

1. Introduction

While rights offerings are a disappearing phenomenon in the US (only 6% of all SEO's are rights offerings), on a global scale 40% of all seasoned equity offerings consist of rights issues¹. In theory, rights issues should be attractive to undervalued firms as they avoid issuing undervalued stock to outside investors as is the case in cash offers (e.g., Myers and Majluf, 1984; Baker and Wurgler, 2002). Hence, the price should drop but the rights issue would still be value improving for the shareholders compared to what would have been if the firm had not raised the money to restructure.

This positive view (“the bright side”) should however be compared to the fact that rights issues may be “coercive” as, in the absence of a liquid market for selling the rights² or, even worse in the case of non-tradability of the rights, rights offers force the existing shareholders to convert in order not to be diluted. Moreover, in many countries (e.g. Australia, US, UK, Germany), managers can even restrict the tradability of the rights making them non-tradable. In such a case, the shareholders will be left to the mercy of the firm and the higher the discount at the equity offering, the more the shareholders will be coerced to subscribe in order not to be diluted. Furthermore, prior research has highlighted that firms in financial distress or “tight” financial situations issue rights (instead of cash offers or private placements) as outside investors might not be willing to invest in the restructuring of the firm (Heron and Lie, 2004; Ursel, 2006). This further underscores the potential agency problems surrounding equity issues. Furthermore, anecdotal evidence shows that during the last global financial crisis many banks were blamed to induce the shareholders to subscribe to rights offers, effectively arm-twisting them. While the coercive nature of rights issues may be driven by good intentions such as raising funds without diluting existing shareholders or solving free-riding problems when the

¹ Based on our collected data, given that prior literature typically uses single country data.

² Evidence that rights are underpriced is reported by Hietala (1994), Poitras (2002) and Rantapuska and Knupfer (2008) and we will confirm their results in this paper.

firm is in financial distress, coercion could also exacerbate agency costs of equity. Consistent with this agency cost view, Holderness (2018) shows, using a meta-analysis, that negative excess returns after rights issue announcements are mainly observed when shareholders don't have to approve the rights issue. The fact that rights issues may be associated with higher agency costs of equity provides the "dark side" of rights offers, especially in the absence of legal governance protection.

Of course, shareholders can avoid coercion if they can sell their shares before the ex-rights day without having a large negative effect on the share price. In this paper, we argue that for large investors, i.e. blockholders, this option is not available so they have an incentive as well as the ability to approve only rights offers that are not (or less) value destroying. Moreover as they may sit on the board and have access to privileged information, they are better able to judge whether the rights issue is driven by agency costs of equity. Additionally, they could also have an influence on the method to raise equity: rights issues or other methods such as cash offers and private placements. And in case of rights offers they may influence the design of the issue i.e. whether rights will be tradable or not. Therefore, the mere existence of such players provides a governance device that should reduce the probability of a coercive rights offer that hurts long-term shareholder value. We will define this the "control hypothesis".

We articulate this control hypothesis in three testable restrictions. First, in the presence of blockholders firms are less likely to resort to rights offers. Second, conditional on doing the rights offer, the presence of blockholders will be related to a better price reaction and value creation. Third, the presence of blockholders will reduce the willingness of the firm to prevent the tradability of the rights. Indeed, if the tradability choice is linked to coercion, one direct restriction comes from the choice to make the rights tradable. Traditionally, tradability has been linked to the risk and cost of execution. For example, making rights non-tradable reduces execution risk – i.e., the risk that a rights issue fails (e.g., Balachandran, Faff and Theobald,

2008). We argue that restricting tradability will further restrict the menu of choices left to the shareholders and will coerce them more. Therefore, if rights issues are driven by coercion, a positive relation between dispersed ownership and non-tradability is expected, while the control hypothesis predicts the reverse (i.e. in the presence of blockholders rights offers will be made tradable).

We bring these restrictions to the data by focusing on block ownership. In widely held corporations, almost half of the firms (47%) have blockholders owning at least 20% of the voting rights (Edmans and Holderness, 2017; Aminadav and Papaioannou, 2020). The idea that larger shareholders can control agency costs is supported by Helwege, Intintoli and Zhang (2012), Chen, Harford and Li (2007) and Edmans (2009). Across the globe, more dispersed ownership is observed in those countries with stronger shareholder protection rights (Aminadav and Papaioannou, 2020). Also, given the global nature of our sample and the large differences in terms of ownership concentration across the world, we choose to use a 5% threshold to define block ownership. As a robustness test, we provide evidence that the results are intuitively similar, but larger in terms of magnitude when using a 20% cut-off. Also when using the total percentage held by blockholders, instead of a dummy variable the main findings are confirmed. Overall, we provide an alternative intuition of why block ownership provides better governance.

We focus on a unique sample of equity issuances around the world over the period 1995-2012. The sample contains 15,751 rights issues and 22,016 non-rights issues. Because rights issues are almost non-existent in the U.S. (let alone a proper market for rights), to test these hypotheses, we have to examine equity issues using a global sample. Such a world-wide focus will also provide the critical information on differences in the market for rights. This can now be done in a proper way given the growing trend of international equity issuances. Within this trend, rights issues have become increasingly important. For example, in 2011, firms around

the world raised \$214 billion through rights issues, compared with \$356 billion through cash offers and \$170 billion by initial public offers. The popularity of rights issues around the globe is partially a result of the fact that they are mandatory in many European and Latin American countries (Spamann, 2010), unless shareholders give explicit approval for cash offers. In some countries brokers and banks will automatically sell rights if investors don't specify whether they want to exercise the rights or not (Holderness and Pontiff, 2016). If firms are concerned about wealth transfer from small investors who don't pay attention, they may prefer to use cash offers. We will explicitly control for all these effects.

We start by documenting a strong negative correlation between the choice of a rights offer and the presence of blockholders. Having a 5% blockholder is related to a 1.5% lower probability of resorting to a rights offer compared to not having a blockholder. Conditional on the decision of doing a rights offer, we investigate the relationship between short-term and long-term excess returns³ and block ownership. We find that blockholder ownership is positively related to long-run returns but does not affect the short run (although institutional ownership is positively correlated with announcement returns). The result is also economically meaningful: having a 5% blockholder is related to a 2.83% points higher long-term return. The effect of block ownership is more than twice as large for a 20% blockholder, which is associated with a 6.91% points higher long-term return.

In order to deal further with potential endogeneity concerns of block ownership, we instrument blockholder ownership with affiliation with the MSCI World Index. We build on the classical work of Kahn and Winton (1998) and Maug (1998) who argue that institutional ownership and liquidity are positively correlated. Further, we assume that stocks that are included in the MSCI World index will experience an exogenous liquidity shock and hence a positive exogenous shock in terms of block ownership. In line with our arguments, we find that

³ Short-term abnormal returns are measured over a three-day event window, whereas long-term excess returns encompass the period from 1 month after the issue until 24 months after the equity issue.

addition to the MSCI World index significantly increases the probability of having a 5% blockholder by 5.12%. We document that, consistent with the previous findings, blockholder presence is statistically significantly positively related to short-term and long-term excess returns even after controlling for potential endogeneity concerns.

Next, we consider alternative proxies for owners-related governance: family ownership and institutional ownership. Institutional investors have the same constraints as blockholders as they cannot avoid coercion by selling their stakes in the open market before the ex-rights date without a large negative effect on stock prices. So we expect institutional ownership to also be positively related to post-announcement returns. We don't expect the same effect for family ownership. Indeed, emotional attachment as well as other non-financial considerations make them less concerned about coercion. They actually may prefer rights issues as it avoids giving up control to outside investors as would be the case in cash offers (Cronqvist and Nilsson, 2005). We would therefore expect family ownership either not to be related or to be negatively related to stock returns. And indeed, we find that having institutional ownership increases both short-term and long-term returns significantly while family ownership does not have a significant effect on returns following rights issues. More importantly, whether we control for family or institutional ownership, block ownership is still positively and significantly related to long-term returns in the multivariate analyses. Furthermore, we include the number of antitakeover provisions in place as alternative governance measures to isolate the effect of blockholders from the general corporate governance quality of the company.

Next, we focus on the tradability of the rights. As we mentioned, the standard finance assumption that investors are indifferent between exercising rights and selling rights to other investors relies on the existence of a liquid market for rights. Is this the case? We document that not only rights are less liquid than the underlying shares, but they are rarely traded (not traded on average 71% of all the days listed on the market). Moreover, they are mispriced to a

degree that, even after transaction costs, 7% of trading days allow for positive arbitrage. Next, we question whether there is a link between tradability and block ownership? We document that higher block ownership increases the probability that the rights can be traded. In particular, having a 5% blockholder is related to a 5.59% higher likelihood that tradability of the rights is not restricted.

Moreover, while unconditionally restricting tradability of the rights is associated with more negative long-term abnormal returns, this negative effect is especially severe when the firm has no blockholder. When the firm does have a blockholder, restricting tradability is perceived to be good governance as the long-term abnormal returns are significantly higher for a non-trading rights offer (-16%) compared to a trading rights offer (-25%). In fact, in the presence of a blockholder, restricting tradability is even perceived to be a good thing when the firm has a high probability of default. Hence, blockholders try to avoid execution risk, reflecting good governance practices.

This paper is, as far as we know, the first comprehensive international study of equity issues and contributes to the literature in several ways. Theoretically, we contribute to the stream of literature that has highlighted the role of institutional investors in seasoned equity offerings (e.g. Chemmanur et al., 2009) by showing that blockholders more broadly hold the potential to limit coercive behavior by their mere presence. Furthermore, we show that legal protection mechanisms, as proposed by Holderness (2018), can be substituted by blockholder presence to protect shareholder value. As such, we study the role played by large shareholders such as blockholders, institutional investors and families. More broadly, we tie this literature to the law and finance literature initiated by La Porta et al. (1998). This stream of the literature has treated the legal provision of mandatory rights issues as a measure of shareholder protection, sometimes (Spamann, 2010) in refined form. However, we show that the assumed shareholder protection provided by rights issues is in fact more complex. As such, we also contribute to

Fried and Spamann (2020)⁴ by providing empirical evidence which shows that rights issues as such do not always protect shareholders. More specifically, issuing rights in the absence of legal provisions or blockholders, can significantly harm shareholders due to the rights being highly undervalued and illiquid.

Empirically, this paper also contributes to the literature by shedding light on different elements typically overlooked in the literature. First, our global perspective stands in sharp contrast to the existing research on SEOs which is mainly country specific. In the U.S., only a few companies have made rights issues in recent decades. This “disappearing rights phenomenon” has been documented by Smith (1977), Hansen (1988), Eckbo and Masulis (1992), Kothare (1997), Armitage (1998), Heron and Lie (2004), and Ursel (2006). Holderness and Pontiff (2016) explain the lack of U.S. rights issues by arguing that they do not offer sufficient protection to uninformed or irrational shareholders. In a direct survey of issuers, these authors document that fewer than two-thirds of shareholders sell or exercise rights. Rantapuska and Knupfer (2008) find similarly low participation rates in Finland and also document that Finnish shareholders exercise rights too early or sell them below the intrinsic value. Balachandran, Faff, and Theobald (2008) and Balachandran et al. (2012) document take-up, liquidity, and announcement returns for non-tradable rights in Australia. In one other international study, McLean, Zhang, and Zhao (2008) report a relation between country-specific governance standards and the choice between rights and cash offers. Second, previous research on long-run returns has been largely based on cash offers because the alternative issue method – i.e., rights issues – is largely non-existent in the U.S. (e.g., Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995; Eckbo, Masulis, and Norli, 2000). Moreover, prior international studies on long-run returns after seasoned equity offers (SEOs) (e.g., McLean, Pontiff, and Watanabe, 2009) do not distinguish between rights and cash offers. As such, we

⁴ In their paper, Fried and Spamann (2020) question the role of preemptive rights in protecting minority shareholders by developing a theoretical model.

are among the first to describe the long-term impact of rights issues for a global sample. Third, we are only aware of one paper that studies the determinants of tradability: Balachandran, Faff and Theobald (2008) who argue that Australian firms make rights non-renounceable (i.e. non-tradable) when they expect take-up in a renounceable issue to be low. They find that the market does not respond differently to renounceable and non-renounceable issues (the average abnormal return is significantly negative in both samples). They also find that firms with high ownership concentration, low risk, high leverage, dividend payers, large firms, large issues and larger prior price run-up tend to select renounceable issues. Therefore, the main contribution of this paper is to make a clear investigation of rights issues taking the perspective of the blockholders. However, while the literature has considered how large shareholders may prefer rights issues to preserve private benefits of control (Wu, Wang, and Yao, 2016), we consider the role played by blockholders in terms of the degree of coercion of the issuance and tradability of the rights.

