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ABSTRACT

Does the first offshore bond initial public offering (BIPO) affect firm valuation? By using a sample of US firms we document the dynamics of the firm valuation in response to initial offshore bond issuance. We find that offshore BIPOs have a positive short-term effect on US firms' valuations. The effect varies in firm characteristics, timing, and the location of the issue. Positive valuation effect is further confirmed by using difference-in-differences analysis approach, where offshore bond issuers are compared with their domestic counterparts. Additionally, firms with a strong need for external funds and growth prospects accelerate their offshore public debt market entry.

1. Introduction

The available literature on the effects of internationalization in the context of raising capital abroad mainly focuses on firms from around the world internationalizing by issuing equity in the USA (e.g., Cumming, Hou, & Wu, 2017; Doidge, Karolyi, & Stulz, 2004; Doidge, Karolyi, & Stulz, 2009; Li, Li, Mittoo, Song, & Zheng, 2019; Reese & Weisbach, 2002). At the same time, trends from recent decades indicate an increasing number of corporate debt offerings and a growth in the volume of capital raised by US firms worldwide. The current paper examines US firms that enter foreign markets by issuing straight dollar denominated debt and the effects of the first offshore bond initial public offerings (hereafter BIPO).

Recent evidence indicates that the competitiveness of the US equity and bond markets relative to overseas markets has weakened (see, e.g., Zingales, 2007; Peristiani & Santos, 2010). Over the last two decades,

international corporate bond markets have been growing at a faster rate than the US bond market.¹ This is most commonly attributed to the financial development, liberalization, and disintermediation of the major overseas markets along with the adverse influence of the enactment of new regulations (e.g., the Sarbanes-Oxley Act of 2002) on the competitiveness of the US capital market. Studies by Engel, Hayes, and Wang (2007), Marosi and Massoud (2007), and Berger, Li, and Wong (2005) suggest that costs arising from SOX discourage firms from listing in the USA and cause US firms to raise capital on overseas exchanges. Peristiani and Santos (2010) show that the choice of US firms to change the market of debt financing from the domestic to the foreign is driven by the decreased US bond market competitiveness reflected in relatively higher underwriting costs.

The extant literature on international corporate finance mainly directs attention to the effects of actions to raise foreign equity capital and focuses on firms from markets around the world internationalizing in the

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¹ In the mid-1990s, the total volume of corporate bonds issued in the US (\$564 billion in 1995) was nearly twice the volume of all other bond markets combined. The disproportionate growth of US and international bond markets resulted in equal estimates of around \$1.5 trillion in mid-2000s. Over the recent decade, as indicated in Thompson Reuters Debt Capital Markets reviews, this trend continued, and the 2015 figures record the US share of corporate bond issuance totaling \$2.6 trillion, which is less than half of global debt issuance (\$5.3 trillion) in 2015.

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USA and other developed markets by issuing equity (see e.g., [Purkayastha and Kumar \(2021\)](#) for a comprehensive overview of the literature on internationalization through foreign listing). However, raising debt in international markets is a far more important source of capital for firms than issuing equity given that the international bond market represents the largest segment of the international capital market ([Lau & Yu, 2009](#)). Consequently, debt markets tend to be internationalized to a larger extent than equity markets ([Gozzi, Levine, & Schmukler, 2010](#)). Accordingly, trends relating to the raising of foreign capital over recent decades indicate that financial internationalization is becoming a multidirectional phenomenon with an increasing number of US firms issuing securities (primarily bonds) in markets worldwide. Over the last three decades, the volume of straight dollar denominated corporate bond issuance by US firms on overseas exchanges has grown from \$35 billion in the 1980s to \$50 billion and \$1 trillion in the 1990s and 2000s respectively. The average number of issuances per year almost doubled over these years from 46 in the 1980s to 85 in the 2000s.

Earlier empirical work on international bond markets primarily focuses on heterogeneity in bond characteristics (size, yields, maturity, interest rate type, and currency) between domestic and foreign issues ([Finnerty, Schneeweis, & Hegde, 1980](#); [Gozzi, Levine, Peria, & Schmukler, 2015](#); [Mahajan & Fraser, 1986](#)). The first study to examine potential value creation effects of international bond offerings by US firms is that of [Miller and Puthenpurackal \(2005\)](#) who document positive stock price reaction to global bond (traded in multiple markets) issue announcements. [Petrsek \(2010\)](#) studies the effects of global bond issues on bond liquidity and yields. [Gu, Filatotchev, Bell, and Rasheed \(2019\)](#) examine the effects of institutional distance on the cost of capital in global bond markets. Our study differs from the previous literature by focusing on US firms that raise debt capital in major overseas markets. Hence, this is the first study to examine the valuation effects of first time offshore bond issuances by US firms.

The current paper contributes to the international corporate finance literature in several ways. First, this paper extends the growing literature on the link between initial public debt issues and the various consequences of debt structure change. Given the focus in that stream of literature, the initial shift to public debt financing is shown to be one of the most informative occurrences of the capital raising events. In contrast to previous studies that mainly focus on domestic bond IPOs, the current research provides new insight on the validity of some debt structure theories by focusing on the unique information content of overseas initial public debt offerings. Second, this paper contributes to several prominent capital structure theories by providing new empirical evidence on the valuation effects of overseas corporate debt offerings. Third, an initial public debt issue in a foreign market also offers exclusive opportunities to investigate the impact that financial internationalization has on firm value, therefore this study also adds to the debate around theories of firm internationalization. Another contribution of this study is that our empirical investigation provides new evidence on the determinants of a firm's decision to enter the public bond market. We identify the characteristics that affect the timing of firms' decisions to undertake an initial public debt offering abroad.²

This paper uses a sample on initial debt issues in overseas markets in the period from January 1984 to January 2015 and portrays the offshore BIPO market. The dynamics of all offshore bond issues are contingent upon the state of the US economy, similar to the distribution of seasoned straight debt offers in the domestic market, while the number of foreign debt IPOs are more evenly distributed throughout the sample. Both the average volume and average number of offshore BIPOs have been steadily growing throughout the sample years. The most recent decade is characterized by both an increasing number of relatively small and

young firms that undertake a BIPO overseas and by an increase in the variety of markets US firms internationalize into.

The main finding of this study is that offshore BIPOs have a positive short-term effect on US firms' valuations, as measured by Tobin's q . Accordingly, the initial issuance of straight debt overseas conveys positive information to the market. We observe significant positive valuation effects around the dates of issuing offshore BIPOs, which subsequently diminish in the longer term. These findings provide support to debt structure theories suggesting that the issuance of straight debt conveys positive information to the market (see, e.g., [Jensen & Meckling, 1976](#); [Heinkel, 1982](#); [Myers & Majluf, 1984](#); and [Stein, 1992](#)), while the interim nature of valuation effect is consistent with segmentation theory (see, e.g., [Tobin & Brainard, 1977](#); and [Albuquerque & Wang, 2008](#)). In our work, we carefully consider several alternative explanations, including reverse causality, sample selection, and endogeneity, rendering alternative explanations unlikely. Lastly, the baseline results withstand various robustness checks, including matched samples, and the positive valuation effect does not vary in the face of the introduction of controls for the firms' size, growth prospects, and leverage; on the industry of the issuer; on the alternative measure of valuation (the relative Tobin's q); and cannot be explained by the market timing theory.

