regulators need to strike a balance between tailoring securities law to match the financial needs of small firms and, at the same time, protecting investors to a reasonable extent. Because greater investor protection adds greater costs and burden to firms, smaller firms may not be able to comply, hence discouraging entrepreneurial activities. Dharmapala and Khanna (2014) examine the impact of retroactive changes in information disclosure requirements on recent initial public offerings in the context of the JOBS Act of 2012 (the 'emerging growth companies' exemption) and provide empirical support for the notion that weaker investor protection may be beneficial to smaller firms. Dambra, Field and Gustafson (2014) further show that these regulatory changes fostered more IPOs of small firms; i.e., those affected by the JOBS Act. In our study, we formalize the discussion by offering a theoretical framework that helps explain the effect both on firms' incentives to rely on crowdinvesting and on medium-sized firms that then must face tradeoffs in terms of whether to rely on the available exemptions or comply with disclosure and registration requirements as larger firms do.

In a final step, we collect unique data on crowdinvesting practices in different European countries. Although data collection is limited because markets are still nascent, we offer first evidence on how crowdinvesting markets are currently emerging and affected by the regulation in place. Consistent with our predictions, our empirical analysis indicates that firms raise inefficiently low amounts of money when the exemptions are restrictive. The German case best evidences these funding

constraints. We use hand-collected data to examine *ceteris paribus* two distinct legal frameworks. While most campaigns were limited to €100,000 initially (the previous legal limit in Germany for prospectus exemption), amounts raised became significantly larger after the usage of specific securities (*partiarische Darlehen*) that were not subject to prospectus regulation in Germany. This suggests that exemptions affect crowdinvesting and the type of investors currently participating in campaigns. Moreover, we document through anecdotal evidence that some portals limit the participation of crowdinvestors by imposing high minimum investment tickets as a way to be able to make use of other exemptions in the prospectus regulation. Importantly, imposing high minimum investment tickets has the effect of attracting sophisticated investors, which are more often in the position to fend for themselves.

Our analysis concludes that strong investor protection through fewer exemptions may hurt entrepreneurial initiatives that rely on security offers, because small firms are not able to support the costs related to compliance, in contrast with large firms for which stronger investor protection is beneficial. The negative impact on such entrepreneurial initiatives may be even stronger in countries in which other equity investors, such as business angels and venture capitalists, are absent, because these investors could offer alternatives to close the entrepreneurial funding gap for seed finance. A notable parallel can be drawn with regard to labor protection and legal capital. Saxenian (2000) documents that an essential element promoting entrepreneurial activities and innovation in Silicon Valley is the poor level of labor protection in California. Weak labor protection makes it easier for entrepreneurs to hire and fire employees, while employees can easily leave the firm and work elsewhere or start their own firm. Another example is the minimum capital requirement for new firm incorporations. Braun, Eidenmüller, Engert and Hornuf (2013) report that the reduction or abolishment of the minimum capital requirement in five major European jurisdictions not only helped promote domestic legal forms but also increased the extent of entrepreneurship in the respective economies more generally.

The remainder of this paper proceeds as follows. The next section presents an overview of the concrete exemptions that are effective in the securities laws of Austria, Belgium, France, Germany, Italy, United Kingdom (UK) and the US. We also discuss ongoing reforms in these jurisdictions that aim at promoting

crowdinvesting. Sections 3 and 4 develop a theoretical framework that investigates aspects of optimal securities regulation for crowdinvesting, which then enables us to derive empirical predictions on how the design of exemptions affects securities issuance and investment in firms that use crowdinvesting. Section 5 provides some first empirical evidence whether securities regulation should promote crowdinvesting or not. Section 6 discusses how the rules have performed so far and concludes.

2. RECENT REFORMS PROMOTING CROWDINVESTING

In Europe, crowdinvesting has challenged securities regulation because it makes use of exemptions, as defined in the national regulation of prospectus and registration requirements. This enables firms to raise external finance while avoiding incurring significant compliance costs.[9] In many countries, the capital raised in crowdinvesting campaigns falls under exemptions, most importantly with regards to the amount of the offer. For example, in the European Union (EU), firms do not need to comply with the prospectus requirement if the amount of the offer does not exceed €100,000 within a 12-month time interval. However, many EU member states apply a significantly higher threshold, some up to € 5,000,000. Other exemptions refer to the maximum number of investors to whom the offer is made, the minimum contribution imposed on investors, the minimum denomination of the securities offered and whether the offer is made to 'accredited' or 'qualified' investors only.

Recently, regulators around the world have realized the economic potential of crowdinvesting and started easing the national securities regulation. In recent years, at least seven jurisdictions have reformed or will soon modify their securities regulation to suit the needs of crowdinvesting more effectively, while also protecting investors from fraud up to a certain level and reducing legal uncertainty for issuing firms. Regulatory changes have largely occurred in response to crowdinvesting issuers not being able to exploit the existing legal exemptions for their business needs and from

[9] The initial compliance costs of a typical IPO often exceed $1,000,000 because issuers must conduct a due diligence; hire a legal counsel and an underwriter; and pay SEC filing fees, state securities filing fees, stock exchange or OTC registration fees, accounting fees and an increased D&O insurance premium (Bagley and Dauchy, 2003). For crowdinvesting, costs are lower because offers are made by smaller, simpler startups, which also do not seek a public listing. Still, according to Darren Westlake, founder of the UK portal *Crowdcube*, costs for such prospectus approvals are in the range between £20,000 and £100,000 in the UK (Collins and Pierrakis, 2012).

lobbying efforts by the alternative investment industry. In what follows, we investigate how legislators have tried to unwind the inefficiency at the firm level that will be the basis of our theoretical model. These main reforms are also summarized in Table 1.

[Table 1 around here]

2.1. United States

As a principal rule of US securities law, securities that are offered to the general public must be registered with the SEC. This is to protect investors from securities fraud by holding the issuer and underwriter of the security liable in case of material misstatements or omissions of material facts. However, to account for the needs of small offerings, exemptions to this rule exist. For example, accredited investors who can 'fend for themselves' or public offers up to $5,000,000 have been exempted from registration with the SEC. However, while the former exemption does per definition not apply to the larger crowd, the latter exemption was of no use for crowdinvesting because registration at the state level was still required, making a geographically dispersed offer prohibitively expensive.[10]

It was mainly for this reason that the US Congress passed detailed rules specifically tailored to crowdinvesting. On April 5, 2012, the JOBS Act was signed into law, amending the existing exemptions for raising capital under § 4(6) of the Securities Act. According to Title III of the JOBS Act (also referred to as CROWDFUND Act; Capital Raising Online While Deterring Fraud and Unethical Non-Disclosure Act), issuers can now raise an overall amount of up to $ 1,000,000 during a 12-month period without filing a registration statement with the SEC or at the state level. The legislator tied this exemption, however, to three conditions: the usage of a broker-dealer or funding portal, limitations on the amount that can be sold to individual investors and disclosure requirements for the issuers.

[10] The implementation of Regulation A+ now allows US issuers to raise up to 50 million USD from non-accredited investors. Filing requirements with the SEC under Regulation A+ are still extensive, which is why it might not become a successful legal exemption for crowdinvesting issuers.

According to § 4(6)(C) of the Securities Act, issuers can now offer or sell securities without a registration statement if the transactions is conducted through a broker-dealer or funding portal as defined in § 3(a)(4) and § 3(a)(80) of the Securities Exchange Act. In this way, the JOBS Act *de facto* established a private gatekeeper for crowdinvesting issues, which is supposed to ensure the correctness and completeness of the securities offered. However, the JOBS Act did not make explicit that funding portals would be liable for material misstatements or the omission of material facts by the issuer. While the JOBS Act explicitly states that crowdinvesting issuers will be liable for such offenses, it could be argued that the liability of the funding portal can be derived from Rule 10b-5 of the Code of Federal Regulations (CFR) as well as previous Supreme Court decisions (Knight et al., 2012).

In addition, the US legislator strives to protect investors through limiting the amount that an investor may invest in the entire market (*aggregate limit*). According to the JOBS Act, this aggregate limit shall not exceed the greater of either $2,000 or 5 percent of the annual income or net worth of an investor if either the annual income or the net worth of the investor is less than $100,000. If the annual income or the net worth of the investor is equal to or exceeds $100,000, the aggregate limit sold to the investor shall not exceed 10 percent of either its annual income or net worth, with the respectively greater value applying. In any case, the maximum aggregate limit sold to a single investor shall not exceed $100,000.

Finally, § 4A(b) of the Securities Act defines the type of information that must be disclosed to potential investors. If the overall amount of the securities issue is equal to or below $100,000, issuers must provide their most recent income tax returns and financial statements, which must be certified by the principal executive officer of the issuer. For issues of more than $100,000 but less than $500,000, financial statements must be provided and reviewed by a public accountant, who should be independent from the issuer. Furthermore, the accountant must use professional standards and procedures for the review. For issues of more than $500,000, the issuer must provide audited financial statements.