Finally, our documentation of the existence and liquidity of the secondary rights market contributes to the discussion on the costs and benefits of rights issues relative to cash offers. We provide evidence on both the undervaluation and tradability of rights in a large international sample and describe how they are linked to the regulatory framework. Rights tend to be undervalued and illiquid which may be one reason why firms don't believe it is in the interest of the current shareholders to make them tradable.

2. Institutional Characteristics of Rights Issues

2.1 Anatomy of a rights issue

In this section, we provide an overview of the rights issue process and describe its main features.

The offer. In a rights issue, the issuer's shareholders have the preemptive right to purchase a pro rata portion of the new shares. The subscription price is typically set at a discount to the recent market price to encourage participation. Some issuers (notably, U.S. and Austrian firms) first announce a range for the subscription price or the discount and do not actually set the price until after the subscription period. This procedure ensures that the stock price does not fall below the subscription price.⁵ The number of rights given to shareholders is based on the number of shares owned on a specified "record date". That is, shareholders have a window of time during which to sell their shares if they prefer not to participate. The record date is, on average, five days after announcement of the rights issue. In only 12 of the non-tradable rights issues in our sample is the record date *before* the announcement date.

Tradability of rights. In tradable rights issues, shareholders who choose not to exercise their rights can trade them in a secondary market during the offer period. Tradability in the absence of a market is rare and costly, and it typically involves larger blocks of rights. Thus, issuers effectively restrict the tradability of rights when they do not provide a market for them.

Non-exercised rights. After the subscription period, the issuer can sell any rights that were not exercised (or sell the non-purchased new shares directly) to a so-called standby buyer or place them in the public market. Standby buyers are usually controlling shareholders, related parties, or underwriters. Public placements typically occur in an accelerated book-building process that is comparable to cash offers. Issuers can also give shareholders an "oversubscription privilege" that entitles subscribers to a second preemptive right to the unsubscribed shares. Very few regulators (notably, Hong Kong and the U.K.) require issuers to reimburse non-exercising shareholders from the proceeds due to purchased new shares.

⁵ Curiously, the main source of transaction risk is the number of shares subscribed rather than the event that the market price falls below the subscription price. Some offers are fully subscribed despite a market price below the subscription price, and many offers are not fully subscribed despite a market price far above the subscription price, especially in illiquid markets. The stock price also only rarely falls below the subscription price, 5 times in our sample. Consistent with the execution risk explanation, all 5 transactions involved tradable rights.

Regulations and discretion. Rights issues, tradability, and reimbursements are regulated by securities laws and listing rules. By definition, preemptive rights are optional; hence, shareholders can waive them (subject to country-specific limitations), typically in a majority vote. This fact makes rights issues susceptible to possible conflicts of interest between groups of shareholders. For example, issuers in most countries exclude foreign shareholders from the distribution and/or tradability of rights. Further variants arise as a function of differences in brokerage agreements. In many European countries, most brokers will sell rights even when shareholders give no instructions to exercise or sell. Such behavior reduces the losses of the investors who do not actively decide about the subscription (e.g., Holderness and Pontiff, 2016).

Prospectus. Issuers must provide a prospectus that details the offer's characteristics and states its objectives and the risks involved. Exemptions to this rule typically apply to small offers and offers to a limited number of (new) shareholders. These exemptions apply to most offers with non-tradable rights.

2.2 Regulations and tradability

Regulations in different countries require, enable, or are silent on the tradability of rights. As a result, depending on the country, all, some, or none of the issued rights are tradable. We observe the actual trading incidence of rights to determine whether firms have the choice to restrict tradability of the rights. As such, 30 of the 127 countries in our sample are free to choose to make rights non-tradable. Why firms choose to make rights tradable and whether it improves short-term or long-term excess returns is an empirical question that we address in this paper.

3. Data and Descriptive Statistics

3.1 Data

We use a global sample of rights issues from 127 countries obtained from Bloomberg, SDC, and Capital IQ. Our sample starts in 1995 (when data on tradability of rights became available from Bloomberg) and ends in 2012.

Bloomberg lists rights offers in its corporate action calendar. Most of this information is reported on dedicated screens for each transaction that can be accessed from the corporate action calendar list. We collect this information by looking up the transaction window for each offer. These screens state whether the rights are tradable and provide trading dates and sometimes tickers in addition to event dates, currency, subscription price, number of rights issued, and number of rights needed to buy one share. When no ticker is listed, we identify the ticker as the related security that was listed and delisted on the dates provided. These tickers are named after country-specific conventions and are usually identifiable as rights (e.g., by a suffix “R”). Accounting and market data on the underlying stock are obtained from Refinitiv.

Our sample consists of 15,751 rights issues for which we were able to find accounting information from Refinitiv and for which we were able to determine if rights were tradable. Out of the 127 countries included in our sample, 30 countries allow firms to restrict tradability of the rights (further called “choice countries”), representing 7,407 rights issues (i.e. 47% of all rights issues in our sample). We find that 4,445 (60%) of the 7,407 rights issues in choice countries allow rights to be traded, meaning that 40% choose to restrict the tradability of the rights, which is non-negligible. We also collect data from 22,016 non-rights issues from SDC. As Holderness (2018) points out, data on cash offers from SDC are unreliable as private placements are sometimes defined as cash offers. Hence, we pool the reported private placements and cash offers in our subsequent analysis (as being non-rights offers) to control for selection issues using a Heckman-approach (Heckman,1979) (see *infra*). We also collect data on blockholder ownership and family ownership using the Orbis Global database of Bureau

Van Dijk (a Moody's analytics product), as well as institutional ownership using the FactSet database.

3.2 Descriptive statistics

In Table 1, we list the 50 largest countries that are part of our sample based on the total number of equity issues in the country. Not surprisingly, the largest number of seasoned equity issues originate in the following five countries: Australia, Canada, US, UK, and China, who together account for 20,006 SEOs out of our global sample of 37,767 SEOs (i.e. 53%). Table 1 also indicates whether issuers are allowed to make rights non-tradable (choice countries). We identify these countries by observing the *de facto* incidence of secondary rights markets. We define as choice countries the countries in which non-tradable rights account for 5% or more of the market. Actual trading/non-trading incidences are important because they reflect a true market choice, rather than merely a rule imposed by regulations, which may or may not actually be enforced. We employ a 5% threshold because there are exceptional cases where issuers deviate from their regulatory regime; for example, when they cater to foreign shareholders or to a controlling shareholder. A 1% threshold yields similar results, but it would misclassify certain countries as choice countries when both regulators and issuers regard tradability as mandatory.

[Insert Table 1 about here]

In Table 2, we describe the characteristics of the equity issues in our sample for all 127 countries and distinguish between rights and non-rights issues (See Appendix for a description of all variables). Some interesting differences are observed between issuers of rights and non-rights. Rights issuers are typically larger, more highly leveraged, more profitable, with a lower market-to-book ratio, lower run-up, lower Altman Z score, lower analyst coverage, fewer antitakeover provisions, and more illiquid shares. Additionally, rights issuers have a lower

likelihood of having a 5% (or 20%) blockholder or institutional ownership, while family ownership is more likely among rights issuers compared to non-rights issuers.

Finally, we document transaction-specific characteristics. We measure the offer size with the number of shares offered as a percentage of shares outstanding following to the offer, and the discount as the offer price relative to the closing stock price five days prior to the announcement. Both offer size and offer discount are typically larger for rights offers compared to non-rights offers.

[Insert Table 2 about here]

4. Rights issues and block ownership

4.1. Bivariate tests

We now relate block ownership to both short-term and long-term excess returns. The cumulative abnormal returns are computed over a 3-day [-1,+1] event window using the standard event study methodology (i.e. the market model). The local Datastream market index is used as the benchmark return. Table 3 Panel A shows that on average short-term announcement returns are significantly negative, but less negative for rights offers (-1.14%) compared to non-rights offers (-1.84%). Moreover, the blockholder presence seems to be related to lower announcement returns (Panel B). Following Heron and Lie (2004), the role of financial distress in seasoned equity offers cannot be negated. Hence, Panel C shows that this negative effect of blockholder presence is concentrated in rights offers by firms in financial distress, which might suggest coercive effects. Contrarily, in the absence of financial distress, blockholder presence is negatively related to short-term returns only for non-rights offers. In other words, when the firm is not in financial distress, investors react more negatively to a non-rights offer (i.e. cash offer or private placement) in the presence of a blockholder compared to when the firms does not have a blockholder. Panels D and E document that the lower return of

non-rights offers is independent of the probability of default in general, but if we condition on the presence of blockholders, the more negative market reaction to non-rights offers is concentrated in firms with low probability of default.

[Insert table 3 about here]

In Table 4 we calculate the long-term excess returns in the 24-month period starting from the month after the effective date.⁶ We use the IRATS (Ibbotson, 1975) event study method which adjusts for risk changes after the event. Such risk changes are likely especially if the rights issue is motivated by financial distress. It also gives equal weight to each event unlike other methods such as the calendar time method which forms an equally weighted portfolio each calendar month. As Loughran and Ritter (2000) point out, if there is time-variation in market efficiency more managers will take advantage of mispricing (i.e. issuing overvalued stock) in months when markets are more inefficient. As a result, the calendar time method will underestimate the benefits from market timing.

The IRATS method involves running each event month a cross-sectional regression of returns against a number of factors. The results presented are based on the Carhart (1997) and Fama and French (2012) local factors. The results, however, are qualitatively similar when using global factors. The intercept of the regression is the abnormal return in the event month. Abnormal returns are cumulated over 24 months after the effective date and the results are shown in Table 4.

Panel A of Table 4 tests for the unconditional difference between rights and non-rights offers. The average 24-months abnormal return for the SEOs in our sample is -35%⁷. We

⁶ We impose the one-month embargo to avoid any systematic Datastream mistakes in adjusting for the rights and new shares, as documented by Espenlaub, Iqbal, and Strong (2012) for UK open (i.e., non-tradable) offers.

