Does informative risk disclosure matter in IPO underpricing? The impact of the European evolving normative context

Marisa Agostini[a], Giulia Baschieri[b], Gloria Gardenal[c]

a

(corresponding author)

Ca' Foscari University of Venice, Department of Management,

San Giobbe, Cannaregio 873, 30121, Venice, Italy

Phone: +39 0412349209

marisa.agostini@unive.it

b

University of Bologna - Department of Management,

Via Capo di Lucca 34, 40126, Bologna, Italy

giulia.baschieri@unibo.it

c

Ca' Foscari University of Venice, Department of Management,

San Giobbe, Cannaregio 873, 30121, Venice, Italy

ggardenal@unive.it

Abstract

This analysis investigates how the evolving European normative context affects the quantity and quality of IPO risk disclosure and, accordingly, the IPO underpricing, traditionally acknowledged as a proxy for the information asymmetry between investors and the issuing company. We posit that the recent evolution of the European regulatory framework improves the effectiveness of IPO risk disclosure, ultimately reducing the information asymmetry between insiders and outsiders and, as a consequence, the IPO underpricing. We run a content analysis on the IPO prospectuses of 130 non-financial IPOs in Italy over the period 2012-2020, focusing on the "Risk Factors" section of the prospectus. Results show a positive effect for the approval of Regulation 2017/1129/EU on the effectiveness of risk disclosure in IPOs, and the subsequent post-IPO market reaction for most of the risks under analysis. However, the sign and the impact of risk disclosure on the IPO underpricing depends on the specific type of risk. Recent regulations and policies which improve risk disclosure are shown to impact IPO costs and affect access to capital market for private firms. However, establishing new rules does not imply rapid or sudden effects, as time is necessary to obtain full corporate legitimacy of the norm itself.

Keywords: IPO, underpricing, risk disclosure, content analysis, normativity, information asymmetry

1. Introduction

This paper sheds light on the relation between risk disclosure in IPO prospectus and IPO performance, focusing on the impact of the evolving European normative context. In the going public process, the IPO prospectus (hereafter, prospectus) represents the main source of information and must contain all the relevant facts about the company and the issue (Beatty, 1989), with the goal of mitigating the information asymmetries between firm insiders and outside investors. The prospectus is required in Europe by Directive 2001/34/EC and has the purpose of protecting investors from market abuse, thus increasing their confidence in the normal operation of the market and ensuring the integrity and efficiency of the market.

In recent years, prospectus content has undergone significant changes, in light of the evolving normative context that increasingly places importance on non-financial disclosures, where risk disclosure (also RD, in what follows) is a non-negligible component. In corporate reporting, the importance of non-financial disclosures and RD has been acknowledged as fundamental for evaluating the company performance (ACCA, 2013; Agostini et al., 2021; Haller et al., 2017) and adjusting corporate reports to comply with the new requirements has been well documented (Dumitru et al., 2017; Guthrie & Parker, 2017; La Torre et al., 2018; Pizzi et al., 2021). The regulatory authorities are tracing a similar path also for the IPO prospectus. Looking at the European context, the Directive 2003/71/CE (hereafter, also Directive) introduced an obligation to disclose the main risks of the company and the issue, without however providing clear indications about the information on risks to be included or standard procedures for risk definitions and assessment. More recently, Regulation 2017/1129/EU (also known as "Prospectus Regulation", hereafter, also Regulation) made a step forward, requiring disclosure of material[1] and specific risks of the issuer and its securities

[1] In the prospectus lexicon, materiality refers to the combination of probability of occurrence of the risk and magnitude of impact (Regulation 2017/1129/EU, Art. 16(1)).

in a concise and intelligible way. The Regulation discourages the disclosure of generic risk factors or risk factors only serving as disclaimers, since they could obscure more specific sources of risk that investors should be aware of, thereby preventing the legibility of the prospectus itself. Even the choice of issuing a Regulation instead of a Directive emphasizes the actual relevance of risk disclosure for the European normative context. In fact, a Regulation is immediately applicable and does not need to be adopted by national member states, thus limiting the possibility of discrepancies at the national level and ensuring a uniform approach.

This evolving normative context and the consequent changes in the content of the prospectus motivate this study. In particular, this paper investigates how the EU normative changes affect the quality of IPO RD and, accordingly, the IPO underpricing, traditionally acknowledged as a proxy for the information asymmetry between investors and the issuing company (Ljungqvist, 2007). Under information asymmetry, issuing companies or investment banks may in fact use IPO underpricing as a discount aimed at encouraging uninformed investors to participate to the IPO market (Rock, 1986; Beatty & Ritter, 1986). However, it is not unanimously clear how a higher-quality RD may alter this relation. In general, a more comprehensive information in a prospectus should help refine the price consistency, motivating a higher bid price and minimizing the scope of underpricing (Falconieri & Tastan, 2018). In this regard, risk disclosure should play a pivotal role in mitigating the information asymmetry between internal stakeholders and potential peripheral investors. However, a higher knowledge of risks could also have a negative effect on the investors' choice of risk (McGuinness, 2019), affecting the amount of discount on the offer price and the IPO valuation.

The present study investigates this relation and posits that the recent evolution of the European regulatory framework improves the effectiveness of IPO RD, ultimately reducing the asymmetric information between insiders and outsiders and, as a consequence, the IPO underpricing. To prove this relation, we run a content analysis on the IPO prospectuses of 130

non-financial IPOs in Italy over the period 2012-2020, focusing on the "Risk Factors" section of the prospectus. The choice of Italy is motivated by evidence showing that the Italian Stock Exchange is among the top financial markets as far as opacity is concerned (e.g., Bhattacharya *et al.*, 2003), a factor that should help further tease out the effective power of the European regulation in reducing the information asymmetry through increased RD. Both quantitative and qualitative RD are analyzed looking at how the amount, tone (e.g. good vs. bad news), temporal perspective (e.g. past vs. future risks) and completeness (e.g. the risk monetary quantification) of RD affect the level of information asymmetries and the IPO underpricing within the evolving normative context.

Our results show a positive effect of the approval of EU Regulation on the effectiveness of RD in IPO, and the subsequent post-IPO market reaction for most of the risks under analysis. However, the sign and the impact of RD on IPO underpricing depend on the type of risk. On the one hand, increased RD on specific risks (e.g. Operations and Integrity) seems to reduce the perceived uncertainty about the riskiness of an IPO firm's future cash flows and the underpricing. In such cases, RD is informative as it affects the IPO pricing process and listing companies can exploit it to reduce their cost of capital. On the other hand, increased RD of other types of risk (e.g. Empowerment) may enhance the perceived uncertainty about the distribution of IPO future cash flows, and increase the first day return. Results on the quality of RD are mixed and extensively discussed in Section 6.

The rest of the paper is organized as follows: Section 2 reviews the Regulatory Framework and the main normative changes that are taking place in Europe, regarding RD in IPO prospectuses; Section 3 defines the Theoretical Framework, presents the Literature Review and formalizes the research Hypothesis; Section 4 describes the Sample and the data collection; Section 5 presents the analysis and the main Results; Section 6 discusses the main findings and concludes.

2. Evolving European normative context on risk disclosure

Creating a Capital Markets Union is one of the goals of the European Union[2]. Over time, the European Parliament issued several regulations devoted to achieving this goal and harmonizing the financial procedures within the member States. In the last twenty years, the Regulator put increasing attention on the role that non-financial information and risk disclosure play in reducing the information asymmetries, thus enhancing the efficacy of corporate reporting, the functioning of the financial market, and ultimately protecting retail investors from market abuses. Regarding the going public process, the normative effort made by the Legislator moved along the same path taken also for corporate reporting, in other words, increasing the non-financial information reported and the major corporate risks. In particular, Directive 2003/71/CE was the first to stress the need to disclose risks in the IPO prospectus, claiming that

> "*Information is a key factor in investor protection; a summary conveying the essential characteristics of, and risks associated with, the issuer, any guarantor and the securities should be included in the prospectus*" (Directive 2003/71/EC, Preamble, pt. 21).

Moreover, it required that

> "(...) *to ensure easy access to this information, the summary should be written in non-technical language and normally should not exceed 2500 words in the language in which the prospectus was originally drawn up"* (Directive 2003/71/EC, para. 21).

Yet, the Directive did not provide clear indications about which information on risks was to be included in the prospectus and left the markets without standard procedures for risk definitions and assessment. As a result, all European IPOs dedicate a section of the offer prospectus to the "risk factors", but the amount and the quality of risk disclosure, the communication on the impact of risk to the company's future profitability, and therefore risk-disclosure effectiveness

[2] See the Communication of the Commission of 30 September 2015, entitled '*Action Plan on Building a Capital Markets Union"*.

was left to the discretion of both the issuing firms and the supporting underwriters in the listing procedure.

Within the Italian context, the Directive was incorporated into Italian law through the Legislative Decree 28 March 2007, n. 51, which changed and integrated the Consolidated Law on Finance[3] (the main regulations in force in Italy concerning finance and financial intermediation) by fully adopting the requirements of the Directive and transferring to CONSOB[4] - the national authority responsible for regulating the Italian financial markets - the power to provide indications on how to present the risk factors in the prospectus. CONSOB Recommendation n. 7105108 (11/29/2007) is the reference point for this procedure and suggests adopting the following criteria to compile the "Risk Factors" section: the most relevant risks can highlight, among other things, the nature of the activity conducted by the issuer; the countries in which it operates; the lack of positive returns in the recent history of the issuer; the potential absence of a liquid market for the financial instruments; the lack of managerial experience; high competition; the forthcoming expiration of patents, trademarks or important agreements; the dependence on a limited number of customers or suppliers. Moreover, risk factors should synthesize information more broadly described in other parts of the prospectus.

The grey area concerning risk disclosure in IPOs generated by the Directive and the misrepresentation of risks firms could exploit (Greco, 2012), led the European Parliament to take a step forward, issuing Regulation 2017/1129/EU. The Regulation – which came into force on 21.7.2019 (24 months after the issue date) and is applicable in all EU countries, together with the related implementing provisions - supersedes the previous Directive through binding provisions on the formulation and presentation of risk factors in the prospectus. The European

[3] Testo Unico della Finanza, TUF.
[4] CONSOB stands for "Commissione Nazionale per le Società e la Borsa"

legislator specifically stresses that the primary purpose of including risk factors in a prospectus is to ensure that investors make an informed assessment of such risks and thus take investment decisions based on full knowledge of the facts. Therefore, risk factors should be limited to those which are relevant and specific to the issuer and its securities and corroborated by the content of the prospectus. Looking more specifically into the Regulation, article 16 establishes that listing companies should assess risk factors based on the probability of their occurrence and the expected magnitude of their negative impact. Furthermore, each risk factor should be adequately described, explaining how it affects the issuer or the securities being offered or to be admitted to trading, assessing the materiality also through a qualitative scale of low, medium or high (art. 16, sub. 1). As previously mentioned, generic risk factors or risk factors that merely serve as disclaimers should be avoided, as they could obscure more specific sources of risk that investors should be aware of, thereby rendering the prospectus itself non-concise and unintelligible.

