Pontifícia Universidade Católica
do Rio de Janeiro

Eduardo Henrique de Freitas

Seasoned equity offerings in Brazil: the impact of restricted efforts method on direct and indirect costs

Dissertação de Mestrado

Dissertation presented to the Programa de Pós–graduação em Economia of PUC-Rio in partial fulfillment of the requirements for the degree of Mestre em Economia.

Advisor: Prof. Walter Novaes Filho

Rio de Janeiro
August 2022

Pontifícia Universidade Católica
do Rio de Janeiro

Eduardo Henrique de Freitas

Seasoned equity offerings in Brazil: the impact of restricted efforts method on direct and indirect costs

Dissertation presented to the Programa de Pós–graduação em Economia of PUC-Rio in partial fulfillment of the requirements for the degree of Mestre em Economia. Approved by the Examination Committee.

Prof. Walter Novaes Filho
Advisor
Departamento de Economia – PUC-Rio

Prof. Marcelo Cunha Medeiros
Departamento de Economia – PUC-Rio

Dr. Alexandre Lowenkron
Banco BBM – Banco BBM

Rio de Janeiro, August 2nd, 2022

Eduardo Henrique de Freitas

B.A., Economics, Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio), 2017.

B.S., Physics, Universidade Estadual de Maringá (UEM), 2018.

Bibliographic data

Freitas, Eduardo Henrique de

Seasoned equity offerings in Brazil: the impact of restricted efforts method on direct and indirect costs / Eduardo Henrique de Freitas; advisor: Walter Novaes Filho. – Rio de janeiro: PUC-Rio, Departamento de Economia, 2022.

v., 42 f: il. ; 30 cm

Dissertação (mestrado) - Pontifícia Universidade Católica do Rio de Janeiro, Departamento de Economia.

Inclui bibliografia

1. Economia – Teses. 2. Finanças – Teses. 3. Emissão Secundária de Capital. 4. Bolsa de Valores Brasileira. 5. Estudo de Eventos. 6. Comissões de Coordenação. 7. Assimetria de Informação. I. Novaes Filho, Walter. II. Pontifícia Universidade Católica do Rio de Janeiro. Departamento de Economia. III. Título.

CDD: 620.11

To my parents, Iolanda and Milton,
and my dog Maggie.

Acknowledgments

I thank my advisor, Walter Novaes, for the guidance and patience. He taught me everything I know about Finance, about reading papers, and about being a good professor.

I also thank the other professors and the staff of the Department of Economics at PUC-Rio.

I thank my parents for an uncountable set of reasons.

Finally, I thank CNPQ and PUC-Rio for the financial support, which made this work possible.

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001.

Abstract

Freitas, Eduardo Henrique de; Novaes Filho, Walter (Advisor). **Seasoned equity offerings in Brazil: the impact of restricted efforts method on direct and indirect costs**. Rio de Janeiro, 2022. 42p. Dissertação de Mestrado – Departamento de Economia, Pontifícia Universidade Católica do Rio de Janeiro.

In 2014, the Brazilian Securities and Exchange Commission included equity offerings in the restricted efforts regulatory instruction, allowing firms to issue equity through simpler, faster procedures, disclosing less information to the market. In turn, firms choosing that issuance method are allowed to sell their new shares to a group consisting of no more than 50 qualified investors. Since the new rules came into force, almost all seasoned equity offerings carried out by listed companies took place under restricted efforts. In this work, we study the impact of the new regulatory setting on two types of costs regarding seasoned equity offerings: the first, an indirect one, is the effect of offering announcements on the issuer's stock price. An event study shows that abnormal returns in a three-day window around the announcement are, on average, 3.23 percentage points higher when the company issues equity under restricted efforts rather than traditional rules. The second type of cost, the direct one, consists of fees paid to the underwriters and other expenses. Under restricted efforts, those fees (as a percentage of total offering proceeds) are, on average, 1.01 percentage point lower than fees charged in the offerings that follow the traditional procedures. We argue that the reduction in the two types of costs is due (at least partially) to the mitigation of information asymmetry provided by the new issuance method.

Keywords

Seasoned Equity Offering Brazilian Stock Exchange Event Study Underwriting Costs Information Asymmetry

Resumo

Freitas, Eduardo Henrique de; Novaes Filho, Walter. **Emissões secundárias de capital no Brasil: o impacto do método de esforços restritos sobre os custos diretos e indiretos**. Rio de Janeiro, 2022. 42p. Dissertação de Mestrado – Departamento de Economia, Pontifícia Universidade Católica do Rio de Janeiro.

Em 2014, a Comissão de Valores Mobiliários incluiu as ofertas de capital na instrução regulotória para emissões via esforços restritos, permitindo às empresas ofertar suas ações por meio de procedimentos mais simples e rápidos, revelando menos informação para o mercado. Por sua vez, as firmas que escolhem esse método de emissão são autorizadas a vender as novas ações para um grupo constituído por não mais que 50 investidores qualificados. Desde que as novas regras entraram em vigor, quase todas as emissões de capital secundárias feitas por empresas listadas em bolsa se deram pelo método de esforços restritos. Neste trabalho, estudamos o impacto do novo cenário regulatório sobre dois tipos de custos associados às emissões secundárias de capital: o primeiro, indireto, é o efeito dos anúncios de oferta no preço das ações das empresas emissoras. Um estudo de eventos mostra que os retornos anormais numa janela de três dias ao redor da data de anúncio são, em média, 3,23 pontos percentuais mais altos quando a firma emite capital via esforços restritos em vez do método tradicional. O segundo tipo de custo, o direto, consiste nas comissões pagas aos coordenadores da oferta e outras despesas. Sob esforços restritos, esses dispêndios (como porcentagem do total levantado pela oferta) são, em média, 1,01 pontos percentuais mais baixos que aqueles incorridos em ofertas feitas sob as regras tradicionais. Argumentamos que a redução nos dois tipos de custos se deve (ao menos parcialmente) à mitigação da assimetria de informação proporcionada pelo novo método de emissão.

Palavras-chave

Emissão Secundária de Capital Bolsa de Valores Brasileira Estudo de Eventos Comissões de Coordenação Assimetria de Informação

Table of contents

List of tables

O afastamento da letra da Constituição pode muito bem promover objetivos constitucionais de elevado peso normativo, e assim esteirar-se em princípios de centralidade inconteste para o ordenamento jurídico.

Gilmar Ferreira Mendes, minister of the Brazilian Supreme Court.

1
Introduction

Determinants of equity and debt issuance costs have been subject of intense research in Finance in recent decades. Theories that involve information asymmetry between firms' managers and outsiders as an explanation for the differences in costs observed in the cross-section of firms, among different securities, and among various flotation methods of a particular security are quite popular in literature, and empirical tests generally give rise to interpretations that corroborate the importance of this phenomenon in some of its manifestations (adverse selection, agency problems, and timing, mainly). Shocks in the information structure arising from institutional changes are good opportunities to test the validity of these interpretations, as Bhagat *et al.* (1985) and Bethel & Krigman (2008) do in the case of the adoption of shelf registration method in the American market.

In 2014, the Brazilian Securities and Exchange Commission (CVM) included equity issues — both initial public offerings (IPOs) and seasoned equity offerings (SEOs)[1] — in its Instruction 476, which allows firms to issue securities by the so-called restricted efforts method. Since 2004, public offerings of equity had to follow the procedures defined by Instruction 400, following a process similar to public offerings of common shares in the United States (Eckbo *et al.* (2007) present a summarized outline of the American process). The stated objective of the restricted efforts method is to reduce transaction costs by simplifying the procedures for making public offers viable. Registration of the offer with CVM, mandatory by the previous regulation, is now waived for the new method, as well as the preparation of a detailed prospectus, which can be replaced by relevant fact to the market. That kind of document announces the offer and brings some elements of the prospectus only, and in much less detail (it is not uncommon for prospectuses to be hundreds of pages long, while relevant facts are typically 20 to 30 pages). This means that firms choosing issuance by restricted efforts are less subject to regulator monitoring

[1]In this work we adopt the following naming convention: seasoned equity offerings and secondary equity offerings mean the same, and consist of firm's shares issuance which increases its equity in exchange for the proceeds. In contrast, equity offerings made by investors owning shares issued in the past are offerings in the secondary market, and the proceeds are due to those investors, not to the firm.

and allowed to disclose less information to the market.

But these reduced regulatory obligations have their counterpart: by being allowed to disclose a smaller set of information regarding their financial position, companies that issue shares by restricted efforts method are allowed to seek a maximum of 75 professional investors, and to sell their equity to 50 professional investors[2] only. The cost of this restriction is the lower potential liquidity of the offer vis-à-vis the general or unrestricted offer method. The choice of the issuance method by the firm should be based on an analysis of benefits arising from reduction of transaction costs, and costs of restricting the set of potential buyers, if there is no other impact arising from the choice.

Observing historical data on SEOs of companies listed on the Brazilian stock exchange (B3) from 2014[3] to the end of 2021 in Table A.1, we easily conclude that there is huge prevalence of the restricted efforts method: 87 out of 94 SEOs took place by such rule. This clear preference gives rise to the question to be answered by this dissertation: are there reductions in costs of SEOs (besides transaction costs) which can explain the consistent choice of firms for the method of restricted efforts? To accomplish this task, we consider two types of costs that have been extensively studied in the literature, the abnormal returns of issuer's shares in the time period surrounding issuance announcement (indirect costs), and the fees paid to underwriters plus expenses due to services provided by auditors, lawyers, marketers, etc. (direct costs).

Negative abnormal returns in the announcement of common shares issuance are extensively documented in the American case (e.g., Asquith & Mullins (1986) and Masulis & Korwar (1986)). Medeiros & Matsumoto (2005) find the same phenomenon in the Brazilian case using a sample of SEOs occurred between 1992 and 2003, with an average cumulative abnormal returns of -3% in the first three days after issuance announcement. Theoretical explanations for the negative abnormal returns in the announcement are based on information asymmetries between the firm and the market. Myers & Majluf (1984) develop a model in which the true value of assets in place and investment opportunities of companies when they announce equity issues is private information of their managers, whose objective is to maximize the value of current shareholders wealth. If it is costly to transmit this information to the market, in the separating equilibrium, the mere act of announcing the issue is

[2]According to the CVM, professional investors are financial institutions, insurance companies, private pension entities, investment funds, Brazilians holding investments above R$10 million value, foreign investors, among others. In models that divide the market into informed and uninformed investors, professional investors can be considered to belong to the first type.