⁷ Prior literature has found similarly large negative long-term abnormal returns following SEO announcements. Using different types of approaches and typically using single country studies, prior findings show abnormal returns ranging from -7% up to -44% (Capstaff and Fletcher, 2011; Ho, 2005; Bilinski and Strong, 2013). Additionally, the discrepancy between short-term and long-term abnormal returns following SEOs has been ascribed to the managers' private information which only reveals over time (Bilinski and Strong, 2013), this is also consistent with our working hypothesis.

document no significant difference between rights and non-rights issues. However, if we condition on the presence of blockholders, we find that the long-term performance of rights offers is less negative than the long-term performance of the non-rights offers if there are no blockholders (Panel B). This difference between rights and non-rights in the absence of blockholders is more significant in firms with no financial distress (Panel C). If we condition on the probability of default (Panels D and E), we find that non-rights offers perform worse than the rights offers only when the probability of default is high. Again, the effect is concentrated in the firms without blockholders. These results provide preliminary evidence on the role played by blockholders. Overall, these results suggest that blockholders are related to higher performance for rights offers, especially in the case of low probability of default and no or low financial distress. They also confirm a role for blockholders that seems to be different between the short run and the long run. However, for a proper interpretation a multivariate analysis is required. Therefore, we will now provide a multivariate analysis in which we can control for confounding effects and spurious correlation.

[Insert Table 4 about here]

4.2 Multivariate tests

To obtain some further insight into whether blockholder monitoring improves governance we move to a multivariate setting. In order to control for selection effects, we follow a 2-stage Heckman procedure where we first estimate the probability of issuing a rights offer (equation (1)) rather than the alternative choice (cash offers and private placements) using a probit model. In the second stage (equation (2)) we regress short-term announcement returns as well long-term excess returns against a 5% block ownership dummy variable as well as other control variables, including the inverse Mills ratio obtained in the first stage, using OLS.⁸ Definitions of the control variables can be found in the Appendix.

⁸ We use the inverse Mills ratio obtained from Model 1 in Table 5.

$$(1) P(Rights_i) = \alpha + \beta Blockholder_i + \gamma Controls_i + Year FE + Country FE + e_i$$

$$(2) Return_i = \alpha + \beta Blockholder_i + \gamma Controls_i + \partial Inverse Mills ratio + Year FE + Country FE + e_i$$

The results of the first stage probit analysis are shown in Table 5. Given that in some countries firms have to use rights issues unless shareholders approve a cash offer (Holderness, 2018), we include country fixed effects. These country fixed effects also control for the fact that in some countries brokers automatically sell the rights if investors don't specify whether they want to exercise the rights. Failure to do so may indeed discourage rights issues, as pointed out by Holderness and Pontiff (2016). Additionally, year fixed effects are included to control for macro-economic tendencies. Finally, we include the fraction of prior rights offers (in the total number of equity issues), computed by year and by country, to meet the exclusion requirement. Prior literature has indicated that firms' financing decisions are significantly affected by peers' financing policies (Leary and Roberts, 2014). Hence, the chosen instrument satisfies the conditions of affecting the outcome variable of the first stage (i.e. the choice of rights offer) while not affecting the outcome variable of the second stage (i.e. the short-term and long-term market reaction).

We document a strong negative correlation between the choice of a rights offer and the presence of blockholders, irrespective of the model specification. Having a 5% blockholder is related to a 1.5% (model 1) lower probability of resorting to a rights offer compared to not having a blockholder⁹. That is, firms with blockholders prefer to issue non-rights offers. Following prior literature, a non-rights issue in the presence of a blockholder should be perceived as good governance and a strong signal of quality given that the firm wants to reduce its ownership concentration (Slovin et al., 2000).

Interestingly, we find that firms with a higher probability of default and lower Altman Z

⁹ Having a 20% blockholder reduces the probability of choosing a rights offer by 4%, as indicated in model 4.

score are more likely to issue rights, which is in line with the intuition that rights are used to recapitalize companies in distress or with weak financial conditions. In line with the proposed control hypothesis, having institutional ownership is related to lower likelihood of rights issuance, while family ownership has no effect on the likelihood of issuing rights. We also find evidence of *market timing* in the sense that firms with a higher runup and market-to-book choose to issue non-rights. Also, firm size, liquidity, and lower volatility are positively associated with the likelihood of issuing a non-rights offer. These findings corroborate the arguments of Slovin et al. (2000) stating that non-rights (compared to rights) are issued by firms to signal their quality.

[Insert Table 5 about here]

Table 6 tests the relationship between short-term (Panel A) and long-term (Panel B) excess returns and block ownership, controlling for selection into a rights issue. All models include year and country fixed effects. The long-term returns for the purpose of the multivariate analyses are computed following the approach of Brennan et al. (1998). The results show that blockholder ownership is positively related to long-run returns but does not affect the short run. In the short-run, only institutional ownership is positively correlated with the announcement return. The result in the long-run, however, is robust: having a 5% blockholder is related to a 3% points higher long-term excess return. The effect of block ownership is more than twice as large for firms with a 20% blockholder. Both long-term and short-term return are negatively related to runup and offer discount. These results support the control hypothesis and document a key role of blockholders.

Block ownership, however, is just one measure of quality of governance, hence, we also investigate whether our results are robust to the use of alternative measures and in particular whether block ownership provides governance that is distinct to other alternative sources of governance. We focus on family ownership and institutional ownership. As we argued, given

that our channel of impact is based on the investors “Walking the Wall Street way” promptly at the announcement of the rights offer, we expect institutional ownership to be positively related to the ensuing stock returns while family ownership, because less likely to walk the Wall Street way, either not to be related or to be negatively related to stock return.

We report the results in Table 6, models 2 through 4. Both, in the short and the long run, family ownership does not affect returns, but institutional ownership is significantly positively correlated with stock price returns. More specifically, in the short run the 3-day announcement return is 0.29% points higher in the presence of institutional ownership, while the 24-months abnormal return is 12% points higher. As such, these results are consistent with the hypothesis that excess returns after rights issues reflect agency costs of equity.

[Insert Table 6 about here]

4.3 Endogeneity

In order to deal further with endogeneity concerns of block ownership, we consider a two stage least squares analysis. We report the results in Table 7. In the first stage (column (1) in table 7) we predict the likelihood of having a 5% blockholder by the fact that the company is included in the MSCI World Index. Prior literature has suggested that ownership concentration is positively related to stock liquidity (Maug, 1998; Kahn and Winton, 1998). Hence, being included in the index is expected to exogenously increase liquidity (Hegde and McDermott, 2003) which in turn should exogenously increase the presence of blockholders. Our analyses indeed support this contention as addition to the MSCI World index significantly increases the probability of having a 5% blockholder by 5.12%. In the second stage the instrumented blockholder variable is used to predict short-term (column (2)) and long-term (column (3)) excess returns after rights issues. Consistent with the findings in Table 6, blockholder presence is statistically significantly positively related to short-term and long-term excess returns even after controlling for potential endogeneity concerns. Given potential concerns in terms of size

effects of instrumented variables we do not interpret the magnitude of the coefficients of our two stage least squares analysis. Prior literature (Jiang, 2017), has indicated that the size of the instrumented estimates is typically much larger (on average up to nine times) than the original coefficient.

[Insert Table 7 about here]

4.4 Shareholder Approval

Prior literature has pointed to the importance of legal provisions to safeguard the interests of shareholders. However, Fried and Spamann (2020) challenge the idea of issuing rights as a mechanism to protect minority shareholders. They indeed show that in a world with asymmetric information, rights as such might not be sufficient to protect minority shareholders' interests. Alternatively, Holderness' (2018) meta-analysis indicates that equity issues that require mandatory approval by shareholders (versus no approval) prior to the issue are associated with more positive stock price reactions.

In an attempt to add to this debate, we run separate analyses using the identification of Holderness (2018) regarding countries that require shareholder approval prior to an equity offer and countries that do not require approval from shareholders. If our hypothesis holds, the effect of blockholders should be more pronounced in countries that do not require shareholder approval. If shareholder approval is required, shareholders already have a voice in the choice of the equity offering. If, on the contrary, shareholder approval is not required, the mere presence of blockholders, should provide a governance mechanism and safeguard long-term value creation.

The findings, using a subsample of countries identified in the paper of Holderness (2018), are presented in table 8. First, we run a probit analysis to control for the choice of equity offering (rights issue versus non-rights). We find similar results to the ones presented in table 5, including the full sample. More specifically, rights issues seem to be issued by smaller firms

without a blockholder, with a lower market-to-book value, lower runup, lower analyst coverage, and higher likelihood of financial distress. Second, we run multivariate analyses on the short-term abnormal returns (model 3 and 4) and long-term abnormal returns (model 5 and 6). All models include year and country fixed effects, additionally the Inverse Mills ratio computed based on models 1 and 2 are included. In the short term, blockholder presence does not seem to affect stock price reactions. In the long-term, however, we do find that blockholder presence is positively associated with abnormal returns, but only significantly so in the countries that did not require shareholder approval. This is in line with our expectations.

[Insert Table 8 about here]

5. Corporate governance and the tradability of rights

Finance textbooks often assume that investors are indifferent between exercising rights and selling rights to other investors. This idea assumes that rights are liquid and priced correctly. In this section, we address two fundamental questions. First, just how liquid are the rights? Second, are the rights priced close to their intrinsic value? Answering these questions may explain why investors are “nudged” to subscribe to rights issues: if liquidity is poor and pricing inefficient investors may feel that exercising rights and perhaps selling shares afterwards is better than selling rights. Shareholders may feel more coerced the more mispriced the rights are. We will start by assessing whether this is the case and then we will directly focus on the limitations imposed by the management on the tradability of the rights.

5.1 Liquidity and Mispricing of the rights market

Panel A of Table 9 displays univariate statistics on the liquidity measures of the rights and of the underlying stocks. The average sample firm has zero returns (Lesmond, Ogden, and Trzcinka, 1999; Bekaert, Harvey, and Lundblad, 2007) for 24% of the rights trading period and a bid-ask spread of 4%, which is in line with previous research on the liquidity of international firms (e.g., Lesmond, 2005; Lang, Lins, and Maffett, 2012).

We also report the Amihud (2002) illiquidity measure; following Lesmond (2005), we exclude prices that exceed $\pm 50\%$ of the prior day's price. The mean of this measure is 0.026, a value comparable to the estimates of Lesmond (2005).

[Insert Table 9 about here]

Turning to the rights, we observe that they are less liquid than the underlying shares. The mean bid-ask spread of rights is 26%, or more than six times the 4% spread of the underlying stock. Rights are not traded on average 71% of all the days listed on the market. The mean Amihud illiquidity measure is almost two times that of the stock.

To compare the quoted and theoretical prices, we follow the methodology of Hietala (1994), Poitras (2002), and Rantapuska and Knupfer (2008) in counting the days on which the quoted price is lower (higher) than the lower PCP bound. Violations of the PCP bound enable positive returns from an arbitrage strategy that involves shorting the stock and buying the right.

Given that short selling is not possible in all countries, we compute an additional, more conservative lower bound. We therefore first assume an underlying risk arbitrage strategy of buying the right and exercising it only if the share price exceeds the exercise price on the day before expiration. Then, we calculate the subsequent returns and count the number of days on which they are positive. To obtain an even more conservative estimate, we calculate the returns after transaction costs. In other words, these are the returns after compensating the investor for the trouble of buying and exercising the right. Following Lesmond (2005), we use data from Bloomberg and various exchanges to find the commissions and fees paid. We use the worldwide average commission and transaction fee for the countries for which we cannot find (respectively) an estimate of commissions or a list of official fees. As a conservative proxy for price impact, we use the full bid-ask spread at the close of the trading day.

Panel B of Table 9 reports the statistics for our measures of undervaluation. The mean right is cheaper (60%, on average) than the lower bound on 18% of all days (*% violated*). These

results are not much affected if we consider bid-ask prices instead of closing prices. Our estimates are comparable with the results of single-country studies. For example, in his analysis of a sample of Finnish rights during the period 1977-1981, Hietala (1994) finds that 58% of rights are mispriced. Poitras (2002) documents violations on 91% of all days in a sample of Singaporean rights issues for the period 1992–1998. In a more recent Finnish sample for 1995–2002, Rantapuska and Knupfer (2008) find that rights are underpriced by 15% on average. These values are much higher than the 3% of underpriced days observed for U.S. S&P 500 Index options (Ackert and Tian, 2001), 1% for the French CAC 40 Index options (Capelle-Blancard and Chaudhury, 2001), and 2% for the Italian MIB 30 Index options (Brunetti and Torricelli, 2007).