Unlike the EU Directive, the EU Regulation is a different type of legislative instrument as it is immediately applicable without needing to be adopted by the member states, thus limiting the discrepancies that could be introduced at the national level and ensuring a uniform approach[5]. Article 16, subsection 4 of the Regulation states the European Securities and Markets Authority (ESMA) will develop guidelines to assist competent authorities in their review of the specificity and materiality of risk factors and of their presentation across categories. The Final Report containing the Guidelines was released on 29 March 2019[6] and all the European countries declared to be in compliance[7].

[5] The European legislator also adopted the Delegated Regulations EU 2019/979 and EU 2019/980. The former relates to regulatory technical standards on key financial information in the summary of a prospectus, the publication and classification of prospectuses, advertisements for securities, supplements to a prospectus, and the notification portal. The latter supplement Regulation 2017/1129 as regards the format, content, scrutiny and approval of the prospectus and repeals Commission Regulation (EC) No 809/2004.

[6] The Final Report is dated 29 March 2019. (Retrieved July 19, 2021 at: https://www.esma.europa.eu/sites/default/files/library/esma31-62-1217_final_report_on_guidelines_on_risk_factors.pdf)

[7] The full list can be referred here (Retrieved July 19, 2021 at:

3. Theoretical background, literature review and hypotheses development

3.1 Theoretical background

The European normative context has recently evolved and introduced new requirements regarding the inclusion of non-financial information in corporate reports, especially for risk disclosure (Elshandidy *et al.*, 2018; Mio *et al.*, , 2021; Stolowy & Paugam, 2018). Indeed, this non-financial disclosure has been acknowledged as fundamental to properly estimating and evaluating company (overall) performance (ACCA, 2013; Agostini *et al.*, 2021; Haller *et al.*, 2017). The changes to corporate reporting to comply with the new requirements in an evolving European normative context have been well documented in the literature (Dumitru et al., 2017; Guthrie & Parker, 2017; La Torre et al., 2018; Pizzi *et al.*, 2021). The literature has also emphasized the high level of discretion still permitted in non-financial disclosure (Aureli *et al.,* 2019; La Torre *et al.*, 2018) and the consequent low comparability (in both time and space) of such information (Biondi et al., 2020). Despite the normative process (EU, 2014, Explanatory Preamble; CSRD, 2021) taken by EU regulators on RD appearing straightforward, corporate compliance is still evolving. A similar pattern of evolution regarding RD can be found in the relations between the recent European regulatory framework and corporate reporting both in the IPO prospectus and in the growing stream of literature.

As described in the previous section, the European legislator, first through the Directive and then the Regulation, introduced also similar requirements to the IPO prospectuses where non-financial disclosure and, specifically, RD plays a crucial role in the going public process with the goal of mitigating the structural asymmetric information between the firm insiders and outside market participants (Hussain *et al.*, 2020). The Directive represents the first EU

https://www.esma.europa.eu/sites/default/files/library/esma31-62-1409_compliance_table_gls_on_risk_factors.pdf)

normative provision to mark a new relevance for RD, which has been enforced and better recognized by the Regulation from a normativity theory perspective (Bebbington *et al.*, 2012). However, this increasing degree of normativity may have been perceived and transposed differently into the prospectus by IPO companies. Specifically, if these companies embrace the new rules considering such an increasing degree of normativity appropriate, then substantial and increased compliance should be reached and a proper RD obtained by investors. Otherwise, companies may only comply with the Regulation in form but not spirit, producing a prospectus that does not report valuable risk information. Substantial compliance is a dynamic process that generally takes a long time (Bozanic *et al.*, 2012). It requires consecutive steps involving corporate understanding, assimilation, and (finally) application of rules (Finnemore & Sikkink, 1998). Therefore, establishing new rules generally does not lead to rapid or sudden effects (Scott, 2013), but requires time to gain the full corporate legitimacy of the norm itself (Bebbington *et al.*, 2012). This process could benefit from two further aspects. First, the role and the involvement of actors and authorities different from the Regulators (e.g., ESMA as mentioned in the previous section) could improve the legitimacy of the norm through soft law systems and non-binding forces (Morth, 2004). Second, observing the practical consequences of a progressive implementation of the rules could be beneficial for the companies applying the rules (pursuing entities to disclose more and better information). Other companies that may still be skeptical about the increasing degree of normativity, could be pressured towards substantial compliance when the practical consequences are evident, thereby creating lasting effects on disclosure practices. When this happens, companies may become proactive in providing substantial and potentially value-relevant information for stakeholders also about their risk management processes (Beasley et al., 2021).

3.2 Literature review and hypotheses development

The analysis of non-financial (often qualitative) disclosure typically requires more time and effort to be implemented than the examination of quantitative information, but it is recognized as extremely relevant by the literature (Bloomfield, 2002; Lehavy *et al.*, 2011; Zhao *et al.*, 2020). Specifically, RD should be of a certain quantity and quality to guarantee comparable and consistent information across the EU. This seems to be difficult-to-get especially in the IPO context since firms experience a sort of trade-off between the benefits and the costs of disclosing risk information. On the one hand, RD may reduce the perceived uncertainty about the riskiness of an IPO firm's future cash flows and improve its transparency, thus reducing the variance-uncertainty discount in a firm's offer price and decreasing its cost of capital. In this case RD is informative and may benefit IPO companies (Gupta & Israelsen 2014; Hanley & Hoberg 2010; Heinle & Smith 2017). On the other hand, RD informs investors of (also potential) risks and may increase the perceived uncertainty about the distribution of IPO company's future cash flows (Balakrishnan & Bartov 2011; Campbell *et al.*, 2014; Kravet & Muslu 2013). This may limit corporate willingness to disclose risk factors and incorporate qualitative risk information into their prospectus. Because of this trade-off, previous literature, generally based on US data and regulations, analyzed the relation between RD and IPO underpricing showing mixed results (Campbell *et al.*, 2019; Gupta & Israelsen, 2014; Huang *et al.*, 2021; Kravet & Muslu, 2013). Underpricing has been traditionally considered the primary cost of going public for many IPO firms (Baker *et al.*, 2021; Ritter, 1987): regulations and policies improving RD can affect IPO costs and influence capital market access for private firms. For this reason, we examine the effects of the above-mentioned EU evolving normative context about RD in IPOs, focusing on the progressive enforcement of RD as provided in the prospectus. The analysis of the disclosure effects (in terms of both quantity and quality) may reveal both the reached step in the dynamic process of corporate rules assimilation extent and

the steps (actions) that can be implemented in order to effectively increase the quality and transparency of RD.

Summarizing, the study builds on two interrelated streams of literature. The first emphasizes the undertaken normative path and its (actual and expected) consequences. The other is on the relation between (the quantity and quality of) RD in the prospectus and the efficiency of the IPO pricing process as revealed by the underpricing. Prior research focusing on the US market has not reached consistent conclusions on RD informativeness (Elshandidy *et al.*, 2018; Zhao *et al.*, 2020). We focus on a non-US setting where regulators seem to have clearly recognized the relevance of RD in reducing uncertainty and information asymmetry (Baron, 1982; Rock, 1986; Welch, 1989) and aim to promote the premarket role (related to information generation and provision for both underwriters and investors) of IPO issuers, recognizing its potential impact on IPO pricing (Ljungqvist, 2007). Our analysis builds on the belief that the production of premarket information can significantly influence pricing accuracy (Hanley & Hoberg, 2010). This is especially relevant with private companies that, not being subject to the same disclosure requirements as public firms before an IPO event, publish limited information (Baker et al., 2021). Therefore, we hypothesize a relevant effect will emerge from an EU normative (and more stringent) path on RD in the prospectus, and a consequent impact on IPO underpricing.

HP1: The undertaken EU normative path towards the implementation of EU Regulation 2017/1129 increases the effect of risk disclosure in IPO prospectuses on IPO underpricing.

We examine both the quantity and quality of RD in the prospectus and its effects on the IPO performance on the first day of trading. As far as RD quantity is concerned, previous literature

finds that a higher number of disclosed risk factors in the prospectus reduces IPO underpricing (Beatty & Welch, 1996), and there is a positive effect between greater disclosure in the Risk Factors section and IPO initial returns (Arnold *et al.*, 2010; Guo *et al.*, 2004). Hanley and Hoberg (2010) use word vectors and "document similarity" to suggest that greater standard (i.e., not informative) RD leads to higher price change and IPO underpricing. Based on previous literature, we further investigate the relation between RD and IPO underpricing, following Linsley and Shrives (2006)'s risk categorization to both add further depth to our analysis and to test whether the disclosure of different types of risk implies different effects of RD on IPO underpricing. We hypothesize that RD volume impacts (decreasing) IPO underpricing, distinguishing the different types of risk volumes (Linsley & Shrives, 2006).

HP2: An increase in the amount of risk disclosure within the IPO prospectus leads to a lower underpricing.

The examination of RD quality is strictly related to the role of RD informativeness emphasized in the previous literature with mixed results: some studies suggests that the increase of RD quality may increase underpricing (Beatty & Ritter, 1986); others show that more specific corporate disclosure is related to lower underpricing (Leone *et al.*, 2007; Ljungqvist & Wilhelm, 2003). In order to better focus on and further examine RD quality, we consider three different dimensions detailed in the following paragraph: completeness, tone, and temporal perspective. In line with previous literature, we posit that when the prospectus contains a higher degree of completeness, it will provide unique information to its readers (Hanley & Hoberg, 2010). Accordingly, we expect the IPO pricing process to be more accurate, thus implying lower IPO underpricing. Therefore, we hypothesize that higher levels of RD completeness may reduce IPO underpricing.

HP3: More complete risk disclosure within the IPO prospectus leads to a lower underpricing.

RD may regard both negative and positive information, each influencing IPO pricing differently (Zhao *et al.*, 2020). When only qualitative and negative risk information are disclosed, the results may be opposite. On the one hand, a negative RD tone may emphasize corporate transparency, fully disclose the riskiness of a firm's cash flows, permit analysts (with different abilities and risk preferences) and underwriters to evaluate RD properly, and reduce the variance-uncertainty discount in the offer price. On the other hand, such a tone may make investors and underwriters be more alarmed about the riskiness of a firm's cash flows, implying lower IPO offer price and increasing underpricing. The related literature based on US data has provided mixed results (Balakrishnan & Bartov, 2011; Kravet & Muslu, 2013; Hope *et al.*, 2016). Specifically focusing on IPO pricing, Loughran and McDonald (2013) use a word list to provide evidence about the significant relation between negative words in the prospectus and IPO underpricing. Hanley and Hoberg (2010) emphasize the strong relation between the tone of the Risk Factors section of the prospectus and IPO pricing, suggesting that this section has the role of mitigating liability risk, and a positive tone of the text is associated with increased pricing accuracy. Based on such previous literature, we expect that the disclosure of good news about risks decreases IPO underpricing.