[3]The first SEO after the entry into force of the possibility of issuing equity via restricted efforts was in 2015.

a negative sign of the true value of the firm, causing a negative reaction from the market and an adverse selection problem that results in underinvestment, because even firms with good investment opportunities and without other resources to finance it may decide not to issue equity in view of this cost of market reaction. Several studies develop more sophisticated models based on Myers & Majluf (1984), such as Eckbo & Masulis (1992), which allows the current shareholders participation in the offers, the presence of underwriters, and the firm's choice of flotation method.

Another theory based on information asymmetry is the one formalized by Jung *et al.* (1996). Agency problems arise if managers have objectives conflicting with shareholder wealth maximization. In this scenario, any free cash flow can be spent in projects that decrease the value of investors' wealth, such as low-return investments when managers aim to empire building. Knowing this possible misuse of proceeds from an equity issue, investors react negatively to its announcement. In an empirical study with a sample of SEOs that took place in the US market between 1994 and 2003, Kim & Purnanandam (2006) test the adverse selection and agency costs hypotheses, in addition to the signaling hypothesis (Leland & Pyle (1977)). They find evidence favorable to the preponderance of agency costs over adverse selection and signaling, with a reduction in these costs when there is greater monitoring of the firm by institutional investors and by the market for corporate control. When this monitoring is weaker, greater sensitivity of managers' equity stakes to changes in the prices of firm's shares plays a role in reducing agency costs.

In order to investigate the difference in abnormal returns between the two types of secondary issuance of shares, we carry out an event study comprising a sample of 158 SEOs that took place between 2004 and 2021. The regressions of cumulative abnormal returns in different event windows around the announcement include firm, issue, and market-specific control variables commonly used in this type of empirical exercise. The relevance of these variables and the accordance of their estimated coefficients with the main theories which state they are correlated with abnormal returns are also analyzed. The results support the hypothesis of reduction of this indirect cost when issuance is made by restricted efforts. The additional cumulative abnormal return (relative to unrestricted issues) in the $(-1, 1)$ window around the announcement is statistically significant at 1% and equal to 3.23 percentage points.

Regarding the differences in SEO direct costs, we consider 4 types of costs (given as a fraction of the gross proceeds of the offers): the total cost, the underwriting fees, the expenses and the firm commitment fee (total cost is the

sum of fees to the underwriters and expenses; firm commitment fee is one of the underwriting fees). The ratio underwriting fees/total cost is also analyzed. Total costs, underwriting fees and firm commitment fee are variables whose determinants are often studied in the securities issuance literature (Eckbo *et al.* (2007)). Analyzing the firm commitment fee separately makes it possible to more reliably test the influence of variations in information asymmetry in determining costs, since this fee is a compensation to underwriters for the risk they assume by agreeing to pay the proceeds of the issuance to the firm and then sell its shares on the market. It is expected that risk, and therefore firm guarantee fees, will be greater the greater the level of information asymmetry between the firm and the underwriters. As for expenses (which are not often studied in the literature), since the procedures for issuing equity via restricted efforts are simplified, it is expected that firms offering shares through this method face lower disbursements to pay this type of cost. Expenses can be identified as the easily measurable part of the transaction costs of the offer[4]. Analyzing the effect of the choice of restricted efforts method on expenses and on underwriting spreads/total cost ratio allows conclusions about the magnitude of average variation of underwriting spreads in relation to a part of the transaction costs to be drawn.

To estimate cost differences between offers made by restricted efforts and unrestricted offers, regression models use the same control variables of the event study plus two other variables related to characteristics of the offer. This set of control variables is very common in studies on direct costs of equity issues (e.g., Calomiris & Tsoutsoura (2013)). The estimation is performed on a sample of 150 SEOs that took place in the Brazilian market between 2004 and 2021 (subset of the sample used in the event study). The results point to a significant reduction, for the restricted efforts method, of total costs, underwriters spreads and firm commitment fees; although the estimated coefficient has the expected negative sign, the variation in average expenses between the two methods is not statistically significant, as is the variation in underwriter spreads/total costs ratio. These results, however, can be biased by changes, over time, in underwriters market conditions. Bias can be particularly strong if there are monotonic trends in costs over time due to changes in the underwriters market, as the indicator variable for issuance by restricted efforts is highly correlated with the binary variable that takes value 1 if the issuance

[4]Of course, other costs not included in the expenses and difficult to measure, such as the effort of managers and the difficulty of taking advantage of the timing of the offer (in our sample, the average time interval between the day of announcement of the offer and the first day of negotiations is 15 days in the case of restricted efforts and 55 days in the case of unrestricted offers), if the timing hypothesis (Lucas & McDonald (1990), Korajczyk *et al.* (2015)) is valid, may be relevant components of transaction costs.

has been made after 2014 and 0 otherwise. Robustness tests are performed introducing year fixed effects in the models, as well as a variable that measures the concentration of the underwriters market for different definitions of this market in the models of total cost, underwriter spreads, and firm commitment commissions. The results do not change qualitatively. The differences are, in the estimation with year fixed effects, -1.014 percentage points for total costs; -0.735 percentage points for underwriter spreads; -0.280 percentage points in the case of expenses, a result that is now significant at the level of 5%; -0.285 percentage points for firm commitment fees; and 1.693 percentage points in the case of underwriter spreads/total cost ratio, but statistically insignificant (p-value of 0.97). Variations in costs are economically relevant and favorable to the hypothesis that direct costs are also reduced with the restricted efforts method, and in the same proportion as the reduction in measurable transaction costs.

Having found evidence of significant reductions in direct and indirect costs in addition to transaction costs, a question remains as to what is the mechanism driving these variations. Within the scope of traditional interpretations based on information asymmetry, we argue that the offering with restricted efforts has some key features of a private placement of equity, so that the informational hypothesis proposed by Hertzel & Smith (1993) is relevant to explain the cost reduction we found in the case of restricted efforts offer. Interestingly, what may seem like an issuance method which reduces the amount of information disclosed to the market, which would exacerbate the information asymmetry problem, actually mitigates it.

This study contributes to the equity issuance costs literature in two ways: the first is to document the average abnormal returns induced by the announcement of SEOs in Brazil, showing the striking difference between the 2004–2014 period (when the mean abnormal return in the announcement was −2.48% in a three-day window surrounding the event) and the 2015–2021 years (with mean abnormal return equal to 1.17%), and a similar movement for direct costs. The second is the statement of a hypothesis (although we do not test it) to try to explain this movement based on the similarities between restricted efforts public offerings and private equity placements.

The remainder of this dissertation is organized as follows: chapter 2 presents the data, its descriptive statistics, and the methodology applied in the analysis of the two types of issuance costs; chapter 3 presents the results, robustness tests, and the discussion of these results; chapter 4 concludes.

2
Data and methodology

2.1
Data and sample selection

The sample consists of 158 observations of SEOs made by companies listed on B3 that took place in Brazil between April 2004 (first issue after Instruction 400 came into force) and November 2021, all carried out with firm commitment. Of these issues, 85 were restricted efforts offerings and 73 unrestricted ones. Not all 175 SEOs comprised between the two dates make up the sample: the only BDR issue was withdrawn, as well as 8 issues whose required return data were not available. The issue by Petrobras, in 2010, and that of Oi, in 2014, were withdrawn due to their atypicality (in the case of Petrobras, political issues dominated the process, with rumors and successive announcements and postponements; in the case of Oi, the analysis of the offer was initially suspended by CVM). The first secondary issuance of two companies is not in the sample because these firms do not have 80 trade days on the stock exchange 10 days before the announcement of the issuance. Finally, all 158 observations are used for the event study regarding the market reaction to the issuance announcement, but 150 are used in the direct cost regressions; the absence of 8 observations is due to the fact that the companies have not disclosed cost information in their reference forms or have not provided it upon request to the respective investor relations departments.

Table A.2 shows the number of SEO announcements by each method by year in the sample. In the period 2004-2013, in which equity issuance by restricted efforts did not yet exist, the years 2009 and 2010 stand out with 12 and 11 announcements, respectively. In 2014, the year issuance of shares through restricted efforts became possible, there was only the issuance of Oi, which was removed from the sample. In the period 2015–2021, the triennium 2019 to 2021 is notable, with a boom in SEOs even during the most uncertain period of the coronavirus pandemic. In those years, issuing equity by unrestricted offerings was an exception.

Companies' financial data were taken from Thomson Reuters platform, and those referring to the issues were obtained from B3 and relevant facts

and prospectuses registered with CVM. As they are different procedures, the announcement dates for unrestricted offers and restricted ones are defined in different ways: for the former, it is the date of offer registration with CVM (when the first version of the preliminary prospectus becomes available to the market), and for the second, the date of publication of the relevant fact of the restricted offer announcement (when the main information about the issuance becomes available). Daily returns are adjusted for bonuses and dividends. Equity, total assets, and leverage were obtained from the balance sheet regarding the year prior to the year the issuance announcement occurred. Monetary variables are all deflated to 2004 reais by the GDP deflator.

Tables A.3 and A.4 show summary statistics of the variables used in the regressions of abnormal returns and direct costs, respectively, for unrestricted SEOs and restricted efforts ones. The first table shows an important difference in the average cumulative abnormal returns across all windows: in $(-1, 1)$, the average cumulative return of unrestricted offers is -2.48% (significant at 1%), while that of issues by restricted efforts is equal to 1.17%, but slightly not significant (p-value equal to 0.13). The difference in averages is 3.65 percentage points, a significant value at 1%. As for the control variables, the two segments of the sample are similar in most aspects by the test of difference of means. The exceptions are the variables *Bank*, *Stock volatility*, and *Secondary*. There are more banks issuing equity by restricted efforts; the average volatility of stock returns in the same segment is higher; and there are fewer secondary market issues associated with primary one in restricted efforts.