The results also indicate that the benefits of offshore BIPOs for US firms differ depending on the financial condition of the firm prior to issuance and the specific market in which offshore BIPOs are issued. In particular, we find that firms with low liquidity prior to the issuing offshore BIPOs have a significant positive short-term effect on valuation after the offshore BIPO, while more liquid firms experience insignificant effect on their valuation. Further, we find that the valuation of more established and relatively larger firms is less affected by offshore BIPOs than the valuation of other firms. This is consistent with reputation-building theories (see, e.g., [Diamond, 1991](#)) such that the valuation effect due to the BIPO varies in the information asymmetry of the firm. The location of the market where US firms issue debt also affects the results. The positive short-term effect on Tobin's q is conditional upon the US firms raising debt in other developed markets.

The results on the determinants of a firm's decision to enter the foreign public bond market suggest that firm's financial conditions prior to issuance affect the timing of the decision to undertake an initial public offer of straight debt overseas. Specifically, firms that have made significant investments prior to the initial debt offer, large firms, and firms with greater need for external funds due to lower profitability and liquidity are more likely to undertake bond financing in the foreign markets earlier than other firms would. Overall, findings on the determinants of a firm's decision to undertake an initial public offering of straight debt support the conclusion of [Hale and Santos \(2008\)](#), suggesting similarities between key determinants of the decisions to undertake offshore and domestic BIPOs.

The remainder of the paper proceeds as follows. The next section presents the theoretical background and develops testable hypotheses. Section 3 describes the dataset, the data collection process, the methods used for the empirical analysis, and provides basic statistics. Section 4 reports the empirical findings on valuation effects. Section 5 presents the supplementary analysis where we investigate potential determinants of the decision to enter the foreign public bond market, followed by robustness tests discussion in Section 6. Section 7 concludes the paper.

2. Theory and testable hypotheses

2.1. Capital structure theories and the valuation effects of corporate debt offerings

Both empirical and theoretical literature on the effects of corporate bond issues offer diverse evidence on the equity wealth change in

² [Filatotchev, Poulsen, and Bell \(2019\)](#) point out that despite the importance of understanding determinants of firms' decisions to source debt in foreign capital markets, the existing literature devoted to these issues is very limited.

response to the corporate bond offerings (mainly seasoned offers).³ Theoretical works of Modigliani and Miller (1958) and Miller (1977) suggest no value-related effects to capital structure change, while models of Miller and Rock (1985), and Diamond (1991) predict negative reaction to debt offerings. However, other debt structure theories suggest that the issuance of straight debt conveys positive information to the market and, therefore, positively affects the valuation of the firm (Heinkel, 1982; Jensen & Meckling, 1976; Kraus & Litzenberger, 1973; Myers & Majluf, 1984 and Stein, 1992). Collectively, these theories suggest that an issuer should benefit from a valuation increase in response to news about a debt offering. That positive revaluation may be due to either balancing the agency costs of debt against the agency costs of equity, the reduction of moral hazard behavior on the part of managers, or simply the capitalization of new valuable investment opportunities. In altering the private-public debt mix, raising capital overseas appears to change the agency costs of debt through managerial incentives, the level of monitoring, and information asymmetry (Heinkel, 1982 and Ross, 1977), and, also, embed signaling through access to high-quality lenders (markets) as well as greater information provision (Titman & Trueman, 1986). Along with that, studies like Merton (1987) and Foerster and Karolyi (1999) suggest positive valuation effects of gaining access to international financial markets related to the expansion of investor base and better investor recognition. Since the access to international debt markets could result in the aforementioned benefits, shifting to international debt financing can increase the firm's value. This reasoning leads us to propose the following hypothesis.⁴

Hypothesis 1. There is an increase in firm valuation following the initial corporate debt offerings in the foreign market.⁵

2.2. Theories of internationalization

Previous studies like Domowitz, Glen, and Madhavan (1998), Foerster and Karolyi (1999), Karolyi (2006), Levine and Schmukler (2006), Gozzi, Levine, and Schmukler (2008), and Tupper, Guldiken, and Benischke (2018) focus on the internationalization of firms from emerging markets or from other developed markets into the US equity markets through the issue of depositary receipts and raising equity capital through private or public placements. The extant literature identifies several theories that explain reasons behind positive valuation effect of cross-listings, such as market segmentation, bonding, investor recognition, liquidity, and signaling.⁶ This paper extends the ground covered in previous literature by examining US firms entering into foreign markets through issuing debt. Hence, we shed a new light on theories of internationalization.

2.2.1. Segmentation theory

Segmentation theory suggests that financial internationalization overcomes barriers to international capital flows and potentially provides firms with cheaper capital, which consequently improves their valuation (Alexander, Eun, & Janakiraman, 1987; Black, 1974; Domowitz et al., 1998; Errunza & Losq, 1985; Gozzi et al., 2010; Pagano, Roell, & Zechner, 2002; Solnik, 1974; Stapleton & Subrahmanyam,

1977). The investor recognition hypothesis of Merton (1987) suggests that internationalizing firms attract new investors and experience increased analyst coverage causing abnormal shareholders' wealth increase during the pre- and post- internationalization period. However, other studies on segmentation theory predict only a short-term positive effect where valuation rises in the period before and during the internationalization and then it falls back to around its original level (Albuquerque & Wang, 2008; Caprio, Laeven, & Levine, 2008; Durnev & Kim, 2005; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002; Lan & Wang, 2004; Tobin & Brainard, 1977). As suggested by Chari and Henry (2002), when barriers to capital movements are removed, firms that internationalize tend to expand their asset base such that there is no long-term effect on Tobin's q . Furthermore, Sarkissian and Schill (2009, 2016) use global sample of equity foreign listings and find that the valuation gains to overseas listings are not permanent. Based on the collective prediction of the segmentation theories and the abundance of empirical evidence we propose the following hypothesis.

Hypothesis 2. The positive valuation effect is expected only around the offering and there is no long-term effect on Tobin's q .

2.2.2. Bonding and reverse bonding

Bonding theory argues that firms issuing securities abroad bond themselves to better corporate governance practices, thus improving investor protection and reducing agency problems (Coffee, 2002; Doidge et al., 2004; Gozzi et al., 2008; Gozzi et al., 2010; Reese & Weisbach, 2002; Stulz, 1999).⁷ However, this is conditional on the fact that firms are internationalizing to the countries with stronger investor protection laws. Indeed, in cases when firm is exposing itself to a more rigorous legal framework and corporate governance systems, small shareholders can mitigate potential agency problems more efficiently and therefore are willing to pay more for such firms, prompting lasting positive effect on valuations (La Porta et al., 2002). Furthermore, Cumming et al. (2017) provide support to the bonding hypothesis and show that benefits in valuations from equity cross-listing in the USA are much higher for firms from strong-governance countries than for firms from weak-governance countries. In this regard, the setup of current paper caters unique opportunity to test the alternative, *reverse bonding* hypothesis, given that US firms have the most advanced corporate governance systems in the world.⁸ Since the bonding view argues that internationalizing in the markets with stronger investor protection mechanisms results in a positive effect on Tobin's q , the reverse situation may also take place. This reasoning leads us to propose the following hypothesis.