HP4: A positive tone of risk disclosure within the IPO prospectus leads to a lower underpricing.

Finally, only a few studies have considered the temporal perspective of RD. Hill and Short (2009) compare RD of IPO issuers and of listed companies, showing that in the first case RD contains more forward-looking information than in the second. Arnold *et al.*, (2010) examine the content of US IPO issuer prospectuses and subsequent stock return volatility, finding a positive relation between them: they conclude that RD is informative of future risk. Accordingly, we expect a negative relation between forward-looking RD and IPO underpricing. Indeed, we posit a more future oriented disclosure may suggest to the market that the IPO firm clearly forecasts and controls its future risks and subsequent threats to firm profitability. This should be positively perceived by the market, and increase the accuracy of the pricing process, thus implying a negative relation between forward-looking RD and IPO underpricing.

HP5: IPO prospectuses disclosing more future-oriented risk information have a lower underpricing.

4. Sample and data collection

Our empirical analysis considers a non-US setting characterized by an evolving normative context about RD. Specifically, it focuses on the Italian Stock Exchange that is one of the most opaque financial markets (e.g., Bhattacharya *et al.*, 2003); for instance, when earnings management is taken into account, Italy ranks fourth out of 31 countries (Leuz et al., 2003). In addition, there is no clear sanction for companies that do not comply with disclosure requirements, so Italy is the ideal research setting for investigating performance implications of IPO RD. We analyze 130 IPOs on the Italian Stock Exchange. The primary data for the empirical analyses consist of IPO data, which we draw from IPO prospectuses. We first considered all 181 IPOs on the Italian Stock Exchange from January 1st, 2012 to June 30th,

2020. We then excluded financial firms (SIC 6000–6999), utilities (SIC 4900-4999), government firms (SIC 9100–9199), and "non-classified establishments" (SIC 9900–9999). We ended up with 130 IPOs.

The analysis distinguishes issuing firms' RD by running a content analysis on the sampled prospectuses. The effects of the Regulation on both risk disclosure and IPO underpricing are traced by a dummy variable (D_Reg) equal to 1 if the IPO firm goes public after the implementation of the Regulation (i.e., after July 20, 2019), and 0 otherwise. Table A.1 in the Appendix presents a detailed description of all variables used in the empirical analysis. The data concerning the quantity and quality of RD were collected through a manual content analysis (Agostini & Costa, 2018; Costa & Agostini, 2016; Unerman, 2000) to gather IPO textual information and systematically identify its properties (Krippendorff, 2018; Guthrie & Parker, 1990; Milne & Adler, 1999). This process considers the sentences devoted to the specific issue under examination: sentences containing "risk" word(s) are here adopted as text-units in order to detect matters of importance that companies want to communicate, and diminish problems associated with reliability (Hooks & van Staden, 2011; Michelon *et al.*, 2015; Beattie and Thomson, 2007). For the same reason (i.e., reducing reliability) a pilot test on three reports was carried out and six coders (three seniors and three juniors) were involved: discrepancies between them were re-analyzed and differences were resolved (Unerman, 2000).

This labor-intensive and time-consuming quantitative content analysis aims to investigate the extent and volume of risk disclosure in IPO, examining the quantity, type, tone and temporal perspective of such information according to the research questions and the hypotheses listed above. Specifically, five main variables are identified and considered in this analysis to evaluate the quantity, the quality (defined by completeness, tone and temporal perspective) and the type of risk disclosure (Costa & Agostini, 2016; Agostini & Costa, 2018). First, the volume of risk disclosure (QUANTITY) measures how much information about risks

is disclosed in IPO reports. This corresponds to the number of relevant text units which are identified and codified in the analysis. Second, the completeness of the disclosure (COMPLETENESS) takes into account whether risk information is presented in a vague manner (i.e., only mentioned), in an exhaustive way (i.e., also descriptive), or through a numerical evaluation of the business impact (i.e., fully evaluated). Third, the tone of the disclosure (TONE) regards how companies consider and disclose risk impact: the disclosed risk information can be portrayed either favorably (i.e., good news about risks with positive effects on the business) or unfavorably (i.e., bad news referring to negative business impacts), neutrally otherwise. Fourth, the temporal perspective of risk disclosure (PERSPECTIVE) examines whether the reported risk information refers only to the past and the present, or also to the future, considering future risk impacts according to a forward-looking perspective. Finally, the type of disclosure (TYPE) measures how much information is disclosed for each of the six major risk categories identified according to Linsley and Shrives' model (2006): financial, operation, empowerment, information processing and technology, integrity, and strategic. Table A.2 in the Appendix shows an example of RD for each investigated variable and category. According to the Regulation (comma 54 Regulation 2017/1129), a further generic (risk) category is introduced to classify residual risk disclosure that does not precisely refer to the other specific categories. For the same reason (comma 54 Regulation 2017/1129), the SIZE of the prospectus (i.e., the numbers of pages in both the (entire) prospectus and the (only) Risk Factor subsection), and the number of disclosed risk types is also considered as a control variable to examine also the conciseness expressly referred to by the Regulation.

5. Results

5.1. Directive vs. Regulation: risk disclosure and IPO characteristics

Table 1 presents the summary statistics for firms that went public during our sample period distinguishing IPOs going public before July 20, 2019 (we call those IPOs "Directive IPOs"), that is under the Directive regime, and firms going public after July 20, 2019 ("Regulation IPOs"), that follow the EU Regulation for drafting the IPO prospectus.

[Insert Table 1 about here]

Looking at Panel A at the IPO characteristics, the univariate comparison shows that in mean and in median Directive IPOs have a lower proportion of newly issued shares relative to pre-IPO shares outstanding (Dilution Factor is 0.26 in mean for Directive IPOs versus 0.35 for Regulation IPOs; similar evidence holds when median values are investigated). In addition, Directive IPOs show a greater participation by retail investors, on average equal to 6% (median is 2%), when compared to Regulation IPOs, with an average equal to 1.4% (median is 1%). All other firm and offer characteristics are rather similar across Directive and Regulation IPOs, suggesting that the evolution in the European normative context did not push firms with different features to the IPO market.

Panel B presents the univariate analysis on risk disclosure. In line with the spirit of the regulatory evolution, among Regulation IPOs, the volume of Financial risks disclosed in the prospectus Risk Factors section is on average (median) equal to 10.5 (11), which is significantly lower than the average (median) volume of Financial risks disclosed in the Directive IPOs, at 13.2 (12). On average, the number of Operations risks disclosed in the Regulation IPOs is also lower than the Directive IPOs (4.5 vs 5.6). However, when Information Processing and Technology (IPTR) risk and Integrity risk are considered, we find opposite evidence. In Regulation IPOs, the amount of IPTR risks is on average (median) equal to 6.8 (7), which is significantly higher than the IPTR risks disclosed in Directive IPOs, at 4.5 (4).

Similar evidence is found when Integrity risk is accounted for, with an average (median) volume of risks in Regulation IPOs equal to 7.3 (7), higher than the value detected for Directive IPOs, at 2.4 (2). When the qualitative risk disclosure is accounted for, univariate analysis shows Regulation IPOs have in mean (median) a more negative tone in their risk reporting than Directive IPOs, with 44 (43) versus 37 (32) bad sentences on risks. At median levels, Regulation IPOs have a more descriptive approach (52 vs. 42) compared to the Directive IPOs. Finally, Regulation IPOs are more future and past oriented in their approach to risk disclosure compared to Directive IPOs (future risks are on average 46 for Regulation and 35 for Directive IPOs; past risks are on average 0.9 for Regulation and 0.3 for Directive IPOs; similar evidence emerges when median values are investigated). Quite surprisingly, the size of the IPO prospectus, the number of pages in the Risk Factor subsection and the overall volume of risks disclosed did not decrease after the evolution in the normative context. Overall, this evidence require further investigation through a multivariate approach.

5.2. Quantity of risk disclosure and Underpricing

To test HP2, on whether an increase in the amount of risk disclosure on the IPO prospectus lowers the IPO underpricing, we estimate Equation (1),

$$\begin{aligned}\text{Underpricing}_i = {} & \beta_0 + \beta_1\text{Financial}_i + \beta_2\text{Operations}_i + \beta_3\text{Empowerment}_i + \beta_4\text{IPTR}_i + \beta_5\text{Integrity}_i \\ & + \beta_6\text{Strategic}_i + \beta_7\text{General}_i + \beta_8\text{Pages IPO Prospectus}_i + \beta_9\text{Pages Risk Factors}_i + \\ & \beta_{10}\text{MktReturn\_60ddPre}_i + \beta_{11}\text{IPOVol\_30ddPost}_i + \beta_{12}\text{Revision}_i + \beta_{13}\text{Range}_i + \\ & \beta_{14}\text{Reputation}_i + \beta_{15}\text{Participation Ratio}_i + \beta_{16}\text{Dilution Factor}_i + \beta_{17}\text{Institutional}_i + \\ & \beta_{18}\text{Log(Proceeds}_i) + \beta_{19}\text{Log(1 + Age}_i) + \beta_{20}\text{Log(Assets}_i) + \beta_{21}\text{Log(1+Press Coverage}_i) + \\ & \beta_{22}\text{Per Capita GDP}_i \qquad (1)\end{aligned}$$

where Underpricing is the left-hand variable and is computed as the percentage difference between the first trading day market price and the offer price, while the key explanatory variables are the set of variables measuring the number of risks disclosed within the previously identified risk categories as in Linsley and Shrives (2006). HP2 predicts a negative relation between Underpricing and the variables on risk disclosure. To control for the size of both the IPO prospectus and the Risk Factors sub-section, we add as explanatory variables the corresponding number of pages (Pages IPO Prospectus and Pages Risk Factors). In the regression we also include a set of standard proxies on firm, offer and market characteristics to control for information asymmetries, risks surrounding the IPO, and hot IPO markets (Beatty & Ritter, 1986; Lowry & Schwert, 2002; Ljungqvist & Wilhelm, 2003).[8]

[Insert Table 2 about here]

Table 2 reports results on Underpricing. Model 1 is the base specification, while Model 2 is on Eq. 1. Results are as predicted and at least partly confirm HP2. In Model 2, Underpricing decreases with the increase in the disclosure on Financial (β_Financial = −0.007**), and Integrity risks (β_Integrity = −0.006*). However Underpricing increases with the increase in the disclosure on Empowerment risk (β_Empowerment Risk = 0.021*). From the economic standpoint, the magnitude of these effects is important as, other things being equal, an increase of 1 unit of the word "risk" in the IPO prospectus within the category Integrity (Financial) risk decreases the average underpricing by about 0.6 (0.7) percent holding all other covariates at

[8] In regression we control for firm size (Log(Assets)), firm age (Log(1+Age)), IPO proceeds (Log(Proceeds)), the width of the offering price range (Range), the final revision of the offer price (Revision), underwriter reputation (Reputation), the number of secondary and primary shares in IPO relative to pre-IPO share outstanding (Participation Ratio and Dilution Factor), institutional allocation (Institutional), IPO aftermarket volatility (IPOVol_30ddPost), the average daily industry-specific returns in the 60 trading days before the IPO (MktReturn_60ddPre), and the number of newspaper articles reporting the IPO firm name in the year before the IPO (Press Coverage). To control for the local wealth, we also add as explanatory variable the yearly per capita GDP computed in the region where the IPO is headquartered (Per Capita GDP). Regression also includes industry dummies, while standard errors are clustered by IPO year.

their sample means, while the same increase in the number of words containing "risk" within the category Empowerment increases the average first-day return by about 2 percent. Consistent with theories based on information asymmetries (e.g. Beatty & Ritter, 1986), Underpricing increases with the volatility of IPO after the listing (β_IPOVol_30ddPost = 1.828*) and decreases with the size of the issuing firm (β_Log(Asset) = −0.010*). Finally, Underpricing increases with the IPO price revision (β_Revision = 0.164**), which is consistent with the partial adjustment phenomenon as in Hanley (1993), while the remaining control variables appear non-significant.