In summary, the US crowdinvesting legislation has not only established a maximum value for offers without a prospectus but also set thresholds for the amounts an

individual can invest. By considering the compliance costs associated with the provision of information, the JOBS Act further outlined a three-step approach on information disclosure. These regulatory measures were combined with the establishment of a private gatekeeper. Although the US was the first country to pass specific legislation on crowdinvesting, not a single issue has taken place so far, as the SEC still must implement specific rules.

2.2. Selected Reforms in the European Union

The prospectus regulation in the EU has been harmonized for offers larger than € 5,000,000 through directives that were enacted through national implementation laws by the respective EU member states. Therefore, it is useful to first present EU-level regulation for prospectus regulation before discussing the recent reforms undertaken by individual jurisdictions.

A main attempt to harmonize regulation on registration statements was made with the Directive 2003/71/EC of 4 November 2003, which specifies when and how a prospectus must be published when securities are offered to the public. More recently, it was amended by the Directive 2010/73/EU of 24 November 2010, which, among other things, modified the extent of certain exemptions. Since this directive came into effect, exemptions to publishing a prospectus apply if at least one of the following criteria is met:

[a] The offer is addressed solely to qualified investors;

[b] The offer is addressed to fewer than 150 natural or legal persons per member state, other than qualified investors;

[c] Investors purchase securities for a total consideration of at least €100,000 per investor;

[d] The denomination per unit amounts to at least €100,000; and

[e] The offer of securities represents a total consideration of less than €100,000 over a 12-month period.

In addition to these exemptions, Directive 2010/73/EU stipulates that national regulators of the EU member states have discretion to increase the amount in point [e] up to €5,000,000, either unconditionally or subject to additional requirements (Assmann, Schlitt and von Kopp-Colomb, 2010).

The former Directive 2003/71/EC stipulated thresholds of 100 in point [b], €50,000 in points [c] and [d], and €2,500,000 for the additional discretion given to national regulators. Hence, the new directive does not mean less investor protection *per se*. While changes made in point [b] extend exemptions, points [c] and [d] reduce the possibilities to obtain an exemption, because the threshold values have increased from €50,000 to €100,000.

A. Italy

The Italian legislator amended the existing securities law (TUF, *Testo Unico della Finanza*) and adopted the first specific crowdinvesting legislation in Europe. On October 20, 2012, the Decreto Legge n. 179/2012 (*Decreto Crescita 2.0*) went into effect. Exemptions now apply to 'innovative startups'—so-called *startups innovativa*—offering common equity shares via online portals.[11] Innovative startups complying with the law can now make offerings of up to €5,000,000 without the obligation to register a prospectus. For *non*-innovative startups, the critical value of €100,000 as stipulated by Directive 2010/73/EU should still apply. However, law n. 179/2012 has determined that 'only innovative startups' are allowed to raise capital online through crowdinvesting portals, thereby potentially prohibiting other firms from collecting capital via the Internet.[12]

The legal definition of an 'innovative startup' is geared to corporations, which are not registered with a regulated market or a multilateral trading facility and fulfill the following criteria:

[a] The incorporation and business operations of the firm should have taken effect no more than 48 months ago;

[b] The management is located in Italy, and the main business activities of the firm take place in Italy;

[11] Under Decreto Crescita, firms raising capital online are not allowed to issue any type of security. When Consob implemented the regulatory guidelines, it stipulated that innovative startups could only sell common equity.

[12] The Italian securities law (TUF, Art. 100-ter, para. 1) stipulates that 'public offers conducted exclusively via one or more portals dedicated to the collection of capital may have the sole purpose of the underwriting of financial instruments issued by innovative start-ups and must have a total amount lower than that determined by Consob pursuant to article 100, subsection 1, letter c)'.

[c] The annual turnover in the second year of business as stated in the last accounts does not exceed €5,000,000;

[d] The firm does not and did not make payouts to shareholders using previous corporate profits;

[e] The sole or main purpose of the firm is to develop, produce and sell innovative products or services with a high technological value;

[f] The firm was not established as part of a merger, de-merger or sale of a corporation or corporate entity; and

[g] The firm fulfills at least one of the following conditions:

1) The firm invests at least 15 percent of the greater of the annual production costs or the production value in R&D;
2) One-third of the employees have obtained a PhD, are enrolled in a university PhD program or two-thirds of the employees have obtained an academic degree or have worked for more than three years in a private or public research institution; and
3) The firm owns a patent on an industrial, biotech or electronic semiconductor innovation or owns the right on a software, which is registered in the public software register, related to the purpose of the corporation.

Although the Italian securities regulator (Consob, *Commissione Nazionale per le Società e la Borsa*) was required to set up a public register and define disclosure requirements for innovative startup issuers, it did not have to define which exemptions and critical value for issues without a prospectus would apply for *non*-innovative startups. In summary, the Italian crowdinvesting regulation established a very narrow exemption, which might lead to a considerable amount of legal uncertainty[13]. By 2014, the Italian crowdinvesting market was still very small, with the leading portal SiamoSoci selling minimum investment tickets in the range of €5,000 to €50,000, largely imitating an Internet-based business angel network. In January 2015,[14] the Italian regulator has also allowed innovative small and medium

[13] Operationally, it remains very unclear what 'innovative' means when it comes to raising capital online. See for instance the case of Pawlonia s.r.l., http://www.repubblica.it/_rubriche/startup-stories/2014/08/26/news/crowdfunding_caso_paulownia-94459210/).

[14] See Decreto Legge n. 45 (*Decreto Investment Compact*) from January 20, 2015, which is currently being discussed in the Italian parliament.

enterprises (SME) to benefit from the lighter regulatory treatment applicable to innovative startups.[15]

B. Austria

In July 2013, the Austrian legislator changed the national securities law (KMG, *Kapitalmarktgesetz*) and raised the critical value for issues without a prospectus from €100,000 to €250,000. In October 2013, the first crowdinvesting was then offered to investors by the portal 1000x1000, with the first issuer Woodero raising a total of €166,950 after a nearly eight-week funding period. The amount clearly exceeded the initial threshold of the critical value for issues without a prospectus, indicating that issuers would have been constrained under the earlier regulation. Austria recently adapted a new regulatory scheme and is going to allow issues up to €5,000,000 without requesting a prospectus from the issuer.

C. United Kingdom

The UK appears to possess one of the most developed crowdinvesting markets that currently exist, with Germany being the closest contestant. By early 2014, issuers in both countries raised more than £28,000,000 and €20,000,000 respectively (Collins, Swart and Zhang, 2013; Hornuf, 2014). In the UK, crowdinvesting currently takes place under the general securities regulation, more precisely the Financial Services and Markets Act 2000.

In October 2013, the Financial Conduct Authority (FCA) initiated a consultation on a specific crowdinvesting regulation. The new rules were enacted in April 2014 and aim to make crowdinvesting 'more accessible to a wider, but restricted, audience' of investors, while also ensuring that 'only those retail investors who can understand and bear the various risks involved are invited to invest in unlisted shares or debt securities'. Similar to the US approach, the FCA only allows the brokering of securities to sophisticated investors, high net worth investors, corporate finance contacts or venture capital contacts, retail clients who confirm that they will receive

[15] The definition of an innovative SME is conceptually the same as the definition of an innovative startup. Some of the thresholds that are relevant to be eligible differ.

regulated investment advice or investment management services from an authorized person, or retail clients who certify that they will not invest more than 10 percent of their net investible portfolio in unlisted shares or unlisted debt securities.[16]

D. France

As a member state of the EU, France implemented the Prospectus Directive 2010/73/EU and thus applies the same rules as other EU jurisdictions, with some adaptations. The exemption for security offers with a total amount of less than €100,000 applies. However, for the range between €100,000 and €1,000,000, an additional exemption applies if the total amount raised does not exceed 50 percent of the existing equity capital of the firm. For example, a firm can raise €200,000 without a prospectus and registration if it already possesses equity capital of at least €400,000. This is unlikely to occur for firms relying on crowdinvesting, because they generally have little capital on the balance sheet before a successful campaign. The French portal Anaxago does not use the €100,000 limit to exempt firms from the prospectus regulation but rather limits the offer to fewer than 150 non-accredited investors. This means that the portal gives access to the documentation and contract of a specific investment offer only to a maximum of 149 people. Consequently, investors are required to participate with high minimum tickets, as only a subset of the 149 people may eventually invest. The advantage is that the total amount of the equity issuance is not limited to €100,000. For the offerings successfully completed so far, the average number of crowdinvestors on Anaxago is 25, with an average amount raised of more than €320,000.

Importantly, French portals need to obtain a license from the French securities regulator AMF (*Autorité des Marchés Financiers*) because they act as financial intermediaries and thus are subject to their own rules. The former legal status and requirements in terms of capital imposed on financial intermediaries made it costly for portals to comply.