2.2 Methodology: abnormal returns

Abnormal returns related to the public offering announcement are calculated based on the following market model:

$$R_{i,t} = \alpha_i + \beta_i IBrX_t + \eta_{i,t}, \tag{2-1}$$

where $R_{i,t}$ is the daily return of the stock of the firm i in the sample on day t and $IBrX_t$ is the variation of the IBrX index on day t, chosen as the market return. The estimation of the model for each firm in each issue is done by ordinary least squares in the window $(-90, -10)$, day 0 being the issue announcement day (or, in some cases in which the announcement was not made on a business day, the next business day). For five event windows around day 0 — (-1.1), (-2.2), (-3.3), (-4.4), and (-5.5) — daily abnormal returns are calculated,

$$AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i IBrX_t, \tag{2-2}$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the ordinary least squares estimators of α_i and β_i in equation 1 respectively. From these abnormal returns, the cumulative abnormal returns (CAR) are calculated in each of the five windows,

$$CAR(-k,k)_i = \sum_{t=-k}^{k} AR_{i,t} \ , \quad k \in \{1,2,3,4,5\}. \tag{2-3}$$

The cumulative abnormal returns are then regressed according to the following model:

$$CAR(-k,k)_{i,t} = \alpha_0 + \alpha_1 RestrictedEfforts_{i,t} + \theta \cdot X_{i,t} + \epsilon_{i,t}. \tag{2-4}$$

The estimation of equation 2-4 (by OLS) seeks to identify differences in abnormal returns on days close to the announcement of issuance. The variable $RestrictedEfforts_{i,t}$ is equal to 1 if the issuance is made by restricted efforts and 0 if unrestricted offer. The 5 different event windows allow a robustness test of the results. Including days prior to the official announcement of the offer encompasses the effects of possible insider information, and including days ahead captures situations in which the announcement is made after the closing of trades on the stock exchange, with repercussion only on the following business day, or even any delay between the dissemination of information and its proper absorption by the market.

The vector $X_{i,t}$ consists of control variables, which are of three types: firm-specific, issue-specific and market-specific. The chosen variables are in common use in the literature on abnormal returns in events and follow the specifications in Li *et al.* (2016). The first variable at the firm level is a measure of its size, the logarithm of total assets. Firm size is commonly considered as a measure of information asymmetry between insiders and the market: the larger the firm, the greater the diversification of its assets and the quality of public information available about the company (Eckbo *et al.* (2007)). Thus, a positive relationship is expected between abnormal returns and this control variable.

The second firm-specific variable is leverage (total assets scaled by equity). The relationship between this variable and abnormal returns from the announcement of equity issuance is ambiguous: in a more direct interpretation, high leverage can mean higher expected cost of financial distress; when announcing SEO, firms with higher leverage would then tend to suffer more negative reactions from the market. But Jensen (1986) argues that higher leverage also implies lower agency costs of free cash flow by limiting managers' discretion, since the cash flows of a more leveraged firm are more committed to paying creditors. If agency costs are relevant to the market reaction, a positive

relationship between abnormal returns and leverage is expected.

Banks are subject to distinct regulatory apparatus. The minimum capital requirements for banks can cause the informational content of an issuance announcement by a firm of this type to be quite different from that of other firms, as pointed out, in the American case, by Li *et al.* (2016), who shows that abnormal announcement returns are higher for banks, except in the period of the Great Recession. In order to take this distinction into account, the binary variable *Bank* is included, taking the value 1 in case the issuing company is a bank and 0 otherwise.

The binary variable *Listing segment* is also included, and takes the value 1 if the issuing firm belongs to the Novo Mercado segment of B3 and 0 otherwise. This variable is potentially important because firms in this listing segment voluntarily commit to corporate governance practices that go beyond what is required by law, notably improving the quality and frequency of financial information disclosure. It is expected, therefore, that the degree of information asymmetry of these companies will be lower and give rise to a more positive market reaction to the announcement of equity issuance.

The firm's share turnover, taken as the average of daily traded volume/outstanding shares ratio in the $(-100, -30)$ window, is also included in the regressions. This variable is a measure of liquidity of firm's shares and therefore a positive relationship is expected between this variable and the abnormal returns in the announcement of the equity issue.

The last two firm-specific variables are stock run-up and stock volatility, the cumulative return and the annualized volatility of the issuing firm in the $(-40, -2)$ and $(-60, -10)$ windows, respectively. On average, abnormally positive stock run-up precedes equity issuance; if firms consider they are undervalued, managers are likely to postpone the equity offering until good news emerges, pushing up stock prices (Lucas & McDonald (1990)). Gomes & Valle (2017) show evidence that the phenomenon also exists in the Brazilian case. If this market timing argument is correct, abnormal market returns must be negatively related to the stock run-up, since equity issuance signals to investors that firm's shares are overvalued. Stock volatility is commonly used as a proxy for information asymmetry between the firm and the market (Kim & Purnanandam (2006)). Thus, a negative relationship between stock volatility and abnormal returns in the announcement is expected.

The first issue-specific variable is proceeds/total assets ratio, usually interpreted as a variable that captures adverse selection effects (Eckbo *et al.* (2007)). The other two variables of this type are binary. *Secondary*, which takes the value 1 when the equity offer is accompanied by an offer on the

secondary market. There are at least two opposite effects due to the presence of this type of offer: the first is the signaling of overvaluation, as argued by Leland & Pyle (1977), which would imply smaller abnormal return in the announcement; and the second is the decrease in agency costs of free cash flow (Jensen (1986)), since the proceeds in this type of mixed offer will only be partially allocated to the firm. The last issue-specific variable is the dummy *Debt motivation*, which takes the value 1 when the allocation of funds from the offering disclosed in the prospectus or reference form is, at least partially, debt amortization, and value 0 if contrary. Both explicit mentions of debt repayment and less direct expressions such as "improvement of the capital structure" are considered. According to Walker & Yost (2008), the intended use of proceeds is relevant to determine the market reaction to the offer announcement, with more negative returns when the purpose of debt repayment is made explicit. If the same phenomenon is valid in the Brazilian case, a negative relationship is expected between abnormal returns and the variable *Debt motivation*.

Finally, two market-specific variables make up the models: market run-up and market volatility. The first variable (calculated as the cumulative market return in the $(-40, -2)$ window) is expected to be positively related to the market reaction, since, as shown by Lewis *et al.* (2003) and Baker & Wurgler (2002) for the American case, abnormal returns on the issuance announcement day are more positive when it is preceded by greater market run-up. The second variable, defined as the annualized standard deviation of IBrX in the $(-70, -1)$ window, seeks to capture the uncertainty in the Brazilian stock market, and therefore the expected relationship between this variable and the market reaction to the announcement is negative.

2.3 Methodology: direct costs

Distribution costs of public offerings are presented in the prospectuses and in the companies' reference forms in two large groups: Offering Fees (known in the literature as underwriter spreads or underwriting fees) and Offering Expenses (or simply expenses). Fees, in turn, are divided into coordination fee, placement fee, firm commitment fee, and incentive fee. The expenses include taxes and other withholdings, offer registration fee to Anbima (the Brazilian Association of Financial and Capital Market Entities), B3 costs, expenses with lawyers and consultants, expenses with independent auditors, and other expenses (including marketing and road shows). The dependent variables in the direct cost regressions are the percentage of these costs in relation to the total value of the offer, the latter being the number of shares offered (without

considering any supplementary lots) multiplied by the price per share, generally evaluated as the market price on the day of announcement.

Five cost-related variables are used as the dependent variable in direct cost regressions: total cost, underwriter spreads, expenses, firm commitment fee, and underwriter fee/total cost[1], according to the model:

$$Cost_{i,t} = \beta_0 + \beta_1 RestrictedEfforts_{i,t} + \gamma \cdot Z_{i,t} + u_{i,t}. \quad (2\text{-}5)$$

The regressions are estimated by ordinary least squares. The control variables $Z_{i,t}$ in the direct cost regressions are the same as in the regressions of abnormal announcement returns plus two others related to the offer: the logarithm of proceeds of the offer and the logarithm of the number of institutions that make up the underwriters syndicate. The first variable is commonly included in cost regressions and its negative expected coefficient is interpreted as evidence of economies of scale in the offer size. The expected relationship between the logarithm of the number of underwriters and direct costs that include fees paid to underwriters is positive, since a larger syndicate implies a greater number of institutions to be remunerated. In general, a negative relationship is expected between issuance costs and the variables which proxy for asymmetry of information existing between the firm and the market, as indicated in the abnormal returns regressions methodology.

The expense component of the total cost can be quite heterogeneous, as it includes any other disbursements the firm may incur to place the offering and that are not related to underwriters', auditors' and lawyers' fees, in addition to taxes and other fees, which were previously removed. However, much of the transaction costs of the offer are found in this cost portion, and estimating the effect of flotation method on its average value provides an indication of cost savings most likely to occur as a consequence of choosing the restricted efforts method. Estimating underwriter spreads/total cost ratio regression, in turn, makes it possible to ascertain the dimensions of relative variations in underwriting fees and expenses.

[1] All cost variables are net of taxes and fees charged by B3 and Anbima.

3
Empirical results

3.1
Abnormal returns

Results of abnormal returns regressions in each event window are shown in Table A.5. In any specification, the coefficient of *Restricted efforts* is positive and significant at the 1% level. The values of estimated coefficients are economically relevant (the average abnormal return induced by the announcement of an equity offering under unrestricted method is -2.48% in the first event window; the estimated coefficient of 3.23% means that this negative return is more than compensated, on average, in issues placed under restricted efforts), and imply an excess of average daily abnormal return ranging from 0.52%, in the $(-5, 5)$ window, to 1.08%, in the window $(-1, 1)$, of SEOs performed with restricted efforts in relation to unrestricted issues. As expected, the additional average daily abnormal return is diluted as the window around the issuance announcement widens, evidence that the news about the offering is concentrated in the days closest to its announcement.