To test HP1, in Model 3 we augment the variables on the amount of risk disclosure of Model 2 with the interacting variable D_Reg, which is a dummy variable equal to 1 if the IPO date is subsequent to July 20, 2019, that is after the approval of Regulation, and 0 otherwise. This allows us to test whether the Regulation improved the effectiveness of risk disclosure and therefore its impact on Underpricing. Consistent with HP1, the interaction of D_Reg with the variables on risk disclosure should affect Underpricing more than the variables on risk disclosure alone. Looking at the pure variables on risk disclosure, Financial risk is still significant in negatively affecting Underpricing (β_Financial = −0.008**), while Operation risk becomes significant in positively affecting the first day return (β_Operations= 0.004*). On the other hand, Integrity and Empowerment risks are no longer significant. Consistent with HP1, when the interaction with D_Reg is considered, the effect of disclosure on Empowerment risk is once again positive, higher in magnitude and more strongly significant than in Model 2 (β_Empowerment*D_Reg = 0.073***), while the effect of disclosure on Integrity risk is negative, highly significant (β_Integrity*D_Reg = -0.019***) and greater in magnitude than in Model 2. Interestingly, when considering the effect of Operations risk disclosure within the Regulation regime, Operations risks become significant in negatively affecting Underpricing

(β_Operations*D_Reg = -0.040***). Finally, the pattern of the control variables remains essentially unchanged compared to previous evidence.

Economically, after the approval of Regulation, an increase of 1 unit of the word "risk" in the IPO prospectus within the category Empowerment risk increases the average first-day return by about 7 percent holding all other covariates at their sample means, while the same increase under the Directive had no effect on Underpricing. On the other hand, an increase of 1 unit of the word "risk" within the category Operations risk under the Regulation regime decreases the average underpricing by about 4 percent, while the same improvement in risk disclosure under the Directive had the opposite effect on the average first day return, with an increase equal to 0.4 percent. The disclosure of Integrity risk appears relevant for Underpricing only after the approval of Regulation, as an increase of one unit of risk within the category decreases the average underpricing by about 2 percent. Finally, the disclosure of one unit of Financial risk reduces the underpricing by about 0.8 percent, but this effect is not affected by the regulatory regime. Overall, previous evidence confirms HP1 and suggests a positive effect of the approval of EU Regulation on the effectiveness of risk disclosure in IPO and the subsequent post-IPO market reaction for most of the risk under analysis but for the Financial risk. Yet, the sign and the impact of IPO prospectus RD on Underpricing depend on the type of risk considered. To further investigate why an increase in the disclosure of different risks (specifically, Empowerment, Operations, Financial and Integrity risk) generates different effects on IPO aftermarket performance, in the following subsection we focus on the risk subcategories, and test how their disclosure affects IPO Underpricing.

5.2.1. Empowerment & Operations risk disclosure and Underpricing

In this section we expand the analysis on the relation between risk disclosure and IPO underpricing and we focus on the subcategories within the Empowerment, Operations,

Financial and Integrity risks macro-categories. More specifically, in Eq. 1 we replace the set of variables on risk disclosure with the subset computed on the subcategories of Empowerment, Operations, Financial and Integrity risks respectively, which are the main risk macro-categories we found significant in affecting Underpricing in Table 2. Table 3 reports the results. Model 1 and Model 3 are on the Empowerment and Operations subcategories of risk respectively, while Model 2 and Model 4 investigate the same subcategories of risk also considering the impact of EU Regulation. The same analyses have been performed also considering Financial and Integrity subcategories of risks (not reported for brevity)[9].

[Insert Table 3 about here]

In Model 1, Underpricing significantly increases with the increase in the disclosure on Change Readiness risk (β_Change Readiness = 0.082**), while it decreases with the increase in Communications risk (β_Communications = -0.118*). The other subcategories of Empowerment risk appear non-significant in explaining the IPO first day return. When the interaction with D_Reg is considered in Model 2, results confirm previous evidence on Empowerment risk: Change Readiness and Communications risks alone are still significant in affecting Underpricing, yet the effect of the interaction of Change Readiness with D_Reg is even stronger in magnitude and more statistically significant than the variable alone (β_Change Readiness*D_Reg = 0.104***), thus supporting HP1. In addition, the Leadership and Management risk variable also becomes positive in affecting Underpricing when its effect under the Regulation is considered (β_Leadership&Management*D_Reg = 0.032**). In

[9] The negative relation between Underpricing and Financial risk is confirmed also when the subcategories of Commodity and Liquidity are considered (β_Commodity = -0.058***; β_Liquidity = -0.013**). When the interaction with D_Reg is taken into account, also Credit risk becomes statistically significant in negatively affecting the Underpricing (β_Credit*D_Reg = -0.034**). On the other hand, none of the variables on the subcategories on Integrity risk is significant in affecting Underpricing.

contrast with prior evidence, both the dummy D_Reg alone and the number of pages of the Risk Factor subsection become significant in negatively affecting the first day return (Model 2: β_D_Reg = -0.187*; β_Pages Risk Factors = -0.005***), suggesting that the approval of EU Regulation and an overall increase in the size of risk disclosure subsection within the IPO prospectus are effective in decreasing Underpricing. On the other hand, the pattern of other control variables is essentially unchanged compared to previous evidence.

When Operations risk subcategories are investigated in Model 3 and 4, we find Underpricing significantly decreases with an increase in the disclosure of Health and Safety risk, and this effect is not affected by the implementation of EU Regulation (Model 4: β_Health and Safety = -0.053***; β_Health and Safety*D_Reg = 0.002). Importantly, when the interacting terms with D_Reg are considered, the subcategories of Product Development, Efficiency and Performance, Stock Obsolescence, Environment and Brand Name Erosion risks become significant in explaining the IPO first day return, despite with different effects. In fact, all mentioned risks except the Product Development risk are significant in negatively affecting Underpricing, while under EU Regulation an increase in Product Development risk disclosure has the opposite effect on first day return (e.g., β_ Efficiency and Performance*D_Reg = -0.141***; β_ Environment*D_Reg = -0.181***; β_ Product Development*D_Reg = 0.253***). The pattern of control variables is once again essentially unchanged compared to previous evidence. Overall, prior evidence holds, supporting a greater effectiveness of risk disclosure in IPO prospectuses after the implementation of EU Regulation.

5.3. Quality of risk disclosure and Underpricing

To test HP3, HP4 and HP5, that is how the quality of risk disclosure in the IPO prospectus affects Underpricing, we replace the quantitative variables with the qualitative variables on risk disclosure we collected on IPO prospectuses. Table 4 reports the results. Model 1 investigates

whether the monetarily quantification (completeness) of risk disclosure affects the first day return, Model 3 is on the tone of risk disclosure, while Model 5 examines the risk time perspective. Model 2, 4 and 6 add to the previous analyses the effect of Regulation.

[Insert Table 4 about here]

Model 2 shows Underpricing is affected by the monetarily quantification of risk disclosure both when we consider the variables alone and when we consider their interaction with the dummy D_Reg. Interestingly, only the risks which are monetarily quantified appear significant in explaining the first day return, even if with opposite effects. Consistent with HP3, if we do not consider the effect of EU Regulation on risk disclosure, the presence of risks in IPO prospectuses which are monetarily quantified decreases Underpricing (β_ Evaluation = -0.014**). Oddly, when we consider the additional effect of EU Regulation, the effect reverses (β_ Evaluation*D_Reg = 0.104***).

Model 4 shows that Underpricing is affected by the tone of risk disclosure only after the approval of Regulation. Against HP4, while risk disclosure with bad tone has no effect on first day return, a positive risk disclosure increases Underpricing (β_ Good*D_Regulation = 0.048**), and a neutral risk disclosure decreases Underpricing (β_ Neutral*D_Regulation = -0.005*).

Against HP5, when the risk disclosure perspective is considered in Model 5, Underpricing is negatively affected by an increase in the number of risks with a current time orientation (β_Current = -0.003*), and positively affected by an increase in the number of risks with a future time orientation (β_Future = 0.003*). If we account for the effect of the Regulation regime, the impact of current and future risk disclosure on Underpricing are even stronger and more statistically significant (β_Current*D_Reg = -0.015***; β_Future*D_Reg = 0.006***),

while the risk disclosure with a past time orientation becomes statistically significant and negative in affecting the first day return (β_Past*D_Reg = -0.047***). Finally, the pattern of control variables is unchanged compared to previous evidence.

6. Discussion, concluding remarks and implications

Over time, the EU Regulator has placed increasing relevance on the RD in IPO prospectuses, with an evolving normative context that, first with the Directive 2003/71/CE and afterward with the Regulation 2017/1129/EU, progressively stresses the importance of disclosure of financial and non-financial information and the risk related to the issuing company and the issue. The ultimate goal is to lower the information asymmetry among market participants and protect IPO investors. We investigate how the EU normative changes affect the quality of IPO RD through the IPO underpricing, which is the traditional proxy for the information asymmetries between outside investors and the issuing firm (e.g., Ljungqvist 2007). We posit the undertaken EU normative path towards the implementation of the Regulation improved the effectiveness of IPO RD, ultimately reducing the asymmetric information between insiders and outsiders in the IPO market, and the IPO underpricing.