In 2013, the AMF proposed a framework aimed to facilitate crowdinvesting with the goal to regulate both the portals and the issuers. This proposal was under public

[16] The FCA's regulatory approach to crowdfunding over the Internet, and the promotion of non-readily realisable securities by other media, Policy Statement 14/4, March 2014.

consultation until November 2013. On February 14, 2014, the ministry of economic affairs and finance announced measures that has become effective in autumn 2014 (see *Ordonnance* nr. 2014-559 of 30 May 2014 and *Décret d'Application* nr. 2014-1053 of 16 September 2014). Among other things, the new regulation contains the following items with regard to crowdinvesting using securities (the reform also concerns crowdlending, which in part is regulated differently than security issuances):

[a] The creation of a separate legal entity for accredited portals from differs from the one that other financial intermediaries use (so-called *Conseiller en Investissement Participatif*); no minimum equity capital is required for this legal entity. However, it must comply with transparency rules that ensure that the crowd obtains 'fair' and 'unbiased' information on the offers.

[b] Investors must undergo a test that determines their risk profile, the results of which must be in line with the risks involved in crowdinvesting. Crowdinvestors must also be made aware when registering at the portal of the risks involved in crowdinvesting.

[c] The threshold of exemption to be increased to €1,000,000, provided the crowdinvesting campaign takes place on an Internet portal that has received formal approval of the AMF.

[d] Obligation of the issuers to supply simplified documentation to the investors, as described in the reform; however, this documentation is not subject to approval by the AMF.

E. Belgium

In 2014, Belgium introduced a reform (see *Loi du 25 avril 2014 portant des dispositions diverses*, published at the official journal Moniteur Belge on 7 May 2014 nr. 36946), as a way to foster crowdinvesting while at the same time acting cautiously to avoid a bubble. Before, Belgium imposed the amount of €100,000 for the small offerings exemption with full prospectus requirement for any issuance above that amount. The new regulation allows issuances up to €300,000 provided no investor is allowed to invest more than €1,000 per campaign. Unlike in the US, the Belgian regulator has thus defined the amount that an investor may invest in the same issuer (*single issuer limit*) not the overall market. The law requires that issuers explicitly state this single issuer limit in the offer. If the single issuer limit is not imposed,

issuers remain limited at raising no more than €100,000. However, the Belgian market remains small and most offers are even today below €100,000.

F. Germany

Unlike other European countries, Germany recently passed a specific legislation and for a long time followed a laissez-faire approach towards crowdinvesting, which had taken place within the scope of the existing securities law (see Weinstein, 2013, for a related discussion). As a general rule, the German Securities Prospectus Act (WpPG, *Wertpapierprospektgesetz*) set the critical value for issues without a prospectus equal to €100,000 (§ 3 Abs. 2 Satz 1 Nr. 5 WpPG). However, the definition of what constitutes an investment was not all-encompassing and left out specific forms of profit participating loans (e.g., *partiarische Darlehen*). In turn, this omission left scope for the issuers either to comply with the existing exemptions and raise up to €100,000 or to bypass the securities law altogether by structuring the investment contract in a way that allowed for offers of unlimited amounts.

On 23 April 2015, the German Parliament passed the Small Investor Protection Act (*Kleinanlegerschutzgesetz*) to regulate crowdinvesting more specifically. According to the new regulation, startups can offer up to €2,500,000 without the obligation to register a prospectus. Similar to the US JOBS Act, the amount sold to a single investor shall generally not exceed €1,000. Investors might invest up to €10,000 per campaign if their wealth (balance on the bank account or on other financial instruments) exceeds €100,000. If the investor does not have that amount of assets, the limit is twice the investor's monthly net income, but in any case not more than € 10,000. Most importantly, this new rule again holds only for specific forms of securities (*Nachrangdarlehen* and *partiarische Darlehen*), which did previously not fall under the definition of an investment. For other types of investments, which are commonly used in crowdinvesting campaigns (*stille Beteiligungen*), startups will only be able to offer €100,000 without the obligation to register a prospectus (Klöhn, Hornuf and Schilling, 2015).

3. MODEL DESCRIPTION

In this section, we develop a theoretical framework that allows us to examine the impact of exemptions to prospectus regulation on the fundraising decisions of small firms, who can decide between active, professional investors (such as venture capital funds or business angels - called 'professional investors' in what follows) and the general public (the crowd). The model offers a setting that considers the issuance of non-listed securities without a registered prospectus. In line with securities regulations, offering securities to the general public without a valid prospectus is only possible within existing exemptions. Our model focuses on the main exemption from the prospectus regulation, namely the total amount of the offer. Although our theoretical model develops a general setting for such small offerings, it suits particularly well small firms that seek to attract crowdinvesting. These firms are more likely to face the tradeoff between crowdinvesting and other forms of early-stage entrepreneurial finance such as venture capital or angel finance, as considered here. The proposed analysis will help understand how the emergence of crowdinvesting as alternative source of equity finance to professional investors affects the firm's choice of financing source and ultimately optimal regulation. This in turn may offer guidance in the question whether regulation should promote crowdinvesting. As we will see, part of the answer depends on the degree of development of the venture capital and business angel markets.

To this end, we model an economy populated by a continuum of firms that differ along their capital needs and seek external funding. Our theoretical framework is based on managerial rent diversion (Shleifer and Wolfenzon, 2002).[17] Managers divert rents away when not properly monitored. While professional investors are assumed able to cope with such managerial inefficiency, the crowd is assumed not be able to adequately monitor management. As mentioned earlier, a formal prospectus requires disclosure of specific information and sets clear liability for issuers in case of inappropriate actions, misleading information and/or misrepresentation. These requirements are necessary in the event of general solicitation such as done in crowdinvesting, where investors cannot easily fend for themselves. In what follows, and consistent with practice, we consider only crowdinvesting campaigns without a

[17] Shleifer and Wolfenzon (2002) build on existing literature that includes earlier work on rent extraction and shareholder expropriation by Shleifer and Vishny (1997), and Burkart, Gromb and Panunzi (1998).

formal prospectus. In order to derive optimal regulation, we further consider a benevolent regulator that decides on the level of exemptions.

3.1. Issuing Firms

We consider an economy populated by a continuum of firms uniformly distributed along the capital needs dimension $\tilde{\theta} \sim [0 ; \Theta]$, which specifies the level of their individual investment opportunities. Firms have a return on investment (ROI) of $v > 0$ (identical for all firms) up to the level $\tilde{\theta}$ and 0 beyond.[18] Thus, the amount $\tilde{\theta}$ represents external capital needs as well as desired investment size.

Under this setting, a firm raising and investing an amount $\theta \leq \tilde{\theta}$ will generate value of $(1 + v)\theta$. The resulting net present value (NPV) equals $v\theta$, given that investments represent θ. If not adequately monitored, entrepreneurs can divert a fraction $\delta > 0$ of the NPV so that shareholders eventually receive only a value of $(1 - \delta)v\theta$. Entrepreneurs privately extract a value of $(1 - x)\delta v\theta$ from this diversion, where $0 \leq x \leq 1$; the remaining fraction x (i.e., the value $x\delta v\theta$) is lost in the course of the value diversion. The fact that this fraction x is lost generates an inefficiency. To restrict the analysis to the case in which agency costs arise, we limit inefficiency to the following condition:

DIVERSION CONDITION: $x < 1 / (1 + v)$

The Diversion Condition ensures that, in equilibrium, entrepreneurs will divert corporate resources whenever they are not constrained by shareholders or regulation.

3.2. Funding Choices: Professional Investors Versus Crowdinvesting Campaigns

We assume that firms have no internal funds available and thus need to raise the entire capital externally. For simplicity, we assume that the entrepreneur initially owns 100 percent of the firm. When raising capital, entrepreneurs give up a fraction $(1 - \alpha)$ of the equity and retain the rest. The value of α is determined so that the crowd

[18] Assuming instead that ROI < 0 for investments above $\tilde{\theta}$ would yield qualitatively similar results.

or investors are willing to invest (which is a take-it-or-leave-it offer), while facing an opportunity cost of 0. By construction, we require $0 \leq \alpha \leq 1$.

Let us suppose these firms may also get funding by professional investors such as venture capital funds or business angels as alternative to launching a crowdinvesting campaign. We assume that these professional investors can enforce internally effective governance rules; this mechanism is less likely to be enforceable under crowdinvesting, because the crowd is dispersed and rather passive. In addition, the crowd does not sit on the board of directors of the firms. However, business angels and venture capitalists traditionally do enforce contracts, because they hold larger equity stakes and participate on the board of directors. Moreover, they generally draft tailored contracts that enable effective intervention in case founders do not behave due diligently. However, intervention by professional investors is time-consuming and thus costly. For costs, we define them by the variable $M > 0$. It seems sufficiently plausible that efficient private contracting by sophisticated investors offers at least the same level of efficiency gains by reducing agency costs as in the case of regulatory compliance. In any case, we regard costs M as monitoring and management costs[19] and thus these costs are borne by the investors, not the issuing firm. However, rational investors will take them into account when setting their terms for an investment.