The bound based on a risk arbitrage strategy reduces the proportion of positive-arbitrage days to 9%. Even after transaction costs, 7% of trading days allow for positive arbitrage. While relative mispricing may indicate that either the stock itself is overvalued or that the rights traders have (negative) inside information, these results still suggest that shareholders who prefer not to exercise their rights will not be fully compensated for the dilution entailed by selling those rights.

Overall, these findings document that rights markets are illiquid and the rights are often undervalued. This suggests that issuing rights may indeed be coercive. However, investors can still take a loss and sell. The key coercive mechanism would be to fully restrict the tradability of the right. This is the topic of the next section.

5.2 Tradability of rights, excess returns and corporate governance

So far, we have shown that rights tend to be undervalued. We now link the tradability of the rights to the firm's governance and stock return. In particular, we test whether the tradability of the rights is related to the short-term and long-term excess returns and whether the effect

depends on the quality of corporate governance – i.e. the concentration of ownership as well as the type of majority owner.

We are aware of only one paper that studies the determinants of tradability for Australian companies. Balachandran et al. (2008) argue that Australian firms make rights non-renounceable (i.e. non-tradable) when they expect take-up in a renounceable issue to be low (i.e. execution risk to be high). They find that the market does not respond differently to renounceable and non-renounceable issues (the average abnormal return is significantly negative in both samples). They also find that firms with high ownership concentration, low risk, high leverage, dividend payers, large firms, large issues and larger prior price run-up tend to select renounceable issues. We extend this analysis to the international sample of rights issues and focus on both short-term and long-term differences in abnormal returns between trading and non-trading offers.

In the international arena, there is a wide variety of situations. Some countries (such as Australia, the United States, Switzerland, Germany, UK among others) allow firms to issue rights and restrict the tradability of the rights (called “choice countries”). Out of the 15,751 rights issues in our sample, 7,407 were issued in countries that allow non-tradability of the rights (i.e. 47% of the issues). Furthermore, we observe that in our world-wide sample, in 2,962 out of these 7,407 rights issues tradability of the rights was indeed restricted (i.e. 40% of the rights issues). This cross-sectional heterogeneity allows for a direct analysis of the role of governance.

In Table 10, we report the results of a probit model in which the dependent variable takes the value of 1 for a trading rights offer and the value of 0 for a non-trading rights offer. For these analyses the sample is restricted to those countries in which companies have the choice to make rights non-tradable (i.e. choice countries). The independent variable of interest is a 5% blockholder dummy.

The results show that block ownership increases the probability that the rights can be traded. In particular, having a blockholder is related to a 5.45% higher likelihood that the right is tradable. Additionally, we observe that firms that restrict tradability are on average smaller, less profitable, with a lower market-to-book, higher volatility, smaller runup, without analyst coverage. Hence, the evidence suggests that firms restrict tradability out of fear of execution risk but blockholders tend to limit such decision. Taken together with the previous results, this suggests that blockholders are less likely to push for the choice of rights but at the same time they favor their tradability.

[Insert Table 10 about here]

Whether this benefits the shareholders is examined next by looking at the stock price reactions. In Table 11, we report the short-term announcement returns of rights issues in countries that allow firms to restrict tradability of the rights. In Panel A, we distinguish between trading rights issues and non-trading rights issues. In Panel B, we distinguish between trading rights and non-trading rights issues, with and without blockholder. In Panel C, we control for the probability of default using a mean sample split based on the Merton distance to default. Finally, in Panel D both the probability of default as well as the presence of a blockholder are controlled for.

[Insert Table 11 about here]

The bivariate analyses indicate that in the short run restricting tradability is not perceived as bad governance, also when conditioning on block ownership. We do observe, however, that tradable rights issued by firms with a blockholder or by firms with a high probability of default are associated with lower announcement returns compared to non-tradable rights. This finding is further confirmed in Panel D which reveals that this negative market reaction following a tradable rights issue by a firm with a high probability of default is especially observed for firms with a blockholder.

Next, Table 12 reports the bivariate analyses for the long-term market reaction following a rights issue in choice countries. Panel A and B show that restricting tradability of the rights is associated with more negative long-term abnormal returns but only when the firm does not have a blockholder. When the firm does have a blockholder, trading rights are associated with more negative long-term returns than non-trading rights offers. Furthermore, firms with a higher probability of default have significantly more negative long-term returns compared to the more financially healthy firms (Panel C). In the presence of a blockholder, restricting tradability is a good thing when the firm has a high probability of default. When the firm has a blockholder and a low probability of default trading rights offers are associated with less negative long-term returns compared to non-trading rights. However, in the absence of a blockholder, non-trading rights are always followed by more negative long-term returns compared to trading rights. The most negative scenario, being a non-trading rights offer by a firm without blockholder and a high probability of default (i.e. – 60%) seems to suggest that current management tries to protect the firm from potentially defaulting which confirms the coercive nature of non-trading rights issues. Alternatively, blockholders seem to protect shareholders from selling undervalued rights by restricting the tradability of the rights.

[Insert Table 12 about here]

The prior findings are confirmed in the multivariate analyses, where we compare firms with low and high probability of default using a sample split based on the mean Merton distance to default measure¹⁰. In the short-term (Table 13), the regression analyses confirm that trading rights offers (compared to non-trading rights) are associated with more negative market reactions, especially for firms with a 20% blockholder and a high probability of default.

¹⁰ Including year and country fixed effects in the regression models in Table 12 and 13 was not possible due to multicollinearity problems. Having 7,028 observations for 30 countries over a time span of 18 years resulted in too high correlations, with an average VIF = 13.89 (max VIF = 221) when including year and country fixed effects. To control for the macro-economic environment we choose to include the country's GDP per capita of the year of SEO and an additional dummy equal to 1 if the SEO was issued during the global financial crisis.

Contrarily, in the long run allowing tradability of the rights is perceived to be better governance compared to non-tradability (Table 14). However, the positive long-term effect of tradability is much more pronounced for firms with a low probability of default (column 3 and 5). Interestingly, when the firm has a low probability of default, the highest returns are observed for trading rights offers in the presence of a blockholder. An unreported three-way interaction model indeed confirms that all else equal, the lowest long-term returns are observed for non-trading rights issued by firms with a high probability of default and no blockholder. On the opposite side, the highest returns are observed for trading rights issued by firms with a low probability of default and with a blockholder.

[Insert Table 13 about here]

[Insert Table 14 about here]

6. Conclusion

We investigate the “reputation” of rights issues. On the one hand, rights issues provide the positive effect of avoiding issuing undervalued stock to outside investors as is the case in cash offers (e.g., Myers and Majluf, 1984; Baker and Wurgler, 2002). On the other hand, they can be seen as “coercive” devices in the absence of a liquid market for selling the rights or, even worse in the case of non-tradability of the rights. Those coercive rights issues might be driven by management that wishes to keep investing in negative NPV projects.

While coercion can be avoided by selling shares before the ex-rights date such option is not available to large investors, without a major negative effect on the stock price. Additionally, avoiding coercion by selling the rights is also problematic considering the systematic undervaluation of rights and their lack of liquidity. We posit that, in the presence of these large investors, i.e. blockholders, firms are less likely to resort to rights offers. Conditional on doing the rights offer, the presence of blockholders will be related to better price reaction and value

creation. Finally, the presence of blockholders will reduce the willingness of the firm to restrict the tradability of the rights. Hence blockholders increase the quality of corporate governance.

We test these predictions by focusing on a unique sample of equity issuances around the world over the period 1995-2012. Our results support our control hypothesis. We first document a strong negative correlation between the choice of a rights offer and the presence of blockholders. Conditional on the decision of doing a rights offer, we find that that blockholder ownership is positively related to long-run returns, while only institutional ownership is positively related to the short-term returns. We deal with the potential endogeneity concerns of block ownership by instrumenting blockholder ownership with affiliation with the MSCI World Index and find consistent results.

Next, we consider alternative proxies for owners-related governance: family ownership and institutional ownership. In line with our hypothesis, we document that institutional investors who are less likely to be able to avoid coercion by selling their shares in the short window between the announcement date and the ex-rights date, are also affecting rights offerings in the same way as block owners, i.e. a negative effect on the likelihood of issuing a rights offer and more positive stock price reactions. In contrast, investors less willing to sell or less concerned about agency costs – i.e., families – do not provide the same effect.

Finally, we look at whether block ownership impacts the tradability of the rights. In line with our control hypothesis, we document that higher block ownership increases the probability that the right can be traded. In fact, when the firm has a high probability of default, blockholders seem to protect shareholders by restricting the tradability of the rights which safeguards shareholders from selling undervalued rights. Our results illustrate the importance of ownership and governance in the equity issuance market.

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APPENDIX: Definitions of variables.

This table provides a definition of all the variables used in the analyses. We distinguish between variables at the country level, referring to the issuer's country, variables at the transaction level, referring to the specific equity issue, and variables at the company level, referring to the issuing company.

Variable	Definition
Country	
Choice country	One if companies have the choice to restrict the tradability of rights and 0 otherwise; based on actual incidence of at least 5% of the issued rights whose tradability is restricted
Fraction of rights by country/year	Number of rights relative to the total number of seasoned equity offerings in a certain country and year
Fraction of trading offers by country/year	Number of rights that were trading relative to the total number of rights issued in a certain country and year
GDP/capita	Gross domestic product per capita of the issuing firm's country and issue year, as reported by the World Bank
Transaction	
Financial crisis	One if the equity offer was issued between Q2 of 2007 and Q1 of 2009, zero otherwise
Offer discount	Discount to the closing price five days prior to the announcement
Offer size	Percentage of new shares sold as a fraction of new shares plus shares outstanding prior to offer
Trading	One if the company decides to allow the tradability of the rights, 0 otherwise
Underpriced by	One minus the ratio of price to put-call parity bound if price is below the bound (0 otherwise)
Zero return days	Fraction of days with zero return to total days traded of the right
% violated	Percentage of trading days on which the last price was below the put-call parity bound
Company	
Altman Z-score	Altman Z-score (Altman, 1968)
Amihud illiquidity	Amihud (2002) illiquidity measure with data corrections according to Lesmond (2005), scaled by 10^3 in line with prior literature e.g. Manconi, Massa, & Yasuda (2012)
Bid-ask	Bid-ask spread divided by the average of bid and ask
Blockholder 5%	One if at least one blockholder holds 5% of the voting rights, 0 otherwise (source: Orbis)
Distress dummy	One if the Altman Z-score is below the cut-off value of 1.81 (Altman, 1968), 0 otherwise
Family ownership	One if the ultimate owner is family, 0 otherwise (source: Orbis)
Firm size	Natural logarithm of total assets
High default (Merton)	One if the Merton distance to default measure (Merton, 1974) is above the mean, 0 otherwise
Institutional ownership	One if institutional shareholders hold at least 5% of the voting rights (source: FactSet)
Leverage	Net debt (debt net of cash and cash equivalents) divided by market value of equity
Market-to-book	Market to book ratio
MSCI affiliation	One if the company is included in the MSCI World index, 0 otherwise (source: MSCI)
No analyst coverage	One if no analyst is covering the company, 0 otherwise (source: I/B/E/S)
Nr of antitakeover	Number of antitakeover provisions in place
Profitability	Earnings Before Interest and Taxes divided by total assets
Runup	Returns 6 months to 42 days before the announcement
Volatility	Stock price volatility in the year prior to the issue

Table 1. Country distribution

This table gives a breakdown of the sample by country of incorporation (50 largest in terms of all offers) listed by the number of offers. “Choice countries” are those in which firms have the possibility to issue non-tradable rights.

