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Economics of Mandatory Disclosure in the Equity Crowdfunding

Crowdfunding represents a new form of financial intermediation that entails raising funds from a large number of dispersed investors via web-based platforms. The main regulatory challenge in this industry concerns the question whether mandatory disclosure, the most widely used tool in conventional financial markets, is an appropriate solution to information asymmetry. Drawing on insights from the economics of voluntary disclosure, this paper theoretically examines whether market forces alone are expected to generate sufficient information. After discussing incentives for fundraising firms to unravel information, the paper addresses the issue whether crowdfunding platforms as two-sided markets are expected to design optimal disclosure rules. The desirability of mandatory (regulatory) disclosure is finally discussed in the light of conditions that might lead to the failure of voluntary disclosure.

Keywords: equity crowdfunding, mandatory disclosure, information asymmetry, two-sided markets

I Introduction

Crowdfunding as a means of soliciting funds from a great number of investors was not a viable alternative until recent years that saw a sharp rise of Internet-based technologies, which revolutionized means of communication between market participants in a great number of industries. This new form of external financing now available to entrepreneurs located in different parts of the world became possible due to considerate savings in transaction costs that existed in the pre- Internet era. The surge of a new financing opportunity for small firms that are otherwise facing

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constraints obtaining funds from traditional financial intermediaries, mainly banks and venture capitalist, has caught regulators around the world largely "unprepared". While some of the regulatory regimes in place allowed for a crowdfunding industry to develop outside the financial authorities' oversight, some others imposed compliance costs that were prohibitively high for fundraising firms. In both scenarios, the regulatory framework was inadequate, either because it did not provide enough legal certainty for market participants, in particular, the appropriate level of investor protection in the former case, or because it prevented crowdfunding market to emerge in the latter case. This has lead to a wave of ongoing regulatory reforms whose aim is to strike a balance between the need to encourage the development of the crowdfunding market by easing the applicable national securities regulation while at the same time ensuring that investors enjoy protection from fraud and other sorts of abuses up to a certain level.

A growing number of legal scholarship papers thoroughly describe recent regulatory changes in specific countries (Stemler, 2013; Yeoh, 2014; Klöhn et al., 2016) or provide a comparative law overview (Butturini, 2016; Juredieu and Mayoux, 2016; Follak, 2016). International standard setting bodies — Basel Committee on Banking Supervision and International Organization of Securities Commissions (IOSCO), are still silent on the necessity of designing rules on the international level and are rather cautious when it comes to giving recommendations to national regulators (Follak, 2016). "Wait-and-see" strategy taken by many jurisdictions and international bodies is justified by the lack of knowledge about risks involved and particularly market's ability to correct market failure associated with information asymmetry.

While information asymmetry is a common phenomenon in different markets, little is known to what extent market-based mechanisms are expected to develop in the crowdfunding context. Therefore, the analysis of optimal regulatory framework for crowdfunding should be based on thorough understanding of the incentive structure of market participants. Economic literature has devoted considerable attention to incentives of fundraising firms (Gerber et al., 2012; Belleflamme et al., 2013; Macht et al., 2014) and incentives of investors (Ahlers et al., 2013; Berkovich, 2011; Burtch et al., 2013; Freedman and Jin, 2014; Koning and Model, 2014), whereas the role of intermediaries has been studied to a much smaller extent. Studies that analyze the market behavior of intermediaries mostly focus on the taxonomy of crowdfunding intermediaries (Haas et al., 2014), pricing strategies (Chen et al., 2014), and choosing the optimal business model (Wash and Solomon, 2014); Giudici et al., 2012, Doshi, 2014). Fewer studies look at the role of platforms in decreasing asymmetry of information (Belleflamme and Lambert, 2016; Mäschle, 2012; Viotto, 2015), and this will be the focal point of analysis in this paper. Assessing market's ability to self regulate is a necessary step to analyze the desirability of mandatory disclosure rules in the crowdfunding market.

Section II of the paper presents a brief overview of recent regulatory reforms in chosen countries and discusses their disparities. Section III identifies key issues relevant to the question of ex ante information asymmetry in the crowdfunding context, which are further analyzed in the subsequent sections. First, drawing on the insights of disclosure theory, the paper addresses the issue whether competition among fundraising firms is expected to lead to information unraveling (Section IV). Understanding incentives of fundraising firms to unravel information serves as a basis for the analysis of what is the role of crowdfunding platforms in designing optimal disclosure rules, which generate sufficient information at moderate costs for the firms (Section V). Since platforms do not operate in an institutional vacuum, section VI takes into account the effect of regulatory environment (other rules aiming to limit investors risk exposure) on platforms' choice of disclosure rules. Finally, drawing on the findings in previous sections, the paper discusses the desirability of mandatory disclosure rules in the crowdfunding context (Section VII). Section VIII concludes.

II Overview of Recent Regulatory Reforms

While there are significant disparities in national regulatory regimes stemming from the little consensus among scholars, practitioners, and regulators regarding the magnitude of the risks involved, most of the reforms employed a technique of exemptions from applicable rules in the existing securities regulation. Series of exemptions mainly refer to the obligation of issuers to publish a prospectus and comply with registration requirements. The purpose of prospectus and securities' registration requirements is to provide potential investors with all the relevant information, which are presented in a summarized and standardized manner, in order to help investors more easily assess prospects of a firm and make informed investment decisions. Such requirements are meant to mitigate asymmetry of information between issuers and investors by mandating specific information that has to be disclosed and prescribing a comprehensive form of disclosure, which makes different investment opportunities comparable. In the recent years, securities' regulation in countries worldwide experienced a rise in compliance requirements driven by financial crises, accounting scandals and issues of corporate governance (Hornuf and Schwienbacher, 2017), which were mainly associated with large and publically traded corporations. However, in the context of crowdfunding such concerns appeared less justified given the seeds-stage of investment and small market capitalization. As a consequence, regulators resorted to a prospectus and registration requirements exemption, which was meant to alleviate the high regulatory burden for small firms and start-ups. Country-specific institutional arrangements differ with respect to the maximum amount of the offer that falls under the exemption rule. The aim of prescribing a cap on the amount of raised funds is to prevent the crowdfunding as a means of soliciting funds through online platforms to be misused for the purpose of circumventing standard securities regulations by firms whose size of issuance and stage of development do not justify a lighter regulatory treatment. In some countries, the exemption from prospectus is conditional on the fulfillment of an additional set of obligations with respect to characteristics of a fundraising firm, characteristics of the investors, limitations concerning the maximum amount sold to an investor and the maximum number of investors to whom the offer is made.

As to the characteristics of a fundraising firm, some regulators opted to restrain the application of prospectus and registration requirements exemption rule to start-ups or innovative SMEs, which is supposed to serve as an additional barrier to a circumvention of securities law applicable to well-established firms. However, such regulatory solution is not very common for the reason that investors tend to have more confidence in investing in established firms given that it is possible to estimate their past performance and that the experience in the market plays an important role in accomplishing an innovative idea.