To enable practice-relevant implications, we introduce the fact that the availability of finance from professional investors such as venture capital funds and business angels varies across countries. While such investors are well developed and able to inject very large amounts in startups in some countries (e.g., the USA), these amounts tend to be smaller in other countries (e.g., continental Europe). Thus, let us consider the maximum amount professional investors can provide to be denoted by S. The parameter S proxies for the development of the venture capital and business angel market in the country. This assumption can be motivated by the fact that venture capital funds tend to be much smaller in Europe than in the US due to smaller supply of capital to the venture capital markets, combined with the standard restrictions that

[19] Under M, we consider any costs other than 'effort costs' that would lead to moral hazard. Thus, we do not consider an incentive-compatibility constraint of investors, since we assume costs M as those costs that are borne by investors by the sake of being 'sophisticated'. These costs include legal costs as well as costs incurred from running a management firm. Should there also be costs that investors can strategically decide whether to incur, an extra incentive-compatibility condition would need to be considered.

venture capital funds typically cannot invest more than a certain amount or percentage of total funds in a single portfolio company (Gompers and Lerner, 1996; Metrick, 2007). For instance, Gompers and Lerner (1996) document that 78 percent of LP agreements include restrictions on the size of investment that can be made in any one portfolio company. While the amounts can be scaled up through syndication, this is more likely in later stages of development.

The second source of funding considered here is crowdinvesting, which involves raising the amount of capital from a large number of small investors. These crowd investors may want to impose similar corporate governance and disclosure rules that mitigate agency costs. However, this possibility seems only realistic in the presence of sophisticated investors, as we assume here; that is, even if such governance rules were included in a contract, crowdinvestors could not enforce them because of coordination problems that result from free-riding among crowdinvestors. Crucially, the Diversion Condition states that even if such rules are negotiated, the entrepreneur may want to deviate and thus still extract personal benefits. This occurs when proper governance cannot be enforced by crowdinvestors. We consider this to be a reasonable assumption for the considered market, given the type of individuals participating in crowdinvesting campaigns.

3.3. The Regulator

The regulator imposes registration and *ex ante* disclosure requirements for any security offer to the general public above a given threshold amount $T \geq 0$, which can be larger or smaller than S. No prospectus is required when securities are issued to professional investors, as this resembles a private offer. A higher threshold value implies lower investor protection in general, because fewer firms comply with securities regulation. We define the variable T as representing an exemption from the general registration and *ex ante* disclosure requirements imposed by national regulators. This view is consistent with real-world exemptions, as we have shown in Section 2, where we discussed that in Europe this value ranges from €100,000 to € 5,000,000 depending on the respective jurisdiction.

Complying with these requirements leads to fixed costs of C > 0 for the firms, which may differ from monitoring costs M incurred by professional investors. These compliance costs may arise for different reasons; some may be incurred by filing with the regulator, while others may be due to the disclosure of relevant information to investors. We assume firms complying with disclosure regulation do not face agency costs (i.e., entrepreneurs can no longer divert value for private purposes). Consistent with practice, we assume that firms can only seek compliance with the regulator if their capital needs are larger than T. In what follows, we assume that costs C are too high for the firms considered in our model. This excludes issuing securities with a prospectus and thus raising an amount larger than T other than from professional investors.

We consider a benevolent regulator who maximizes total welfare in the economy, that is the sum of value created by the firms seeking external finance.[20] This means that the regulator is not subject to any inefficiency or agency problems. Rather, the regulator balances the costs and benefits generated by setting the variable T.

3.4. Time Line

We consider the following time line. First (at time t = 0), the regulator sets T, which becomes public knowledge. This sets the scope for crowdinvesting campaigns. Second, at t = 1 the firm decides whether to raise funds from a professional investor or through a crowdinvesting campaign. Next, at t = 2 entrepreneurs make investment decisions, by deciding how much to raise and thus offer a fraction (1 - α) of the cash flow rights to the crowd or professional investor. Given the assumptions made, crowdinvesting limits the issue amount to T. Professional investors can supply up to S. Finally, at t = 3 firms realize their payoffs, which are then distributed. Consistent with rational behavior, we solve the game by backward induction and maximize firm value based on the entrepreneur's perspective.

[20] The literature distinguishes between two main types of theoretical models of regulation (Mulherin, 2007): [a] 'public interest theories', which are based on the idea that regulation acts in response to market failure, such as information asymmetry problems, and thus regulation is designed to mitigate market failure and thereby improve social welfare, and [b] 'special interest theories', which argue that regulation is put in place because of political lobbying of interest groups. Our approach fits the first type of model.

4. OPTIMAL CHOICE OF FUNDING AND SECURITIES REGULATION

4.1. Optimal Outcome for the Entrepreneur

In this section, we derive the optimal choice of funding. We first consider outcome of each source separately and then compare them.

Case [1]: Under crowdinvesting, an entrepreneur with given capital needs $\tilde{\theta} \leq T$ receives $\alpha[(1 + v)\tilde{\theta} - \delta v\tilde{\theta}] + (1 - x)\delta v\tilde{\theta}$, subject to the crowd's participation constraint $(1 - \alpha) = \tilde{\theta} / [(1 + v)\tilde{\theta} - \delta v\tilde{\theta}]$. The first term represents her financial gains (net of diversion costs $\delta v\tilde{\theta}$), the second one (i.e., $(1 - x)\delta v\tilde{\theta}$) her private benefits from diversion. This leads to the following gains for the entrepreneur: $(1 - x\delta)v\tilde{\theta}$. Any firm with $\tilde{\theta} > T$ will not raise more than T, as otherwise the firm would need to obtain a costly prospectus approval; thus, gains are capped at $(1 - x\delta)v\theta T$.

Case [2]: Under professional investor finance, the entrepreneur will raise capital amount of $\tilde{\theta} \leq S$ and receives $\alpha(1 + v)\tilde{\theta}$, subject to investors' participation constraint $(1 - \alpha) = [\tilde{\theta} + M] / (1 + v)\tilde{\theta}$. Here, only financial returns accrue to the entrepreneur, since no diversion takes place. Thus, the entrepreneur receives $v\tilde{\theta} - M$. Any firm with $\tilde{\theta} > S$ will have its gains capped at $vT - M$.

Both outcomes under [1] and [2] are depicted in Figure 1 whenever $S > T$. It is straightforward to derive the threshold level of T, called $\underline{T}$, that makes crowdinvesting as efficient as professional investors; i.e.,

$\underline{T}$ such that $(1 - x\delta)v\underline{T} = v\underline{T} - M$ or:

$\underline{T} = M / x\delta v$

Therefore, crowdinvesting is optimal choice of entrepreneurs seeking capital lower than $\underline{T}$, and opting for professional investors is optimal whenever capital needs are larger than $\underline{T}$. Above the amount S, professional investor can no longer supply the full amount, so that the firm needs to seek prospectus approval from the regulator to initiate a private placement larger than that amount. However, in countries with a well developed venture capital market, this amount S may be very large and therefore not

binding as long as the startup operates in an industry area that is the scope of venture capital funds (mainly segments with high growth potential).

When S < T (i.e., the venture capital and angel market is under-developed), a discontinuity occurs. The size of the discontinuity depends on the magnitude of the difference between S and T, as depicted in Figure 2.

[Figure 1 and 2 around here]

It is optimal for the entrepreneur to seek crowdinvesting below $\underline{T}$ for the same reason as above, but potentially also for larger amounts if the small offer exemption level T is large enough to make it worthwhile. In the case depicted in Figure 2, this is not happening, but would happen if T would be as large as $\overline{T}$. Then, larger crowdinvesting campaigns would occur. $\overline{T}$ can formally be derived as the solution to the following condition:

$(1 - x\delta)v\underline{T} = v\underline{T} - C$ or:

$\mathbf{\overline{T} = C / x\delta v}$

4.2. Market Equilibrium under Endogenous Regulation

Figures 1 and 2 are helpful in deriving the optimal level of exemption, denoted below as T*, from the perspective of the securities regulator. Crucially, this level is affected by the degree of development (or efficiency) of the venture capital and business angel market. However, a note is warranted here. Our optimal outcome abstracts from effects that such exemptions may have on other firms seeking equity finance. Therefore, we will consider below the lowest possible exemption value as being the optimum, as it also minimizes any impact on other firms in the economy.

Formally, the optimal level of exemption for crowdinvesting is as follows:[21]

$T^* = \underline{T}$ if $\overline{T} < S$

$T^* = \overline{T}$ if $\overline{T} > S$

This result yields the following empirical implications. First, note that a more developed venture capital and business angels market has a higher S (i.e., they can finance larger investments as funds are larger) and lower M (i.e., they are able to do more cost-efficient contracting monitoring, leading to lower costs M).[22] The latter (about M) enables a lower threshold $\underline{T}$; the former (about S) allows startups to raise larger amounts from professional investors and thus does not require the regulator to set a higher level of exemption. For sufficiently large venture capital and business angel markets, the exemption level can even be substantially reduced.

Moreover, when S > T, the condition derived above ($\underline{T} = M / x\delta v$) indicates that $\underline{T}$ is decreasing in the following, exogenous parameters: the profitability (ROI) of projects (the parameter v), extent of managerial rent diversion (the parameter δ), and the degree of losses derived from such diversion (the parameter x). All these predictions are intuitive, except perhaps for ROI. Projects with higher profitability or value potential will benefit more from monitoring, making funding from professional investors more valuable relative to crowdinvesting. Greater rent extraction possibilities creates higher cost of capital under crowdinvesting, since crowd investors will require a higher rate of return for purchasing securities from the firm. Similarly, greater losses from diversion makes again crowdinvesting less valuable relative to professional investors, which favors the latter and thus reduces the threshold for the entrepreneur. Given the reduced threshold, the optimal level of exemption is also reduced (since $T^* = \underline{T}$ in this case).