Another result worth noting is the relevance of *Market run-up* in determining abnormal returns. The coefficients of this variable are almost all highly significant, with a value of 0.227 in the $(-1, 1)$ window (as the *Market run-up* variable is measured as decimal number, abnormal returns in the announcement increase, in average, 0.0227 percentage point for each 10 percentage-point increase in market run-up). This result can be interpreted as evidence of timing by firms, which wait for a moment of optimism in the market to announce the equity offer (Lucas & McDonald (1990)). There is also evidence of timing in the estimated coefficients of the variable *Stock run-up*, with significant values in the first three windows and the negative sign prescribed by the theory, but with a magnitude smaller than that of the *Market run-up* coefficients.

The estimated coefficients of *Leverage* support the hypothesis that negative consequences of leverage dominate the potential benefits of reducing agency costs of free cash flow. Likewise, the estimated coefficients of *Secondary* support the signaling theory as opposed to agency costs. The results also show that *Share turnover* is relevant to the market reaction and that its estimated

coefficient has the expected sign.

The fit of the estimated models to the data, measured by the adjusted R^2, is 0.044 for the $(-1, 1)$ window and about 0.1 for the other windows. These values are consistent with studies of similar events carried out in other markets around the world, as pointed out by Eckbo *et al.* (2007).

3.2 Direct costs

Table A.6 shows the results of the 5 cost variables regressions estimation. They show a statistically significant impact of the choice of restricted efforts method on total cost, underwriter spreads, and firm commitment fee. In comparison with the averages of these costs in the unrestricted offer setup shown in Table A.4, the observed reductions represent 24.5%, 26.8%, and 20.3%, respectively. These results support the hypothesis of reducing costs other than transaction costs.

Other notable results are the negative coefficients of *log(Proceeds)* in the regressions of total cost, underwriter spreads, and expenses. The negative coefficients of considerable magnitude relative to the averages in Table A.4 support the presence of economies of scale in the size of the offer. The average variation of the underwriter spreads/total cost ratio is positive and shows that the costs of the offer are reduced at a greater rate than the underwriter spreads in the restricted efforts method.

Firm size, captured by the variable *log(Total assets)*, has negative impact on total cost, underwriter spreads and firm commitment fee. As it is interpreted as a firm feature correlated with the degree of asymmetric information, these results indicate that reduction of information asymmetry also implies a reduction in direct costs via underwriters spreads.

The estimated coefficients of *Leverage* are significant for all dependent variables, but the negative signs in total cost, underwriter spreads, and firm commitment fees are in disagreement with what was found in other studies in other markets (such as Calomiris & Tsoutsoura (2013)). It is also important to note the significant and economically relevant coefficient of the variable *Secondary* in the regression of expenses: a possible interpretation is that, with an associated secondary market offer, there are economies of scale regarding the expenses of the two offers. In the regression of underwriting spreads, the prediction that a larger syndicate increases this type of cost is confirmed.

3.3 Robustness analyses

A valid concern in the regressions of direct costs is a possible bias of omitted variable caused by the fact that conditions of underwriters market may have changed significantly over the years of the sample, influencing the spreads charged by financial institutions. A first attempt to mitigate this problem (and potentially any other that affects costs over time) is to consider year fixed effects in the proposed regression models. Table A.7 shows the results of direct costs regressions estimation with time fixed effects (the coefficients of dummy variables indicating year are not shown).

Comparing these results with those shown in Table A.6, there are no qualitatively important changes. The *Restricted efforts* coefficient in the total cost regression remains negative, increasing its magnitude to -1,014, significant at 5%. The negative and significant (at the 5% level also) estimated coefficient of this variable in the expenses regression is also relevant. In the other regressions, the changes are small and the statistical significance is kept at 10% for the *Restricted efforts* coefficients that were already significant in the previous models. These results are even more noticeable when we remember that the variable *Restricted efforts* is strongly correlated with the sum of the dummy variables of year fixed effects indicating the years 2015 to 2021 (sample correlation is equal to 0.92).

Another robustness test for the estimation of the models involving total cost, underwriter spreads, and firm commitment fee is the insertion, in the initial models, of a variable that captures the conditions of underwriters market. This variable is the Hirschman-Herfindahl index for each year, a measure of the concentration of firms in the respective market. It is calculated as the sum of the squares of the market shares of lead underwriters in a given year, where the market share of a lead underwriter is the fraction of the gross proceeds raised in the offer the institution underwrites relative to the total gross proceeds of offerings in that year. For each of the three regressions, we used four distinct market definitions. In the first, only SEOs are used to delimit the market. In the second one, secondary issues in the secondary market are added. In the third one, all primary issues constitute the market, which implies considering not only SEOs, but also IPOs. The fourth definition, the most comprehensive, also considers primary and secondary issues in the secondary market[1].

The index (variable *HHI* in the regression tables) was included in the

[1] Although uncommon, there are initial public offerings (IPOs) made not by the firm, but by its shareholders.

models in two ways: contemporaneously (that is, for an SEO that took place in a given year, *HHI* assumes the value of the index in that same year) and lagged by one year (in which case the 3 observations of the first year, 2004, are lost). In any method and in any definition of the underwriters market, the main results do not change, as shown in the Tables A.8 to A.13.

3.4 Discussion

Having obtained empirical results that support the existence of economically relevant reductions in direct and indirect issuance costs when firm chooses restricted efforts method of flotation, compared to the unrestricted offer setup, the next question is: what is the mechanism that leads to this cost reduction?

The characteristics of the restricted efforts method that lead to the mitigation of transaction costs, partially captured by public offering expenses, are evident: the relaxation of regulatory requirements and the simplification of procedures for placing the offer. Less obvious are the characteristics that make underwriter spreads cheaper and eliminate the negative market reaction to the announcement of issue in the form of abnormal returns.

In a study that investigates the American market's reaction to private equity placement announcements, Wruck (1989) finds average abnormal returns of 4.5%, which contrasts sharply with the -3% for public offerings reported in previous studies. Private equity placements generally involve the sale of a significant block of shares to a small group of qualified investors. Wruck (1989) shows evidence that the market reaction is highly correlated with the change in the concentration of ownership of firms due to private placement, corroborating the hypothesis that the announcement of the deal is a positive sign of the true value of the firm to the extent in which blockholders, through greater monitoring of managers' actions, reduce agency costs.

In a follow-up study, Hertzel & Smith (1993) state the informational hypothesis that, in addition to the effect of change in firm's ownership structure, a private equity placement provides a signal that eliminates asymmetric information regarding the firm's value. The authors develop a theoretical basis which modifies the Myers & Majluf (1984) model so that the option for private placement can be included in addition to the public offering, and consequently firms can circumvent the underinvestment problem when they are undervalued. The choice of the former over the latter, plus the agreement of buyers with the deal, signals an undervaluation of the firm's shares to the market. Empirical evidence shown by the authors suggests that this informational effect is relevant to determine the market's reaction to the private placement

announcement.

This hypothesis can also be applied to offers with restricted efforts in Brazil. This flotation method has similar characteristics to private equity placements. Firstly, only professional investors engage in the latter transactions, precisely the same segment that is the only one allowed to participate in offerings made under restricted efforts. Secondly, the number of participants is small. It can be argued that the maximum number of professional investors who can be approached by the firm and the underwriters (75) is several times greater than the number of investors in a typical private placement. However, it is necessary to scale the number due to the fact that there is always an underwriting syndicate in the public offering with restricted efforts, providing communication services with investors, while in private placement negotiations take place directly between the firm and investors. This means that the firm's negotiating power, persuasion and knowledge of investors' idiosyncrasies is not harmed in the offer by restricted efforts. Finally, it is also not necessary to register the transaction with the CVM in the case of a private placement. This brings the two types of equity issuance closer together in terms of some of the transaction costs.

Therefore, the neutral reaction of the Brazilian market to restricted efforts SEO announcements can be explained by the informational hypothesis of Hertzel & Smith (1993). Choosing this method over the unrestricted one would signal the undervaluation of the firm according to the Myers & Majluf (1984) model modified by the authors. Additionally, the hypothesis of a change in the ownership structure stated by Wruck (1989) may have a signaling role too, as with trading taking place between professional investors, there may be an expectation of greater monitoring in the future. However, this effect may not be so relevant if, for example, 50 investors each acquire the same fraction of the shares offered. Even if they constitute relevant blocks, there may be a free rider problem in monitoring the actions of managers, resulting in little or no change in agency costs.

A problem with this interpretation is the fact that, in the announcement of a private placement, the negotiation is already guaranteed, and the investors' commitment to the business strengthens the positive signal for the market. In the case of a restricted efforts offering, potential buyers still have to be convinced to buy it. It is possible, however, that the almost exclusive nature of the offer, as well as the presence of underwriters who may decide to allocate their efforts to their own clients (about whom they have more knowledge), may affect the market's perception of the success of the offer. A syndicate with a mean and median of 8 participants, as is the case of our sample for

estimating the cost models, would certainly be able to find more than 50 potential investors[2] and use its discretionary power to allocate shares to ration access and increase the probability of success of the offering with restricted efforts, alleviating the potential liquidity problem and the market's expectation of failure of the issuance.

As for underwriter spreads, we look specifically at the firm commitment fee. This is a cost the firm incurs by transferring inventory risk of issued shares. If the announcement of an offering with restricted efforts really signals undervaluation of the shares and, as we argued above, the liquidity risk can be mitigated due to the characteristics of this type of issuance, then, in equilibrium, reduction (relative to unrestricted offerings) in the firm commitment fee would be expected. Thus, it is possible that the reduction in the degree of asymmetric information between the firm and the market due to the signaling arising from the choice of the issuance by restricted efforts method also explains, at least partially, the reduction in direct costs indicated by our empirical exercise[3].

[2]The fact that the syndicate agrees to coordinate the offer is a sign that its members are confident in finding the necessary liquidity to carry out the offering.

[3]In the case of firm commitment fee, underwriters receive the firm's signal before the market — when they are hired to underwrite the offering — regardless of whether it is the firm that proposes the restricted efforts method to banks or banks convince managers of the convenience of the method.