Conditions concerning the profile of the investor and maximum amount he is allowed to invest were introduced to limit investors' exposure to risk. Regulators have taken a paternalistic approach, which assumes that they "put themselves in the shoes of an investor" and decide on the level of risk he is able to assume taking into account his expertise and income level. For example, some national crowdfunding laws make a distinction between accredited and non-accredited (retail) investors by allowing access to the crowdfunding market only to the former group or by prescribing different conditions of market participation for the two groups. The justification for this approach is that retail investors have limited skills and knowledge to assess the quality of the project and prospects of the issuer. As to the number of funds invested by individual investors, national laws on crowdfunding can be divided into two broad categories. The first group consists if regulatory regimes that prescribe the maximum amount that can be invested in a single issuer, whereas the other group of regulatory regimes sets an investment threshold depending on the level of net income of the investor or the value of his investable financial assets. The common rationale of these rules it to bound the potential loss, which is assured through diversification in the former case or through the cap on the absolute value of loss in the latter case.

Despite the fact that regulators commonly introduced exemptions from prospectus in the crowdfunding market, several country-specific institutional arrangements kept or reintroduced some mandatory disclosure requirements, which are applicable at the stage of issuance of securities or govern firms' disclosure practice in the post-investment stage. Disclosure standards in the primary market for crowdfunding securities are meant to substitute for the lack of prospectus by prescribing a list of relevant statements, while the purpose of reporting standards in the later stage is to alleviate corporate governance issues. While there is no common ground among regulators as to whether mandatory disclosure is an appropriate tool in the crowdfunding context, regulatory regimes also diverge with respect to the question whom such obligations should be imposed on – firms as issuers of securities and/or platforms, which are required to ensure that investors are provided with the needed information. Solutions adopted in some countries also entail that the level of mandatory disclosure depends on the value of issues in order to adapt the regulatory burden to the size of the firm and the total value of a potential loss.

An indispensable element of crowdfunding regulation in some countries is a duty to educate investors about the risks inherent in investing in the crowdfunding securities and/or risks of investments in a specific issuer. In the latter case, the obligation of education partially overlaps with the obligation to disclose information. However, education usually also implies their active role of investors who are supposed to assure that they have understood the risks involved. The concrete methods vary from simple statements on the platforms' websites, to specially designed tests or mandatory financial advice for retail investors.

Lastly, while most of the described obligations fall upon the fundraising firm, a majority of specific crowdfunding regimes also regulate the activities of crowdfunding platforms. Such regulation involves mandatory authorization of platforms, which is often accompanied by regulatory oversight of the national financial authority. This aspect of crowdfunding regulation bears particular importance for two reasons. First, it ensures that platforms refrain from activities that could fall within the domain of other financial intermediaries, which are subject to different set of regulatory rules such as, for example, offering financial advice or underwriting or reselling securities on behalf of issuers. Second, it increases the overall level of legal certainty and investors' confidence in the crowdfunding industry since regulatory oversight creates incentives for platforms to ensure that issuers are complying with their regulatory obligations. Accountability of platforms is reinforced in regulatory regimes that prescribe mandatory capital requirements, which serve to protect both firms and investors from operational and financial hazards of platforms or mitigate the loss that can arise as a consequence.

The rest of this chapter will outline some of the cornerstone elements of specific crowdfunding regulatory regimes in chosen countries without the aim of providing a comprehensive overview.

USA

Securities issued to the general public are subject to registration with the SEC with a purpose of increasing the investor protection in case of fraud, misleading information or omissions of material facts. While some small issue exemptions from registration requirement were foreseen by the first federal securities law from 1933 [1] and subsequent amendments, these provisions were limited to offerings to residents of a single state, thus unsuitable for crowdfunding given the “interstate reach of the Internet” (Hazen, 2011, p. 1749). The JOBS Act[2], which was enacted on April 12th, 2012, created rules that enabled crowdfunding to expand beyond geographic limits of a single state. Title III of the JOBS Act, which specifically refers to crowdfunding,

[1] The law was enacted as "Truth in Securities" Act in the wake of stock exchange crash in 1929.
[2] Jumpstart Our Business Startups Act, Pub. L. No. 112-106, 126 Stat. 306 (2012).

came into force on May 16th, 2016.[3] The most important regulatory innovation is the new exemption from registration of securities for the issuers who raise up to $1,000,000 during a twelve-month period. The exemption is applicable to registration both with the SEC and at the state level; however, subject to additional conditions that refer to the authorization of the intermediary, maximum amount invested by a single investor and disclosure requirements for the issuers. Exempt offerings can be made only through a registered intermediary, which operates as a broker-dealer or funding portal[4] . US regulator opted for a restriction concerning the maximum amount of investment that an investor can make in the asset class as a whole, defined as a percentage of his annual income or net worth.[5] It is worth noting that the limit is determined with respect to the entire crowdfunding market, thus without interfering with the investor's free will on how much to invest in a single issuer. While investors' decisions remained largely unconstrained, the same does not hold true with respect to the issuers and their ability to withhold information. Securities law mandates a disclosure of information, which gradually increases with the value of the offerings.[6]

EU regulatory framework

In the EU, crowdfunding is regulated at the national-state level, while there is still no European regulation in place. The reason is that a necessity for an adequate regulatory framework emerged relatively recently with little time for designing a supra-national solution. A harmonized EU solution is rather waiting for a clearer picture of what are the benefits and risk associated with the crowdfunding industry and, in particular, how significant is its cross-border potential.[7] Despite this fact, national institutional

[3] The JOBS Act amended Section 4(6) of the Securities Act, which refers to the exemptions for raising capital.
[4] Section 4(6)(C) of the Securities Act.
[5] If the annual income or the net worth is less than $100,000, an investor is not allowed to invest more than $2000 or 5% of his annual income or net worth. If the annual income or the net worth of the investor is $100,000 or above, an investor is not allowed to invest more than 10% of either his annual income or net worth. In any case, the maximum aggregate limit sold to a single investor cannot exceed $100,000.
[6] Section 4A(b) of the Securities Act foresees that 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. For issues of more than $500,000, the issuer must provide audited financial statements.
[7] First initiatives with respect to a Legislative proposal for an EU framework on crowd and peer to peer finance have already taken place. For more details see: https://ec.europa.eu/info/law/better regulation/initiatives/ares-2017-5288649_en

arrangements applicable to crowdfunding have emerged within the existing EU framework – directives that govern the prospectus requirement (Prospectus Directive and the accompanying Prospectus Regulation) [8] and conduct of financial intermediaries (the Markets in Financial Instruments Directive - MiFID)[9].