We find mixed evidence. Looking at the quantity of RD, we find an increase in Financial RD lowers the IPO underpricing regardless the underlying normative context, while Operations and Integrity RD are effective in reducing the underpricing only after the approval of the Regulation. However, Empowerment RD within the Regulation context has the opposite effect and increases the IPO first day return. Overall, previous evidence suggests a positive effect from the approval of the Regulation on the effectiveness of RD in IPO, and the subsequent post-IPO market reaction for most of the risk under analysis. Yet, the sign and the impact of RD on IPO underpricing depend on the type of risk considered. On the one hand, consistent with Arnold *et al.* (2010), and Guo *et al.* (2004), we find that increased RD about specific risks,

such as Operations and Integrity risk seems to reduce the perceived uncertainty about the riskiness of an IPO firm's future cash flows for underwriters and investors, ultimately reducing the variance-uncertainty discount in the IPO offer price and the underpricing. In this case, we show RD is informative and beneficial for IPO companies that can even reduce their cost of capital, increasing the quality of RD. However, unlike Hanley and Hoberg's (2010) analysis of standard versus informative components of information in the whole IPO prospectuses, or Heinle and Smith (2017) who theoretically analyze the price effects of risk disclosure, we focus on the Risk Factor section of IPO prospectuses and find evidence for the effectiveness of the evolving EU normative context on a listing firm's cost of capital. On the other hand, in line with Balakrishnan and Bartov (2011), Campbell *et al.* (2014), and Kravet and Muslu (2013), increased RD of other risks, such as Empowerment risks, may enhance the perceived uncertainty about the distribution of IPO future cash flows, and the first day return. A possible explanation is that such risk is recognized as not easily manageable, for example through changes in the operations procedures (e.g., improvement of contract completeness with customers or suppliers, improvement in health and safety procedures, use of derivatives to hedge against adverse price variation on raw materials, etc.), ultimately causing a deeper discount on IPO offer price and a higher initial return. In this case we suggest listing firms will not perceive RD as beneficial, as it increases the company's cost of capital, and IPOs might choose to decrease their RD into their prospectuses.

The analysis of risk subcategories, confirms this interpretation. As an example, the increased RD of risks which may be categorized as difficult to hedge or manage, such as Change Readiness (which relates to the ability of the firm to quickly adapt and change following variations in the economic and industrial context where it operates) and Leadership and Management risk (which is about the dependence on key figures, issues with employees and governance), suggests underwriters compensate risk through deeper underpricing, and is

found to increase the first day return, eventually driving prior results on Empowerment risk. On the other hand, an increased RD reduces the underpricing and is beneficial for IPO firms when it relates to risks that can be managed through changes in operations procedures or the implementation of financial hedging strategies against potential losses. This is the case of Health and Safety (that is related to the possibility a person may be harmed or suffers adverse health effects when exposed to a hazard risk in the workplace), Efficiency and Performance (related to the potential losses to due inefficiencies in the supply chain, like distribution channels and logistic system) or Environment risks (which is on the potential losses due to the negative impact of the company on the environment), which drive the negative relation we found between Operations RD and Underpricing.

Results on the quality of RD suggest there is no clear pattern between the completeness of RD and the IPO first day return, as the monetarily quantification of risks decreases the underpricing before the approval of Regulation, and increases the first day return afterwards. A possible interpretation is that a clear risk assessment could be hedged with specific funds or hedging strategies such as the use of derivatives, at first decreasing the risk perceived in terms of potential loss of money as well as the information asymmetries between insiders and outsiders. However, when RD becomes more selective within the Regulation normative framework and less risks are disclosed, the relative impact on the firm's economics as well as the awareness of the amount of money that could be lost if the risky event happens could be perceived as a threat by the underwriters and the market, ultimately causing a deeper discount on IPO offer price and a higher initial return. A similar explanation could be given for the positive relation we find between underpricing and the future representation of risks that flips sign when past and current risk are disclosed. Previous evidence suggests the market, especially since the Regulation has come into force, perceives a current and a past representation of risks as risks that are or that have been already managed, resulting in a reduction of the IPO firm

information asymmetries, and ultimately lowering the underpricing. On the other hand, the future representation of risks seems perceived as a potential threat, and results in underwriters compensating the risk through deeper underpricing. Finally, in line with previous evidence on the relation between the underpricing and the tone of news on IPOs (Bajo & Raimondo, 2017), the increased underpricing following the release of good disclosure on IPO risk could be explained through greater participation by investors in the aftermarket, eventually increasing the stock performance in the first day of trading. The good news would therefore not be incorporated by underwriters into the offer price setting process, but would be discounted only afterwards through stronger market participation in IPO.

Overall, we show regulations and policies improving RD can heavily impact IPO costs and affect the access to capital market for private firms, but establishing new rules does not lead to rapid or sudden effects (Scott, 2013), as it requires time to gain the full corporate legitimacy of the norm itself (Bebbington *et al.*, 2012). This process could benefit from two further aspects. First, the role and the involvement of actors and authorities different from the Regulators (e.g., ESMA as mentioned in the previous sections) could improve the legitimacy of the norm through soft law systems and non-binding forces (Morth, 2004). Second, observing the practical consequences of a progressive implementation of the rules could be beneficial for the companies applying the rules (pursuing entities to disclose more and better information) and other companies (that experience the practical consequences and feel pressure towards a substantial compliance), implying enduring effects on disclosure practices (Beasley *et al.*, 2021).

Future research could tackle the task of classifying and detecting which type of risk is prevalent for a specific industry, with the goal of providing market participants a better understanding of when a listing firm is actually motivated to implement an effective RD, or just a pro forma and uninformative RD in their prospectus. The prevalence of one type of risk

over the other should give preliminary and yet important information about the informativeness of IPO prospectuses. Listing firms that are more exposed to risks perceived as manageable, for example through changes in procedures or the implementation of financial hedging strategies against potential losses, can actually exploit the evolving normative context, lowering their cost of capital through higher RD. On the other hand, IPOs exposed to risk factors that are hard to properly assess, quantify or manage, could end up being adversely selected in going public, have no incentive to implement a proper RD, and more easily face the risk of leaving substantial money on the table.

References

Agostini, M., & Costa, E. (2018). Financial and Sustainability Reporting: An Empirical Investigation of Their Relationship in the Italian Context. In G. Graham, A. Orhan, & W. Wooldridge (Eds.). *Sustainability and Social Responsibility: Regulation and Reporting* (pp. 411–441). Springer.

Agostini, M., Costa, E. & Korca, B. (2021). Financial and Sustainability Reporting: An Empirical Investigation of Their Relationship in the Italian Context. *Accounting in Europe*. Ahead-of-print.

Arnold, T., Fishe, R. P., & North, D. (2010). The effects of ambiguous information on initial and subsequent IPO returns. *Financial Management*, 39(4), 1497-1519.

ACCA (2013), What do investors expect from non-financial reporting. Retrieved December 10, 2020, Retrieved in July 2020 from: http://www.accaglobal.com/content/dam/acca/global/PDF-technical/sustainability-reporting/tech-tp-wdir.pdf

Aureli, S., Magnaghi, E., & Salvatori, F. (2019). The role of existing regulation and discretion in harmonising non-financial disclosure. *Accounting in Europe*, 16 (3), 290–312.

Baker, E. D., Boulton, T. J., Braga-Alves, M. V., & Morey, M. R. (2021). ESG government risk and international IPO underpricing. *Journal of Corporate Finance*, 67, 101913.

Baron, D. P. (1982). A model of the demand for investment banking advising and distribution services for new issues. *The Journal of Finance*, 37(4), 955-976.

Bajo, E., Raimondo, C. (2017). Media sentiment and IPO underpricing. *Journal of Corporate Finance*, 46, 139–153.

Balakrishnan, K., & Bartov, E. (2011). Analysts' Use of Qualitative Earnings Information: Evidence from the IPO Prospectus' Risk Factors Section. Working paper, New York University.

Beasley, M., Branson, B., Pagach, D., Panfilo, S. (2021). Are required SEC proxy disclosures about the board's role in risk oversight substantive? *Journal of Accounting and Public Policy*, 40(1), 106816.

Beattie, V., & Thomson, S. J. (2007,). Lifting the lid on the use of content analysis to investigate intellectual capital disclosures. *Accounting Forum*, 31 (2), 129-163.

Beatty, R. P., & Ritter, J. R. (1986). Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, 15(1-2), 213-232.

Beatty, R.P., & Welch, I. (1996). Issuer Expenses and Legal Liability in Initial Public Offerings. *Journal of Law and Economics*, 39, 545-602.

Bebbington, J., Kirk, E., & Larrinaga, C. (2012). The production of normativity: A comparison of reporting regimes in Spain and the UK. Accounting, Organizations and Society, 37(2), 78–94.

Bhattacharya, U., Daouk, H., Welker, M. (2003). The world price of earnings opacity. *Accounting Review*, 78, 641-678

Biondi, L., Dumay, J., & Monciardini, D. (2020). Using the International Integrated Reporting Framework to comply with EU Directive 2014/95/EU: can we afford another reporting façade? Meditari Accountancy Research, Ahead-of-print.

Bloomfield, R.J. (2002). The "Incomplete Revelation Hypothesis" and Financial Reporting. *Accounting Horizons*, 16(3), 233–243.

Bozanic, Z., Dirsmith, M. W., & Huddart, S. (2012). The social constitution of regulation: The endogenization of insider trading laws. *Accounting, Organizations and Society*, 37 (7), 461–481.

Campbell, J. L., Chen, H., Dhaliwal, D. S., Lu, H. M., & Steele, L. B. (2014). The information content of mandatory risk factor disclosures in corporate filings. *Review of Accounting Studies*, 19(1), 396-455.

Campbell, J. L., Cecchini, M., Cianci, A. M., Ehinger, A. C., & Werner, E. M. (2019). Tax-related mandatory risk factor disclosures, future profitability, and stock returns. *Review of Accounting Studies*, 24(1), 264-308.

Costa, E., & Agostini, M. (2016). Mandatory disclosure about environmental and employee matters in the reports of Italian-listed corporate groups. *Social and Environmental Accountability Journal*, 36 (1), 10–33.

CSRD (2021). Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting. Retrieved July 12, 2021, from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0189

Dumitru, M., Dyduch, J., Guşe, R. G., & Krasodomska, J. (2017). Corporate reporting practices in Poland and Romania–an ex-ante study to the new non-financial reporting European directive. *Accounting in Europe*, 14(3), 279-304.

Elshandidy, T., Fraser, I., Hussainey, K., 2013. Aggregated, voluntary, and mandatory risk disclosure incentives: Evidence from UK FTSE all-share companies. *International Review of Financial Analysis*, 30, 320–333.

Elshandidy, T., Neri, L., 2015. Corporate Governance, Risk Disclosure Practices, and Market Liquidity: Comparative Evidence from the UK and Italy. *Corporate Governance: An International Review*, 23(4), 331–356.

Elshandidy, T., Shrives, P. J., Bamber, M., & Abraham, S. (2018). Risk reporting: A review of the literature and implications for future research. *Journal of Accounting Literature*, 40, 54-82.