For the opposite case where S < T (see Figure 2), the regulator has incentive to increase T to compensate for shortage of professional investor finance. The optimal

[21] This form of solution assumes projects are not scalable; i.e., firms cannot start projects with less than their $\tilde{\theta}$. Under the assumption of scalability (i.e., firms can raise any amount $\theta \leq \tilde{\theta}$ and earn returns v per unit of capital), then there would be a discontinuity in capital target at S, since any θ close to the right of S yield lower levels of profits. However, our conclusions on optimal policy would not be affected from a qualitative point of view.

[22] Empirically, costs M may be proxied by the number of law firms, as this affects legal costs of drafting contracts and advising services for venture capital funds.

level is $\bar{T}$, as shown in Figure 2. This scenario corresponds to cases in which venture capital and business angel markets are under-developed, as these investors then tend to manage smaller funds in which average investment sizes become small. Overall, we expect countries with smaller venture capital and business angel markets to have the incentives to follow more restrictive exemptions.

4.3. Empirical Implications

The parameter T can be directly interpreted as the level of investor protection, in which a *lower* value of T represents *more* investor protection *on average*. The conclusions of our theoretical model lead to the following empirical predictions. First, more investor protection leads to fewer crowdinvesting campaigns, since the bulk (if not all) of these campaigns take place under securities regulation exemptions. This may eventually create a smaller crowdinvesting market, because many firms will find it economically not worthwhile to seek prospectus approval by the national regulator. Others may seek financing from professional investors. In the absence of any exemptions, smaller firms may even refrain from entering the market in the first place, since crowdinvesting may be their only option in terms of equity finance. The complete absence of an exemption (T = 0), such as that in the US, leads to exclusion of firms with the lowest capital needs. This is especially true if there is not a sufficiently large, professional market available as main alternative source of seed capital. These professional markets are composed of business angels (so-called informal market) and venture capital firms (so-called formal market).

Our main conclusion from this analysis is that regulation that maximizes investor protection (which implies no exemptions at all) hurts small firms, and those relying on crowdinvesting are likely to be smaller firms seeking seed or early stage capital. This is because these firms are too small to obtain funding from professional investors and thus may lack alternative sources of equity capital. At the country level, optimal regulation trades off the costs of ensuring sufficient investor protection in firms that can afford these costs and for which it is efficient to impose them with the benefits of ensuring access to capital to smaller firms. Extensive access to capital, however, comes at the expense of weakening investor protection in smaller firms.

Crucially, the extent to which exemptions to the prospectus regulation are needed depends on the availability of alternative sources of capital, mostly from professional investors. Countries with well developed markets of professional, private investors may have fewer exemptions. Interestingly, the US has a well developed formal and informal markets (i.e., venture capital and angel markets), which can compensate for the lack of exemptions needed to tap the crowd. This contrasts with Europe, where the angel market is small. A greater development of these markets (leading to an increase in S; e.g., larger venture capital funds active in the economy) reduces the benefits from crowdinvesting and even the use of prospectuses for raising private funds more generally.

We further expect a substitution to occur away from professional investors, not for startups with lower capital needs but with average levels. These firms now have an alternative source of funding, namely crowdinvesting. For some firms, the latter may economically be more interesting, so that they seek funding from the crowd instead of professional investors. In fact, changing the level of small offer exemption T may have no impact on crowdinvesting activities in business sectors that are well covered by professional investors, except for very small issuances. However, other areas may be affected more when poorly covered by professional investors. This may be more likely in areas with limited growth prospects.

5. SHOULD SECURITIES REGULATION PROMOTE CROWDINVESTING: SOME EMPIRICAL EVIDENCE

In this section, we illustrate the impact of exemptions as defined in national securities regulation on crowdinvesting campaigns, the type of investors attracted, and the structure of portals. While data availability does not permit large-scale analysis, our approach is to offer different pieces of evidence on such impact. Our work is therefore exploratory. However, we believe these pieces of evidence are insightful and meaningful for contributing to a discussion on current initiatives to reform securities regulations as a means to encourage crowdinvesting.

To achieve this goal, we proceed as follows. First, we offer evidence that restrictive exemptions may create a funding gap, in that firms raise inefficiently low amounts of

capital. Second, we offer survey evidence from two specific German portals that non-sophisticated investors acting as crowd investors are relatively well educated and diversify well their portfolio. And third, some portals set minimum tickets to attract only the wealthiest investors and therefore impose their own restrictions, which suggests portals use mechanisms of self-regulation to complement legal restrictions. These pieces of evidence will be helpful in our final discussion on whether securities regulation should promote crowdinvesting.

5.1. Structure of Crowdinvesting Campaigns

As our theoretical model predicts, firms may restrict their fund-raising goal if the small offer exemption threshold is low. One good example is Germany, which for a long time set the critical threshold at the lower bound of €100,000. We illustrate this argument by relying on the cases of Seedmatch and Companisto. Moreover, like many other continental European countries, the German venture capital and business angel markets are much less developed than in countries such as the US and UK.

On October 31, 2011, Seedmatch successfully funded the first two startups through crowdinvesting in Germany. The contracts that Seedmatch provided to issuers were initially designed to comply with the German securities law (more precisely, the exemptions under § 8f Abs. 1 Satz 1, 1.Fall VerkProspG aF until May 31, 2012, and afterwards § 2 Nr. 3 lit. b VermAnlG). All the initial 26 crowdinvestings offered by Seedmatch used this exemption, and a total of 24 issues had to be terminated at the threshold of the exemption at €100,000, which indicates that issuers had higher capital needs. Moreover, as campaigns were sometimes funded very quickly[23], firms' capital needs could have easily been satisfied by the crowd and were only constrained by the existing threshold under the securities law (see Figure 3).

[Figure 3 around here]

[23] On November 29, 2012, it took Protonet only 48 minutes to raise €200,000 on Seedmatch. In May 2014, the same startup raised another € 1,500,000 in 10 hours and 8 minutes, after which the founders decided to continue raising funds. Eventually, they raised € 3,000,000 in a few days only.

Seedmatch and other portals soon realized the legally imposed funding constraint and tried to circumvent the existing securities legislation. On November 29, 2012, Seedmatch offered for the first time a new investment contract—the so-called *partiarische Darlehen*, which until recently was not classified as investment under the German securities law and thus did not require the registration of a prospectus. While there was some legal uncertainty surrounding this issue, the *partiarische Darlehen* allowed issuers to raise unlimited amounts without the obligation to draft and register a prospectus. The largest issue funded under this contractual design Protonet 2 raised a total of €3,000,000 in June 2014.

The crowdinvesting campaigns on Companisto show a similar trend after the portal switched contracts to the *partiarische Darlehen* on February 4, 2013. After the implementation of the new investment contract, Companisto was able to more than double the funding volumes per campaign, while in the case of Seedmatch, they more than tripled. The idea that the increase in funding volumes does not merely reflect a general trend in the selection of funding campaigns provides a comparison with Innovestment, which might serve as a control group because the portal has not adopted the *partiarische Darlehen* so far. The average funding size at Innovestment was €83,155, just below the threshold of €100,000, and increased only slightly to €91,594 in the period when Seedmatch adopted the *partiarische Darlehen*.

However, at least in some cases, the type of firm that received funding under the unrestricted investment contract changed as well. Average and median pre-money valuations of the firms listed increased for Seedmatch and Companisto, as did the average and median total assets of the firms making a securities offer (see Table 2). Although average and median pre-money valuations of Innovestment campaigns increased as well in the period after Seedmatch introduced the *partiarische Darlehen*, average total assets of firms offering their securities on Innovestment decreased greatly. This pattern could be interpreted as a first sign of money chasing deals in the sense of Gompers and Lerner (2000), as the most profitable firms had already offered their securities on one of the major crowdinvesting portals. This observation receives

support because not only did the average number of investors increase but so too did the average amounts they put down in a single campaign.[24]

[Table 2 around here]

In November 2013, crowdinvesting in Germany begun taking place under the traditional prospectus regime, which provides a legally well-known approach to raise larger amounts. The portal Bergfürst placed an issue with a total amount of €3,000,000 offering ordinary shares to investors. The issuer published a prospectus, which was previously approved by the German securities regulator (BaFin, *Bundesanstalt für Finanzdienstleistungsaufsicht*). Apparently, the funding volume of €3,000,000 was sufficient to cover the compliance costs of drafting and registering a prospectus. Around 1,000 investors funded the issuer Urbanara in an IPO auction.

5.2. Investors Characteristics

While securities law shapes the structure of crowdinvesting campaigns, crowdinvesting campaigns, in turn, affect the types of investors participating. As mentioned previously, some portals offer comparatively large minimum investment tickets to the crowd. This creates a way for the portals to filter the crowd. Consequently, certain investors are *de facto* excluded from crowdinvesting. The Financial Conduct Authority (2013, p. 37) reports that crowdinvestors in the UK 'tend to be high-net worth individuals with investment experience'. The same holds for many users of the German crowdinvesting portals, on which average investments range from approximately €308 (Companisto) to €3,243 (Innovestment).