Hypothesis 3. Initial debt capital offerings in the countries with less rigorous corporate governance mechanisms (emerging markets) have an adverse valuation effect.

2.3. Information asymmetry

Diamond (1991) indicates that more established firms have less information asymmetry and this finding can be related to the reputation-developing assertion.⁹ Put succinctly, due to the reputation, established over time, investors know more about these firms prior to their internationalization, which limits the potential positive ramification on

³ For an overview of existing empirical evidence on stock market reactions to bond offerings see Table 1 in Klein (2017). For a comprehensive review of the literature on the relationship between internationalization and firm capital structure see Lindner, Klein, and Schmidt (2018).

⁴ We test our hypothesis in the setting of the initial corporate debt offerings. Even though our focus is only on the initial corporate bond offerings, the theoretical prediction based on Ross (1977) signaling theory that refers to any debt issuance would imply positive information content also beyond the first offering.

⁵ The term "foreign" here refers to the first bond offering abroad.

⁶ See Bris, Cantale, and Hrnjic, E., and Nishiotis, G.P. (2012) for a comprehensive discussion about challenges in empirical testing of these theories.

⁷ Note, however, that some studies question the very existence of the relationship between internationalization and the improved governance system of a firm, thus disregarding the motivation behind bonding theory (Licht, 2003; Pinegar & Ravichandran, 2003; Siegel, 2004).

⁸ For more details see Tables 2 and 6 in La Porta et al. (2002).

⁹ The role of information asymmetry between managers and investors in the equity cross-listing context has been examined by Li et al. (2019), who argue that firms utilize their superior information to choose timing of cross-listings in accordance with market movements.

valuation. Therefore, older and larger firms are expected to be less affected by overseas capital raising. Similarly, [Chaplinsky and Ramchand \(2000\)](#) argue that a firm's market value correlates positively with the number of investors who know about the firm. Global issuance of securities thus reduces the information costs by raising the profile of a US firm with stakeholders around the world, which should be less apparent for firms with longer public existence and established reputation. Based on this reasoning we propose the following hypothesis.

Hypothesis 4. Firms with less information asymmetry by virtue of longer period of existence and established reputation are expected to experience less positive valuation effect of first corporate bond issuance on overseas exchanges.

2.4. Decision to enter the international bond market

The implications of the issuing offshore BIPOs in the context of firm valuation point out importance of examining determinants of the decision to first enter the public bond market. [Hale and Santos \(2008\)](#) argue that such decision is of high relevance in a firm's life, as entering public bond market affects the firm's capital structure. The extant literature on choices of funding sources and effects of firms' switching to bond financing devote little attention to the distinct characteristics of firms that decide to enter the bond market for the first time, or to the timing of that decision.¹⁰ The first paper to find that firm-specific traits increase the likelihood of undertaking a debt IPO was that of [Datta, Iskandar-Datta, and Patel \(2000\)](#), who suggest that large firms and firms with greater financial needs are more likely to enter a public bond market than others are. Accordingly, [Hale and Santos \(2008\)](#) find that firms with these characteristics, in addition to high creditworthiness and strong reputation, tend to undertake a domestic bond IPO earlier than others do. Evidence on domestic bond offerings, like that provided by [Eckbo \(1986\)](#), [Johnson \(1997\)](#), [Krishnaswami, Spindt, and Subramaniam \(1999\)](#), and [Cantillo and Wright \(2000\)](#) collectively suggests that large and creditworthy firms operate with more debt and are therefore more prone to issue bonds. It is plausible that the role of financial conditions is not restricted to domestic bond IPOs and extends to offshore bond IPOs as well. In our empirical analysis, we shed further light on this issue by examining whether the results regarding the influence of financial conditions on domestic bond offerings are applicable in the international BIPOs setting. Therefore, we propose the following hypothesis.

Hypothesis 5. Large firms and firms with a greater need for external funds and creditworthiness accelerate foreign public debt market entry.

3. Data, methodology, and sample design

In this section, we describe the data, the sample, and the empirical strategies used to examine the impact of issuing offshore BIPOs on a firm's valuation, and the determinants of a firm's decision to issue bonds abroad.

3.1. Data

In the empirical analysis, we use data on (i) dates of offshore BIPOs by US firms, (ii) issue characteristics, (iii) firm-level data on valuation, and (iv) firm-specific characteristics. We rely on three sources to identify our sample and to obtain the data for the empirical analysis.

First, we identify the US firms' international activities by utilizing the data from the Thomson Reuters SDC Platinum database. SDC Platinum is regarded as the most comprehensive database on global security issues ([Gozzi et al., 2008](#)). Specifically, we collect (i) the dates of the first

offshore bond offerings from publicly traded US firms, (ii) the principal amount of the issues, and (iii) the country and the exchange where the issues are listed.¹¹ The firm is included in our sample if it at least once raises debt capital offshore by issuing straight debt denominated in US dollars and has not previously issued any other securities abroad.¹² In a time-series dimension, the US firm is classified as *international* from the moment it raises debt capital abroad for the first time.

The sample of US firms is then screened against the Compustat database for the data availability on valuation and other firm-level traits. We pay particular attention to whether the timing of the issue and the impact on valuation differs by firm characteristics such as liquidity ratio, indebtedness, profitability, growth opportunities, and size. In addition, we rely on Compustat to determine a firm's age. Finally, we gather industry related information and, in the empirical analysis, exclude financial firms from our sample.¹³ Our sample is limited to those firms with available data on each of the required variables.

Finally, we use CRSP to eliminate firm subsidiaries from our sample, and to control for name changes and mergers or acquisitions that occurred over the time span of this study. After the screening procedure, our final dataset of *international* firms provides annual observations of 168 US firms (198, including financial firms) that raised debt capital abroad for the first time during the period from January 1984 until January 2015.

Additionally, we collect data on *domestic* firms that issue domestic BIPOs (and do not issue international BIPOs). The data sources are identical for the *international* and *domestic* firms. For each of the firm that issue offshore BIPO, we match a *domestic* firm that is as close as possible in Tobin's q to *international* firm ex ante (before the BIPO). Our matching technique used is the propensity score method for matching ([Dawid, 1979](#); [Dehejia & Wahba, 2002](#); [Rosenbaum & Rubin, 1983](#)). The total sample of all *international* and *domestic* firms is 336.

3.2. Baseline identification and variables' definition

The empirical strategy of our study is determined by the two objectives of our analysis: (i) to evaluate the impact of the issuing offshore BIPO on firm valuation; and (ii) to identify the determinants of the firm's decision to issue bonds abroad for the first time. This section outlines the two approaches.

First, we evaluate the impact of issuing BIPOs abroad on a firm's valuation. In order to address this objective, we estimate unbalanced panel regressions and report standard errors clustered at the firm level. This leads to unbiased standard errors as long as the time effect is fixed ([Petersen, 2009](#)). Further, each of the models and specifications includes firm (η_j) and year effects (τ_t). We examine the dynamics of the impact of the US firms' offshore bond issue activity on a firm's valuation, by including the anticipatory, impact, intermediate, and permanent dummy variables in our models. The baseline model is of the following form:

¹¹ Please note, data on international debt capital raising is not as complete as that of domestic bond IPOs, so we were not able to obtain the complete information set for some issue characteristics like filing dates or underwriters.