4
Conclusion

This work brings evidence that the choice of equity issuance by restricted efforts method in Brazil, allowed for this category of securities since 2014, is associated with the reduction of issuance costs in addition to the mitigation of transaction costs caused by the simplification of offer procedures. In a three-day window around the issuance announcement, the average abnormal return is 3.23 percentage points higher for offers via restricted efforts than for unrestricted ones. The effect of method choice is statistically and economically significant. The analysis of direct issuance costs, as usually reported by firms in their issuance prospectuses and reference forms, also points towards a decrease in total cost, underwriter spreads, and firm commitment fee. The evidence also confirms the reduction of at least part of transaction costs (included in expenses), and the relative variations of underwriter spreads and expenses are statistically equal.

We argue that offerings with restricted efforts have similarities with private equity placements. The common characteristics make it reasonable to consider the informational hypothesis, stated by Hertzel & Smith (1993) to provide a theoretical framework for the observation of positive average abnormal returns arising from private placement announcements. By the hypothesis, the act of announcing a private placement (and, in our interpretation, a public offering with restricted efforts) signals that the firm's shares are undervalued, solving the problem of information asymmetry and giving rise to a positive reaction. We extend the hypothesis to direct costs, arguing that the signaling provided by the offer announcement with restricted efforts also allows the reduction of firm commitment fee.

In terms of efficiency of equity markets, our study is also an assessment of the impacts of the new CVM regulation. The results allow us to affirm that the regulatory agency promoted an improvement in the market by reducing the aforementioned costs, the benefits not being solely a softening of transaction costs. The relaxation of obligations that imply strict monitoring of offers by the CVM and production of a large volume of information contributes to mitigating the degree of information asymmetry between firms and the market and to the reduction of the associated costs.

Bibliography

Asquith, Paul, & Mullins, David W. 1986. Equity issues and offering dilution. *Journal of Financial Economics*, **15**(1), 61–89.

Baker, Malcolm, & Wurgler, Jeffrey. 2002. Market Timing and Capital Structure. *The Journal of Finance*, **57**(1), 1–32.

Bethel, Jennifer E., & Krigman, Laurie. 2008. Managing the Costs of Issuing Common Equity: The Role of Registration Choice. *Quarterly Journal of Finance and Accounting*, **47**(4), 57–85.

Bhagat, Sanjai, Marr, M. Wayne, & Thompson, G. Rodney. 1985. The Rule 415 Experiment: Equity Markets. *The Journal of Finance*, **40**(5), 1385–1401.

Calomiris, Charles W, & Tsoutsoura, Margarita. 2013. *Underwriting Costs of Seasoned Equity Offerings: Cross-Sectional Determinants, Technological Change, and Pricing Benefits, 1980–2008*. Tech. rept. Working Paper.

Eckbo, B. Espen, Masulis, Ronald W., & Øyvind Norli. 2007. Security Offerings. 233–373.

Eckbo, B.Espen, & Masulis, Ronald W. 1992. Adverse selection and the rights offer paradox. *Journal of Financial Economics*, **32**(3), 293–332.

Gomes, Matheus da Costa, & Valle, Maurício Ribeiro do. 2017. Ocorrência de equity market timing na decisão de emissão primária de ações (IPO e Follow-on) no mercado de capitais brasileiro.

Hertzel, Michael, & Smith, Richard L. 1993. Market Discounts and Shareholder Gains for Placing Equity Privately. *The Journal of Finance*, **48**(2), 459–485.

Jensen, Michael C. 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review*, **76**(2), 323–329.

Jung, Kooyul, Kim, Yong-Cheol, & Stulz, RenéM. 1996. Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics*, **42**(2), 159–185.

Kim, E Han, & Purnanandam, Amiyatosh. 2006. Why do investors react negatively to seasoned equity offerings? *Ross School of Business Paper*.

Korajczyk, Robert A., Lucas, Deborah J., & McDonald, Robert L. 2015. The Effect of Information Releases on the Pricing and Timing of Equity Issues. *The Review of Financial Studies*, **4**(4), 685–708.

Leland, Hayne E., & Pyle, David H. 1977. Informational Asymmetries, Financial Structure, and Financial Intermediation. *The Journal of Finance*, **32**(2), 371–387.

Lewis, Craig M., Rogalski, Richard J., & Seward, James K. 2003. Industry conditions, growth opportunities and market reactions to convertible debt financing decisions. *Journal of Banking & Finance*, **27**(1), 153–181.

Li, Hui, Liu, Hong, Siganos, Antonios, & Zhou, Mingming. 2016. Bank regulation, financial crisis, and the announcement effects of seasoned equity offerings of US commercial banks. *Journal of Financial Stability*, **25**, 37–46.

Lucas, Deborah J., & McDonald, Robert L. 1990. Equity Issues and Stock Price Dynamics. *The Journal of Finance*, **45**(4), 1019–1043.

Masulis, Ronald W., & Korwar, Ashok N. 1986. Seasoned equity offerings: An empirical investigation. *Journal of Financial Economics*, **15**(1), 91–118.

Medeiros, Otavio Ribeiro de, & Matsumoto, Alberto Shigueru. 2005. Brazilian market reaction to equity issue announcements. *BAR-Brazilian Administration Review*, **2**(2), 35–46.

Myers, Stewart C., & Majluf, Nicholas S. 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, **13**(2), 187–221.

Walker, Mark D., & Yost, Keven. 2008. Seasoned equity offerings: What firms say, do, and how the market reacts. *Journal of Corporate Finance*, **14**(4), 376–386.

Wruck, Karen Hopper. 1989. Equity ownership concentration and firm value: Evidence from private equity financings. *Journal of Financial Economics*, **23**(1), 3–28.

A
Tables

Table A.1: Number of SEOs announced in Brazil by year and issuing method

Year	Unrestricted offering	Restricted efforts	Year	Unrestricted offering	Restricted efforts
2004	4	0	2013	4	0
2005	4	0	2014	1	0
2006	11	0	2015	1	3
2007	6	0	2016	2	5
2008	6	0	2017	2	9
2009	13	0	2018	0	2
2010	13	0	2019	2	26
2011	5	0	2020	0	19
2012	9	0	2021	0	23

Table A.2: Number of SEOs announced in Brazil by year and method of issuing in the sample

Year	Unrestricted offering	Restricted efforts	Year	Unrestricted offering	Restricted efforts
2004	4	0	2013	3	0
2005	2	0	2014	0	0
2006	11	0	2015	1	3
2007	6	0	2016	2	5
2008	4	0	2017	2	10
2009	12	0	2018	0	2
2010	11	0	2019	2	25
2011	5	0	2020	0	18
2012	8	0	2021	0	22

Table A.3: Summary statistics of variables in abnormal returns regressions

	Unrestricted offerings						Restricted offerings						
Variable	N	Mean	St. Dev.	Median	Min	Max	N	Mean	St. Dev.	Median	Min	Max	Mean of Panel 2 minus mean of Panel 1
CAR$(-1,1)$, %	73	−2.479	7.186	−3.078	−17.676	27.433	85	1.171	7.090	1.158	−15.298	31.711	3.650***
CAR$(-2,2)$, %	73	−3.097	7.888	−3.718	−18.271	19.826	85	2.539	8.884	2.001	−21.369	37.988	5.636***
CAR$(-3,3)$, %	73	−3.291	8.435	−3.803	−20.964	19.726	85	2.558	8.998	1.482	−20.348	28.403	5.849***
CAR$(-4,4)$, %	73	−4.151	8.205	−4.005	−22.211	13.667	85	1.859	9.535	1.411	−21.916	26.263	6.010***
CAR$(-5,5)$, %	73	−4.600	9.461	−5.190	−32.198	17.633	85	1.644	10.339	1.659	−20.726	27.336	6.244***
Total assets	73	12.702	54.515	2.024	0.251	457.514	85	5.969	13.415	1.772	0.014	78.624	−6.733
Leverage	73	4.527	9.705	2.306	1.222	80.700	85	6.253	22.649	3.354	−46.929	198.107	1.726
Bank	73	0.027	0.164	0	0	1	85	0.094	0.294	0	0	1	0.067*
Listing segment	73	0.712	0.456	1	0	1	85	0.800	0.402	1	0	1	0.088
Share turnover	73	0.785	4.072	0.191	0.0005	34.917	85	0.636	0.715	0.508	0.0005	5.353	−0.149
Stock run-up, %	73	18.251	24.359	12.460	−23.093	97.318	85	18.365	38.555	7.601	−78.850	206.621	0.114
Stock volatility	73	0.459	0.218	0.422	0.155	1.774	85	0.549	0.306	0.418	0.166	1.493	0.090**
Proceeds/Total assets	73	0.247	0.232	0.176	0.010	1.139	85	0.307	0.411	0.182	0.010	2.523	0.059
Secondary	73	0.479	0.503	0	0	1	85	0.282	0.453	0	0	1	−0.197**
Debt motivation	73	0.315	0.468	0	0	1	85	0.200	0.402	0	0	1	−0.115
Market run-up, %	73	5.222	7.993	4.684	−8.634	23.626	85	5.817	9.915	5.690	−19.107	30.474	0.595
Market volatility	73	0.226	0.067	0.202	0.136	0.388	85	0.231	0.137	0.198	0.119	0.867	0.005

This table shows summary statistics of the variables used in the regressions of abnormal returns. The CAR variables are the cumulated abnormal returns calculated using the market model over the window $(-90,-10)$ days, with day 0 = announcement day. *Total assets* is measured in billions of reais and are deflated to 2004 values by the GDP deflator. *Leverage* is firm's total assets/equity. *Bank* is a dummy variable indicating if issuer is a bank. *Listing segment* is another binary variable indicating firm listed in the Novo Mercado segment. *Share turnover* is the mean, over the $(-100,-30)$ window, of the daily volume of shares traded/shares outstanding ratio. *Stock run-up* is the issuer's cumulative stock return over the $(-40,-2)$ window and is used in percentage points. *Stock volatility* is the annualized standard deviation of issuer's stock return over the $(-60,-10)$ window. *Proceeds/Total assets* is the fraction of offer's gross proceeds relative to firm's total assets. *Secondary* is a dummy variable indicating if there a secondary market offer being placed together with the SEO. *Debt motivation* is a dummy variable equal to 1 if firm stated repayment of debt as one of the uses of offering proceeds. *Market run-up*, measured in percentage points, is the cumulative return of IBrX over the $(-40,-2)$ window. *Market volatility* is the annualized standard deviation of IBrX returns over the window $(-70,-1)$. The test of difference of means for *Total assets* is done with the logarithm of this variable. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.4: Summary statistics of variables in cost regressions