The Prospectus directive governs the duty of the issuer to disclose all relevant information in a standardized document, which is supposed to be submitted for an approval to a competent national authority before the offering of securities takes place. The purpose of prospectus requirement under EU law, common among other regulatory regimes, is to alleviate information asymmetries prior the investment decision, thus enabling investors to make informed estimations of the value of assets and liabilities as well as a potential for growth and risk of losses. Its application is limited to transferable securities as defined by Art. 4(1)(44) MiFID, which employs a restrictive notion of the term (Klöhn, 2017, p. 3). As a consequence, some widely used investment contracts such as subordinated profit participation loans fall outside its scope of application. While publishing a prospectus that contains all relevant information in a standardized form is a general principle governing all public offerings, Prospectus directive also foresees several exemptions (Art. 3(2)).[10] The Directive is silent on a specific exemption that would be tailored to the needs of crowdfunding. However, Art. 1(2)(h) confers a discretion to member states to decide on whether to impose mandatory prospectus for the value of offerings that do not exceed EUR 5 million. As we shall see in more detail, EU countries widely relied on this provision and refrained from imposing prospectus requirement on crowdfunding firms, though they differ with respect to the exemption threshold they set within boundaries of the Prospectus directive.

[8] Directive 2003/71/EC of the European Parliament and of the Council of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC; Commission regulation (EC) No 809/2004 of 29 April 2004 implementing Directive 2003/71/EC of the European Parliament and of the Council as regards information contained in prospectuses as well as the format, incorporation by reference and publication of such prospectuses and dissemination of advertisements.

[9] Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.

[10] Directive prescribes that prospectus requirement does not apply if one of the alternative conditions 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 e) The offer of securities represents a total consideration of less than €100,000 over a twelve-month period.

EU regulatory framework has also harmonized some regulatory solutions with respect to financial intermediaries. MiFID applies to investment firms providing a wide range of financial services, [11] some of which cover the activity of crowdfunding platforms. The application of the MiFID mainly depends on the type of activity that a platform performs. If a platform effectively operates as a broker of investments in firms that offer securities and other financial instruments, MiFID is applicable, though as any other European directive, it has to be transposed into national law. If a platform acts as a broker in financial instruments that fall outside the definition of financial instruments within the meaning of Section C of Annex I, MiFID would not apply and the activity of the platform would be solely subject to a national securities regime. This is the case, for example, if investments are made in profit participating loans. If a platform does not operate as a broker, but merely performs a service of receiving and transmitting orders in relation to financial instruments, which is most often the case, then national states can opt for an exemption from the application of MiFID.[12] Such exemption is only allowed to the extent that a financial intermediary is not allowed to hold clients' funds or assets. If MiFID does apply to the activities of crowdfunding intermediaries, a number of important aspects of crowdfunding business are subject to a detailed regulation. MiFID prescribes mandatory authorization of platforms, mandates the compliance with capital requirements and measures to be taken to prevent the conflict of interest (which include inter alia information duties of platforms and know-your-customer-requirements)[13].

In sum, both Prospectus directive and MiFID confer a broad discretion to national states to regulate prospectus requirements and legal status and conduct of platforms outside the scope of application of their general rules by opting for an exemption regime. Exemption from prospectus requirements is subject to constraints with respect to the total amount raised by a single issuer. Non-application of European rules governing the conduct of crowdfunding intermediaries is conditional on the type of financial service that they offer or type of financial instruments issued by a fundraising firm. Thus, it is not surprising that national regulators have created very distinct rules, some of which will be briefly presented. The choice of state-level

[11] MiFID applies to investment firms as defined by Art. 4(1) MiFID, which provide financial services within the meaning of Section A of Annex I MiFID. The scope of MiFID is further limited to financial services provided with respect to financial instruments defined in Section C of Annex I MiFID.
[12] The right of member states to opt out from the application of MiFID is envisaged by Art. 3 MiFID.
[13] For more details on the content of MiFID rules see: Klöhn, (2017), p. 4-6.

crowdfunding regimes, whose rules will be outlined in more detail, is motivated by the current stage of development of the crowdfunding industry.

UK

The UK amended existing securities regulation in April 2014 to account for the needs of the fast-growing crowdfunding industry.[14] The major change was the introduction of prospectus exemption for the value of offerings up to EUR 5 million in the twelve-month period, thus making use of the maximum limit determined by the Prospectus directive. The exemption is, nevertheless, made conditional on the type of investors who are able to invest in the market. While in principle the crowdfunding exemption is created for professional clients, high net worth investors or venture capitalist, retail investors are able to participate in the market if they confirm that they will receive investment advice or that they will not invest more than 10% of their net investible assets in the asset class as a whole (unlisted shares or unlisted debt securities).[15] Thus, UK regulator opted for an aggregate limit, which does not impose constraints as to the amount of investment in the financial instruments of a single issuer.

While the exemption option has been used with respect to the mandatory prospectus, the same does not hold true as to the application of MiFID. Namely, UK securities regulation prescribes that crowdfunding intermediaries provide financial services within the meaning of the European directive. The application of national regulation implementing MiFID [16] has important implications for the status of crowdfunding intermediaries and their rules of conduct.[17] First, crowdfunding platforms are allowed to operate only after obtaining an authorization from Financial Conduct Authority (FCA). Second, platforms are obliged to ensure that the information disclosed by fundraising firms is fair, clear and not misleading.[18] It is worth noting that the UK regulator took a light touch approach with respect to disclosure requirements by

[14] General rules applicable to securities regulation are contained in the Financial Services and Markets Act of 2000 (FSMA 2000), which was amended in 2014 in order to use the exemption alternative provided by Art. 1(2)(h) of the Prospectus directive.

[15] This solution implies that a platform does not have a duty to verify whether investors indeed remain within the regulatory limits with respect to the amount they are allowed to invest.

[16] FSMA 2000 and the FCA's Conduct of Business Handbook.

[17] The UK regulator also issued a statement which clarifies the regulatory obligations of crowdfunding intermediaries: PS14/4: The FCA's regulatory approach to crowdfunding over the Internet, and the promotion of non-readily realizable securities by other media.

[18] FCA, Conduct of Business Sourcebook, 4.2.1R.

omitting to mandate specific information that issuers are expected to disclose, but at the same time introduced liability regime for platforms if disclosed information does not correspond to the standard of "fair, clear and not misleading information". Finally, platforms are expected to ensure that the investors have the necessary knowledge and experience to understand the risks involved. [19] However, in practice, the duty of educating the investors boils down to a "simple automated test about the characteristics of the equity crowdfunding investments" (Klöhn, 2017, p. 7).