¹² Here and throughout the paper, straight debt is an issue defined by the SDC Platinum database as a straight bond, which is a non-convertible bond, note or debenture. However, SDC Platinum does not report all of the relevant features of a debt issue, some of the issues classified straight bonds, may simply be instruments that are more complex. Therefore, we manually screened all potential sample entries and eliminated those that do not match a simple straight bond criteria. Finally, we make sure that our sample consists of firms that internationalize only by issuing U.S. dollar denominated debt. This eliminates potential alternative explanations of our results, such as hedging motives, currency inflows/outflows matching and other exchange rate risk related arguments.

¹³ In doing so we rely on prominent studies that suggest that the valuation of financial firms can be determined differently due to high leverage and difference in regulation environments (see, e.g., [Gozzi et al., 2008](#)).

¹⁰ See e.g. [Denis and Mihov \(2003\)](#) for a discussion about the choice among bank debt, non-bank private debt and public debt.

$$T_{i,t}^I = \alpha_0 + \beta_1 \text{Anticipatory}_{i,t} + \beta_2 \text{Impact}_{i,t} + \beta_3 \text{Intermediate}_{i,t} + \beta_4 \text{Permanent}_{i,t} + \beta_5 S_{i,t} + \beta_6 SG_{i,t} + \beta_7 L_{i,t} + \beta_8 n_j + \beta_9 \tau_t + \varepsilon_{i,t} \quad (1)$$

The dependent variable ($T_{i,t}^I$) in the regressions is Tobin's q , which is the firm's i valuation measure in time t . The superscript I labels the firm as an international, which is a firm that raises debt capital abroad at some point over the sample period. The numerator of Tobin's q is the market value of equity plus the book value of debt and the denominator is the book value of assets. Specifically, the book value of debt is calculated as the book value of assets minus the book value of equity. Similar definitions to Tobin's q are used in La Porta et al. (2002), Doidge et al. (2004), and Gozzi et al. (2008).¹⁴ For robustness, we estimate the results also using a relative Tobin's q that essentially is the firm's Tobin's q divided by the average q of all the firms in the country in the same year.

In a similar fashion to Gozzi et al. (2008), our main explanatory variables are related to the event of offshore issuance.¹⁵ The first explanatory variable of interest is a dummy ($\text{Impact}_{i,t}$) that captures the impact effect of the issuing offshore BIPO and takes the value of one in the year of offshore BIPO by US firm and zero otherwise. To capture the dynamics around the offshore BIPO we also include anticipatory ($\text{Anticipatory}_{i,t}$) and intermediate ($\text{Intermediate}_{i,t}$) dummies. $\text{Anticipatory}_{i,t}$ is a dummy variable capturing the anticipatory effect of issuing offshore BIPO on the firm's valuation that equals one in the year before the first offshore bond issue and zero otherwise, while $\text{Intermediate}_{i,t}$ represents an intermediate dummy variable that equals one for the year after the first offshore bond issue. $\text{Permanent}_{i,t}$ represents dummy variable that equals one in the period starting from two years after the first offshore bond issue event and remains one throughout all of the subsequent years in the sample. Therefore, significance of explanatory variables of interest (*Anticipatory*, *Impact*, *Intermediate*, and *Permanent*) would indicate valuation effect for the firms issuing offshore BIPOs.

Following the aforementioned literature, we control for the firm-specific characteristics that might affect the valuation of firms. Control variables used in all regression specifications are firms' size, growth prospects, and leverage. To control for possible size effects, we include a variable of the logarithm of total assets $S_{i,t}$ of a firm i in time t in each model specification. The sample firms' growth prospects are proxied by $SG_{i,t}$ that represents the growth rates of total sales. We use sales instead of earnings because earnings are often volatile and easily manipulated. To control for the firm's ability to meet its financial liabilities we introduce the leverage ratio $L_{i,t}$, which is calculated as the firm's total outstanding debt divided by the amount of shareholder equity. Finally, we also check if the valuation effect changes upon the introduction of the state of the market, and the industry of the issuer, and the alternative measure of valuation.

The second objective of the paper is to investigate the possible impact of the set of explanatory variables on the timing of the initial international bond issues. In other words, we study how various firm characteristics affect the timing of a firm's decision to issue bonds offshore during its lifetime. We focus on the timing of the event of interest (BIPO) and conduct a survival analysis. In our framework, the outcome variable (exposure time) is the firm's age and the event (failure) is the firm's decision to issue bonds abroad for the first time. The hazard function then pinpoints the probability that the offshore bond IPO will occur during the current year, given that the firm has not done so (survived) up to the year in question. The sample consists of both internationalizing firms and firms that never raise capital on overseas markets. Once the event occurs, the firm exits the sample.

In our survival analysis, in a similar vein to Hale and Santos (2008),

we estimate Cox proportional hazards regression models (Cox, 1972). This semiparametric model makes fewer assumptions than do parametric models (e.g., with Weibull or Gompertz distributions).¹⁶ For instance, it makes no assumptions about the shape of the hazard function and allows easy interpretation of hazard function and explanatory variables. The hazard function takes the form:

$$h(t) = h_0(t)e^{X'\beta} \quad (2)$$

The outcome variable in our models is the firm's age, which is computed by subtracting the year of the first appearance in the Compustat from the year of each observation in our sample (available from 1950). Alternatively, for robustness purposes, we redefine the age variable using the CRSP appearance date and trace the firm age back as far as 1925. In our survival models, the outcome variable is estimated against the set of explanatory variables that can be broadly grouped as follows: the firm's growth opportunities, liquidity, creditworthiness, and the bond market conditions.¹⁷ The explanatory variables are computed and followed from the year the firm appears in Compustat until the year prior to the intentional bond issue or the end of the sample period. The positive β coefficient then indicates that the increase in explanatory variable X leads to greater hazard that, in turn, translates into a greater probability that the event will occur; or in our case, a shorter period before the firm decides to issue bonds abroad.

3.3. Sample characteristics

The sampling procedure provides a complete history of all offshore public debt offerings made by US firms over the period from January 1984 until January 2015. We identified a total of 1552 such issues over the 31-year sample period, of which 198 are internationalization issues, defined as an event of first offshore financial market entry by issuing public debt. Fig. 1 depicts the distribution of offshore public bond issues over time. The dynamics of all offshore bond issues coincides reasonably well with the distribution of investment grade corporate debt offerings in the domestic market, such that the total number of bond offerings increases during the expansion periods in the US economy and drops around periods of recession. The distribution of new offshore public bond offerings is quite stable, with a few exceptions around the recession periods in the US economy, thus again being similar to the distribution of new bond issues in the domestic market.¹⁸

Table 1 reports the statistics for the US firms that raised public debt capital abroad for the first time during the period 1984–2015. As listed in Panel A, the average number of bond issuances overseas is 50 per year, out of which 14% are internationalization issues (of occurs in a given year). Developed countries dominate as the target markets for offerings with the average share of 92% of the total issuances. Panel B reports the (non-financials) firms' specific characteristics one year prior to the firm issuing public debt abroad and shows that firms that enter foreign debt markets are on average 28.8 years old, fairly large in terms of size, profitable, liquid, sound, and have previously issued bond domestically. These characteristics are similar to those of new issuers of

¹⁶ For robustness purpose, we estimate parametric models with Weibull and Gompertz distributions as well. Results are similar to their counterparts in Table 8.