Country	Total	Offer		Rights		Choice country
		Non-rights	Rights	Non-tradable	Tradable	
Australia	5438	3318	2120	73%	27%	x
Canada	4407	4283	124	1%	99%	
US	4258	4016	242	55%	45%	x
UK	3148	2708	440	7%	93%	x
China	2755	1144	1611	0%	100%	
Hong Kong	1651	1195	456	23%	77%	x
Taiwan	1137	595	542	0%	100%	
South Korea	1132	0	1132	0%	100%	
Japan	949	897	52	0%	100%	
Sweden	913	116	797	3%	97%	
Germany	845	251	594	40%	60%	x
Brazil	749	191	558	1%	99%	
Turkey	720	37	683	31%	69%	x
Greece	653	94	559	29%	71%	x
France	652	167	485	7%	93%	x
Malaysia	593	296	297	1%	99%	
India	524	390	134	1%	99%	
Singapore	483	289	194	7%	93%	x
Spain	398	78	320	3%	97%	
Italy	389	94	295	1%	99%	
Norway	379	181	198	6%	94%	x
Indonesia	342	86	256	1%	99%	
Vietnam	327	29	298	52%	48%	x
South Africa	281	89	192	0%	100%	
Thailand	258	53	205	14%	86%	x
Poland	241	94	147	0%	100%	
Ireland	200	158	42	5%	95%	x
Denmark	196	53	143	0%	100%	
New Zealand	180	77	103	17%	83%	x
Switzerland	178	96	82	20%	80%	x
Chile	171	19	152	0%	100%	
Austria	159	41	118	20%	80%	x
Mexico	157	32	125	0%	100%	

Bermuda	144	125	19	5%	95%	x
Netherlands	127	112	15	33%	67%	x
Philippines	126	56	70	0%	100%	
Israel	123	85	38	0%	100%	
Sri Lanka	106	1	105	0%	100%	
Portugal	105	22	83	0%	100%	
Finland	102	47	55	2%	98%	
Peru	96	3	93	0%	100%	
Kuwait	95	2	93	0%	100%	
Russia	94	0	94	100%	0%	x
Belgium	92	50	42	24%	76%	x
Ivory Coast	88	16	72	0%	100%	
Pakistan	86	1	85	0%	100%	
Jersey	83	72	11	0%	100%	
Jordan	82	0	82	0%	100%	
Isle of Man	75	0	75	9%	91%	x
Bulgaria	75	0	75	0%	100%	
Others	1205	257	948	8%	92%	x

Table 2. Descriptive statistics

Table 2 provides descriptive statistics for the 37,767 world-wide equity offers in our sample, distinguishing between rights and non-rights issues. In column (8) the t-statistic is reported to compare difference in means of rights and non-rights issues. Z-statistics are used to test the differences in means for dichotomous variables. *, **, and *** denote statistical significance at (respectively) the 10%, 5% and 1% level.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	mean	Median	sd	min	max	Rights Mean	Non-rights Mean	T-stat Rights /vs/ Non-rights	
						<i>N = 15 751</i>	<i>N = 22 016</i>		
Blockholder 5%	0.351			0	1	0.249	0.423	Z = 16.55	***
Blockholder 20%	0.297			0	1	0.193	0.372	Z = -17.05	***
Institutional ownership	0.100			0	1	0.043	0.133	Z = -8.58	***
Family ownership	0.110			0	1	0.123	0.101	Z = 2.06	**
Total blockholder %	0.094	0.00	0.176	0	0.986	0.074	0.109	-19.19	***
Firm size	12.06	12.06	2.755	7.598	17.49	12.37	11.83	18.55	***
Market-to-book	1.570	1.570	1.024	0.480	4.737	1.415	1.681	-24.95	***
Altman Z-score	5.798	5.798	7.761	-0.685	35.29	3.983	7.086	-38.94	***
Profitability	-0.0710	-0.0710	0.238	-0.839	0.163	-0.0450	-0.089	17.86	***
Leverage	0.367	0.367	0.422	-0.236	1.362	0.454	0.306	34.09	***
Amihud illiquidity	0.041	0.001	0.169	3.070e-08	1.536	0.046	0.037	5.41	***
Runup (momentum)	0.127	0.127	0.766	-1.590	2.723	0.046	0.185	-17.40	***
Volatility	0.162	0.162	0.117	1.15e-07	0.780	0.161	0.163	1.14	
No analyst coverage (dummy)	0.465			0	1	0.563	0.396	Z = 15.96	***
Nr of antitakeover provisions	0.306	0	1.045	0	12	0.115	0.441	-30.20	***
Offer size	0.346	0.346	0.411	0.0005	2	0.565	0.190	97.53	***
Offer discount	0.026	0.026	0.010	0.001	0.054	0.0265	0.0261	3.17	**

Table 3. Announcement returns

This table reports the announcement returns of seasoned equity offers. The cumulative abnormal returns are computed over a 3-day [-1,+1] event window using the standard event study methodology. The local Datastream market index is used as the benchmark return. In Panel A, we distinguish between rights issues and non-rights issues (private placements and cash offers). In Panel B, we distinguish between rights and non-rights offers, with and without block ownership of 5% or more. In Panel C, we compare rights and non-rights offers with and without blockholder, controlling for financial distress (using Altman Z below 1.81 as a threshold). In Panel D we compare firms based on their probability of default as defined by the Merton distance to default measure. In Panel E, we control for both the Merton distance to default and the presence of a 5% blockholder. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

Panel A. Rights versus Non-rights

Announcement return		[-1,+1]
Rights offer	<i>n</i> = 15 751	-1.14% ***
Non-rights offer	<i>n</i> = 22 016	-1.84% ***
T-test: Rights /vs/ Non-rights offer		9.10 ***

PANEL B: Blockholder presence

Announcement return [-1,+1]	With 5% blockholder	Without 5% blockholder	T-test: With /vs/ without blockholder
Rights offer	-1.55% ***	-1.00% ***	-3.59 ***
Non-rights offer	-1.93% ***	-1.78% ***	-1.65 *
T-test: Rights /vs/ Non-rights offer	2.63 ***	8.31 ***	

PANEL C: Financial distress

Announcement return [-1,+1]	With 5% blockholder	Without 5% blockholder	T-test: With /vs/ without blockholder
Financial Distress (i.e. Altman Z < 1.81)			
Rights offer	-2.23% ***	-1.05% ***	-4.16 ***
Non-rights offer	-1.80% ***	-1.75% ***	0.30
T-test: Rights /vs/ Non-rights offer	-1.60	3.86 ***	
No Financial Distress			
Rights offer	-1.25% ***	-0.99% ***	1.44
Non-rights offer	-1.97% ***	-1.79% ***	-1.75 *
T-test: Rights /vs/ Non-rights offer	4.27 ***	7.40 ***	

PANEL D: Merton probability of default

Announcement return [-1;+1]

	Rights offer		Non-rights offer		T-test: Rights /vs/ Non-rights offer	
Probability of default						
Low – Q1	-0.74%	***	-1.76%	***	7.58	***
Q2	-0.96%	***	-1.89%	***	6.56	***
Q3	-1.09%	***	-1.63%	***	3.16	**
High - Q4	-1.36%	***	-1.96%	***	2.50	**
T-stat: Q1 vs Q4	2.66	***	1.21			

PANEL E: Merton probability of default – Blockholder presence

Announcement return [-1;+1]

	With 5% blockholder			Without 5% blockholder			With /vs/ without blockholder	
	Rights offer	Non-rights offer	Rights /vs/ Non-rights	Rights offer	Non-rights offer	Rights /vs/ Non-rights	Rights offer	Non- rights offer
Probability of default	T-stat			T-stat			T-stat	T-stat
Low – Q1	-0.58%	-1.82%	4.94 ***	-0.78%	-1.71%	5.45 ***	0.70	-0.79
Q2	-1.23%	-1.87%	2.48 **	-0.87%	-1.91%	5.98 ***	-1.35	0.19
Q3	-1.18%	-1.81%	1.92 *	-1.05%	-1.49%	2.16 **	-0.45	-1.40
High - Q4	-2.25%	-2.42%	0.39	-1.03%	-1.61%	2.00 **	-3.14***	-2.29**
T-stat: Q1 vs Q4	3.26 ***	2.32 **		0.93	-0.42			

Table 4. Long-term abnormal returns

This table reports the long-term excess returns up to 24 months after the issue, using the Ibbotson (1975) RATS methodology, based on the five Fama French local factors (Fama and French, 2012). In Panel A, we distinguish between rights issues and non-rights issues (private placements and cash offers). In Panel B, we distinguish between rights and non-rights offers, with and without block ownership of 5% or more. In Panel C, we compare rights and non-rights offers with and without blockholder, controlling for financial distress (using Altman Z below 1.81 as a threshold). In Panel D we compare firms based on their probability of default as defined by the Merton distance to default measure. In Panel E, we control for both the Merton distance to default and the presence of a 5% blockholder. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

Panel A. Rights versus Non-rights

IRATS (1,24 months)			
Rights offer	<i>n</i> = 15 751	-35.02%	***
Non-rights offer	<i>n</i> = 22 016	-35.68%	***
T-test: Rights /vs/ Non-rights offer			0.56

PANEL B: Blockholder presence

IRATS (1,24 months)					
	With 5% blockholder		Without 5% blockholder		T-test: With /vs/ without blockholder
Rights offer	-27.70%	***	-36.49%	***	4.68 ***
Non-rights offer	-24.44%	***	-43.94%	***	11.21 ***
T-test: Rights /vs/ Non-rights offer		-1.59	4.78	***	

PANEL C: Financial distress

IRATS (1,24 months)					
	With 5% blockholder		Without 5% blockholder		T-test: With /vs/ without blockholder
Financial Distress (i.e. Altman Z < 1.81)					
Rights offer	-27.18%	***	-37.76%	***	3.12 ***
Non-rights offer	-27.35	***	-43.39%	***	4.52 ***
T-test: Rights /vs/ Non-rights offer		0.04	1.91	*	
No Financial Distress					
Rights offer	-27.34%	***	-35.93%	***	3.81 ***
Non-rights offer	-23.94%	***	-44.17%	***	10.08 ***
T-test: Rights /vs/ Non-rights offer		-1.41	4.45	***	

PANEL D: Merton probability of default

IRATS (1,24 months)

Probability of default	Rights offer		Non-rights offer		T-test: Rights /vs/ Non-rights offer	
Low – Q1	-16.28%	***	-19.15%	***	1.20	
Q2	-24.89%	***	-27.72%	***	1.06	
Q3	-30.35%	***	-32.51%	***	0.75	
High - Q4	-42.49%	***	-51.78%	***	2.73	**
T-stat: Q1 vs Q4	9.83	***	10.40	***		

PANEL E: Merton probability of default – Blockholder presence

IRATS (1,24 months)

Probability of default	With blockholder			Without blockholder			With /vs/ without blockholder	
	Rights offer	Non-rights offer	Rights /vs/ Non-rights T-stat	Rights offer	Non-rights offer	Rights /vs/ Non-rights T-stat	Rights offer T-stat	Non-rights offer T-stat
Low – Q1	-9.23%	-11.89%	0.63	-19.10%	-27.08%	2.63 ***	2.29 **	5.10 ***
Q2	-22.10%	-20.52%	-0.36	-26.05%	-33.83%	2.25 **	0.98	3.46 ***
Q3	-26.46%	-23.30%	-0.65	-33.02%	-39.69%	1.83 *	1.62	3.70 ***
High - Q4	-43.90%	-46.14%	0.42	-41.12%	-55.07%	3.03 ***	-0.68	1.52
T-stat: Q1 vs Q4	6.55 ***	7.94 ***		7.10 ***	6.16 ***			