Germany

Until 2015, German regulator did not use the option to exempt issues bellow EUR 5 million from the application of Prospectus Directive. However, strict prospectus requirements did not prevent crowdfunding industry from developing since market participants found a way to circumvent the applicable national legislation that implemented the directive. [20] Namely, crowdfunding platforms widely used hybrid financial instruments known as subordinated profit-participating loans (*partiarische Nachrangdarlehen*), which fall outside the scope of the definition of financial instruments for which a prospectus is required (Klöhn, et al., 2016). This allowed crowdfunding industry to raise funds without prospectus with no limit as to the maximum amount.

The ability to bypass German prospectus legislation nevertheless triggered a reaction of German legislator, which enacted the Small Investor Protection Act in 2015.[21] The aim of this act was to extend the obligation of publishing a prospectus to firms that rely on subordinate profit-participating loans, but at the same time to provide an exemption for raising a limited amount of funds, thus enabling crowdfunding activity to further develop. As a consequence, offerings of subordinated profit-participating loans are still not subject to prospectus requirements, although the exemption limit is set to EUR 2,5 million. [22] As in other regulatory regimes, the exemption is

[19] FCA, Conduct of Business Sourcebook, 4.7.7(3), 4.7.8(2), 10.2.

[20] Prospectus requirements are governed by German Securities Prospectus Act (WpPG, Wertpapierprospektgesetz) while Investment Act (VermAnlG, Vermögensanlagengesetz) provides a definition of an investment to which prospectus requirements would be applicable.

[21] Small Investor Protection Act (Kleinanlegerschutzgesetz, KASG) of 3 July 2015, BGBl.

[22] Interestingly, the same rules do not apply to other types of financial instruments used in crowdfunding industry which fall under the scope of German Securities Prospectus Act, and thus can be sold to investors without a prospectus relying on the general exemption limit of EUR 100 000.

accompanied by a rule that prescribes a limit with respect to the maximum amount of investment per investor. Unlike US and UK regimes, which prescribe an aggregate limit as to the amount that can be invested in the asset class as a whole, German regulator opted for a single issuer limit. Individual investors are only allowed to invest up to EUR 1000 in financial instruments sold by a single issuer unless their wealth exceeds EUR 100,000, which allows them to invest up to EUR 10,000.[23] Put differently, a firm issuing security is not allowed to sell financial instruments whose value overpasses these limits to an individual investor. Exemption from prospectus requirements is further limited by a rule that mandates that offerings can be made only on a crowdfunding platform, which is subject to a regulatory oversight (Klöhn, 2017, p. 9).

In the absence of an obligation to publish a prospectus, German regulation in place foresees that the issuer has to publish an "Investment information sheet" (Vermögensinformationsblatt, VIB), which has to be registered with the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and contain "the most essential information about the investment." (Klöhn, 2017, p. 9). In connection to this, German regulatory regime also implies a mandatory education of investors, which is done through a warning notice contained in the Investment information sheet. Investors are also expected to make a statement in which they confirm understanding of the risks associated with crowdfunding investment (Klöhn, 2017, p. 9).

France

Crowdfunding industry had started to develop in France before the legislator enacted a special regulatory regime tailor to the industry needs. Crowdfunding platforms were relying on two distinct grounds for the exemption from prospectus requirements, as foreseen by Art. 3(2) of the Prospectus directive: the offer of securities did not surpass the threshold of EUR 100,000 or securities were offered to a limited number of non-accredited investors (fewer than 150). While the former exemption was inadequate for being too restrictive as to the amount of funds that can be raised, the latter exemption

[23] Exceptionally, independently of the value of freely available assets, the limit is set to twice the amount of the investor's net monthly income, provided that the investor provides a statement on income. The absolute limit is, nevertheless, set at EUR 10,000.

assumed large contributions from individual investors, thus contradicting the very nature of crowdfunding market. The high regulatory burden was put on platforms as well since they were required to obtain a license from a Securities regulator (L'Autorité des marchés financiers (AMF)) and comply with high capital requirements (Hornuf and Schwienbacher, 2017, p. 6,7). This has lead to changes in the existing securities regulation in 2014, with the aim of allowing the industry to develop under less restrictive rules. [24] Similarly to its European counterparts, the French regulator created an exemption from prospectus requirement by increasing the threshold to EUR 1,000,000. However, in contrast to solutions adopted in other countries, investors do not face any constraints as to the number of investments in a single issuer or crowdfunding market as a whole.

The concept of mandatory licensing for crowdfunding platforms is not abandoned. However, platforms have to apply for a specific license, which does not require any capital requirements, in contrast to a standard license used by other financial intermediaries (Hornuf and Schwienbacher, 2017, p. 7). The obligation of the issuers to disclose some information is not entirely abandoned either; however, the simplified documentation that they are expected to provide investors with is not subject to approval by the competent authority (Hornuf and Schwienbacher, 2017, p. 7). Platforms also bear some indirect costs of information disclosure given that the regulator introduced some sort of due diligence through transparency rules applicable to platforms. Namely, platforms are expected to ensure that investors "obtain fair and unbiased information about the offers" (Hornuf and Schwienbacher, 2017, p. 7). Finally, the French regulator has also foreseen some sort education about risks for the investors, which is reinforced by a duty to take a test that determines investors' risk profile. The idea is that their risk profile should correspond to the risks associated with crowdfunding investments.

III Ex Ante Information Asymmetry in the Crowdfunding: Theoretical Considerations

[24] Ordonnance nr. 2014–559 of 30 May 2014 and Decret d'Application nr. 2014–1053 of 16 September 2014.

While crowdfunding industry has been recognized as a promising alternative for channeling financial resources towards innovative firms, its potential for growth will mainly depend on its ability to cope with asymmetry of information between market participants, a primary source of the emergence of traditional financial intermediaries. The very concept of crowdfunding is based on the idea that it is possible to "disintermediate" or "debunk" the financial system by creating a virtual space where unhindered information flow can substitute for conventional ways of intermediation. Such space not only enables entrepreneurs and firms to interact more directly but also permits a great number of small investors who have dispersed skills and knowledge to assess the prospects of a project to share their experience and benefit from their joint effort in reducing information asymmetries. While there is little doubt that crowdfunding will enhance the information transmission channels, the question remains to what extent it is able to overcome a much larger obstacle to a balanced distribution of information across the two sides of the financial market - the incentive mechanisms driving the informational exchange. In other words, this novel way of allocating financial resources to new ventures is novel only to the extent that it offers innovative solutions to the old problems of the financial industry arising out of asymmetric information.

Such solutions might emerge as a consequence of a different physical environment in which the information exchange takes place (or its lack thereof) or a distinctive regulatory environment in which crowdfunding market participants operate. Since crowdfunding in most of the countries appeared before specific laws have been enacted, while many of the regulators took only a light touch approach in subsequent regulatory changes, a behavior of market participants remains largely unconstrained by burdensome rules of compliance that potentially hinder some market-based solutions to arise within the traditional financial sector. Nevertheless, as the long history of regulation of traditional financial intermediaries has demonstrated, some regulatory aspects such as rules that impose mandatory disclosure of information are meant to underpin market mechanisms of information production and often complement rather than substitute information unraveling by the parties to a transaction.