¹⁷ Those explanatory variables are Investments-to-Assets, Quick ratio (cash and short-term investments to current liabilities), ROA, Leverage, Size, Offshore bond market (total number of offshore bond issues), and the Recession indicator (as defined by NBER).

¹⁸ See Santos (2006) for an overview of the US bond market during expansions and recession periods. For the total number of the new bond issues in the US over the years and other descriptive statistics, see, e.g., Hale and Santos (2008). Lastly, see NBER data for dates of business cycles in the US economy.

¹⁴ Data source for Tobin's q is Compustat.

¹⁵ Gozzi et al. (2008) focus on raising equity capital in international markets, while we focus on offshore bond issuances.

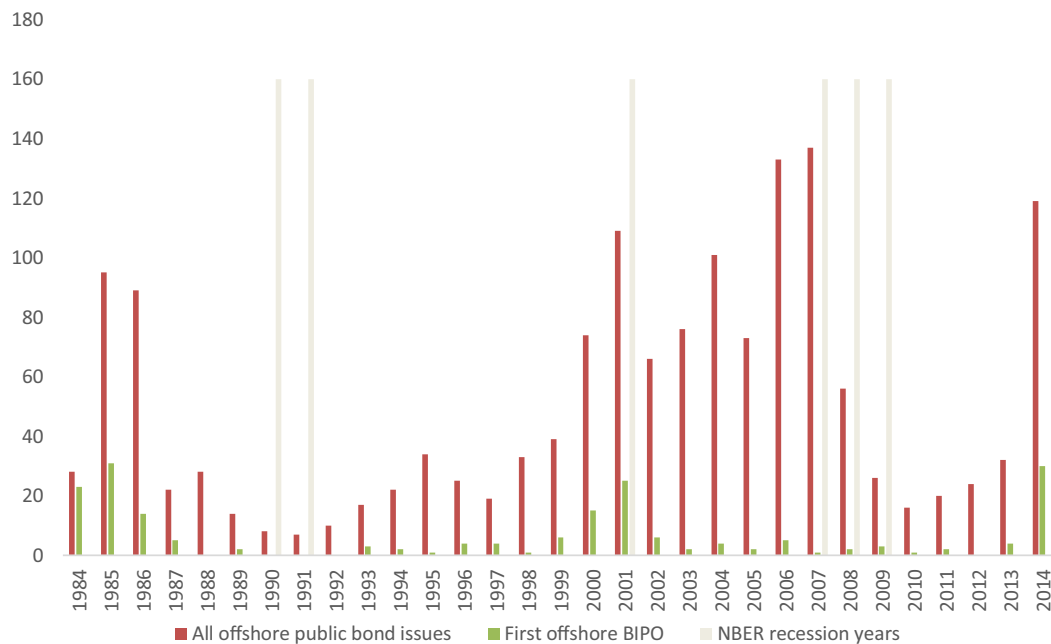


Fig. 1. Number of all (red bar) and first (green bar) offshore public bond issues over sample period. Note: gray bars indicate that at least one issue occurs during recession periods, as defined by NBER. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

straight bonds in the USA, as documented by Hale and Santos (2008).¹⁹ Panel C reports the industry distribution of the first offshore bond offerings, and shows that manufacturing firms dominate (this is due the way we aggregate SIC code in the table). The average internationalizing firm in the sample has 4 % of its revenues coming from the country of issuance and 79% of all BIPO firms have presence (via subsidiaries or joint ventures) in the target country.

Table 2 reports the characteristics of BIPOs and target country locations at the time of the first issuance during the period 1984–2015. Most of the bond IPOs in the sample (if rated) are investment grade issues with a rating of BBB+ or above with the average maturity of ten years and the average coupon of around 7 %. All the target countries had an insider trading law enforced at the time of BIPOs, but there is a substantial heterogeneity in the quality of investor protection laws, namely the strength of investor protection index and the strength of shareholders rights index, among the target countries.²⁰

The left-hand side of Fig. 2 shows first offshore BIPOs versus total number offshore bond issues in the same year, while the right-hand side of Fig. 2 shows the evolution of the average age of the offshore bond issuers over the sample period. The figure indicates that average age of firms issuing offshore BIPO has reduced over sample time.

It is worth noticing that issuing bonds abroad remains a relatively small source of debt capital for the US firms, for instance, overseas straight bond issues in US dollars in our sample account for only about 2 % of all US corporate bond issuances over the period from 2010 to 2014 (\$207 billion of total of \$12.5 trillion). However, the proportion of

offshore bond issuances is constantly growing, and in 2014 alone, US firms issued \$102 billion worth of dollar denominated bonds overseas, which amounted to around 4 % of total issuances (\$2.5 trillion). Nevertheless, it is important to note that not only is raising international capital through debt issuances growing rapidly, but also that financial globalization in recent decades has made foreign markets more accessible to a wider range of firms.

4. Empirical findings on valuation effects

This section presents our main empirical results on the evolution of US firms' valuation around the dates of the issuing offshore BIPOs. We then investigate if the baseline valuation effects hold when differentiating by firms' characteristics, the location and the timing of the issue. We also directly compare *international* and *domestic* firms by using difference-in-differences analysis approach. Finally, we address endogeneity concerns by performing instrumental analysis.

4.1. Baseline model

First, we illustrate the dynamics of valuation around the offshore BIPO dates and provide a direct test of Tobin's q before, during, and after the first offshore BIPO of US firms.

We illustrate the valuation dynamics by plotting the average Tobin's q of all of the US firms included in the sample during the period of three years before and after the offshore BIPO dates (Fig. 3), where year 0 stands for the year of issuing activity. Panel A of Fig. 3 refers to the firms issuing the first offshore BIPO, while Panel B refers to the firms issuing only domestic BIPO. Panel A shows that Tobin's q tends to rise before the initial offshore BIPO, reaching its maximum in the year of actual issuance, before declining to around the pre-issuance level. The sharp decline in the Tobin's q in the first two years after the initial bond offering is in line with the segmentation theory that predicts only a short-term positive effect where valuation rises in the period before and during the offshore BIPO and then it falls back to around its original level. On the other hand, Panel B of Fig. 3 reports relatively flat dynamics of Tobin's q of the firms that undertake only domestic BIPO. The following tables present the results of more formal statistical tests

¹⁹ Note, however, that in Hale and Santos (2008) sample period spans from 1972 until 2002 and covers 566 new issuers.

²⁰ The strength of investor protection index is sourced from the World Bank and it is measured on a scale from 0 (low protection) to 10 (high protection). The strength of shareholders right index is from Djankov et al. (2008) and it is measured on a scale from 0 (low protection) to 6 (high protection). The country's insider trading enforcement is defined in the same manner as in Bhattacharya and Daouk (2002). The liberalization intensity is defined as in Bekaert et al. (2005), meaning that fully segmented countries have an intensity measure of zero, and fully liberalized countries have an intensity measure of one.

Table 1

Basic statistics of offshore bond IPO market and offering firms.