Table 5. Selection model: issuing method – rights versus non-rights

In this table a probit model is reported in which the dependent takes **the value of 1 for a rights offer and the value of 0 otherwise**, these non-rights offers include cash offers and private placements. The independent variables of interest are blockholder presence, default probability, Altman Z-score, family ownership and institutional ownership. The fraction of prior rights offers in the total number of seasoned equity offers (by year and country) is included to meet the exclusion requirement of a Heckman model. All models include country and year fixed effects. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1)	(2)	(3)	(4)
Blockholder 5%	-0.086*** (0.027)	-0.076*** (0.027)	-0.074*** (0.027)	
Altman Z score	-0.014*** (0.002)		-0.014*** (0.002)	-0.014*** (0.002)
Merton Default prob. Q2		0.218*** (0.033)		
Merton Default prob. Q3		0.305*** (0.034)		
Merton Default prob. Q4		0.557*** (0.038)		
Merton Default prob. missing		0.201*** (0.033)		
Institutional ownership			-0.187*** (0.038)	-0.173*** (0.038)
Family ownership			0.051* (0.030)	0.049 (0.030)
Blockholder 20%				-0.156*** (0.028)
Fraction of rights by country/year	2.967*** (0.065)	2.983*** (0.065)	2.965*** (0.065)	2.966*** (0.065)
Firm size	-0.045*** (0.006)	-0.045*** (0.006)	-0.044*** (0.006)	-0.041*** (0.006)
Profitability	-0.122** (0.050)	-0.132*** (0.050)	-0.120** (0.050)	-0.116** (0.050)
Market-to-Book	-0.072*** (0.012)	-0.083*** (0.012)	-0.070*** (0.012)	-0.069*** (0.012)
Leverage	-0.018 (0.022)	-0.013 (0.021)	-0.018 (0.022)	-0.017 (0.022)
Amihud illiquidity	0.193*** (0.053)	0.192*** (0.053)	0.193*** (0.053)	0.196*** (0.053)
Runup	-0.187*** (0.013)	-0.169*** (0.013)	-0.186*** (0.013)	-0.186*** (0.013)
Volatility	-0.118 (0.094)	-0.475*** (0.098)	-0.134 (0.094)	-0.133 (0.094)
No analyst coverage	0.415*** (0.023)	0.385*** (0.023)	0.409*** (0.023)	0.406*** (0.023)
Nr of antitakeover	-0.162*** (0.015)	-0.153*** (0.015)	-0.158*** (0.015)	-0.149*** (0.015)
Missing blockholder data	0.128*** (0.026)	0.126*** (0.026)	0.126*** (0.026)	0.102*** (0.024)
Constant	-0.388 (0.499)	-0.583 (0.498)	-0.405 (0.498)	-0.431 (0.499)
Observations	33,899	33,899	33,899	33,899
Year fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes

Table 6. Multivariate analyses**Panel A. short- term cumulative abnormal returns for rights issues**

This table reports OLS regression analyses, with short-term cumulative abnormal returns [-1,+1] as dependent variable. The standard market model (using the local Datastream market index) is used to compute the CAR. The independent variables of interest are the 5% blockholder dummy, institutional ownership dummy, family ownership dummy, and a 20% blockholder dummy as well as the total % held by blockholders as robustness check. All models include year and country fixed effects. Furthermore, the Inverse Mills ratio, based on Model 1 in Table 5, controls for selection effects (selection into a rights offer compared to a non-rights offer). Standard errors are reported. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

	(1)	(2)	(3)	(4)	(5)	(6)
Blockholder 5%	-0.050 (0.091)			-0.060 (0.091)		
Institutional ownership		0.286* (0.151)		0.289* (0.151)		
Family ownership			0.104 (0.136)	0.098 (0.136)		
Blockholder 20%					0.120 (0.095)	
Total blockholder %						0.001 (0.002)
Firm size	-0.019 (0.019)	-0.020 (0.019)	-0.019 (0.019)	-0.020 (0.019)	-0.020 (0.019)	-0.019 (0.019)
Market-to-book	0.014 (0.012)	0.014 (0.012)	0.014 (0.012)	0.014 (0.012)	0.014 (0.012)	0.014 (0.012)
Altman Z score	-0.017*** (0.006)	-0.017*** (0.006)	-0.017*** (0.006)	-0.017*** (0.006)	-0.017*** (0.006)	-0.017*** (0.006)
Profitability	0.173 (0.162)	0.171 (0.162)	0.169 (0.162)	0.167 (0.162)	0.168 (0.162)	0.172 (0.162)
Leverage	-0.023 (0.078)	-0.024 (0.078)	-0.024 (0.078)	-0.026 (0.078)	-0.023 (0.078)	-0.022 (0.078)
Amihud illiquidity	0.488*** (0.159)	0.486*** (0.159)	0.488*** (0.159)	0.490*** (0.159)	0.483*** (0.159)	0.486*** (0.159)
Runup	-0.241*** (0.040)	-0.242*** (0.040)	-0.241*** (0.040)	-0.242*** (0.040)	-0.239*** (0.040)	-0.241*** (0.040)
Volatility	-0.520* (0.291)	-0.496* (0.291)	-0.518* (0.291)	-0.500* (0.291)	-0.516* (0.291)	-0.517* (0.291)
No analyst coverage	0.117 (0.073)	0.124* (0.073)	0.116 (0.073)	0.126* (0.073)	0.114 (0.073)	0.115 (0.073)
Offer size	-0.069 (0.063)	-0.068 (0.063)	-0.068 (0.063)	-0.066 (0.063)	-0.070 (0.063)	-0.070 (0.063)
Discount	-0.867*** (0.172)	-0.876*** (0.172)	-0.868*** (0.172)	-0.880*** (0.172)	-0.866*** (0.172)	-0.866*** (0.172)
Nr of antitakeover	0.057 (0.063)	0.051 (0.062)	0.056 (0.062)	0.054 (0.063)	0.044 (0.063)	0.054 (0.062)
Missing blockholder data	0.051 (0.079)	0.084 (0.065)	0.077 (0.065)	0.056 (0.079)	0.117 (0.073)	0.083 (0.071)
Inverse Mills ratio	0.221* (0.115)	0.204* (0.114)	0.215* (0.114)	0.214* (0.115)	0.193* (0.116)	0.211* (0.115)
Constant	-0.908 (0.568)	-0.917 (0.565)	-0.942* (0.565)	-0.887 (0.568)	-0.980* (0.566)	-0.943* (0.566)
Observations	13,391	13,391	13,391	13,391	13,391	13,391
R-squared	0.048	0.048	0.048	0.049	0.048	0.048
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Long-term cumulative abnormal returns for rights issues

This table reports the multivariate regression analyses, using OLS, with long-term excess return up to 24 months after the issue - expressed in percentages- as dependent variable. The approach of Brennan et al. (1998) is used to compute the long-term excess returns. The independent variables of interest are the 5% blockholder dummy, institutional ownership dummy, family ownership dummy, and a 20% blockholder dummy as well as the total % held by blockholders as robustness check. All models include year and country fixed effects. Furthermore, the Inverse Mills ratio, based on Model 1 in Table 5, controls for selection effects (selection into a rights offer compared to a non-rights offer). Standard errors are reported. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Blockholder 5%	2.788* (1.661)			2.394 (1.663)		
Institutional ownership		11.695*** (2.745)		11.488*** (2.751)		
Family ownership			-0.415 (2.469)	-0.683 (2.468)		
Blockholder 20%					6.853*** (1.732)	
Total blockholder %						0.130*** (0.037)
Firm size	1.154*** (0.340)	1.096*** (0.340)	1.147*** (0.340)	1.106*** (0.340)	1.091*** (0.340)	1.118*** (0.340)
Market-to-book	-0.340 (0.222)	-0.343 (0.222)	-0.339 (0.222)	-0.342 (0.222)	-0.342 (0.222)	-0.343 (0.222)
Altman Z score	0.164 (0.107)	0.158 (0.106)	0.156 (0.107)	0.165 (0.107)	0.175 (0.107)	0.173 (0.107)
Profitability	-2.267 (2.955)	-2.329 (2.953)	-2.230 (2.957)	-2.318 (2.955)	-2.533 (2.954)	-2.381 (2.954)
Leverage	1.283 (1.412)	1.200 (1.412)	1.284 (1.413)	1.216 (1.412)	1.283 (1.412)	1.314 (1.412)
Amihud illiquidity	-4.585 (2.891)	-4.510 (2.889)	-4.493 (2.891)	-4.604 (2.890)	-4.676 (2.889)	-4.596 (2.890)
Runup	-3.366*** (0.730)	-3.419*** (0.729)	-3.392*** (0.729)	-3.392*** (0.729)	-3.301*** (0.729)	-3.315*** (0.729)
Volatility	-8.946* (5.296)	-8.229 (5.296)	-9.099* (5.296)	-8.109 (5.297)	-8.987* (5.293)	-8.950* (5.294)
No analyst coverage	-3.999*** (1.334)	-3.611*** (1.335)	-3.939*** (1.334)	-3.672*** (1.336)	-4.024*** (1.333)	-4.160*** (1.335)
Offer size	7.671*** (1.152)	7.745*** (1.151)	7.675*** (1.152)	7.729*** (1.152)	7.626*** (1.151)	7.598*** (1.152)
Discount	-34.153*** (3.132)	-34.621*** (3.132)	-34.212*** (3.133)	-34.541*** (3.132)	-34.215*** (3.131)	-34.063*** (3.131)
Nr of antitakeover	7.286*** (1.139)	7.253*** (1.137)	7.407*** (1.137)	7.145*** (1.139)	6.770*** (1.148)	7.251*** (1.137)
Missing blockholder data	-1.953 (1.439)	-2.967* (1.186)	-3.330*** (1.184)	-1.803 (1.438)	-0.962 (1.325)	-1.528 (1.291)
Inverse Mills ratio	-20.186*** (2.098)	-20.186*** (2.084)	-19.783*** (2.084)	-20.537*** (2.098)	-20.946*** (2.103)	-20.554*** (2.095)
Constant	112.121*** (10.341)	114.513*** (10.293)	113.739*** (10.299)	113.163*** (10.339)	111.248*** (10.311)	111.880*** (10.307)
Observations	13,391	13,391	13,391	13,391	13,391	13,391
R-squared	0.229	0.230	0.229	0.230	0.230	0.229
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 7. Test of endogeneity - MSCI inclusion

This table reports the results of the Two Stage Least Squares (2SLS) analysis to tackle the potential endogeneity concerns regarding blockholder presence. In the first stage we run a probit model (column 1), in which the dependent variable, the likelihood of having a 5% blockholder, is predicted by inclusion in the MSCI World Index. This dummy takes the value of 1 when the company is part of the MSCI World Index and 0 otherwise. In the second stage of the 2SLS model (columns 2 and 3) the instrumented blockholder variable is included to predict the short-term abnormal return (column 2) and long-term excess return (columns 3) for rights issues. Furthermore, we include the Inverse Mills ratio, based on the regression in Table 5 (model 1), to control for selection effects. All models include year and country fixed effects. Standard errors are reported between brackets. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level respectively.