In the case of Innovestment, minimum investment tickets range from €500 to €25,000. According to a survey by Klöhn and Hornuf (2012), more than half the Innovestment user base is self-employed, 41 percent are employed at a firm and the remaining 5 percent are either pensioners or civil servants (Figure 4, a). Moreover, many Innovestment users pursue a profession that might require solid knowledge of startup firms and finance. The majority of Innovestment users either are executives

[24] That the average number of investors decreased in the case of Innovestment might be due to the portal increasing the minimum investment ticket in some campaigns up to €25,000.

themselves or work in consulting, management, information technology, banking or financial services (Figure 4, b). Although this can be considered a first indicator of their financial sophistication, these investors are generally not as active to affect the governance rules of the startup as outlined in the theoretical model in Section 3.3. Innovestment users also report having experience in other assets classes (Figure 4, c). Four of five Innovestment users claim to have invested in ordinary stocks, while two-thirds have experience with investment funds and certificates. Such investment experience implies that the investments of the crowd constitute only a small part of the crowd's overall portfolio.

Even within this particular asset class, the crowd appears well diversified. In the case of Companisto, in which the minimum investment tickets start at €5 (potentially attracting less sophisticated investors), the majority of the financiers who invested in the campaign 'Schnuff & Co' in December 2013 were holding a portfolio of five or more startups on Companisto alone (Figure 4, d). A considerable number of investors had even invested in 20 or more startups. The actual size of their crowdinvesting portfolios might even be larger because investors are likely to diversify their portfolios across various portals.

[Figure 4 around here]

In sum, securities law is not the only mechanism, which is capable to exclude a particular group of investors. The self-imposed rules by some of the portals can be effective to attract those investors, who are in the position to fend for themselves. And as the nestor of US-securities regulation Louis Loss (1988) phrased it, in securities markets '(e)veryone has the right to make a fool of himself'.

6. DISCUSSION AND CONCLUDING REMARKS

This study discusses ongoing reform attempts in different countries and presents empirical evidence based on the European experience in permitting non-accredited investors access to crowdinvesting. While our analysis remains exploratory, it contributes to the ongoing policy debate on how to regulate this market and to examine its potential impact on business finance. This debate is motivated by the fear

expressed by some regulators and academics that entrepreneurs may take advantage of the less sophisticated crowd, by strategically avoiding to raise capital from sophisticated investors (Hazen, 2012; Griffin, 2014).

Our simple theoretical framework generates key policy implications in relation with alternative sources of entrepreneurial finance. A central implication is that benefits related to weaker investor protection that promote crowdinvesting is higher when the availability of venture capital and angel capital is scarce, but lower when these professional markets are well developed. If no specific legal exemption is available that suits the needs of crowdinvesting issuers, crowdinvesting is unlikely to develop. If a regulation exists, crowdinvesting portals often need to adopt a structure similar to that of angel-investing networks (e.g., by limiting participation to 'accredited' or 'qualified' investors), which limits participation to wealthy investors. This is particularly true for portals operating in the US, such as CircleUp, which is set up as a private, password-protected network for accredited investors only.[25] A tailored regulation may therefore be needed for crowdinvesting, as securities regulation primarily deals with regulating large issuances and therefore impose significant compliance costs that are prohibitively high for small firms. Moreover, a lack of specific regulation for crowdinvesting may induce portals to resemble online angel networks and thus offer little differentiation with existing sources of entrepreneurial finance.

We further conclude that regulation may apply to the issuing firms, the crowd and the portals. The countries considered herein tend to adopt approaches regulating the three actors differently. Doing so affects the level of investor protection of the crowd as well as the costs imposed on firms. From our presentation of different reforms undertaken by European countries and the US, we can categorize approaches in several ways, according to the relative weights put on regulating investors' access to securities, the portal as gatekeepers, or the issuers (mostly in terms of information disclosure and exemptions). So far, Germany has until recently adopted a laissez-faire approach by avoiding a specific regulation for crowdinvesting. German portals could develop very quickly and match firms with potential crowdinvestors more easily and

[25] See https://circleup.com/getting-started/ (last accessed February 2, 2014).

at relatively low costs. Moreover, German issuers had much flexibility as specific investments were for a long time not part of the investment definition for prospectus approval. In contrast, portals in France need to be registered at the national regulator as financial intermediaries. This leads to higher costs but also more investor protection. The recent amendments made are likely to have reduced these costs but made portals gatekeepers. The approach adopted by the US is to regulate not only the portals but also the crowd, by limiting the extent of risk it can take. As mentioned previously, non-accredited investors will be entitled to invest through registered portals up to a specific fraction of their annual net income or wealth. In contrast, other countries such as the Netherlands do not regulate investment opportunities by the crowd.

Securities regulation ensures that investors receive the needed information to evaluate the company at the time of issuance and, provided that the information is accurate and complete, to obtain a fair value for their investment. A complementary way to protect the crowd is through sound corporate governance *ex post*, an important aspect that has received scant attention in the regulatory debate. Information disclosure is an important component of good governance, but it is not enough; in other words, it is a necessary but not sufficient condition. Although it is a necessary condition to track whether an entrepreneur misbehaves, investors also need a mechanism and incentives to intervene to mitigate such misbehavior. In the absence of these, founders may lack accountability. Professional investors, such as business angels and venture capitalists, protect themselves through well-designed contracts and the inclusion of covenants in shareholder agreements. Such investors also tend to hold a large stake, in contrast with crowdinvestors, who are more dispersed shareholders. To protect crowdinvestors, portals, which often help draft contracts, need to offer effective contracts.

Relatedly, these contracts should ensure that firms are able to raise follow-up funding, including funding from professional investors who may contribute larger amounts if the company develops high-growth potential. Some contract terms may hinder the capacity of startups to raise more money, if control rights are not properly specified in previous contracts. Problems of similar nature may arise such as in situations in which

venture capitalists consider investing in startups that already have business angels as shareholders.

Finally, other forms of financial regulation may impact crowdinvesting practices, including regulations directly pertaining to portals themselves as well as specific aspects of national corporate law. For instance, national corporate law also affects the entrepreneurial choice of equity or debt finance. In the case of Germany, of the 115 successful funding campaigns up until February 15, 2014, only one issuer opted for equity. The most important reason issuers have adopted debt or some mezzanine form of finance is that incorporating and transferring shares of a private limited liability company requires incurring the costs of a notary (Braun et al., 2013), while the mezzanine form of finance used by the majority of issuers does not. From a regulatory perspective, it is more than inconsistent that mezzanine instruments can now be sold without a prospectus in an aggregate amount of up to € 2.5 million, whereas common equity shares can be issued only up to an amount of € 100,000, albeit equity shareholders benefit from all the mandatory provisions of German corporate law.

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Table 1: Overview of Reforms

	USA	Italy	Austria	UK	France	Belgium	Germany
Reform	JOBS Act (Title III) 2012	Decreto Crescita 2.0 2012	Kapitalmarkt-gesetz 2013	PS14/4 2014	Ordonnance nr. 2014-559 of 30 May 2014; Décret d'Application nr. 2014-1053 of 16 September 2014	Loi du 25 avril 2014 portant des dispositions diverses, published at the official journal Moniteur Belge on 7 May 2014 nr. 36946	Kleinanleger-schutzgesetz 2015
Maximum issue w/o prospectus	$1,000,000 (previously $0)	€5,000,000 (previously €100,000)	€250,000 (previously €100,000)	€5,000,000 (previously €5,000,000)	€1,000,000 (previously €100,000)	€300,000 if no investor can invest more than €1,000; otherwise €100,000	€2,500,000 (previously €100,000)
Maximum amount sold to investor	$2,000 to $100,000 annually depending on income and net wealth	-	-	10% of net investable financial assets	-	€1,000 in case the issuance is between €100,000 and €300,000	€1,000 to €10,000 contribution per project
Regulation of Gatekeeper	Funding portal or broker-dealer	-	-	Securities regulator authorizes platform	Securities regulator authorizes platform	-	-
Others	Disclosure requirements; investor education	Only 'innovative startups' eligible	-	Retail clients need to seek financial advice	Investor education; disclosure requirements	-	Small information leaflet
Implemented	No	Yes	Yes	Yes	Yes	Yes	No

Table 2

Table 2 compares funding characteristics for the German crowdinvesting portals Seedmatch, Companisto and Innovestment under the restricted setting when the exemptions under the German securities law apply (*pre–partiarisches Darlehen*) with the unrestricted setting when Seedmatch and Companisto circumvent the exemptions using a specific type of investment (*post–partiarisches Darlehen*), which allows issuers to offer unlimited amounts without registering a prospectus with the securities regulator. Innovestment never changed its investment contract to circumvent the exemption threshold of the German securities law. The data cover the period from August 1, 2011, to March 7, 2014, and are hand-collected from the portal websites (www.seedmatch.de, www.companisto.com and http://innovestment.de). Total assets were collected from the public register (www.unternehmensregister.de) as well as the Amadeus database as of 2011.