EU – European Union (2003). Directive on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC, 2003/71/CE, Retrieved August 2020, from https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32003L0071&from=EN

EU - European Union (2014). Directive as regards disclosure of non-financial and diversity information by certain large undertakings and groups, 2014/95/EU. Retrieved August, 2020, from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095

EU – European Union (2017). Prospectus Regulation, 2017/1129/EU. Retrieved August 2020, from https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32017R1129&from=IT

Falconieri, S., Tastan, M. (2018). The role of admission documents on the pricing of UK fixed priced IPOs. *Economics Letters*, 173 (C), 44-46.

Finnemore, M., & Sikkink, K. (1998). International norm dynamics and political change. *International organization*, 52(4), 887-917.

Greco, G. (2012). The management's reaction to new mandatory risk disclosure: A longitudinal study on Italian listed companies. *Corporate Communications: An International Journal*. 17(2), 113 137.

Guo, R. J., Lev, B., & Zhou, N. (2004). Competitive costs of disclosure by biotech IPOs. *Journal of Accounting Research*, 42(2), 319-355.

Gupta, S., & Israelsen, R. D. (2014). Indirect costs of the jobs act: Disclosures, information asymmetry, and post-ipo liquidity. Kelley School of Business Research Paper, (2014-34).

Guthrie, J. and Parker, L.D. (1990). Corporate Social Disclosure Practice: a comparative international analysis. *Advances in Public Interest Accounting*, 3, 159-175.

Guthrie, J., & Parker, L. D. (2017). Reflections and projections: 30 years of the interdisciplinary accounting, auditing and accountability search for a fairer society. *Accounting, Auditing & Accountability Journal*, 30 (1), 2–17.
Haller, A., Link, M., & Groß, T. (2017). The term 'non-financial information'– a semantic analysis of a key feature of current and future corporate reporting. *Accounting in Europe*, 14(3), 407–429.
Hanley, K.W., (1993). The underpricing of initial public offerings and the partial adjustment phenomenon, *Journal of Financial Economics*, 34(2), 231-250, https://doi.org/10.1016/0304-405X(93)90019-8.
Hanley, K. W., & Hoberg, G. (2010). The information content of IPO prospectuses. The *Review of Financial Studies*, 23(7), 2821-2864.
Heinle, M. S., & Smith, K. C. (2017). A theory of risk disclosure. *Review of Accounting Studies*, 22(4), 1459-1491.
Hill, P., & Short, H. (2009). Risk disclosures on the second tier markets of the London Stock Exchange. *Accounting & Finance*, 49(4), 753-780.
Hooks, J., Van Staden, C.J. (2011). Evaluating environmental disclosures: The relationship between quality and extent measures. *The British Accounting Review*, 43(3), 200-213.
Hope, O. K., Hu, D., & Lu, H. (2016). The benefits of specific risk-factor disclosures. *Review of Accounting Studies*, 21(4), 1005-1045.
Huang, A. H., Shen, J., & Zang, A. Y. (2021). The unintended benefit of the risk factor mandate of 2005. *Review of Accounting Studies*, 1-37.
Hussain, H. I., Ali, M., Hassan, M. K., & El-Khatib, R. (2020). Asymmetric capital structure speed of adjustment, equity mispricing and Shari'ah compliance of Malaysian firms. *International Review of Economics & Finance*. Ahead-of-print.
Kravet, T., & Muslu, V. (2013). Textual risk disclosures and investors' risk perceptions. *Review of Accounting Studies*, 18(4), 1088-1122.
Krippendorff, K. (2018). Content analysis: An introduction to its methodology. Sage publications.
La Torre, M., Sabelfeld, S., Blomkvist, M., Tarquinio, L., & Dumay, J. (2018). Harmonising non-financial reporting regulation in Europe: Practical forces and projections for future research. *Meditari Accountancy Research*, 26(4), 598–621.
Lehavy, R., Li, F., & Merkley, K. (2011). The effect of annual report readability on analyst following and the properties of their earnings forecasts. *The Accounting Review*, 86(3), 1087-1115.
Leone, A. J., Rock, S., & Willenborg, M. (2007). Disclosure of intended use of proceeds and underpricing in initial public offerings. *Journal of Accounting Research*, 45(1), 111-153.
Leuz, C., Nanda, D., Wysocki, P.D. (2003). Earnings management and investor protection: an international comparison, *Journal of Financial Economics*, 69, 505-527
Linsley, P. M., Shrives, P. J., 2005. Transparency and the disclosure of risk information in the banking sector. *Journal of Financial Regulation and Compliance*, 13(3), 205-2
Linsley, P. M., & Shrives, P. J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *The British Accounting Review*, 38(4), 387-404.
Linsley, P. M., Shrives, P. J., & Crumpton, M. (2006). Risk disclosure: An exploratory study of UK and Canadian banks. *Journal of Banking Regulation*, 7(3-4), 268–282.
Ljungqvist, A., & Wilhelm Jr, W. J. (2003). IPO pricing in the dot-com bubble. *The Journal of Finance*, 58(2), 723-752.
Ljungqvist, A. (2007). IPO underpricing. Handbook of empirical corporate finance, 375-422.
Loughran, T., McDonald, B. (2011). When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *The Journal of Finance*, 66(1), 35-65.

Loughran, T., & McDonald, B. (2013). IPO first-day returns, offer price revisions, volatility, and form S-1 language. *Journal of Financial Economics*, 109(2), 307-326.
Lowry, M., Schwert, G.W. (2002). IPO Market Cycles: Bubbles or Sequential Learning? *The Journal of Finance*, 62(3), 1171-1200
McGuinness, P.B. (2019). Risk factor and use of proceeds declarations and their effects on IPO subscription, price 'fixings', liquidity and after-market returns. *The European Journal of Finance*, 25 (12), 1122-1146.
Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical perspectives on accounting*, 33, 59-78.
Milne M.J., Adler R.W. (1999), Exploring the Reliability of Social and Environmental Disclosures Content Analysis. *Accounting, Auditing and Accountability Journal*, 12(2), 237-252.
Mio, C., Agostini, M., & Panfilo, S. Bank Risk Appetite Communication and Risk Taking: The Key Role of Integrated Reports. *Risk Analysis*. Ahead-of-print.
Morth, U. (2004). Soft law in governance and regulation: an interdisciplinary analysis. Edward Elgar Publishing.
Pizzi, S., Rosati, F., & Venturelli, A. (2021). The determinants of business contribution to the 2030 Agenda: Introducing the SDG Reporting Score. *Business Strategy and the Environment*, 30(1), 404-421.
Ritter, J. R. (1987). The costs of going public. *Journal of Financial Economics*, 19(2), 269-281.
Rock, K. (1986). Why new issues are underpriced. *Journal of Financial Economics*, 15(1-2), 187-212.
Scott, W. R. (2013). Institutions and organizations: Ideas, interests, and identities. Sage publications.
Stolowy, H., & Paugam, L. (2018). The expansion of non-financial reporting: an exploratory study. *Accounting and Business Research*, 48(5), 525-548.
Unerman, J. (2000). Methodological issues-Reflections on quantification in corporate social reporting content analysis. *Accounting, Auditing & Accountability Journal*, 13 (5), 667-681.
Welch, I. (1989). Seasoned offerings, imitation costs, and the underpricing of initial public offerings. *The Journal of Finance*, 44(2), 421-449.
Zhao, M., Ke, Y., & Yi, Y. (2020). The effects of risk factor disclosure on analysts' earnings forecasts: evidence from Chinese IPOs. *Asia-Pacific Journal of Accounting & Economics*, 1-30.

Table 1

Summary Statistics and Univariate Analysis

The Table provides descriptive statistics for the investigated sample of Directive IPOs and Regulation IPOs. The sample consists of 130 IPOs on the MSE over the period 2012–2020. Financial firms (SIC 6000–6999), utilities (SIC 4900-4999), government firms (SIC 9100–9199), and "non-classified establishments" (SIC 9900-9999) are excluded. The sample is made by 108 Directive IPOs and 22 Regulation IPOs. Regulation IPOs are firms going public after July 20, 2019, while Directive IPOs are firms going public before July 20, 2019. Panel A reviews IPOs features, while Panel B is on IPO prospectuses risk disclosure. Variables are defined in Table A.1 in the Appendix. The last two columns report the t- and the z-statistics for the test of difference in means and median of distributions between the sample of the Directive and Regulation IPOs. ***, **, * indicate significance at the 1%, 5%, and 10% levels.

Panel A - Summary Statistics - IPO characteristics

	Directive IPOs			Regulation IPOs			Test of Differences: Directive - Regulation	
	Obs	Mean	Median	Obs	Mean	Median	Mean diff t-test	Kruskal-Wallis test
Total Asset Pre IPO (,000.000)	108	87,119	11,535	22	39,016	6,944	1,478*	1,249
Age	106	19,642	14,500	22	20,000	15,500	-0,081	0,041
Underpricing	108	0,094	0,027	22	0,139	0,052	-1,0149	0,505
Dilution Factor	92	0,257	0,250	22	0,348	0,332	0,027**	3,522*
Retail Ratio	92	0,060	0,020	22	0,014	0,001	1,947**	4,359**
Institutional Ratio	92	0,938	1,000	22	0,971	1,000	-1,204	2,111
Participation Ratio	97	0,067	0,000	22	0,039	0,000	1,298	1,464
Proceeds	103	93,532	6,900	22	40,451	5,725	1,242	0,236

Panel B - Summary Statistics - Risk Disclosure

	Directive			Regulation			Test of Differences: Directive - Regulation	
	Obs	Mean	Median	Obs	Mean	Median	Mean diff t-test	Kruskal-Wallis test
Financial	108	13,2	12,0	22	10,5	11,0	2,702***	2,933*
Operations	108	5,6	4,0	22	4,5	4,0	1,341*	0,118
Empowerment	108	4,3	4,0	22	5,3	5,5	-1,864	3,860**
IPTR	108	4,5	4,0	22	6,8	7,0	-3,051***	11,201***
Integrity	108	2,4	2,0	22	7,3	7,0	-5,844***	34,409***
Strategic	108	15,2	14,0	22	15,4	15,0	-0,146	0,769
General	108	21,7	19,0	22	22,4	18,5	-0,204	0,089
Good	108	1,1	1,0	22	1,3	1,0	-0,707	2,297
Bad	108	37,5	32,0	22	43,9	43,0	-1,729**	5,056**
	108	28,1	24,0	22	26,9	23,5	0,393	0,71
Mention	108	21,6	17,0	22	23,0	18,0	-0,405	0,184
Description	108	44,7	41,5	22	48,8	51,5	-1,049	3,507*
Evaluation	108	0,6	0,0	22	0,4	0,0	1,063	0,004
Past	108	0,3	0,0	22	0,9	0,5	-2,773**	15,605***
Current	108	31,2	26,5	22	25,8	21,0	1,658*	2,681
Future	108	35,3	33,5	22	45,5	44,0	-2,939***	9,803***
Pages IPO Prospectus	107	248,5	171,0	22	217,7	182,0	1,162	1,174
Pages Risk Factors	107	21,8	17,0	22	19,4	20,5	1,211	0,809
# sentences with "risk"	107	67,6	63,0	22	72,2	70,5	-0,7698	1,697

Table 2

Type of Risk Disclosure and IPO Underpricing

The Table reports results from multivariate analysis of IPO Underpricing. Model 1 is the base specification, Model 2 considers the categories of risk as in Linsley and Shrives (2006), while Model 3 adds the impact of the EU Regulation coming into force. Variables are defined in Table A.1 in the Appendix. All regressions include industry dummies. *t*-statistics based on White standard errors clustered by IPO year are reported in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels.