Panel A: Offshore bond IPO market (amounts <i>per year</i>)	Mean	Min	Max
Overall Market			
Number of first issuances	6.38	1	35
Average (\$ mil) amount of first issuances	407.52	79.18	1176.67
Total number of issuances	50	7	137
Average (\$ mil) amount of all issuances	580.35	98.28	1611.11
Share in total bond issuances (if occurs in a given year)			
% of offshore bond IPO	14.35	1.46	71.43
% of offshore bond IPO in developed countries	13.60	0.73	71.43
% of offshore bond issuances in developed countries	92.24	68.75	100.00
% of offshore bond IPO in emerging countries	3.39	0.73	9.38
% of offshore bond issuances in emerging countries	16.55	2.63	31.25
Panel B: Firm characteristics prior to the first offshore bond issuance	Mean	Min	Max
Characteristics			
Age	28.81	1	63
Size (\$ mil)	17,913	189	284,421
Tobin's <i>q</i>	1.48	0.22	8.83
Profitability	6.82	-57.72	24.54
Investments	0.63	0.00	0.93
Liquidity (InQuick)	0.87	0.20	2.29
Leverage	0.63	0.01	17.25
Issued domestic bonds (% in all BIPOs)	96.99	50	100
International activity (prior to the first BIPO)			
% of BIPO firms with the presence in the target country (in all BIPOs)	79.46	33.33	100
% of revenue coming from the target country	3.89	0	12.79
Panel C: Industry distribution (relative to all international BIPOs)			
Agriculture, Forestry and Fishing	0.16%		
Mining	6.30%		
Manufacturing	53.20%		
Transportation, Communications, Electric, Gas	14.00%		
Wholesale and Retail Trade	13.87%		
Services and Non-classifiable	12.48%		

This table reports the summary statistics for US firms that issue bonds abroad during the period 1984–2015. Panel A displays the number of first time offshore bond issues by all US firms (including financial firms) with the average dollar amount of issues, the total number of all following offshore bond issues with the average dollar amounts per issue, and the share of BIPOs in total issuances and for different locations. Locations are marked as developed or emerging countries based on MSCI classification. Panel B reports the specific characteristics of US firms (excluding financial firms) one year prior the offshore BIPO. The averages, the minimum and the maximum values are reported for the following firm attributes: age, size, profitability, investments, liquidity, leverage, international activity. Panel C reports industry distribution (relative to all international BIPOs).

confirming that first offshore BIPO issuance of US firms leads to a temporary increase in Tobin's *q*. First, we test [Hypothesis 1](#), which proposes that firms that undertake offshore initial corporate debt offerings experience positive effects in valuation.

[Table 3](#) shows the dynamics of valuation around the offshore BIPO dates. To test whether the valuation effect is short-lived ([Hypothesis 2](#)), we introduce a series of dummy variables that capture annual patterns around the dates of first offshore BIPO. Specifically, the dummy variable *anticipatory* takes the value of one in a year prior to first offshore BIPO and zero otherwise, the *impact* equals one in the year of the issue itself and zero otherwise, and so forth. In each of the models we control for a variety of relevant factors, include firm and year fixed effects and use standard errors clustered at the firm level. The control factors that potentially influence both Tobin's *q* and the decision to issue offshore BIPO are the firm's size (as measured by the logarithm of the firm's total assets); the logarithm of growth rate of sales; and the leverage ratio

Table 2

Basic statistics of bond IPOs and target locations.

Panel A: Location and bond characteristics	Mean	Min	Max
Location characteristics at the time of the BIPO			
Strength of investor protection index	5.36	4.5	8.3
Insider trading rule, %	100	100	100
Liberalization	0.95	0.08	1
Strength of shareholders rights	4.35	3	5
BIPOs' characteristics (all BIPOs)			
Maturity, years	10.24	1.03	50.73
Coupon, %	6.87	0.75	13
YTM, %	6.87	0.74	13.25
Panel B: Frequencies of S&P's bond ratings and maturity	Frequency	Percentage	
Frequency of Standard and Poor's ratings			
AAA to A-	50		25.25
BBB+ to B-	58		29.29
CCC+	1		0.51
Not rated	89		44.95
Frequency of maturity			
0 < maturity ≤ 5	38		19.19
5 < maturity ≤ 10	79		39.90
10 < maturity ≤ 20	57		28.79
20 < maturity ≤ 30	12		6.06
30 < maturity	12		6.06

This table reports the summary statistics for BIPOs and target locations. Panel A displays the location characteristics at the time of the BIPO and the characteristics of BIPOs. We report average, minimum and maximum values for the strength of investor protection index (World Bank), the quality of investor protection laws, namely strength of shareholders rights index (as in [Djankov et al. \(2008\)](#) scales from 0 (low protection) to 6 (high protection)) and dummies for country's insider trading enforcement (as in [Bhattacharya & Daouk, 2002](#)) and liberalization intensity (as in [Bekaert, Harvey, & Lundblad, 2005](#)), and for the BIPOs characteristics, such as maturity, coupon and yield to maturity. Panel B reports the frequencies of S&P's bond ratings and maturity of BIPOs (including financial firms). The frequencies and shares of total number BIPOs are reported.

(computed as firm's total outstanding debt divided by the amount of shareholder equity). In addition to *international* firms, we include the set of matching *domestic* firms to the analysis: each international firm issuing offshore BIPO is matched with its domestic counterpart that issue domestic BIPO (matching is done based on Tobin's *q* prior to the BIPO). The sample consists of 336 firms and financial firms are excluded.

First, we find that an initial overseas bond issue positively affects the valuation of the firm. Models 2 and 5 of [Table 3](#) indicate that regardless of the model specification, the *impact* dummy variable enters positively and significantly, implying that issuing debt overseas has a positive effect on firm, lending support to our [Hypothesis 1](#). Coefficients for the *impact* dummy variable are uniformly significant at the 5% level at least.

Second, the effect of the first offshore BIPO on valuation lasts only for the short-term. Consistent with [Fig. 3](#), we find no evidence of the valuation effect in the long-term, in that coefficients on both *intermediate* and *permanent* dummies offer no evidence of persistent effects on Tobin's *q*.

Collectively, the results on the dynamics of Tobin's *q* reported in [Table 3](#) broadly support the segmentation theory of firms' internationalization. The observed valuation patterns are consistent with the segmentation theory prediction of a short-term positive impact ([Hypothesis 2](#)). Moreover, results provide additional support to debt structure theories that predict positive revaluation of the firm upon the issuance of straight debt.