VARIABLES	(1) 5% Blockholder	(2) ST CAR	(5) LT return
Included in MSCI index	0.183*** (0.067)		
Blockholder 5% (instrumented)		0.353* (0.209)	31.755*** (10.332)
Firm size	0.094*** (0.008)	-0.015 (0.019)	0.421 (0.376)
Market-to-Book	0.083*** (0.017)	0.067 (0.046)	-3.926*** (0.828)
Altman Z score	-0.001 (0.002)	-0.019*** (0.007)	0.197 (0.125)
Profitability	0.078 (0.068)	0.235 (0.194)	-5.041 (3.491)
Leverage	-0.042 (0.031)	-0.011 (0.079)	0.448 (1.491)
Amihud illiquidity	-0.018 (0.067)	0.505** (0.202)	-4.070 (3.541)
Runup	-0.003 (0.015)	-0.236*** (0.047)	-3.670*** (0.780)
Volatility	-0.160 (0.115)	-0.376 (0.320)	-6.682 (6.249)
No analyst coverage	-0.243*** (0.028)	0.136* (0.072)	-4.653*** (1.305)
Offer size		-0.019 (0.070)	7.154*** (1.253)
Offer discount		-1.469*** (0.235)	-24.634*** (4.120)
Nr of antitakeover		0.045 (0.068)	6.998*** (1.102)
Inverse Mills ratio		0.165 (0.112)	-20.075*** (2.048)
Constant	-2.623*** (0.568)	-0.818** (0.362)	121.896*** (10.332)
Observations	13,391	13,391	13,391
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes

Table 8. Shareholder approval for rights issues

This table uses a subsample of SEO's issued in countries for which we know the regulatory status (i.e. whether shareholder approval is required) following (Holderness, 2018). Models 1, 3, and 5 include the countries in which shareholder approval is required prior to issuing rights, whereas no approval is required in the countries included in models 2, 4, and 6. We rerun the main analyses. The probit model is used to control for selection into a rights offer (compared to a cash offer or private placement). The Inverse Mills ratio based on model 1 (2) is included in the OLS regression models 3 and 5 (4 and 6 respectively). All models include year and country fixed effects. Standard errors are reported between brackets. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

VARIABLES	Probit (right)		ST CAR		LT Return	
	(1)	(2)	(3)	(4)	(5)	(6)
	Shareholder Approval	No Shareholder Approval	Shareholder Approval	No Shareholder Approval	Shareholder Approval	No Shareholder Approval
Blockholder 20%	-0.194** (0.077)	-0.106*** (0.035)	0.325 (0.229)	0.238 (0.168)	6.687 (4.098)	5.708** (2.750)
Firm size	-0.095*** (0.017)	-0.038*** (0.008)	0.021 (0.046)	-0.071** (0.035)	-2.589*** (0.816)	1.016* (0.568)
Market-to-book	-0.103*** (0.039)	-0.079*** (0.015)	0.029 (0.040)	0.034* (0.020)	-0.397 (0.720)	-0.173 (0.320)
Altman Z score	-0.031*** (0.006)	-0.009*** (0.002)	-0.022 (0.016)	-0.018** (0.009)	-0.318 (0.289)	0.090 (0.141)
Profitability	-0.687*** (0.167)	-0.044 (0.059)	0.873** (0.363)	0.045 (0.255)	4.480 (6.484)	-1.074 (4.168)
Leverage	-0.075 (0.066)	0.030 (0.028)	0.076 (0.187)	-0.052 (0.148)	1.748 (3.343)	0.854 (2.426)
Amihud illiquidity	0.061 (0.210)	0.237*** (0.062)	0.997*** (0.378)	0.316 (0.245)	1.635 (6.757)	-10.397*** (4.000)
Runup	-0.213*** (0.038)	-0.191*** (0.016)	-0.129 (0.093)	-0.332*** (0.073)	-2.813* (1.660)	-3.923*** (1.194)
Volatility	-0.970*** (0.311)	0.033 (0.115)	0.853 (0.733)	-0.475 (0.513)	-34.582*** (13.104)	-3.314 (8.374)
No analyst coverage	0.416*** (0.072)	0.356*** (0.030)	0.155 (0.173)	0.046 (0.145)	-4.543 (3.101)	2.622 (2.363)
Nr of antitakeover	-0.146** (0.057)	-0.131*** (0.017)	0.250 (0.237)	0.136 (0.099)	11.684*** (4.237)	7.206*** (1.620)
Financial crisis	-0.004 (0.095)	-0.008 (0.042)	-0.676** (0.334)	0.037 (0.208)	-7.712 (5.972)	-0.385 (3.392)
Missing blockholder data	0.102 (0.072)	0.144*** (0.031)	0.160 (0.176)	0.299** (0.135)	3.480 (3.147)	-1.860 (2.204)
Fraction rights (country/year)	2.922*** (0.173)	2.861*** (0.115)				
Offer size			0.115 (0.129)	-0.164 (0.129)	1.400 (2.298)	3.495* (2.102)
Discount			-1.166*** (0.379)	-1.162*** (0.318)	-14.179** (6.771)	-12.285** (5.191)
Inverse Mills ratio			0.033 (0.353)	0.125 (0.275)	3.203 (6.312)	-9.785** (4.495)
Constant	1.484*** (0.506)	-0.281 (0.182)	-1.200 (0.935)	0.013 (0.577)	171.388*** (16.708)	113.546*** (9.424)
Observations	3,567	18,388	2,444	5,461	2,444	5,461
R-squared			0.062	0.045	0.169	0.133
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 9. Liquidity and mispricing characteristics

This table reports the descriptive statistics of liquidity characteristics, such as the bid-ask spread, the percentage of zero return days, and the Amihud illiquidity measure of the rights as well as the underlying stock (Panel A). In Panel B the extent of underpricing is reported by providing the number of trading days on which the quoted price (close, ask, or bid) violates the lower put-call parity arbitrage bound. If the lower put-call parity arbitrage bound is violated, the percentage of underpricing relative to the quoted price (close, ask, or bid) is also reported, as well as the possible percentage of risk arbitrage with or without transaction costs.

	Mean	SD	Min	Max
Panel A: Liquidity measures				
<i>Right</i>				
Bid-ask	26%	29%	0%	100%
Zero return days	71%	36%	0%	100%
Amihud	0.045	0.118	0.000	0.492
 <i>Underlying stock</i>				
Bid-ask	4%	5%	0%	17%
Zero return days	24%	20%	0%	100%
Amihud	0.026	0.056	0.000	0.196
 Panel B: Underpricing				
<i>% Violated</i>				
Close	18%	35%	0	100%
Ask	16%	32%	0	100%
Bid	15%	32%	0	100%
<i>If violated, underpriced by</i>				
Close	60%	34%	5%	100%
Ask	59%	34%	4%	100%
Bid	61%	33%	7%	100%
<i>% risk arbitrage possible (no short sales)</i>				
No transaction costs	9%	26%	0%	100%
Transaction costs	7%	22%	0%	92%

Table 10. Selection model: tradability of rights

This table reports a probit model in which the dependent takes **the value of 1 for a trading rights offer** and the value of 0 for a non-trading rights offer. The sample is restricted to those countries in which companies have the choice to make rights non-tradable. The independent variable of interest is a 5% blockholder dummy. Standard errors are reported between brackets. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

	(1)	(2)	(3)	(4)
Blockholder 5%	0.218*** (0.056)	0.216*** (0.057)		
Institutional ownership		-0.236*** (0.090)	-0.221** (0.090)	
Family ownership		-0.212*** (0.059)	-0.222*** (0.059)	
Blockholder 20%			0.245*** (0.059)	0.361*** (0.077)
High default (Merton)				-0.102** (0.044)
Blockholder 20% * High default				-0.248** (0.106)
Missing blockholder data	0.230*** (0.052)	0.220*** (0.052)	0.166*** (0.043)	0.173*** (0.043)
Firm size	0.057*** (0.009)	0.059*** (0.010)	0.056*** (0.010)	0.052*** (0.009)
Profitability	0.353*** (0.085)	0.373*** (0.085)	0.370*** (0.085)	0.330*** (0.085)
Market-to-book	0.026*** (0.007)	0.027*** (0.007)	0.027*** (0.007)	0.026*** (0.007)
Altman Z score	-0.000 (0.003)	-0.000 (0.003)	-0.000 (0.003)	
Leverage	0.150*** (0.048)	0.164*** (0.048)	0.164*** (0.048)	0.142*** (0.045)
Amihud illiquidity	-0.260*** (0.082)	-0.273*** (0.083)	-0.276*** (0.083)	-0.237*** (0.083)
Runup	0.119*** (0.024)	0.118*** (0.024)	0.118*** (0.024)	0.112*** (0.024)
Volatility	-0.488*** (0.167)	-0.493*** (0.167)	-0.512*** (0.167)	-0.385*** (0.171)
No analyst coverage	-0.243*** (0.042)	-0.253*** (0.043)	-0.255*** (0.043)	-0.229*** (0.042)
Offer size	0.508*** (0.042)	0.505*** (0.042)	0.502*** (0.042)	0.524*** (0.043)
Discount	-0.072 (0.102)	-0.043 (0.102)	-0.046 (0.102)	-0.063 (0.102)
Nr of antitakeover	0.035 (0.031)	0.035 (0.031)	0.038 (0.031)	0.029 (0.031)
GDP/capita	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Financial crisis	-0.241*** (0.063)	-0.222*** (0.064)	-0.228*** (0.064)	-0.248*** (0.063)
Fraction of trading offers by country/year	4.208*** (0.118)	4.231*** (0.118)	4.207*** (0.118)	4.184*** (0.117)
Constant	-1.777*** (0.149)	-1.769*** (0.149)	-1.669*** (0.145)	-1.645*** (0.143)
Observations	7,028	7,028	7,028	7,028

Table 11. Short-term abnormal returns: Trading versus Non-trading rights

This table reports the announcement returns of rights issues in countries that allow firms to restrict tradability of the rights (i.e. choice countries). The cumulative abnormal returns are computed over a 3-day [-1,+1] event window using the standard event study methodology. The local Datastream market index is used as the benchmark return. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

Panel A. Trading versus Non-trading rights

<i>CAR [-1;+1]</i>			
<i>Subsample of rights in countries that allow to restrict tradability</i> $n = 7\,407$ -1.20% ***			
Trading rights	$n = 4\,445$		-1.35% ***
Non-trading rights	$n = 2\,962$		-1.03% ***
T-test: Trading /vs/ Non-trading rights			-1.50

PANEL B: Blockholder presence

<i>CAR [-1;+1]</i>	With 5% blockholder	Without 5% blockholder	T-test: With /vs/ without blockholder
Trading rights	-2.09% ***	-1.07% ***	-3.35 ***
Non-trading rights	-1.40% ***	-0.91% ***	-1.25
T-test: Trading /vs/ Non-trading rights		-1.57	-0.68

PANEL C: Merton probability of default

<i>CAR [-1;+1]</i>	Trading rights	Non-trading rights	T-test: Trading /vs/ Non-trading rights
Probability of default (mean split)			
Low probability	-1.02% ***	-0.91% ***	-0.54
High probability	-1.74% ***	-1.10% ***	-1.95 *
T-stat: Low vs High	2.67 ***	0.41	

PANEL D: Merton probability of default – Blockholder presence

<i>CAR [-1;+1]</i>	With 5% blockholder			Without 5% blockholder		
	Trading	Non-trading	Trading vs Non-trading T-stat	Trading	Non-trading	Trading vs Non-trading T-stat
Probability of default						
Low probability	-1.46%	-1.11%	-0.64	-0.84%	-0.84%	0.02
High probability	-3.02 %	-1.60%	-2.02 **	-1.34%	-0.94%	-1.05
T-stat: Low vs High	2.89 ***	0.67		1.61	0.26	

Table 12. Long-term abnormal returns: Trading versus Non-trading rights

This table reports the long-term excess returns up to 24 months after the issue, using the Ibbotson (1975) RATS methodology, based on the five Fama French local factors (Fama and French, 2012). The sample is restricted to rights issues in countries that allow firms to restrict tradability of the rights. In Panel A, we distinguish between trading rights issues and non-trading rights issues. In Panel B and D, we distinguish between trading rights and non-trading rights offers, with and without block ownership of 5% or more. In Panel C and D, we distinguish between rights offers with a high versus low probability of default (based on the Merton distance to default mean split). *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.