Therefore, a deeper understanding on the issue of information asymmetries in the crowdfunding context is needed not only for the peculiarities of the fundraising process itself but also for the fact that a specific regulatory regime, which often varies from one country to another, is expected to produce different results given the complex dynamics between market forces and applicable rules. Some preliminary efforts that have been done so far in the literature mainly address empirically signaling techniques that entrepreneurs use to reveal their quality, while few important questions deserve a more comprehensive analysis that I will attempt to conduct in this section.

First, from a theoretical standpoint, it is important to understand how traditional models in microeconomics can be used to explain the information unraveling process of fundraising firms. Namely, market failure of adverse selection is expected to arise only if high-quality firms whose projects are worth pursuing are not able to distinguish themselves from low-quality ones by disclosing verifiable information or otherwise credibly signaling their quality to investors. Therefore, in this section, I will attempt to provide a deeper perspective on conditions under which competitive unraveling of information is expected to occur in the crowdfunding, absent regulatory rules mandating information disclosure.

Second, to the extent that firms' incentives to unravel information do not lead to a full disclosure, some authors have drawn attention to the specific role of crowdfunding platforms that act as intermediaries between firms and investors. Since crowdfunding platforms are considered to be multisided platforms, which assume that participation of one group is beneficial to the other group (cross-side network effects), they have incentives to design rules that enhance the participation of both sides of the market. Such rules should, inter alia, impose disclosure requirements on firms in order to assure that investors have confidence in the market and are able to make informed investment decisions. I will explore this important aspect of the asymmetric information problem by discussing platform's incentives to create disclosure rules given the costs of disclosure for the firms and capacity of investors to process disclosed information. In particular, I will address the question whether the role of platforms goes beyond designing simple rules of conduct for market participants by taking over the role of certifiers similar to intermediaries in traditional consumer markets. If platforms take an active role in information disclosure process by simplifying the task of producing or receiving information (also known as a form of due diligence), there are two important implications that need to be further discussed. First, the question arises as to whether due diligence efforts of platforms will affect their requirements regarding information disclosure and what will be the dynamics between these two aspects of investor protection. Second, further analysis is needed to assess whether the overall level of information asymmetry is expected to be lower once platforms can be held liable for false statements or disclosure omissions.

Third, the effectiveness of market-based solutions to the problem of asymmetry of information is largely dependent on the regulatory environment in which market participants interact, in particular, different aspects of investor protection created by specific laws and regulations on crowdfunding. As a consequence, another important aspect that needs to be addressed is whether the rules aiming to enhance investor protection, specifically those that limit investors' exposure to risk, will affect market-based solutions to information asymmetry. Namely, it is an open question whether such rules can affect platforms' incentives to mandate disclosure rules and act as certifiers.

Finally, the previous analysis concerning the ability of the crowdfunding market to self-regulate under different conditions should be used to enlighten the ongoing debate on whether mandatory disclosure is desirable. While mandatory disclosure is most widely used a regulatory tool in financial markets, its use in the crowdfunding context should be considered with caution. In order to understand the effectiveness and consequences of such legal intervention, it is necessary to discuss the sources that prevent market forces to produce an efficient outcome in the first place. In other words, mandatory disclosure is desirable only to the extent it relieves some of the reasons that lead to the failure of voluntary disclosure of firms or platforms-mandated disclosure rules.

In sum, the purpose of this section is to provide a comprehensive overview of the questions which are relevant to the issue of asymmetric information in the crowdfunding market by bridging the gap between economic literature which largely neglects the effect of regulatory environment on incentives of market participants and legal scholarship literature which often calls for broad legal intervention without questioning the ability of markets to provide investors with adequate protection which is proportionate to the burden that small firms are able to bear given the high costs of information disclosure.

IV Information Unraveling by Fundraising Firms

Drawing on the insights from disclosure theory, in this section, I develop a theoretical analysis that will allow us to examine the conditions under which competition among fundraising firms will lead to a voluntary disclosure of information (also known as discretionary-based disclosure). The issue of voluntary disclosure is highly relevant in financial markets, given that initial public offerings are always characterized by a pronounced information asymmetry, which entails that issuers of securities, more precisely their founders, are always better informed than investors about the prospects of the firm. Investors face difficulties estimating the future value of the firm given that it is costly for them to acquire independent information about the originality of the idea, feasibility of the project and other risks and constraints stemming from both firm and industry-specific factors. As in any other market with information asymmetry, disclosure is expected to resolve a tension between divergent interests of two groups - investors who are interested in more quality information to guide their choice of the project that they will invest in and low quality firms or firms whose projects entail high risk of failure that would like to go unnoticed in the pool of high quality and low risk firms. More information is expected to result in efficiency gains, since it allows for sorting between fundraising firms, incentivizes fundraising firms to improve the quality of the projects and forces firms that offer low-quality projects to exit the market (Dranove and Jin, 2010, p. 943).

The value of disseminated information is even greater in the crowdfunding market since fundraising firms are usually start-ups that do not possess any track record of their previous performance, which is the reason why it is costly for them to raise capital in a conventional way through banks or venture capitalists. Moreover, it is rather a common phenomenon that a fundraising firm brings an entirely new product to the market whose characteristics will become completely known only after the project has been financed and has entered the production stage. The very purpose of the crowdfunding campaign is among other things to test the market and obtain feedback (Belleflamme and Lambert, 2014, p. 3). In some instances, the novelty of the idea consists of improving the production process of an existing product, technical details of which are hardly understandable by a broad audience of investors who are not experts in the field. For these reasons, it is difficult for investors to independently assess the quality of the project beyond the information that is revealed by fundraising firm. As a consequence, firms' willingness to disclose can severely impact the degree the adverse selection.

While it is rational to assume that founders will have incentives to unravel all the information that will help them create an optimistic estimate of the firm's future value, their incentives to disclose unfavorable information are more ambiguous. While a large body of theoretical work has identified conditions under which competitive unraveling occurs, the aim of this section is to extend it into the realm of crowdfunding and examine whether existing models are suitable for explaining the unraveling process in this specific context.

The theory of voluntary disclosure was first introduced to explain the outcomes in the consumer market and later extended into the literature of finance and accounting. The intuition underlying the idea that competition among firms will lead to a full disclosure of information is that high-quality firms would want to distinguish themselves from low-quality firms by informing their potential buyers about all relevant features of the product including the risks and limitations. The basic assumption is that they face rational buyers who infer that withhold information or shrouded attributes are unfavorable about the quality of the product (Grossman and Hart, 1980; Grossman, 1981). In other words, buyers discount the value of the product until the point it is in the sellers' best interest to disclose all the information. All the sellers except for the seller of the lowest quality product follow the unraveling strategy since it allows them to demonstrate the superiority of their product to the product of their competitors and charge a higher price.