4.2. Valuation effects by timing and location of the issue

In this section, we test the reverse bonding hypothesis. [La Porta et al. \(2002\)](#) establish that US firms have the most advanced corporate governance systems in the world. The rationale behind the bonding hypothesis is that firms from countries with poor governance raise

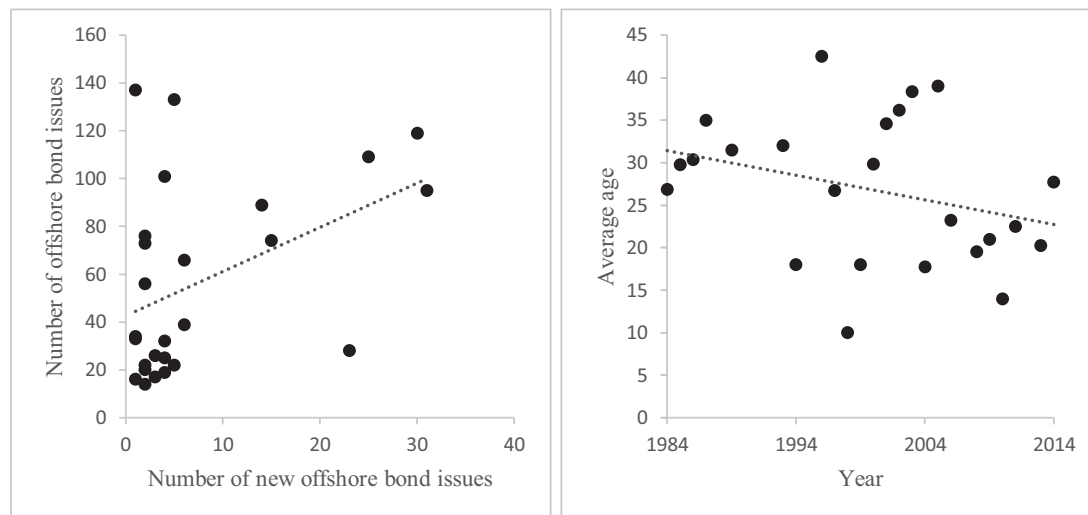


Fig. 2. First offshore bond IPOs vs. total number offshore bond issues in the same year (left-hand side) and average age of firms that issue the first offshore BIPO over sample period (right-hand side).

capital in markets with better corporate governance standards, the internationalization setup of US firms should not support this view, and there is a possibility of a *reverse* bonding hypothesis. Therefore, we expect a divergence in valuation effects between firms that decide to issue debt in developed markets with strict systems and high investor protection and those that raise capital in emerging markets with potentially weak corporate governance systems and shareholder protection laws (*Hypothesis 3*).

In Models 1 and 2 of *Table 4*, we split our sample based on the location of the firms' first offshore BIPO. The sample is divided into US firms undertaking BIPOs in emerging and developed markets (MSCI classification). The baseline results point to a different direction from what was initially expected. Specifically, a positive short-term effect on Tobin's q is conditional upon the US firms raising debt in other developed markets, while the *impact* dummy is not significant for BIPOs in emerging markets. The valuation of those firms that raise capital in emerging markets remains unchanged. We find three possible explanations of these results. First, the negative effects of initial debt capital offers in the countries with poor corporate governance mechanisms (emerging markets) can be offset by the fact that US firms remain bound to the rigorous domestic governance standards, and therefore no adverse valuation effect is observed. Second, as quality of corporate governance has improved in many emerging countries in recent years, the difference in corporate governance quality between developed and emerging markets can differ over the sample period. Third, a notable feature of the current sample is that only 17 of 168 firms issued bonds in emerging markets over the sample period, which casts some doubts on the aforementioned results.²¹ However, even when we use alternative subsamples by differentiating BIPOs on the World Bank's strength of investor protection index, strength of shareholders rights index (see e.g., Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2008) and other investor protection law characteristics, the baseline results do not change. Therefore, based on the collective evidence *Hypothesis 3* is rejected.

The evidence from Ljungqvist (1995), Helwege and Liang (1996), Pagano, Panetta, and Zingales (1998), and Santos (2006) suggests that fluctuations in the number of BIPOs over the years are dependent on the general conditions of US economy. Thus, we create Models 3 and 4 to

check for differences in the impact on firm valuations of the first offshore BIPO actions that occurred during recessions and expansion periods. Specifically, Model 3 reports the impact on the valuation of US firms during the recession periods as defined by NBER, while Model 4 examines the impact during the expansion times. The results suggest that US firms issuing overseas BIPOs during a recession suffer a short-term negative valuation impact. Specifically, each of the dummy variables tracing the dynamics of the impact on valuation after the first offshore BIPO show negative coefficients. In contrast, we find positive (but not significant) short-term impact effects for US firms issuing the first offshore BIPO during period of expansion for the US economy.

4.3. Valuation effects by firm characteristics

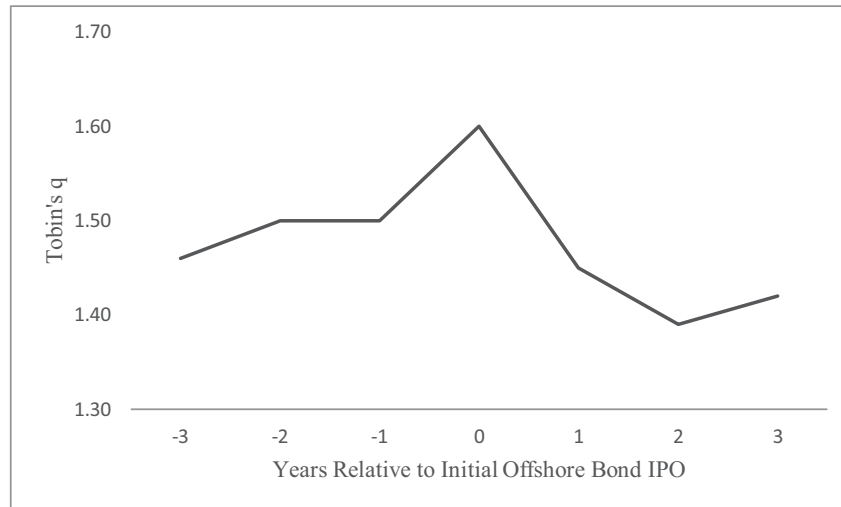
The results in section 4.1 suggest that US firms issuing offshore BIPOs enjoy a positive, but not enduring valuation effect in terms of Tobin's q . However, pooling all firms together might not give us a clear picture of the relationship between the firms' first offshore BIPO and their valuation. To provide more detailed evidence of the impact on Tobin's q , we test whether the results hold when differentiating firms by various characteristics prior to the offshore BIPO issuing event. To do so we first divide the sample into terciles, based on the levels of liquidity ratio and leverage ratio. Next, to test the information asymmetry hypothesis (*Hypothesis 4*), in a similar manner we investigate if the valuation effect differs in firms' size and age. The regression setup is similar to that applied in the previous section. Throughout the twelve models of *Table 5*, we report the Tobin's q dynamics for the different levels of firms' liquidity, leverage, size and age, as defined by the *Low*, *Medium*, and *High* terciles.

The liquidity measure used in Models 1–3 is the quick ratio, as measured by the sum of the firms' total cash, marketable securities and accounts receivable divided by the current liabilities.²² The quick ratio shows the firm's ability to pay its short-term financial obligations and in our setting is the proxy for a firm's need for external funds. Model 1 suggests that firms with relatively low liquidity experience a positive and significant short-term valuation impact. Furthermore, the coefficients on the *impact* dummy variable in Models 2–3 reveal that firms with a higher liquidity ratio also experience a positive effect on their valuation, however not statistically significant. Models 4–6 check for the

²¹ The emerging markets in our sample remained classified as emerging during entire sample period, so there is no issue of potential reclassification (from emerging to developed).

²² The quick ratio is often used as a proxy for liquidity (see e.g., Hale & Santos, 2008).