	Dep: Underpricing		
	1	2	3
Financial		-0,007	-0,008
		(-2,96**)	(-2,53**)
Operations		-0,001	0,004
		(-0,11)	(1,93*)
Empowerment		0,021	0,007
		(2,11*)	(1,31)
IPTR		0,004	0,007
		(0,77)	(0,88)
Integrity		-0,006	-0,005
		(-1,88*)	(-0,72)
Strategic		-0,002	-0,002
		(-1,06)	(-0,64)
General		0,000	0,002
		(0,16)	(1,35)
Financial*D_Reg			0,006
			(1,11)
Operations*D_Reg			-0,040
			(-3,62***)
Empowerment*D_Reg			0,073
			(8,77***)
IPTR*D_Reg			-0,0084
			(-0,80)
Integrity*D_Reg			-0,019
			(-3,52***)
Strategic*D_Reg			0,000
			(0,03)
General*D_Reg			-0,001
			(-0,16)
D_Reg			-0,0413
			(-0,29)
Pages Admission Doc		-0,001	-0,001
		(-0,39)	(-0,72)
Pages Risk Factors		-0,001	-0,001
		(-0,04)	(-0,15)
MktReturn_60ddPre	-0,084	-0,103	-0,060
	(-0,73)	(-0,93)	(-0,42)
IPOVol_30ddPost	1,576	1,828	2,221
	(1,28)	(1,92*)	(2,14*)
Revision	0,197	0,164	0,219
	(2,93**)	(3,14**)	(2,43**)
Range	-0,001	0,003	0,011
	(-0,09)	(0,33)	(0,82)
Reputation	0,088	0,003	-0,046
	(0,38)	(0,01)	(-0,20)
Participation Ratio	0,104	0,132	0,040
	(0,65)	(0,81)	(0,12)
Dilution Factor	0,001	-0,001	-0,001
	(0,09)	(-1,57)	(-0,03)
Institutional	0,128	0,125	0,143
	(1,39)	(1,37)	(1,75)
Log(Proceeds)	-0,031	-0,004	-0,003
	(-1,73)	(-0,32)	(-0,13)

Log(1+Age)	0,018	0,017	0,027
	(1,11)	(0,90)	(0,87)
Log(Assets)	-0,001	-0,010	-0,004
	(-0,12)	(-1,93*)	(-0,58)
Press Coverage	0,001	0,001	0,001
	(0,21)	(1,79)	(1,06)
Per capita GDP	0,001	0,001	0,001
	(0,76)	(0,47)	(0,73)
Constant	-0,.085	-0,067	-0,230
	(-0,40)	(-0,34)	(-1,21)
Observations	110	110	110
R^2-adj	0,120	0,226	0,327

Table 3

Subcategories of Risk Disclosure and IPO Underpricing

The Table reports results from multivariate analysis of IPO Underpricing. Model 1 considers the subcategories of Empowerment risk, while Model 3 the subcategories of Operations risk. Model 2, and 4 also take into account the impact of the EU Regulation coming into force. Variables are defined in Table A.1 in the Appendix. All regressions include industry dummies. *t*-statistics based on White standard errors clustered by IPO year are reported in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels.

	Dep: Underpricing			
	1	2	3	4
	Empowerment		Operations	
Leadership&Management	0,019	0,0136	Customer Satisfaction	-0,022	-0,024
	(1,52)	(1,37)		(-0,87)	(-0,66)
Outsoucing	0,001	0,003	Product Developement	0,022	0,013
	(0,02)	(0,07)		(0,47)	(0,30)
Performance Incentives	0,002	-0,003	Efficiency&Performance	0,003	0,013
	(0,09)	(-0,21)		(0,16)	(0,74)
Change Readiness	0,082	0,049	Sourcing	0,010	0,007
	(2,63**)	(2,08*)		(0,30)	(0,20)
Communications	-0,118	-0,130	Stock Obsolescence	-0,050	-0,041
	(-2,09*)	(-2,38**)		(-2,30**)	(-1,45)
Leadership&Management*D_Reg		0,032	Product&Service Failure	0,024	0,023
		(3,19**)		(1,32)	(1,34)
Outsourcing*D_Reg		-0,019	Environment	-0,049	-0,034
		(-0,55)		(-1,29)	(-1,00)
Change Readiness*D_Reg		0,104	Health&Safety	-0,051	-0,053
		(4,09***)		(-3,85***)	(-3,14***)
			Brand Name Erosion	0,018	0,02
				(1,38)	(1,27)
			Customer Satisfaction*D_Reg		0,018
					(0,35)
			Product Developement*D_Reg		0,253
					(3,89***)
			Efficiency&Performance*D_Reg		-0,141
					(-7,17***)
			Sourcing*D_Reg		0,009
					(0,32)
			Stock Obsolescence*D_Reg		-0,089
					(-2,01*)
			Product&Service Failure*D_Reg		-0,002
					(-0,08)
			Environment*D_Reg		-0,181
					(-3,50***)
			Health&Safety*D_Reg		0,002
					(0,03)
			Brand Name Erosion*D_Reg		-0,154
					(-6,62***)
D_Reg		-0,187			0,164
		(-1,90*)			(2,86**)
Pages Admission Doc	0,001	0,001		-0,001	-0,001
	(0,97)	(0,38)		(-0,15)	(-0,22)
Pages Risk Factors	-0,005	-0,005		-0,002	-0,002
	(-3,53***)	(-4,32***)		(-1,49)	(-1,23)
IndustryRet_Before60dd	-0,240	-0,139		-0,001	-0,022
	(-1,62)	(-1,12)		(-0,00)	(-0,10)
σIPO_After30dd	2,078	1,850		1,308	1,932
	(1.78)	(1,14)		(1,10)	(1,36)
Revision	0,148	0,173		0,147	0,179
	(3,25**)	(3,13**)		(2,48**)	(3,39***)
Range	-0,017	-0,008		-0,006	0,007
	(-1,36)	(-0,61)		(-0,44)	(0,66)

Reputation	0,172	0,286	-0,066	-0,182
	(0,98)	(1,58)	(-0,21)	(-0,64)
Participation Ratio	0,175	0,186	0,235	0,174
	(1,92*)	(1,43)	(0,91)	(0,62)
Dilution Factor	-0,001	-0,001	-0,001	0,001
	(-1,72)	(-0,76)	(-0,35)	(0,51)
Institutional	0,066	0,086	0,125	0,157
	(0,72)	(1,18)	(1,14)	(1,59)
Log(Proceeds)	-0,014	-0,018	-0,022	-0,020
	(-1,03)	(-1,18)	(-0,96)	(-0,77)
Log(1+Age)	0,003	0,010	0,019	0,024
	(0,27)	(0,61)	(0,82)	(0,82)
Log(Assets)	-0,013	-0,007	-0,001	0,000
	(-1,81)	(-0,81)	(-0,08)	(0,02)
Press Coverage	0,001	0,001	0,001	0,001
	(1,70)	(1,99)	(1,01)	(0,81)
Per capita GDP	0,001	0,001	0,001	0,001
	(0,89)	(0,87)	(1,23)	(1,44)
Constant	-0,018	-0,040	-0,015	-0,199
	(-0,07)	(-0,16)	(-0,08)	(-1,14)
Observations	110	110	107	107
R^2-adj	0,2754	0,3141	0,2449	0,384

Table 4

Qualitative Risk Disclosure and IPO Underpricing

The Table reports results from multivariate analysis of IPO Underpricing. Model 1 considers the Tone, Model 3 the Completeness, while Model 5 is on the Perspective of risk disclosure on IPO prospectuses. Model 2, 4 and 6 also take into account the impact of the EU Regulation coming into force. Variables are defined in Table A.1 in the Appendix. All regressions include industry dummies. *t*-statistics based on White standard errors clustered by IPO year are reported in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels.

	Dep: Underpricing							
	Completeness			Tone			Perspective	
	1	2		3	4		5	6
Mention	-0,001	0,001	Good	-0,011	-0,015	Past	-0,005	-0,016
	(-0,43)	(0,51)		(-1,02)	(-1,40)		(-0,38)	(-1,41)
Description	-0,001	-0,001	Bad	0,000	0,001	Current	-0,003	-0,002
	(-1,27)	(-1,32)		(-0,37)	(0,08)		(-2,10*)	(-1,68)
Evaluation	-0,004	-0,014	Neutral	-0,002	-0,001	Future	0,003	0,003
	(-0,31)	(-2,51**)		(-0,83)	(-0,32)		(1,90*)	(1,89*)
Mention*D_Reg		-0,006	Good*D_Reg		0,048	Past*D_Reg		-0,047
		(-1,49)			(3,07**)			(-4,01***)
Description*D_Reg		0,002	Bad*D_Reg		0,002	Current*D_Reg		-0,015
		(1,13)			(1,26)			(-8,79***)
Evaluation*D_Reg		0,104	Neut*D_Reg		-0,005	Future*D_Reg		0,006
		(3,39***)			(-2,28*)			(3,48***)
D_Reg		0,063			0,032			0,174
		(1,09)			(0,49)			(2,08*)
IndustryRet_Before60dd	-0,134	-0,044		-0,115	-0,025		-0,093	-0,092
	(-0,95)	(-0,24)		(-0,96)	(-0,21)		(-1,07)	(-0,77)
σIPO_After30dd	1,121	1,819		1,184	1,789		2,219	2,389
	(0,72)	(1,06)		(0,83)	(1,01)		(1,91*)	(1,75)
Revision	0,182	0,197		0,197	0,205		0,175	0,196
	(2,55**)	(2,20*)		(2,54**)	(2,47**)		(2,80**)	(2,52**)
Range	0,010	0,005		0,006	0,011		0,007	0,017
	(0,94)	(0,54)		(0,38)	(1,10)		(0,40)	(1,29)
Reputation	0,051	0,110		0,061	0,101		0,087	-0,018
	(0,20)	(0,38)		(0,26)	(0,42)		(0,43)	(-0,08)
Participation Ratio	0,187	0,248		0,178	0,240		0,375	0,344
	(0,96)	(1,21)		(0,84)	(1,04)		(1,49)	(1,25)
Dilution Factor	-0,001	0,001		-0,001	0,001		-0,001	0,001
	(-0,51)	(0,50)		(-0,87)	(0,13)		(-0,52)	(0,58)
Institutional	0,125	0,168		0,124	0,154		0,107	0,121
	(1,24)	(2,27*)		(1,27)	(1,89*)		(1,15)	(1,52)
Log(Proceeds)	-0,027	-0,035		-0,025	-0,028		-0,018	-0,019
	(-1,79)	(-2,11*)		(-1,45)	(-1,52)		(-1,33)	(-1,16)
Log(1+Age)	0,021	0,016		0,025	0,025		0,033	0,039
	(1,09)	(0,80)		(1,21)	(1,18)		(1,69)	(1,30)
Log(Assets)	-0,005	0,003		-0,008	-0,002		-0,017	-0,013
	(-0,64)	(0,29)		(-0,82)	(-0,22)		(-1,82)	(-1,23)
Press Coverage	0,000	0,000		0,000	0,000		0,000	0,000
	(1,08)	(1,24)		(0,89)	(1,18)		(0,98)	(0,85)
Pages Admission Doc	-0,001	-0,001		-0,001	-0,001		-0,001	0,000
	(-0,38)	(-0,18)		(-0,52)	(-0,69)		(-0,98)	(-0,92)
Pages Risk Factors	-0,001	-0,001		-0,001	-0,001		-0,001	-0,002
	(-0,23)	(-0,61)		(-0,01)	(-0,75)		(-0,07)	(-0,78)
Per capita GDP	0,001	0,001		0,001	0,001		0,001	0,001
	(0,80)	(1,73)		(0,89)	(1,02)		(0,93)	(0,81)
Constant	-0,010	-0,186		-0,013	-0,127		-0,113	-0,205
	(-0,03)	(-0,88)		(-0,05)	(-0,49)		(-0,52)	(-1,23)
Observations	110	110		110	110		110	110
R^2-adj	0,1412	0,1933		0,1476	0,1807		0,1941	0,2636