	Seedmatch		**Companisto**		**Innovestment**	
	pre *Partiarisches Darlehen*	post *Partiarisches Darlehen*	pre *Partiarisches Darlehen*	post *Partiarisches Darlehen*	never adopted *Partiarisches Darlehen*	period after Seedmatch adoped the *Partiarisches Darlehen*
Offering amount without a prospectus	restricted to €100,000	unrestricted	restricted to €100,000	unrestricted	restricted to €100,000	restricted to €100,000
Period during which this security type was offered	01.08.2011 15.11.2012	29.11.2012 today	07.06.2012 17.01.2013	04.02.2013 today	18.12.2011 today	29.11.2012 today
Successful offerings	26	24	8	16	28	13
Offerings that did not reach the minimum target amount	0	1	0	0	15	9
Pending insolvency proceedings	3	1	0	1	0	0
Average total funding amounts reached by successful offerings, median in parentheses	98,048 € (100,000 €) (n=26)	330,854 € (250,000 €) (n=25)	91,673 € (100,000 €) (n=8)	210,134 € (166,793 €) (n=16)	83,287 € (85,313 €) (n=43)	91,594 € (96,000 €) (n=23)
Average pre-money valuation of firms making a securities offer, median in parentheses	1,692,183 € (1,312,000 €) (n=26)	2,819,680 € (2,500,000 €) (n=25)	1,212,500 € (1,200,000 €) (n=8)	1,692,183 € (1,287,500 €) (n=16)	1,274,558 € (909,090 €) (n=43)	1,514,748 € (929,600 €) (n=23)
Average total assets of firms making a securities offer, median in parentheses	76,451 € (67,578 €) (n=18)	105,506 € (25,998 €) (n=9)	21,484 € (21,361 €) (n=4)	65,978 € (7,671 €) (n=6)	70,628 € (26,038 €) (n=16)	31,330 € (27,086 €) (n=5)
Average number of investors in successful offerings, median in parentheses	167 (172)	340 (280)	428 (418)	616 (523)	26 (19)	24 (16)
Average investment per investor in successful offerings	589 €	934 €	214 €	350 €	3,243 €	3,867 €
Minimum investment ticket	250 €	250 €	5 €	5 €	1,000 €	500 € to 25,000 €

Figure 1

Financing Outcomes when S > T

INV-finance denotes the outcome under financing with professional investors, CI-finance with crowdinvesting. The x-axis represents the amount to be issued, while the y-axis the entrepreneur's profit level. The point T corresponds to the situation where the entrepreneur is indifferent between the two financing choices.

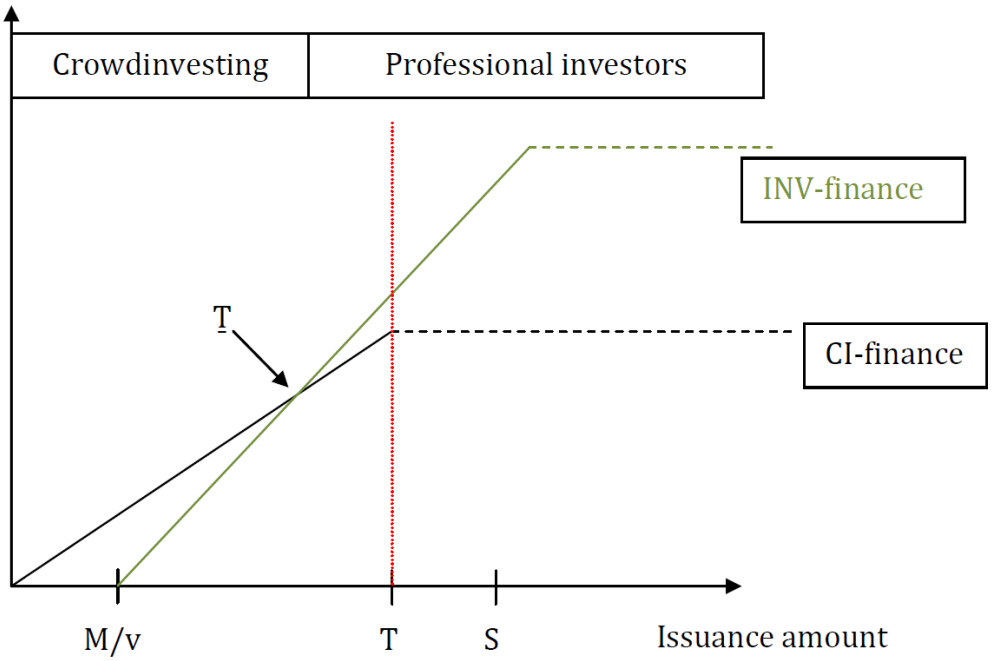


Figure 2

Financing Outcomes when S < T

INV-finance denotes the outcome under financing with professional investors, CI-finance with crowdinvesting. The red line shows the outcome with a formal prospectus, for which amounts of issuances must be larger than the threshold T. The x-axis represents the amount to be issued, while the y-axis the entrepreneur's profit level. The point $\bar{T}$ corresponds to the situation where the entrepreneur is indifferent between crowdinvesting and financing with a formal prospectus (if the threshold where large enough to allow crowdinvesting campaigns to be larger than $\bar{T}$, which is not the case in this figure).

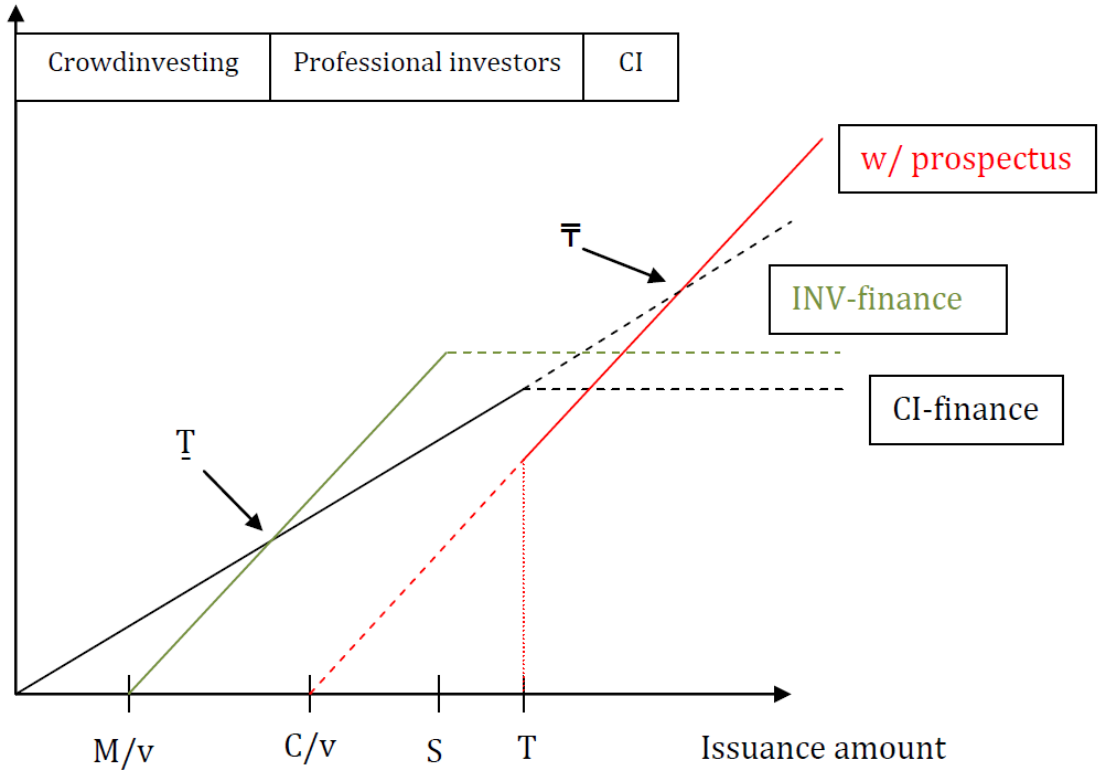
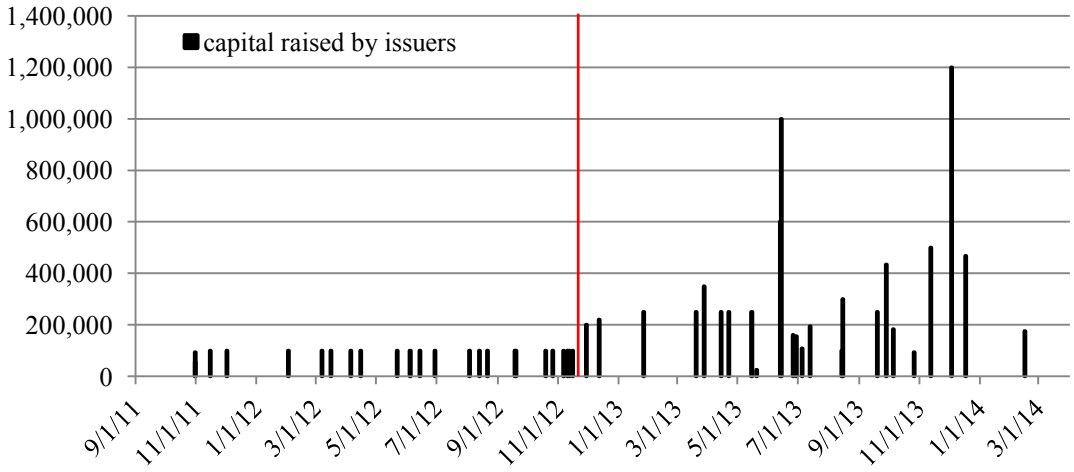
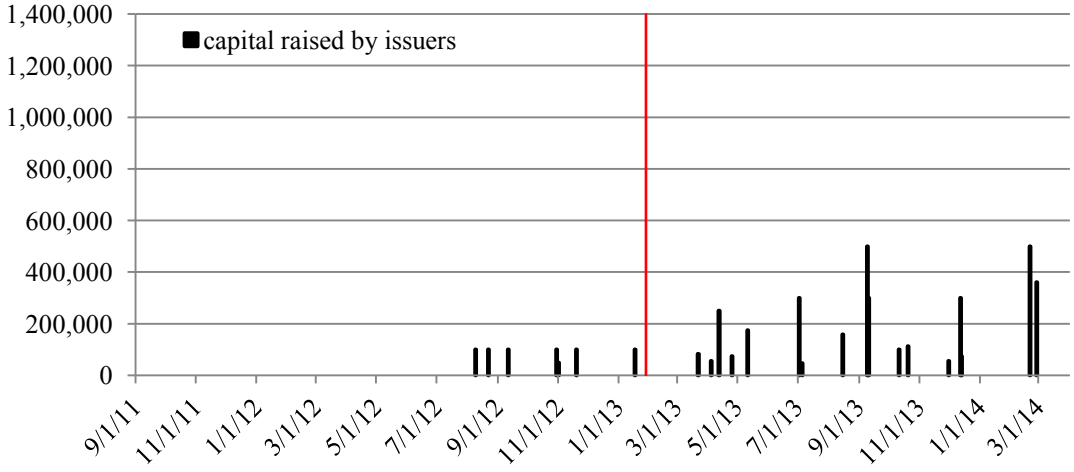