	Unrestricted offerings						Restricted offerings						
Variable	N	Mean	St. Dev.	Median	Min	Max	N	Mean	St. Dev.	Median	Min	Max	Mean of Panel 2 minus mean of Panel 1
Total cost, %	72	3.557	1.513	3.775	0.500	6.500	78	3.174	1.307	2.975	1.070	6.360	−0.383
Underwriter spreads, %	72	2.952	1.340	3.028	0.000	5.600	78	2.520	0.948	2.500	0.300	4.750	−0.432**
Expenses, %	72	0.605	0.492	0.540	0.000	3.530	78	0.654	0.653	0.445	0.070	3.150	0.050
Firm commitment fee, %	72	1.068	0.621	1.045	0.000	2.700	78	1.051	0.484	1.140	0.000	2.250	−0.017
Under. spreads/T. cost, %	72	82.966	12.382	84.543	0.000	100.000	78	81.254	13.410	84.730	8.696	95.349	−1.713
Total Assets	72	12.853	54.882	2.146	0.251	457.514	78	6.263	13.949	1.799	0.014	78.624	−6.589
Leverage	72	4.559	9.769	2.318	1.222	80.700	78	6.603	23.623	3.386	−46.929	198.107	2.044
Bank	72	0.028	0.165	0	0	1	78	0.090	0.288	0	0	1	0.062
Listing segment	72	0.722	0.451	1	0	1	78	0.795	0.406	1	0	1	0.073
Share turnover	72	0.794	4.100	0.192	0.0005	34.917	78	0.615	0.690	0.495	0.0005	5.353	−0.179
Stock run-up, %	72	18.253	24.530	12.365	−23.093	97.318	78	18.720	37.784	9.341	−78.850	206.621	0.467
Stock volatility	72	0.459	0.220	0.417	0.155	1.774	78	0.544	0.309	0.417	0.166	1.493	0.086*
Proceeds	72	0.794	0.469	0.683	0.249	3.220	78	0.696	0.293	0.642	0.145	1.529	−0.097
Proceeds/Total assets	72	0.251	0.232	0.176	0.010	1.139	78	0.289	0.343	0.182	0.010	2.167	0.038
Secondary	72	0.486	0.503	0	0	1	78	0.282	0.453	0	0	1	−0.204
Debt motivation	72	0.319	0.470	0	0	1	78	0.192	0.397	0	0	1	−0.127*
No. of underwriters	72	6.514	1.453	7	4	10	78	7.705	1.691	8	4	10	1.191***
Market run-up, %	72	5.198	8.047	4.583	−8.634	23.626	78	5.927	9.915	5.749	−19.107	30.474	0.729
Market volatility	72	0.227	0.067	0.202	0.136	0.388	78	0.231	0.143	0.196	0.119	0.867	0.005

This table shows summary statistics of the variables used in the regressions of direct costs. *Total assets* is measured in billions of reais and are deflated to 2004 values by the GDP deflator. *Leverage* is firm's total assets/equity. *Bank* is a dummy variable indicating if issuer is a bank. *Listing segment* is another binary variable indicating firm listed in the Novo Mercado segment. *Share turnover* is the mean, over the $(-100, -30)$ window, of the daily volume of shares traded/shares outstanding ratio. *Stock run-up* is the issuer's cumulative stock return over the $(-40, -2)$ window and is used in percentage points. *Stock volatility* is the annualized standard deviation of issuer's stock return over the $(-60, -10)$ window. *Proceeds* variable is the gross proceeds firm expect to receive from the offer, measured in reais deflated to 2004 values by the GDP deflator. *Proceeds/Total assets* is the fraction of offer's gross proceeds relative to firm's total assets. *Secondary* is a dummy variable indicating if there is a secondary market offer being placed together with the SEO. *Debt motivation* is a dummy variable equal to 1 if firm stated repayment of debt as one of the uses of offering proceeds. *No. of underwriters* is the number of banks participating in the offer's underwriter syndicate. *Market run-up*, measured in percentage points, is the cumulative return of IBrX over the $(-40, -2)$ window. *Market volatility* is the annualized standard deviation of IBrX returns over the window $(-70, 1)$. The test of difference of means for *Total assets* is done with the logarithm of this variable. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.5: SEO announcement stock returns

	Dependent variable:				
	CAR(-1, 1)	CAR(-2, 2)	CAR(-3, 3)	CAR(-4, 4)	CAR(-5, 5)
Restricted efforts	3.230***	4.961***	4.994***	4.902***	5.701***
	(1.115)	(1.316)	(1.383)	(1.365)	(1.582)
log(Total assets)	−0.221	−0.851	−0.836	−0.471	−0.434
	(0.593)	(0.722)	(0.623)	(0.664)	(0.675)
Leverage	−0.027***	−0.026*	−0.005	0.004	0.006
	(0.010)	(0.014)	(0.019)	(0.016)	(0.014)
Bank	1.728	2.466	1.448	2.588	4.706
	(2.050)	(3.066)	(2.882)	(3.226)	(3.839)
Listing segment	0.054	1.964	1.595	1.245	0.302
	(1.484)	(1.858)	(1.928)	(2.005)	(1.877)
Share turnover	0.115**	0.201**	0.152*	−0.059	0.078
	(0.051)	(0.079)	(0.089)	(0.104)	(0.102)
Stock run-up	−0.050**	−0.067**	−0.060*	−0.039	−0.005
	(0.024)	(0.033)	(0.032)	(0.034)	(0.036)
Stock volatility	−0.262	3.243	0.024	−1.260	−6.829
	(2.420)	(5.216)	(4.739)	(5.048)	(6.274)
Proceeds/Total assets	0.883	−3.898	0.157	1.437	3.015
	(2.338)	(3.147)	(2.386)	(2.797)	(3.032)
Secondary	−0.447	−1.418	−2.455*	−3.756**	−2.969*
	(1.160)	(1.352)	(1.423)	(1.465)	(1.572)
Debt motivation	−0.325	2.466	2.328	1.835	2.674
	(1.468)	(1.788)	(1.693)	(1.678)	(1.799)
Market run-up	0.223***	0.167*	0.298***	0.284***	0.310***
	(0.075)	(0.092)	(0.093)	(0.097)	(0.106)
Market volatility	4.274	4.648	2.713	1.919	11.675
	(5.335)	(9.413)	(9.205)	(9.954)	(9.526)
Constant	−3.320	−5.122*	−4.460	−4.407	−5.814**
	(2.236)	(2.991)	(2.863)	(3.117)	(2.854)
N	158	158	158	158	158
Adjusted R^2	0.044	0.112	0.103	0.099	0.117

This table shows the results of the abnormal returns regressions OLS estimation across 5 alternative event windows. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cumulative abnormal returns (CAR) of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.6: Direct costs (fees and expenses)

	Dependent variable:				
	Total cost	Underwriter spreads	Expenses	Firm commitment fee	Underwriter spreads/Total cost
Restricted efforts	-0.872^{***}	-0.791^{***}	-0.082	-0.217^{***}	-1.696
	(0.231)	(0.208)	(0.075)	(0.068)	(1.928)
log(Total assets)	-0.351^{**}	-0.247^{*}	-0.104	-0.072^{*}	1.960
	(0.147)	(0.126)	(0.067)	(0.043)	(1.209)
Leverage	-0.005^{*}	-0.007^{***}	0.002^{**}	-0.001^{***}	-0.085^{***}
	(0.003)	(0.002)	(0.001)	(0.0003)	(0.017)
Bank	0.294	0.418	-0.124	0.147	7.035^{**}
	(0.358)	(0.330)	(0.159)	(0.103)	(3.018)
Listing segment	0.259	0.462^{*}	-0.202	0.112	7.297^{*}
	(0.253)	(0.269)	(0.138)	(0.075)	(3.759)
Share turnover	0.004	0.010	-0.006	-0.001	0.209
	(0.012)	(0.011)	(0.007)	(0.004)	(0.160)
Stock run-up	0.005	0.004	0.001	-0.0003	-0.010
	(0.003)	(0.003)	(0.001)	(0.001)	(0.028)
Stock volatility	0.558	0.331	0.227	0.106	-1.733
	(0.477)	(0.441)	(0.153)	(0.118)	(3.499)
log(Proceeds)	-1.261^{***}	-0.693^{*}	-0.567^{***}	-0.048	8.437^{**}
	(0.448)	(0.386)	(0.203)	(0.099)	(3.921)
Proceeds/Total assets	0.143	0.108	0.035	0.102	3.713
	(0.435)	(0.389)	(0.156)	(0.179)	(3.065)
Secondary	-0.290^{*}	0.004	-0.294^{***}	0.001	5.753^{***}
	(0.172)	(0.170)	(0.080)	(0.052)	(2.106)
Debt motivation	0.071	-0.144	0.214^{**}	0.112	-5.788^{**}
	(0.188)	(0.185)	(0.104)	(0.093)	(2.597)
log(No. of underwriters)	0.826	0.739^{*}	0.087	0.005	5.141
	(0.521)	(0.445)	(0.159)	(0.128)	(3.283)
Market run-up	0.004	0.007	-0.003	0.009^{**}	0.210^{*}
	(0.013)	(0.012)	(0.004)	(0.004)	(0.122)
Market volatility	-0.126	0.296	-0.422	-0.009	4.721
	(0.988)	(0.903)	(0.267)	(0.236)	(6.384)
Constant	1.490	0.946	0.544	0.366	66.232^{***}
	(1.202)	(1.028)	(0.410)	(0.292)	(8.638)
N	150	150	150	150	150
Adjusted R^2	0.466	0.326	0.387	0.144	0.293