Panel A. Trading versus Non-trading rights							
<i>IRATS (1,24 months)</i>							
<i>Subsample of rights in countries that allow to restrict tradability</i>		<i>n = 7 407</i>			-36.23%	***	
Trading rights		<i>n = 4 445</i>			-34.61%	***	
Non-trading rights		<i>n = 2 962</i>			-40.70%	***	
T-test: Trading /vs/ Non-trading rights					15.33	***	
PANEL B: Blockholder presence							
<i>IRATS (1,24 months)</i>							
		With 5% blockholder		Without 5% blockholder		T-test: With /vs/ without blockholder	
Trading rights		-25.04%	***	-38.23%	***	3.75 ***	
Non-trading rights		-16.10%	***	-51.68%	***	7.76 ***	
T-test: Trading /vs/ Non-trading rights		-1.76	*	4.44	***		
PANEL C: Merton probability of default							
<i>IRATS (1,24 months)</i>							
		Trading rights		Non-trading rights		T-test: Trading /vs/ Non-trading rights	
Probability of default (mean split)							
Low probability		-24.84%	***	-33.46%	***	2.54 **	
High probability		-47.18%	***	-46.41%	***	-0.20	
T-stat: Low vs High		6.71	***	3.25	***		
PANEL D: Merton probability of default – Blockholder presence							
<i>IRATS (1,24 months)</i>							
		With 5% blockholder			Without 5% blockholder		
		Trading	Non-trading	Trading vs Non-trading T-stat	Trading	Non-trading	Trading vs Non-trading T-stat
Low probability		-15.16%	-26.22%	1.72 *	-29.11%	-37.30%	2.03 **
High probability		-40.51%	-12.07%	-3.56 ***	-49.02%	-60.20%	2.48 **
T-stat: Low vs High		3.99 ***	-1.76 *		5.06 ***	4.97 ***	

Table 13. Trading versus Non-trading rights – short-term abnormal returns

This table reports the multivariate regression analyses, using OLS, with short-term cumulative abnormal returns [-1,+1] as dependent variable. We use a subsample, only including choice countries, i.e. where firms have the choice to restrict the tradability of the rights. The independent variables of interest are a dummy equal to 1 when rights are tradable (0 when rights are made non-tradable), a 5% blockholder dummy (and as robustness test a 20% blockholder dummy), and a dummy equal to 1 if the firm has a high probability of default according to the Merton measure (mean split). Furthermore, we include the Inverse Mills ratio, based on Model 1 in Table 5, to control for the selection effect of choosing a rights offer (compared to a non-rights offer). In models 3 and 4 (and 5 and 6), we split the sample into firms with a low probability of default and high probability of default, based on the mean value of the Merton distance to default. We control for the macro-economic environment by including the country's GDP per capita of the issuing year as well as a dummy for issues launched during the global financial crisis. Standard errors are reported between brackets. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level respectively.

VARIABLES	(1)	(2)	(3) low default probability	(4) high default probability	(5) low default probability	(6) high default probability
Trading	-0.208** (0.105)	-0.214** (0.105)	-0.114 (0.160)	-0.151 (0.178)	-0.065 (0.149)	-0.121 (0.168)
Blockholder 5%	-0.133 (0.142)		0.102 (0.272)	-0.056 (0.276)		
Blockholder 20%		0.001 (0.144)			0.837** (0.337)	0.286 (0.345)
Trading x Blockholder 5%			-0.250 (0.293)	-0.347 (0.317)		
Trading x Blockholder 20%					-0.931** (0.378)	-0.880** (0.426)
High default (Merton)	-0.365*** (0.102)	-0.365*** (0.102)				
Firm size	(0.024)	(0.024)	-0.021 (0.033)	-0.067* (0.036)	-0.020 (0.033)	-0.069* (0.036)
Market-to-Book	0.180*** (0.056)	0.180*** (0.056)	0.251*** (0.084)	0.138* (0.077)	0.253*** (0.084)	0.137* (0.077)
Profitability	0.554** (0.227)	0.552** (0.227)	1.121*** (0.373)	0.310 (0.297)	1.106*** (0.373)	0.312 (0.297)
Leverage	0.179* (0.092)	0.179* (0.092)	0.059 (0.130)	0.280** (0.131)	0.052 (0.130)	0.278** (0.131)
Amihud illiquidity	0.152 (0.215)	0.146 (0.215)	0.572 (0.596)	0.000 (0.245)	0.551 (0.595)	0.013 (0.245)
Runup	-0.176*** (0.059)	-0.174*** (0.059)	-0.150* (0.084)	-0.196** (0.084)	-0.145* (0.084)	-0.195** (0.084)
Volatility	-0.032 (0.169)	-0.031 (0.170)	-1.272* (0.650)	0.055 (0.186)	-1.272* (0.649)	0.056 (0.186)
No analyst coverage	-0.107 (0.106)	-0.109 (0.106)	-0.219 (0.141)	0.014 (0.159)	-0.214 (0.141)	0.017 (0.159)
Offer size	0.056 (0.098)	0.056 (0.098)	0.314** (0.142)	-0.076 (0.137)	0.312** (0.142)	-0.069 (0.137)
Discount	-1.128*** (0.248)	-1.122*** (0.248)	-1.013*** (0.344)	-1.235*** (0.357)	-1.012*** (0.344)	-1.248*** (0.357)
Nr of antitakeover	0.112 (0.082)	0.107 (0.083)	0.086 (0.096)	0.081 (0.150)	0.078 (0.095)	0.076 (0.150)
Inverse Mills ratio	-0.242** (0.100)	-0.255** (0.100)	-0.167 (0.127)	-0.355** (0.160)	-0.199 (0.126)	-0.342** (0.160)
GDP/capita	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Financial crisis	-0.541*** (0.137)	-0.545*** (0.137)	-0.459** (0.201)	-0.580*** (0.190)	-0.472** (0.201)	-0.584*** (0.190)

Missing blockholder data	0.161 (0.127)	0.237** (0.114)	0.215 (0.163)	0.106 (0.198)	0.291** (0.142)	0.175 (0.161)
Constant	-0.453 (0.370)	-0.526 (0.364)	-0.836 (0.546)	-0.496 (0.543)	-0.933* (0.532)	-0.569 (0.531)
Observations	7,028	7,028	3,436	3,592	3,436	3,592
R-squared	0.017	0.017	0.018	0.019	0.020	0.020

Table 14. Trading versus Non-trading rights – long-term abnormal returns

This table reports the multivariate regression analyses, using OLS, with long-term abnormal returns up the 24 months after the issue as dependent variable. We use a subsample, only including choice countries, i.e. where firms have the choice to restrict the tradability of the rights. The independent variables of interest are a dummy equal to 1 when rights are tradable (0 when rights are made non-tradable), a 5% blockholder dummy (and as robustness test a 20% blockholder dummy), and a dummy equal to 1 if the firm has a high probability of default according to the Merton measure (mean split). Furthermore, we include the Inverse Mills ratio, based on Model 1 in Table 5, to control for the selection effect of choosing a rights offer (compared to a non-rights offer). In models 3 and 4 (and 5 and 6), we split the sample into firms with a low probability of default and high probability of default, based on the mean value of the Merton distance to default. We control for the macro-economic environment by including the country's GDP per capita of the issuing year as well as a dummy for issues launched during the global financial crisis. Standard errors are reported between brackets. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level respectively.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
			low default probability	high default probability	low default probability	high default probability
Trading	13.807*** (1.821)	13.322*** (1.824)	23.989*** (2.757)	6.915** (3.102)	23.786*** (2.560)	5.284* (2.930)
Blockholder 5%	2.167 (2.470)		8.732* (4.684)	4.408 (4.797)		
Blockholder 20%		9.051*** (2.501)			15.842*** (5.792)	12.944** (6.000)
Trading x Blockholder 5%			-7.281 (5.033)	-9.154* (5.518)		
Trading x Blockholder 20%					-14.204** (6.508)	-7.883 (7.409)
High default (Merton)	-16.512*** (1.771)	-16.373*** (1.770)				
Firm size	-2.712*** (0.413)	-2.783*** (0.413)	-3.203*** (0.566)	-2.031*** (0.629)	-3.277*** (0.564)	-2.044*** (0.629)
Market-to-Book	-1.786* (0.976)	-1.776* (0.975)	-3.259** (1.439)	-0.623 (1.339)	-3.297** (1.440)	-0.467 (1.340)
Profitability	-1.306 (3.948)	-1.573 (3.945)	-0.137 (6.415)	-1.920 (5.170)	-0.373 (6.413)	-2.155 (5.170)
Leverage	-1.384 (1.594)	-1.544 (1.593)	-2.423 (2.240)	-1.030 (2.274)	-2.458 (2.241)	-1.251 (2.275)
Amihud illiquidity	-2.874 (3.736)	-3.196 (3.733)	20.313** (10.255)	-7.233* (4.264)	20.134** (10.243)	-7.489* (4.266)
Runup	-4.387*** (1.027)	-4.281*** (1.026)	-2.526* (1.441)	-5.274*** (1.457)	-2.512* (1.439)	-5.152*** (1.457)
Volatility	-3.652 (2.946)	-3.726 (2.943)	-36.940*** (11.185)	-1.392 (3.235)	-37.424*** (11.175)	-1.369 (3.234)
No analyst coverage	-6.354*** (1.844)	-6.246*** (1.842)	-6.506*** (2.424)	-4.908* (2.773)	-6.607*** (2.424)	-4.799* (2.768)
Offer size	7.074*** (1.696)	6.962*** (1.695)	3.780 (2.449)	10.583*** (2.392)	3.744 (2.449)	10.537*** (2.391)
Discount	-29.399*** (4.306)	-29.426*** (4.301)	-27.980*** (5.922)	-28.143*** (6.209)	-28.035*** (5.920)	-28.191*** (6.207)
Nr of antitakeover	8.699*** (1.427)	7.911*** (1.443)	5.008*** (1.645)	14.070*** (2.614)	5.092*** (1.637)	13.820*** (2.613)
Inverse Mills ratio	-8.975*** (1.739)	-9.777*** (1.742)	-4.307** (2.180)	-16.313*** (2.776)	-4.437** (2.168)	-16.962*** (2.786)
GDP/capita	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000* (0.000)	-0.000*** (0.000)	-0.000* (0.000)
Financial crisis	3.386	3.326	-3.108	7.000**	-3.123	6.816**

	(2.379)	(2.376)	(3.457)	(3.308)	(3.453)	(3.307)
Missing blockholder data	-3.659*	-1.240	-5.610**	-3.437	-6.095**	-0.954
	(2.206)	(1.976)	(2.807)	(3.444)	(2.450)	(2.794)
Constant	124.971***	123.922***	134.528***	98.672***	136.326***	97.338***
	(6.430)	(6.313)	(9.398)	(9.449)	(9.155)	(9.244)
Observations	7,028	7,028	3,436	3,592	3,436	3,592
R-squared	0.065	0.066	0.069	0.049	0.070	0.050