Subsequent research into the conditions under which voluntary disclosure occurs changed some of the assumptions of the early information unraveling models to demonstrate that there exist equilibria which do not imply full disclosure of information. The most common cause of deviations from predictions of the unraveling theory are costs of disclosure. Such costs include both direct costs of making credible announcements about the quality of the good sold and costs associated with the information that is proprietary in nature (Dye, 1986). Proprietary information "is defined as information whose disclosure reduces the present value of cash flows of the firm endowed with the information" (Dye, 1986, p. 331). It has been shown that, when disclosure is costly, only sellers with product quality above a specific threshold will have incentives to disclose (Grossman and Hart, 1980).

Unraveling theory also assumes that buyers know or can infer that that seller possesses complete and private information about their own product quality. This assumption is necessary for buyers to create rational expectations that withhold information is unfavorable and consequently discount the value of the product. However, in the presence of uncertainty regarding the existence of private information (Dye, 1985), sellers will have reduced incentives to disclose their private information given that adverse selection problem will be less pronounced.

Buyers will discount the value of the product whose features are shrouded only if after processing all the available information about the product they have come to a conclusion that disclosure is flawed. A body of theoretical work analyzed the failure of unraveling for the reasons on buyers-side. It has been shown that information disclosure may fail if buyers pay little attention to the available information or if they face difficulties understanding the disclosed content. [25] Such an outcome is not necessarily incompatible with rational behavior if detecting flaws in the process of disseminating information is costly for buyers. Finally, it is disputable to what extent disclosed information affects market choices if information cannot be independently verified. This distinguishes disclosure from “broader marketing efforts” which assume that conveyed information is not verifiable (Dranove and Jin, 2010, p. 936).

Drawing on the findings of disclosure literature, there are several reasons for which disclosure by fundraising firms is likely to be incomplete. First crowdfunding firms are expected to incur significant costs of disclosing information, both direct and indirect. Direct costs of disclosure stem from the fact that disclosed information has to be proven by verified documents or by engaging third-party certifiers, which entails accounting, audit and publication costs (Huddart et al., 1999, p. 255, 256). One might argue that firms with project quality above a specific threshold would have more incentives to disclose under such circumstances, given that they have the higher expected value of future profits of the firm. However, seeds-stage crowdfunding firms have little resources in the first place to finance such costs before the fundraising process is finished, the uncertainty about the successful accomplishment of the campaign is high, whereas all the costs of disclosure are sunk.

Indirect (proprietary) costs of the disclosure can play even a greater role in discouraging firms to unravel all the available information. Namely, the value of many crowdfunding firms consist of an innovative idea, which can be stolen by potential competitors (Agrawal et al. 2014, 92), at low or high costs depending on the features of the product or production process and industry characteristics.

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[25] See Dranove and Jin, 2010, p. 944 for the overview of the economic literature addressing buyer-side reasons for the failure of information unraveling.

Independently of a distribution of imitation costs, they are expected to decrease in the level of disclosure. This implies that more disclosure would lead to higher proprietary costs for the firm since a greater likelihood of competitors being able to steal the intellectual property decreases the present value of future cash flows.[26]

Apart from disclosure costs, which represent the most important constraint to information unraveling in the crowdfunding market, disclosure might fail for the reasons that relate to investors' perception of how fundraising firms behave and their disclosure strategies. First, investors will create rational expectations that withhold information is unfavorable, and consequently, discount the value of the project, only if investors can infer that a firm possesses private information about the project quality. Despite the reasoning that, founders of the firm are, by very definition, better acquainted with both firm and industry-specific factors that influence feasibility of the project, investors are sometimes unable to infer whether lack of disclosure of certain risks and limitations is driven by motives of shrouding negative attributes or by the fact that founders themselves are unaware of them. Therefore, whenever it is difficult for investors to know about the existence of private information, they will not discount the value of the project, which in turn, incentivizes firms to withhold information. On similar grounds, one can argue that unraveling will occur only if the costs of detecting flaws in disclosure strategy are relatively low i.e. if investors can easily reveal a firm's strategy to withhold certain information. The strategy of shrouding important information will be harder to detect the larger the number of irrelevant information investors have to process, and the smaller the benefits of detecting information unraveling flaws. Given that individual investments in crowdfunding are relatively small, it is rational for investors not to invest time and effort to question disclosure strategy of a firm.

While a failure of unraveling might occur as a consequence of high costs of detecting flaws in the disclosure process itself, there are also reasons to believe that processing information that is actually disclosed generates high costs for investors. Once again, the value of individual investments plays an important role in predicting whether investors will have incentives to process disclosed information. Put differently, investors' incentives to process information are increasing in the value of investments and decreasing in the complexity of disclosed information.

[26] This is in line with a definition of proprietary costs. (Dye, 1986, p. 331).

In sum, both costs of disclosure incurred by crowdfunding firms and costs of processing disclosed information and detecting flaws in the unraveling process incurred by investors are likely to prevent full disclosure in the crowdfunding market. The level of disclosure will, nevertheless, depend on many characteristics of a fundraising firm and conditions in the consumer market, in which the firm operates. However, it is important to notice that complete disclosure of information is not the only market mechanism for overcoming information asymmetry. There are many markets in which other "quality assurance mechanisms" substitute or complement incomplete market mechanisms (Dranove and Jin, 2010, p. 939). Some of the traditional signaling mechanism in consumer markets such as branding and reputation, the experience of buyers, and warranties are not applicable in the crowdfunding context for several reasons. First, there is no or little-repeated interaction – firms rarely launch more than one crowdfunding campaign, that would incentivize them prioritize the success of future campaigns over the success of a first one.[27] Second, investors are able to fully assess the quality of a project only sometime after the investment has been made and even then it is sometimes hard to establish whether the success or failure should be attributed to the firm's management or exogenous circumstances. Finally, the very essence of every entrepreneurial endeavor is the risk, so that any warranties alike mechanisms are excluded by the very nature of the crowdfunding market. However, as some recent empirical papers have shown, crowdfunding market has developed new quality assurance mechanisms that are being recognized by investors, such as retaining equity or internal governance (Ahlers et al., 2013). From a theoretical perspective, it is an open question to what extent these signaling mechanisms can complement partial disclosure in the crowdfunding context, and whether it is possible to draw a clear line between the two.