This table shows the results of the direct costs regressions OLS estimation across 4 cost components and the underwriter spreads/total cost ratio. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.7: Direct costs (fees and expenses) — time fixed effects

	Dependent variable:				
	Total cost	Underwriter spreads	Expenses	Firm commitment fee	Underwriter spreads/Total cost
Restricted efforts	-1.014^{**}	-0.735^{**}	-0.280^{**}	-0.285^{*}	1.693
	(0.402)	(0.351)	(0.119)	(0.154)	(2.435)
log(Total assets)	-0.331^{**}	-0.231^{*}	-0.100^{*}	-0.076^{*}	1.779^{*}
	(0.135)	(0.118)	(0.060)	(0.041)	(1.038)
Leverage	−0.004	-0.006^{***}	0.002^{*}	-0.001^{**}	-0.075^{***}
	(0.002)	(0.002)	(0.001)	(0.0005)	(0.016)
Bank	0.298	0.347	−0.049	0.225^{*}	5.676^{*}
	(0.340)	(0.312)	(0.176)	(0.121)	(3.347)
Listing segment	0.299	0.414^{*}	−0.115	0.166	5.320
	(0.224)	(0.248)	(0.112)	(0.105)	(3.211)
Share turnover	0.010	0.005	0.005	−0.004	0.012
	(0.015)	(0.014)	(0.006)	(0.006)	(0.131)
Stock run-up	0.005^{*}	0.005	0.001	0.0002	−0.006
	(0.003)	(0.003)	(0.001)	(0.001)	(0.028)
Stock volatility	0.641	0.277	0.364^{***}	0.044	−3.955
	(0.434)	(0.435)	(0.133)	(0.100)	(3.494)
log(Proceeds)	-1.544^{***}	-0.869^{**}	-0.675^{***}	−0.051	9.860^{***}
	(0.418)	(0.358)	(0.182)	(0.098)	(3.234)
Proceeds/Total assets	0.192	0.093	0.099	0.059	2.838
	(0.376)	(0.334)	(0.158)	(0.108)	(3.223)
Secondary	-0.307^{*}	−0.061	-0.245^{***}	−0.031	4.650^{***}
	(0.181)	(0.166)	(0.078)	(0.045)	(1.636)
Debt motivation	0.050	−0.076	0.126^{*}	0.079	-3.733^{*}
	(0.180)	(0.181)	(0.073)	(0.091)	(1.985)
log(No. of underwriters)	1.389^{**}	1.135^{**}	0.254	0.072	4.329
	(0.569)	(0.497)	(0.232)	(0.175)	(5.117)
Market run-up	0.003	0.002	0.0002	0.006	0.167
	(0.013)	(0.012)	(0.006)	(0.004)	(0.133)
Market volatility	−0.673	−0.021	-0.651^{**}	0.127	6.870
	(0.895)	(0.842)	(0.272)	(0.211)	(6.869)
Constant	1.500	0.196	1.305	0.484	43.217^{**}
	(1.217)	(1.290)	(0.790)	(0.602)	(21.394)
N	150	150	150	150	150
Adjusted R^2	0.497	0.333	0.474	0.209	0.347

This table shows the results of the direct costs regressions OLS estimation with fixed year effects (results for time dummy variables are not shown) across 4 cost components and the underwriter spreads/total cost ratio. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.8: Total cost — Underwriters market Hirschman-Herfindahl index

	Dependent variable:			
	Total cost			
	Primary SEO proceeds	Primary and secondary SEO proceeds	Primary SEO and IPO proceeds	Primary and secondary SEO and IPO proceeds
Restricted efforts	-0.781^{***}	-0.804^{***}	-0.829^{***}	-0.808^{***}
	(0.245)	(0.239)	(0.248)	(0.245)
log(Total assets)	-0.382^{**}	-0.380^{**}	-0.367^{**}	-0.374^{**}
	(0.153)	(0.153)	(0.155)	(0.155)
Leverage	-0.005^{**}	-0.005^{**}	-0.005^{**}	-0.005^{**}
	(0.002)	(0.002)	(0.002)	(0.002)
Bank	0.354	0.321	0.319	0.318
	(0.367)	(0.365)	(0.363)	(0.363)
Listing segment	0.273	0.257	0.259	0.259
	(0.254)	(0.253)	(0.254)	(0.254)
Share turnover	0.007	0.007	0.006	0.006
	(0.013)	(0.013)	(0.013)	(0.013)
Stock run-up	0.005	0.005	0.005	0.005
	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	0.580	0.586	0.565	0.579
	(0.478)	(0.479)	(0.480)	(0.479)
log(Proceeds)	-1.204^{***}	-1.196^{**}	-1.223^{***}	-1.199^{**}
	(0.460)	(0.465)	(0.466)	(0.470)
Proceeds/Total assets	0.125	0.122	0.132	0.128
	(0.436)	(0.438)	(0.437)	(0.437)
Secondary	−0.281	−0.278	−0.277	−0.270
	(0.170)	(0.170)	(0.172)	(0.173)
Debt motivation	0.082	0.086	0.077	0.080
	(0.185)	(0.185)	(0.187)	(0.188)
log(No. of underwriters)	0.887^{*}	0.845	0.822	0.809
	(0.522)	(0.520)	(0.522)	(0.522)
Market run-up	0.007	0.007	0.006	0.007
	(0.013)	(0.013)	(0.013)	(0.013)
Market volatility	−0.260	−0.274	−0.184	−0.217
	(1.009)	(1.004)	(0.994)	(0.996)
HHI	0.488	0.488	0.272	0.443
	(0.406)	(0.428)	(0.484)	(0.516)
Constant	1.243	1.371	1.454	1.458
	(1.212)	(1.201)	(1.197)	(1.199)
N	150	150	150	150
Adjusted R^2	0.467	0.466	0.463	0.465

This table shows the results of the total cost regressions OLS estimation across 4 definitions of underwriters market and using the additional control variable *HHI*, the Hirschman-Herfindahl index calculated in each market definition in the same year of the offer. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.9: Underwriter spreads — Underwriters market Hirschman-Herfindahl index

	Dependent variable:			
	Underwriter spreads			
	Primary SEO proceeds	Primary and secondary SEO proceeds	Primary SEO and IPO proceeds	Primary and secondary SEO and IPO proceeds
Restricted efforts	-0.711^{***}	-0.722^{***}	-0.735^{***}	-0.718^{***}
	(0.219)	(0.215)	(0.220)	(0.218)
log(Total assets)	-0.274^{**}	-0.276^{**}	-0.267^{**}	-0.273^{**}
	(0.129)	(0.129)	(0.130)	(0.130)
Leverage	-0.007^{***}	-0.007^{***}	-0.007^{***}	-0.007^{***}
	(0.002)	(0.002)	(0.002)	(0.002)
Bank	0.470	0.445	0.450	0.446
	(0.340)	(0.339)	(0.337)	(0.338)
Listing segment	0.474^{*}	0.459^{*}	0.461^{*}	0.461^{*}
	(0.272)	(0.271)	(0.271)	(0.271)
Share turnover	0.013	0.013	0.012	0.013
	(0.012)	(0.012)	(0.012)	(0.012)
Stock run-up	0.004	0.004	0.004	0.004
	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	0.350	0.359	0.340	0.355
	(0.443)	(0.446)	(0.446)	(0.445)
log(Proceeds)	−0.644	−0.629	−0.645	−0.624
	(0.394)	(0.396)	(0.397)	(0.400)
Proceeds/Total assets	0.092	0.087	0.095	0.091
	(0.389)	(0.391)	(0.389)	(0.390)
Secondary	0.011	0.015	0.021	0.027
	(0.169)	(0.169)	(0.170)	(0.171)
Debt motivation	−0.134	−0.129	−0.136	−0.133
	(0.183)	(0.182)	(0.184)	(0.184)
log(No. of underwriters)	0.793^{*}	0.758^{*}	0.734	0.720
	(0.447)	(0.445)	(0.445)	(0.445)
Market run-up	0.009	0.010	0.008	0.010
	(0.012)	(0.012)	(0.012)	(0.012)
Market volatility	0.178	0.148	0.220	0.193
	(0.926)	(0.923)	(0.917)	(0.916)
HHI	0.428	0.485	0.351	0.502
	(0.369)	(0.392)	(0.439)	(0.474)
Constant	0.730	0.828	0.900	0.910
	(1.042)	(1.031)	(1.027)	(1.028)
N	150	150	150	150
Adjusted R^2	0.327	0.328	0.324	0.327

This table shows the results of the underwriter spreads regressions OLS estimation across 4 definitions of underwriters market and using the additional control variable *HHI*, the Hirschman-Herfindahl index calculated in each market definition in the same year of the offer. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.10: Firm commitment fee — Underwriters market Hirschman-Herfindahl index

	Dependent variable:			
	Firm commitment fee			
	Primary SEO proceeds	Primary and secondary SEO proceeds	Primary SEO and IPO proceeds	Primary and secondary SEO and IPO proceeds
Restricted efforts	-0.195^{***}	-0.212^{***}	-0.204^{***}	-0.210^{***}
	(0.064)	(0.068)	(0.069)	(0.070)
log(Total assets)	-0.079^{*}	-0.074^{*}	-0.076^{*}	-0.074^{*}
	(0.044)	(0.044)	(0.043)	(0.043)
Leverage	-0.001^{***}	-0.001^{***}	-0.001^{***}	-0.001^{***}
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Bank	0.161	0.149	0.154	0.149
	(0.106)	(0.103)	(0.102)	(0.102)
Listing segment	0.115	0.112	0.112	0.112
	(0.076)	(0.075)	(0.075)	(0.075)
Share turnover	0.00005	−0.0004	−0.0001	−0.0004
	(0.004)	(0.004)	(0.004)	(0.004)
Stock run-up	−0.0002	−0.0003	−0.0003	−0.0003
	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.111	0.108	0.108	0.108
	(0.121)	(0.120)	(0.119)	(0.120)
log(Proceeds)	−0.034	−0.043	−0.037	−0.042
	(0.099)	(0.098)	(0.099)	(0.098)
Proceeds/Total assets	0.098	0.101	0.099	0.101
	(0.176)	(0.178)	(0.177)	(0.178)
Secondary	0.004	0.002	0.005	0.004
	(0.051)	(0.051)	(0.050)	(0.051)
Debt motivation	0.115	0.113	0.113	0.113
	(0.092)	(0.092)	(0.092)	(0.092)
log(No. of underwriters)	0.020	0.006	0.004	0.003
	(0.131)	(0.130)	(0.127)	(0.126)
Market run-up	0.009^{**}	0.009^{**}	0.009^{**}	0.009^{**}
	(0.004)	(0.004)	(0.004)	(0.004)
Market volatility	−0.041	−0.020	−0.026	−0.018
	(0.255)	(0.253)	(0.250)	(0.249)
HHI	0.118	0.036	0.079	0.045
	(0.136)	(0.147)	(0.157)	(0.176)
Constant	0.306	0.357	0.355	0.363
	(0.309)	(0.302)	(0.293)	(0.295)
N	150	150	150	150
Adjusted R^2	0.142	0.138	0.139	0.138