Figure 3

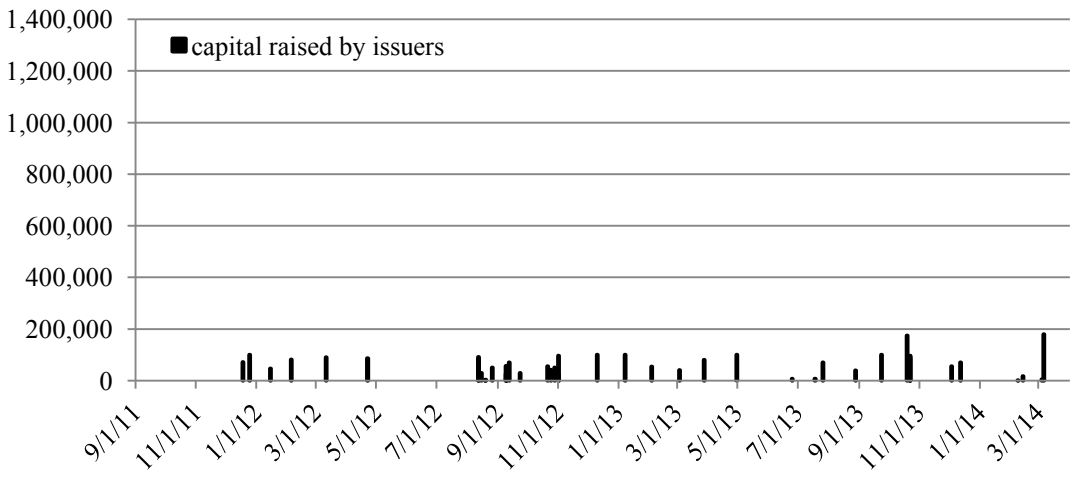
Figure 3 shows amounts raised in crowdinvesting campaigns on Seedmatch (N=51), Companisto (N=24) and Innovestment (N=43) in the period from August 1, 2011, to March 7, 2014. The red lines separate the period before and after financial contracts were designed to circumvent the threshold of the small offering exemption as defined in the German securities law (T=€100,000). Before financial contracts circumvented the threshold, the average amounts raised were €98,048 for Seedmatch campaigns and €91,673 for Companisto campaigns; thereafter, the amounts rose to €330,854 and €210,134 respectively. Innovestment never changed its investment contract to circumvent the threshold of the German securities law and exhibits an average funding amount of €83,287 per campaign.



Seedmatch



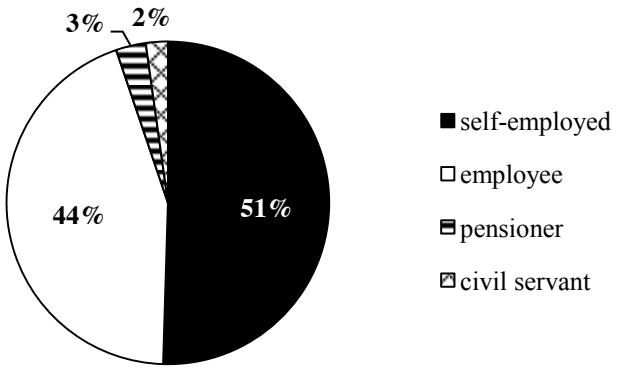
Companisto



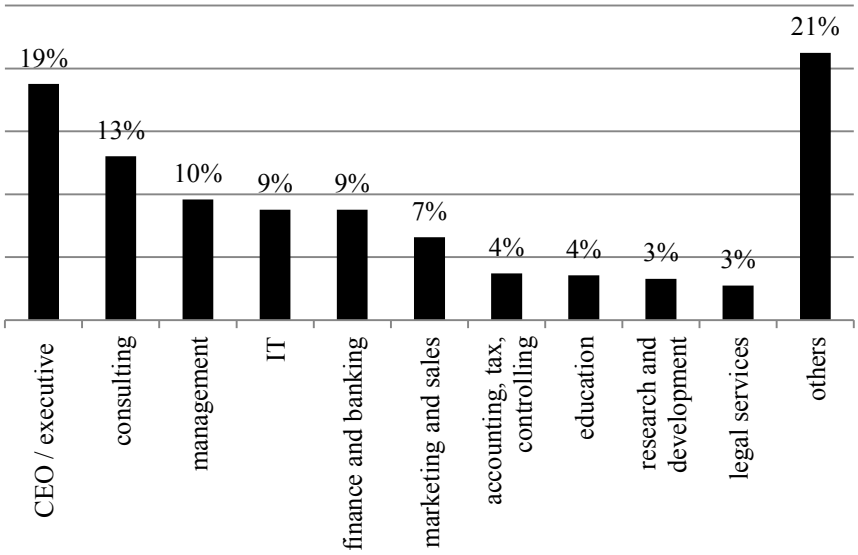
Innovestment

Figure 4

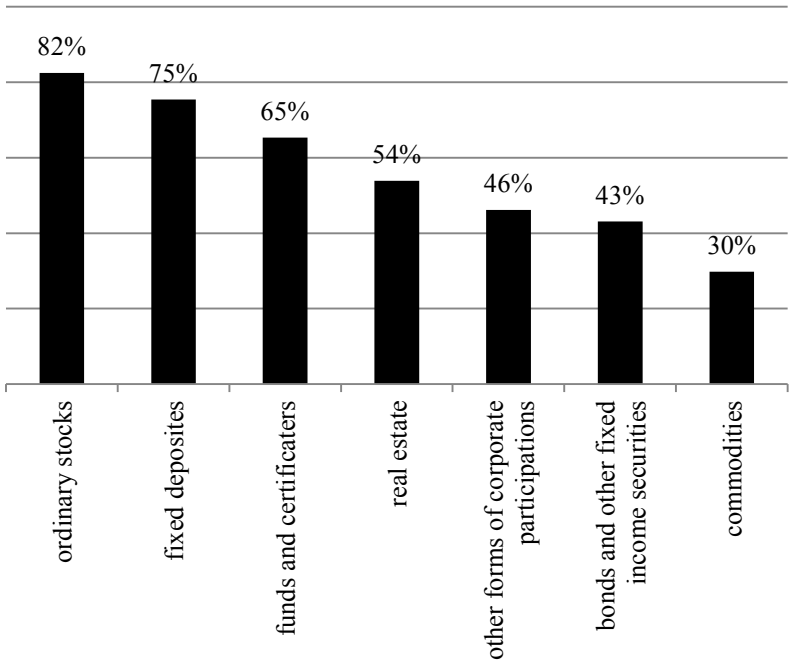
(a) Job-status of Innovestment users in 2012 (N=634)



(b) Profession of Innovestment users in 2012 (N=747)



(c) Investment experience of Innovestment users in 2012 (N=557). The figure reports the asset classes with which Innovestment users had experience at the time of registration.



(d) Portfolio diversification of Companisto investors (N=363). The figure reports the density function for the number of investments financiers made with Companisto before investing in the campaign 'Schnuff & Co' in December 2013.