V The role of Crowdfunding Platforms in Reducing Asymmetric Information

If fundraising firms are not expected to fully disclose information, the question arises as to whether the existence of crowdfunding platforms can help mitigate the problem of asymmetric information. Crowdfunding intermediaries can be seen as multisided platforms whose presence in the market can be explained by a pronounced externality

[27] However, as a recent empirical paper has shown, first successful crowdfunding campaign can serve as a signal of quality for attracting future venture capital (Ibrahim, 2017).

and transaction costs, which prevent the two sides, firms and investors, from solving this externality directly (Evans, 2011, p. 4). Externalities stem from the fact that members of each group benefit from being able to coordinate with the members of the other group, which is also known as cross-side network effects. Each member of the group, however, does internalize the welfare effects of his use of the platform to the members of the other group (Rochet and Tirole, 2006, p. 646).

In the crowdfunding market, investors benefit from having more firms participating in the platform, given that their participation also implies a larger pool of projects to choose from and better opportunities to find a project that fits their preferences. This is also true for the fact that investors' interest to participate in the crowdfunding market often driven by intrinsic motives other than gaining profits. Positive cross-network externalities are particularly strong when it comes the fundraising firms' utility stemming from having a large number of potential investors on the other side of the market since their presence increases the chances of reaching the funding threshold (Belleflamme and Lambert, 2014, p. 9).

Externalities alone would not lead to the emergence of crowdfunding platforms if firms and investors were able to negotiate freely i.e. if neither transaction costs nor asymmetric information hindered the bargaining process (Coase, 1960). Therefore, the failure of the Coase theorem emerges as a necessary condition for the activity of platforms (Rochet and Tirole, 2006), which are able to coordinate the participation of two sides of the market by lowering the transaction costs. The rest of this section will analyze whether platforms' are also expected to mitigate asymmetry of information through their effort to try to get the two sides "on board" by appropriately designing disclosure rules.

The idea that "platforms have a natural tendency to self-regulate" is based on the idea that unrestricted competition among multisided platforms for both firms and investors will lead to a creation of rules that maximize of joint surplus of market participants ("race to the top") (Belleflamme and Lambert, 2016; Mäschle, 2012; Viotto, 2015). In other words, platforms have incentives to design contracts in a way that induces entrepreneurs to disclose the socially optimal amount of information (Klöhn, 2017, at p. 11). Mandatory disclosure rules, thus, appear redundant, since platforms will ensure that investors obtain the adequate level of protection.

Studies that have brought the argument of a self-regulating tendency of crowdfunding market, have not addressed a number of potential caveats to such conclusion. Only the study of Mäschle (2012) tackles this issue in more detail and develops a simple model of a competition of two platforms, which opt between low and high disclosure rules. The model predicts that competition among intermediaries leads to "race to the top" scenario, which equals high protection of investors if conditions of competition are not impaired. The model is presented as a three-stage game in which platforms first choose disclosure requirement, entrepreneurs then choose platforms, and investors make investment decisions at the end. The model assumes that information asymmetry creates benefits for entrepreneurs and costs for investors embedded in the price of shares, which decreases with additional disclosure requirements. Thus, the marginal costs of firms stemming from increased disclosure equal the benefits investors derive from such policy.

However, these simplifying assumptions of the model and the conclusion derived from them might not hold, if one takes into account the reasons that might have lead to the failure of unraveling by firms. Namely, the costs of firms go beyond their inability to create an overly optimistic image about their project, and thus, charge a high price for shares. As discussed before, firms incur both direct and indirect (proprietary) costs of disclosure associated with lower expected profits of a firm, if too much information is revealed to competitors. Second, while investors benefit from more information disclosure in terms of being able to make an informed investment decision, they also incur costs of processing information. As a consequence, the marginal costs of firms stemming from increased disclosure does equal the net benefits investors derive from such policy. Therefore, it is reasonable to assume that there exists a threshold of information disclosure requirements, which once surpassed, creates costs for firms that are greater than the net benefits for investors. This leads to a conclusion that platforms that tend to optimize the participation of both sides of the market would not necessarily choose high disclosure requirements. Their chosen level of disclosure would somehow need to reflect the sensitivity of both sides to changes in the rules. This is analogous to the argument brought up in the literature that a platform's choice of prices charged to each side of the market depends on the price sensitivity of demand on both sides (Evans, 2011, p. 11). Moreover, since firms differ with respect to both direct and indirect costs of disclosure, and platforms do not necessarily have information about their distribution, it is reasonable to assume that they would not set up disclosure requirements too high, thus, allowing firms with low disclosure costs to unilaterally disclose more.

Since investors incur costs of processing information, they might be more sensitive to platforms' efforts to reduce such costs by performing some sort of due diligence. In other words, crowdfunding platforms can mitigate information asymmetry "by acting as trusted intermediaries" (Belleflamme and Lambert, 2014, p. 11). Platforms' involvement in the process of preventing fraud, verifying disclosed information and presenting it in a comprehensible form can create more trust among investors than high disclosure requirements. However, the greater the due diligence effort of platforms the larger the costs they incur for additional information disclosed. Thus, this might incentivize platforms to decrease their disclosure standards as compared to a situation in which they merely design disclosure rules and are not engaged in the verifying process. Due diligence effort of platforms resembles the role of certifiers in the consumer markets who make some information verifiable at the lower cost than the cost investors would need to incur. The extensive literature on certifiers in the consumer markets has raised important questions concerning the incentives of certifiers to disclose information in a precise and unbiased way. These questions are as well relevant in the crowdfunding market; especially given that due diligence efforts of platforms are not really observable by investors. However, they are left with some further research.

It is worth noting that designing optimal disclosure rules for fundraising firms and due diligence efforts are not the only market-based mechanisms that platforms have at their disposal to enable information flows. To the extent that fundraising firms use different quality assurance mechanisms other than full disclosure of information, platforms are also able to mitigate asymmetry of information by creating rules that underpin them. Some recent empirical literature described some strategies that platforms use to this endeavor, such as "provision point mechanism", which implies that entrepreneurs only receive funds if the total amount of investments surpassed certain threshold i.e. amount that is needed for a project to be feasible (Agrawal et al., 2013). This could potentially deter low-quality firms, which would not necessarily use the funds to accomplish the project. Therefore, from a theoretical perspective, it is an open question what is the relation between disclosure rules and other strategies that platforms use to induce signaling.

VI The Influence of Crowdfunding Regulatory Regime on Platforms' Choice of Disclosure Rules

Market participants do not operate in an institutional vacuum, which implies that existing rules of the game, exogenously imposed by regulators and lawmakers, change their incentive scheme. The aim of this section is to analyze how platforms' ability to mitigate information asymmetry by mandating disclosure changes with different rules on crowdfunding. As described earlier, while not all crowdfunding regimes opted for a mandatory disclosure, all have prescribed some regulatory measures whose purpose is to mitigate investors' exposure to risk. Without focusing on a regulatory solution of any particular country, and bearing in mind that there are many common provisions, different regulatory measures will be analyzed in an isolated manner. In the jargon of economists, I will assume that ceteris paribus condition holds with respect to all other legal constraints, without refuting possible interactions between isolated effects.