Appendix

Table A.1

Variable Definitions

The Table describes the variables used in the empirical analyses.

Variable	Description
Age	The number of years since firm foundation.
Assets	The firm's total assets before the IPO.
Dilution Factor	The ratio of primary shares in IPO to pre-IPO shares.
MktReturn_60ddPre	The average of daily industry-specific index returns computed in the 60 trading days before the IPO date.
Institutional	The percentage of IPO shares allocated to institutional investors.
Pages IPO Prospectus	The number of pages in the IPO prospectus.
IPOVol_30ddPost	The standard deviation of IPO returns computed on a daily basis from day +1 to day + 30 post IPO.
Pages Risk Factors	The number of pages in the Risk Factors subsection of the IPO prospectus.
Participation Ratio	The ratio of secondary shares in IPO to pre-IPO shares.
Per Capita GDP	The regional yearly GDP per capita.
Press Coverage	The number of newspaper (Il Sole 24 Ore) articles on the IPO firm in the year before the IPO.
Proceeds	IPO proceeds.
Revision	The percentage change between the actual IPO offer price and the middle range of the prices in the IPO prospectus.
Range	The range of offer prices as indicated in the IPO prospectus.
Reputation	The relative market share of IPO leading Underwriter.
Underpricing	The percentage difference between the IPO 1st trading-day market price and the offer price.

Table A.2

Risk Taxonomy

The Table presents the taxonomy of risk used in the empirical analysis distinguishing i. completeness, ii. tone, and iii. perspective used in the risk description within the IPO prospectuses, and iv. type of risk according to the Linsley and Shrives (2006) categorization. The third column of the Table provides examples of categorization in the original (Italian) language first with an English translation afterwards.

Variable	Category	Example (English in Italics)
COMPLETENESS	Mention	Il GRUPPO, operando a livello internazionale, è esposto al **rischio** di potenziali oscillazioni dei tassi di cambio, in particolar modo con riferimento al Dollaro Statunitense. (Source: ILLA Admission Doc) *The GROUP works in an international context, and it is exposed to the **risk** of fluctuations in exchange rates, especially with reference to the US dollar.*
	Description	Gli stabilimenti produttivi sono esposti ai tipici **rischi** operativi, comprendenti, a titolo meramente esemplificativo, guasti delle apparecchiature, mancato o ritardato adeguamento alla normativa applicabile, revoca dei permessi e delle licenze, mancanza di forza lavoro o interruzione di lavoro, interruzioni nelle forniture, […]. (Source: ILLA Admission Doc) *Production plants are exposed to typical operation **risks**, including, but not limited to, equipment malfunction, lack in compliance with applicable legislation, suspension of permits and licenses, lack of workforce, supply interruptions, […].*
	Evaluation	[…] l'Emittente, sulla base di proprie valutazioni […] ha accantonato fondi per un ammontare complessivo pari a Euro 467 migliaia a fronte del **rischio** soccombenza. (Source: PIOVAN Admission Doc) *[…] the issuing firm, based on its own assessments [...] has set aside funds for a total of Euro 467 to cover the **risk** of loss.*
TONE	Good	Tenuto conto della rapida e continua innovazione tecnologica che contribuisce ad accelerare il **rischio** di obsolescenza delle soluzioni tecnologiche presenti sul mercato, il Gruppo effettua una costante attività di ricerca e sviluppo al fine di monitorare le tendenze del mercato, l'evoluzione tecnologica e individuare le nuove soluzioni informatiche da offrire alla propria clientela. (Source: RELATECH Admission Doc) *In light of the rapid and continuous technological innovation that accelerates **risk** of obsolescence of the technological solutions, the Group continually carries out research and development activities to monitor market trends, technological evolution and identify new IT solutions to offer to its customers.*
	Neutral	L'ammissione alle negoziazioni delle AZIONI e dei WARRANT della SOCIETÀ su AIM ITALIA […] presenta gli elementi di **rischio** tipici di un investimento in strumenti finanziari negoziati su AIM ITALIA. (Source: ILLA Admission Doc) *The admission to trading firm SHARES and WARRANTS on AIM ITALIA […] presents the typical elements of **risk** as with any investment in financial instruments traded on AIM ITALIA.*
	Bad	[…] il sistema di reporting potrebbe essere soggetto al **rischio** di errori nell'inserimento dei dati, con la conseguente possibilità che il management riceva un'errata informativa in merito a problematiche potenzialmente rilevanti o tali da richiedere interventi in tempi brevi. (Source: ILLA Admission Doc) *[…] the reporting system could be subject to **risk** of errors in data entry, with the possible consequence that management receives incorrect information regarding potentially relevant issues or requiring quick intervention.*

PERSPECTIVE	Past	Tale contesto negativo […] ha penalizzato in particolare i sistemi bancari più esposti ai debiti sovrani, […] causando un progressivo peggioramento della crisi che si è protratta […] per tutto il 2012 con conseguente rivalutazione del **rischio** di credito degli Stati sovrani e delle istituzioni finanziarie. (Source: PATTERN Admission Doc) *This negative context [...] particularly penalized the banking systems most exposed to sovereign debts, [...] causing a progressive worsening of the crisis which lasted [...] throughout 2012 with a consequent re-evaluation of the credit **risk** of sovereign states and financial institutions.*
	Current	Le attività poste in essere dal GRUPPO, in alcuni casi, prevedono l'utilizzo di sistemi informatici, i quali sono soggetti a molteplici **rischi** operativi. (Source: ILLA Admission Doc) *The activities carried out by the GROUP, in some cases, involve the use of IT systems, which are subject to multiple operation **risks**.*
	Future	Nello svolgimento della propria attività il GRUPPO è inoltre esposto al **rischio** che l'amministrazione finanziaria o la giurisprudenza addivengano […] a interpretazioni o posizioni diverse rispetto a quelle fatte proprie dalla SOCIETÀ nello svolgimento della propria attività. (Source: ILLA Admission Doc) *In carrying out the business, the GROUP is exposed to the **risk** that the financial administration or jurisprudence may [...] come to interpretations or positions other than those adopted by the COMPANY in carrying out its business.*
TYPE (Linsley and Shrives, 2006)	Financial	Il Gruppo è esposto al **rischio** di non essere in grado di reperire le risorse finanziarie necessarie a garantire il mantenimento e lo sviluppo dell'attività produttiva a causa dell'incapacità a negoziare ed ottenere nuovi finanziamenti. (Source: PIOVAN Admission Doc) *The Group is exposed to the **risk** of not being able to find the financial resources necessary to ensure the maintenance and development of production due to an inability to negotiate and obtain new loans.*
	Operations	Eventuali difetti di progettazione o di produzione dei prodotti del GRUPPO ILLA potrebbero esporre lo stesso al **rischio** di azioni di responsabilità da prodotto da parte di soggetti terzi. (Source: ILLA Admission Doc) *Any design or manufacturing flaws of ILLA GROUP's products could expose the firm to the **risk** of product liability actions by third parties.*
	Empowerment	Il Gruppo è esposto al **rischio** di perdere l'attuale posizione di mercato […] a causa dell'incapacità di assumere personale qualificato e/o mantenere i rapporti di collaborazione professionale con alcune figure chiave del management e/o del personale. (Source: PIOVAN Admission Doc) *The Group is exposed to the **risk** of losing its current market position [...] due to the inability to hire qualified employees and/or maintain professional collaborations with key management and/or staff.*
	Information Processing and Technology (IPTR)	[…] la SOCIETÀ sta elaborando alcuni interventi con l'obiettivo di realizzare una completa integrazione della reportistica, […] riducendo in tal modo il **rischio** di errore e incrementando la tempestività del flusso delle informazioni. (Source: ILLA Admission Doc) *[…] the COMPANY is planning interventions with the goal of achieving a complete reporting integration, [...] thus reducing the **risk** of error and increasing the promptness of the information flow.*
	Integrity	Il Gruppo resta comunque esposto al **rischio** che le procedure implementate […] si rivelino inadeguate e/o che non siano correttamente attivati i necessari presidi di privacy […] e che, pertanto, i dati vengano danneggiati o perduti […]. (Source: PIOVAN Admission Doc)

		*The Group is, in any case, exposed to the **risk** that the procedures implemented […] are found to be inappropriate and/or that the necessary privacy safeguards are not properly implemented […] and therefore, that data will be damaged or lost […].*
	Strategic	Il Gruppo è esposto ai **rischi** connessi all'attuale congiuntura economico-finanziaria globale e, più in particolare, all'andamento congiunturale degli specifici mercati di sbocco in cui i prodotti del Gruppo trovano applicazione. (Source: PIOVAN Admission Doc) *The Group is exposed to the **risks** associated with the current global economic situation and, more specifically, to the economic trend of the markets where the Group's products are used.*