This table shows the results of the firm commitment fee regressions OLS estimation across 4 definitions of underwriters market and using the additional control variable *HHI*, the Hirschman-Herfindahl index calculated in each market definition in the same year of the offer. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.11: Total cost — Underwriters market Hirschman-Herfindahl index (lagged)

	Dependent variable:			
	Total cost			
	Primary SEO proceeds	Primary and secondary SEO proceeds	Primary SEO and IPO proceeds	Primary and secondary SEO and IPO proceeds
Restricted efforts	-0.882^{***}	-0.853^{***}	-0.883^{***}	-0.885^{***}
	(0.229)	(0.229)	(0.227)	(0.228)
log(Total assets)	-0.349^{**}	-0.345^{**}	-0.338^{**}	-0.333^{**}
	(0.144)	(0.143)	(0.140)	(0.140)
Leverage	-0.006^{**}	-0.006^{**}	-0.006^{**}	-0.006^{**}
	(0.002)	(0.002)	(0.003)	(0.003)
Bank	0.320	0.308	0.268	0.222
	(0.345)	(0.341)	(0.333)	(0.334)
Listing segment	0.342	0.329	0.320	0.284
	(0.255)	(0.253)	(0.250)	(0.246)
Share turnover	0.008	0.007	0.005	0.003
	(0.013)	(0.013)	(0.013)	(0.013)
Stock run-up	0.005^{*}	0.005^{*}	0.006^{*}	0.006^{*}
	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	0.536	0.530	0.545	0.566
	(0.463)	(0.456)	(0.441)	(0.438)
log(Proceeds)	-1.308^{***}	-1.314^{***}	-1.357^{***}	-1.347^{***}
	(0.441)	(0.436)	(0.429)	(0.428)
Proceeds/Total assets	0.147	0.148	0.124	0.131
	(0.450)	(0.447)	(0.446)	(0.440)
Secondary	−0.282	−0.284	-0.309^{*}	-0.312^{*}
	(0.177)	(0.178)	(0.182)	(0.182)
Debt motivation	0.010	0.007	0.021	0.018
	(0.188)	(0.187)	(0.188)	(0.187)
log(No. of underwriters)	0.901^{*}	0.917^{*}	0.910^{*}	0.924^{*}
	(0.523)	(0.522)	(0.514)	(0.514)
Market run-up	0.006	0.004	0.004	0.003
	(0.013)	(0.013)	(0.013)	(0.013)
Market volatility	−0.271	−0.251	−0.312	−0.255
	(0.986)	(0.978)	(0.966)	(0.955)
HHI	−0.356	−0.416	−0.736	-0.845^{*}
	(0.317)	(0.357)	(0.451)	(0.498)
Constant	1.420	1.376	1.464	1.436
	(1.223)	(1.215)	(1.180)	(1.182)
N	147	147	147	147
Adjusted R^2	0.480	0.480	0.486	0.487

This table shows the results of the total cost regressions OLS estimation across 4 definitions of underwriters market and using the additional control variable *HHI*, the Hirschman-Herfindahl index calculated in each market definition in the year preceding the one of the offer. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.12: Underwriter spreads — Underwriters market Hirschman-Herfindahl index (lagged)

	Dependent variable:			
	Underwriter spreads			
	Primary SEO proceeds	Primary and secondary SEO proceeds	Primary SEO and IPO proceeds	Primary and secondary SEO and IPO proceeds
Restricted efforts	-0.837^{***}	-0.819^{***}	-0.837^{***}	-0.839^{***}
	(0.209)	(0.209)	(0.208)	(0.208)
log(Total assets)	-0.267^{**}	-0.264^{**}	-0.260^{**}	-0.257^{**}
	(0.125)	(0.123)	(0.121)	(0.122)
Leverage	-0.007^{***}	-0.007^{***}	-0.007^{***}	-0.007^{***}
	(0.002)	(0.002)	(0.002)	(0.002)
Bank	0.422	0.413	0.392	0.365
	(0.323)	(0.321)	(0.315)	(0.318)
Listing segment	0.433	0.425	0.420	0.399
	(0.267)	(0.268)	(0.265)	(0.266)
Share turnover	0.009	0.008	0.007	0.006
	(0.011)	(0.011)	(0.011)	(0.011)
Stock run-up	0.004	0.004	0.004	0.004
	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	0.313	0.309	0.318	0.331
	(0.442)	(0.438)	(0.432)	(0.430)
log(Proceeds)	-0.680^{*}	-0.684^{*}	-0.709^{*}	-0.704^{*}
	(0.384)	(0.382)	(0.378)	(0.379)
Proceeds/Total assets	0.093	0.093	0.079	0.084
	(0.394)	(0.392)	(0.391)	(0.389)
Secondary	−0.039	−0.041	−0.054	−0.056
	(0.169)	(0.171)	(0.172)	(0.173)
Debt motivation	−0.119	−0.120	−0.112	−0.115
	(0.182)	(0.181)	(0.182)	(0.181)
log(No. of underwriters)	0.690^{*}	0.697^{*}	0.694^{*}	0.701^{*}
	(0.363)	(0.363)	(0.359)	(0.359)
Market run-up	0.009	0.009	0.008	0.008
	(0.012)	(0.012)	(0.012)	(0.012)
Market volatility	0.095	0.104	0.073	0.107
	(0.913)	(0.907)	(0.903)	(0.895)
HHI	−0.214	−0.264	−0.434	−0.496
	(0.275)	(0.310)	(0.381)	(0.428)
Constant	1.356	1.341	1.382	1.368
	(0.865)	(0.862)	(0.837)	(0.841)
N	147	147	147	147
Adjusted R^2	0.332	0.332	0.335	0.335

This table shows the results of the underwriter spreads regressions OLS estimation across 4 definitions of underwriters market and using the additional control variable *HHI*, the Hirschman-Herfindahl index calculated in each market definition in the year preceding the one of the offer. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

Table A.13: Firm commitment fee — Underwriters market Hirschman-Herfindahl index (lagged)

	Dependent variable:			
	Firm commitment fee			
	Primary SEO proceeds	Primary and secondary SEO proceeds	Primary SEO and IPO proceeds	Primary and secondary SEO and IPO proceeds
Restricted efforts	-0.211^{***}	-0.204^{***}	-0.208^{***}	-0.211^{***}
	(0.070)	(0.067)	(0.069)	(0.070)
log(Total assets)	-0.075^{*}	-0.074^{*}	-0.073^{*}	-0.072^{*}
	(0.044)	(0.043)	(0.044)	(0.043)
Leverage	-0.001^{***}	-0.001^{***}	-0.001^{***}	-0.001^{***}
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Bank	0.111	0.104	0.110	0.095
	(0.099)	(0.098)	(0.097)	(0.096)
Listing segment	0.054	0.050	0.052	0.044
	(0.069)	(0.069)	(0.068)	(0.067)
Share turnover	−0.002	−0.003	−0.002	−0.003
	(0.004)	(0.004)	(0.004)	(0.004)
Stock run-up	0.00003	0.0001	0.00003	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.115	0.112	0.117	0.121
	(0.114)	(0.112)	(0.114)	(0.111)
log(Proceeds)	−0.036	−0.037	−0.043	−0.044
	(0.099)	(0.098)	(0.100)	(0.099)
Proceeds/Total assets	0.111	0.109	0.111	0.109
	(0.175)	(0.174)	(0.175)	(0.174)
Secondary	−0.001	−0.004	−0.0004	−0.005
	(0.049)	(0.049)	(0.048)	(0.049)
Debt motivation	0.157^{*}	0.158^{*}	0.157^{*}	0.158^{*}
	(0.093)	(0.093)	(0.094)	(0.093)
log(No. of underwriters)	0.038	0.039	0.041	0.042
	(0.097)	(0.099)	(0.097)	(0.099)
Market run-up	0.009^{**}	0.008^{**}	0.008^{**}	0.008^{**}
	(0.004)	(0.004)	(0.004)	(0.004)
Market volatility	−0.084	−0.089	−0.073	−0.076
	(0.231)	(0.226)	(0.225)	(0.222)
HHI	−0.072	−0.122	−0.070	−0.144
	(0.081)	(0.091)	(0.111)	(0.125)
Constant	0.377^{*}	0.389^{*}	0.354	0.373^{*}
	(0.218)	(0.224)	(0.220)	(0.221)
N	147	147	147	147
Adjusted R^2	0.169	0.173	0.168	0.172

This table shows the results of the firm commitment fee regressions OLS estimation across 4 definitions of underwriters market and using the additional control variable *HHI*, the Hirschman-Herfindahl index calculated in each market definition in the year preceding the one of the offer. The estimated coefficients of the variable *Restricted efforts* — which is a dummy variable for equity issue under restricted offering method — are the average difference between cost component of restricted efforts offering and unrestricted offering announcements. The other variables are controls for firm-specific, issuance-specific, and market-specific features. Heteroskedasticity-robust standard errors are shown in parentheses. *N* is the number of observations. *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.