Regulation that introduces mandatory capital requirements and/or authorization of platforms increases the accountability of platforms and exit costs. The greater the exit costs, the more likely it is that platforms will act as "gatekeepers" (Klöhn, 2017), ensuring that only good projects are offered. This is expected to increase disclosure requirements, in order for platforms to be able to preselect projects. However, once platforms become "bearers of reputation" (Belleflamme and Lambert, 2016), investors have fewer incentives to independently assess risks, and therefore, their demand for disclosure decreases.

Regulation might introduce mandatory due diligence of platforms in the form of accountability for misleading information or fraud. With additional information provided by entrepreneurs, verification costs of platforms increase. As a consequence, platforms have incentives to loosen disclosure requirements. Moreover, as in the previous case, greater accountability of platforms decreases investors' incentives to carefully choose projects, which also leads to less demand for disclosure. However, the regulation that introduces mandatory due diligence often prescribes specific information that needs to be verified, thus disabling platforms to lower the standards.

It is common that a regulator limits the amount of investment in the crowdfunding. The limit can take two forms: limits on the amount that can be invested in a single crowdfunding project or the amount that can be invested in the whole class of assets. Each form can prescribe a fixed amount for all investors or amount that varies with the level of wealth/income of individual investors. Independently of the type of rules, the lower the threshold, the lower the incentives for investors to process disclosed information. Platforms are expected to react to decreased demand for information by lowering disclosure requirements. However, rules that prescribe the maximum amount that can be invested in a single firm instead of the amount invested in the entire class of assets are expected to reinforce this effect because they lead to greater diversification.

Regulation that does not allow access to certain groups of investors can also take two forms. First one, which is more common, but which at the same time opposes the very purpose of crowdfunding, allows only investments from accredited investors and not retail investors. Accredited investors are better able to assess the risks involved, so one might expect that their demand for information disclosure is higher. Moreover, this rule decreased the pool of investors, thus incentivizing platforms to privilege them over entrepreneurs. The opposite rule, which allows only retail investors to invest in the market, is usually justified by a specific, more lenient, regulatory approach to crowdfunding. Here one might observe two opposite effects. Decreasing the pool of investors leads to a better protection for the same reason as in the previous case. However, inexperienced investors do not have the knowledge to understand disclosed information, thus lowering their demand for disclosure.

Laws that allow only certain types of firms to raise funds through crowdfunding usually exclude firms that are not startups. Such a rule limits the pool of potential projects to invest in, thus incentivizing platforms to lower investment protection. Moreover, information disclosure is on average more expensive for firms in the seed-stage than in the later stage of development, since such firms rarely have a steady income and do not possess relevant information due to a short record of their previous activities. Therefore, platforms might have incentives to opt for lower standards.

VII Is it desirable to mandate firms' disclosure?

Mandatory disclosure is perhaps the most widely used regulatory instrument in financial markets, whose benefits are often associated with the benefits of having free and easily available information in the market. Namely, to the extent that mandatory disclosure is able to ensure informed investment choices, on the one hand, and disciplining effect on the companies' managers thanks to the pricing of shares, on the other, its wide use should be praised. However, there are two important caveats to such reasoning. First, mandatory disclosure is not always an effective instrument for achieving full transparency. Second, mandatory disclosure is often associated with significant costs and unintended consequences. Therefore, in order to establish the desirability of regulatory rules on disclosure, it is necessary to look at the causes that lead to the failure of voluntary disclosure in the first place. This is important not only for the decision on whether to introduce mandatory disclosure but also to design optimal rules on which specific information should be disclosed, in which form, and who and under which circumstances bears the responsibility for failure to disclose i.e. misstatement and omissions.

As shown beforehand, failure of voluntary disclosure in the crowdfunding market is likely to be caused by the costs of disclosure incurred by firms and costs of processing information incurred by investors. If costs of disclosure are significant for a great number of firms, and in particular if costs of disclosing proprietary information are particularly high than imposing mandatory disclosure might have an inhibitory effect on the participation of firms. The question whether a moderate disclosure regime – the one that carefully distinguishes between disclosure obligation that firms are able to bear and those that they are not, is desirable is complex. While in principle, there are no reasons to oppose such regime; the question is whether a financial regulator has a better ability than the market itself, and more specifically, crowdfunding platforms, to assess both the benefits and burden of specific disclosure rules. If voluntary disclosure fails due to high costs of processing information incurred by investors, and to the extent that the platforms themselves do not design mechanisms that simplify information processing, mandatory disclosure can be justified. However, such disclosure rules should primarily focus on the standardization and simplification of the way in which information is presented, rather than aggravating the problem by mandating more information to be disclosed, which would only further increase information processing costs.

VIII Conclusions

Firms are unlikely to resort to a strategy of full disclosure due to high costs of disclosure and high costs that investors incur to detect flaws in the unraveling process and to process the disclosed content. In the crowdfunding context, the issue of indirect proprietary costs is particularly pronounced since the value of many crowdfunding firms consists of an idea, which will be easier to imitate the more information is disseminated.

While platforms have incentives to mitigate information asymmetry by imposing disclosure rules on firms, their choice of disclosure standards is not necessarily the one that offers the highest protection for investors, contrary to arguments that have been raised in the literature. This is due to the fact that there is a threshold of disclosure requirements, which once surpassed, creates larger costs for firms than the net benefits for investors. However, the competition of platforms might reinforce their role of gatekeepers who perform some sort of due diligence, given that they are able to make some information verifiable at the lower costs than investors. Their role of gatekeepers, however, can mitigate their incentives to mandate high disclosure rules since their costs of due diligence are increasing in additional information disclosed.

A platform's inclination to mandate disclosure rules is likely to be affected by other aspects of crowdfunding regulation whose purpose is to mitigate investors' exposure to risk. As such rules change the incentive structure of market participants, a platform's choice of high disclosure standards is more likely if the regulator prescribes mandatory capital requirements and allows for the participation of accredited investors and non-start-ups. Platform's choice of high disclosure standards is less likely in case of mandatory due diligence imposed on platforms and relatively low limits on the amount of investment in a particular firm.

Exogenous (mandatory) disclosure standards are not necessarily desirable in the crowdfunding context, given the high costs of disclosure and little incentives of investors to process all disclosed information. If a regulator, nevertheless, chooses to introduce such rules, it should carefully assess which type of disclosure is likely to discourage firms from participating in the market. If mandatory disclosure is motivated by investors' side reasons that lead to a failure of voluntary disclosure – investors' inability to detect flaws in the unraveling process, the regulator should focus on the standardization and simplification of the way in which information is presented. Requiring full-blown disclosure instead would, on the contrary, aggravate the cause of failure.

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