Panel A



Panel B

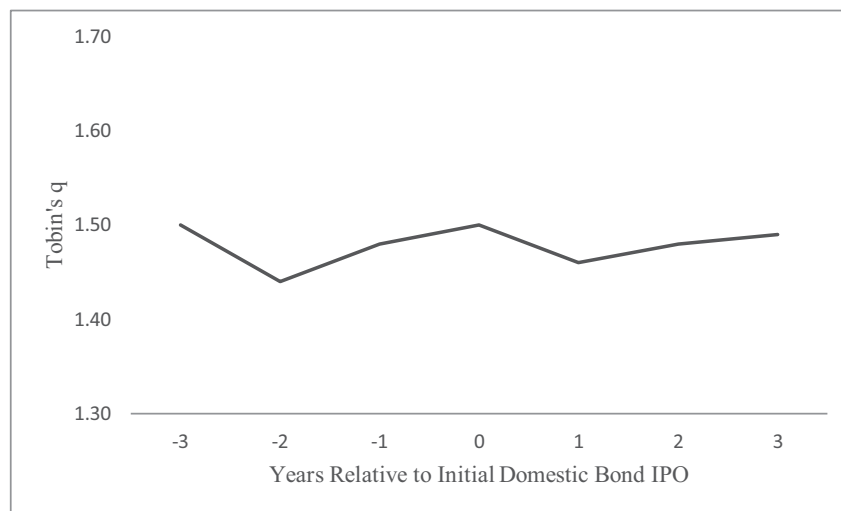


Fig. 3. Dynamics of average Tobin's q . Panel A graph plots the dynamic of average Tobin's q of the firms that undertake their first offshore bond IPO (date zero), while Panel B plots the dynamics of Tobin's q of the firms that undertake only domestic bond IPO (date zero).

valuation effects by differentiating firms based on their leverage ratio levels (as defined above) prior to the first offshore BIPO. The *impact* dummy variable exhibits positive and significant coefficients for Models 5 and 6, implying a positive valuation effect for relatively leveraged US firms only. Note, however, that the actual levels of debt-to-equity ratios for firms included in the *Medium* and *High* terciles are around one, a characteristic of relatively safe firms; a result that confirms the previous finding of sound firms experiencing a short-term boost in their valuation in the year following the first overseas bond issue.

To test whether older and more established firms experience less positive valuation effect of first corporate bond issuance on overseas exchanges we differentiate firms by firm-specific attributes such as size and age (Models 7–12). Relative size is defined as the natural logarithm of book value of total assets over the average size of all issuers in the decade of the given BIPO. Results indicate that small and medium-sized US firms in our sample experience a short-term increase in their valuation following the first offshore BIPO. The coefficients on dummy variables for some of the world's largest firms in terms of total assets are still

positive, yet are insignificant. Further, throughout Models 10–12 we observe that younger US firms (under 22 years old at the time of an overseas BIPO issue) experience a significant short-term positive valuation effect at the time of the first offshore BIPO. Collectively these results lend support to our [Hypothesis 4](#) that firms with relatively high information asymmetry are more affected by the offshore BIPO activity. This is consistent with [Diamond's \(1991\)](#) reputation-building assertion, and [Chaplinsky and Ramchand's \(2000\)](#) argument of market value being positively related to the number of informed investors and better information coverage overall. Consistent with the previous findings, the valuation effect lasts for one year and does not persist in the following years.

4.4. Difference-in-differences analysis

In order to strengthen the causality effect between offshore BIPOs and valuation, we perform difference-in-differences analysis where our international sample of firms is compared to their counterparts that

Table 3

First offshore bond issuance and firm valuation.

	Dependent variable: Tobin's q				
	(1)	(2)	(3)	(4)	(5)
Anticipatory	−0.005 (−0.224)				−0.003 (−0.129)
Impact		0.093*** (4.113)			0.021** (2.094)
Intermediate			−0.004 (−0.252)		−0.021 (−1.181)
Permanent				−0.004 (−0.215)	−0.021 (−1.158)
Size (Log of Total Assets)	−0.091*** (−14.714)	−0.028*** (−2.852)	−0.091*** (−12.685)	−0.091*** (−12.637)	−0.092*** (−14.767)
Log of (Sales Growth)	0.047*** (4.628)	0.054*** (2.819)	0.047* (1.730)	0.047* (1.728)	0.047*** (4.621)
Leverage	0.001*** (4.975)	0.001*** (5.399)	0.001*** (5.301)	0.001*** (5.306)	0.001*** (4.953)
Firm Dummies	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
R-squared	0.75	0.70	0.75	0.75	0.76
No. of Firms	336	336	336	336	336

The dependent variable is Tobin's q . The *Anticipatory* dummy equals one for the year prior to the first overseas bond issue by US firm and zero otherwise. The *Impact* dummy captures the impact effect of the first offshore BIPO and takes the value of one in the year of offshore bond issue and zero otherwise, while *Intermediate* represents a dummy variable that equals one for the year after the first offshore bond issue and zero otherwise. The *Permanent* dummy equals one in the period starting from two years after the first offshore bond issue event and remains one throughout all of the subsequent years in the sample. All models include firm and year dummies, albeit not reported in the table. A firm is considered international if it raises capital in international markets at least once. The sample includes both firms that issue offshore BIPOs and matching domestic firms (firms that issue domestic bond IPO and not offshore bond IPO). The regressions are estimated with standard errors clustered by firm. The constant is estimated, albeit not reported in the table. t -statistics are reported in brackets. *, **, *** denote statistical significance at the 10%, 5% and 1% levels respectively. The estimated equation is the following: $T_{i,t} = \alpha_0 + \beta_1 Ant_{i,t} + \beta_2 Imp_{i,t} + \beta_3 Int_{i,t} + \beta_4 Per_{i,t} + \beta_5 S_{i,t} + \beta_6 SG_{i,t} + \beta_7 L_{i,t} + \beta_8 \eta_j + \beta_9 \tau_t + \varepsilon_{i,t}$.

Table 4

Valuation effects by location and economic conditions.

	Dependent variable: Tobin's q			
	Emerging vs developed		Recession	
	Emerging	Developed	During	Outside
	(1)	(2)	(3)	(4)
Anticipatory	0.016 (0.324)	−0.010 (−0.457)	−0.135 (−2.167)	−0.006 (−0.287)
Impact	0.015 (0.357)	0.018* (1.782)	−0.055* (−1.701)	0.021 (1.993)
Intermediate	0.020 (0.296)	−0.028 (−1.612)	−0.049 (−1.283)	−0.021 (−1.147)
Permanent	−0.015 (−0.199)	−0.024 (−1.435)	−0.072* (−2.028)	−0.018 (−0.982)
Controls	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
R-squared	0.84	0.76	0.95	0.76
No. of Firms	34	302	64	272

The dependent variable is Tobin's q . The baseline models are estimated. The sample is divided into emerging/developed countries based on the location of the first time offshore bond issues by US firms. Additionally, the valuation impact is examined during the recession and expansion periods. The *Anticipatory* dummy equals one for the year prior to the first overseas bond issue by the US firm and zero otherwise. The *Impact* dummy captures the impact effect of the first offshore BIPO and takes the value of one in the year of offshore bond issue and zero otherwise, while *Intermediate* represents a dummy variable that equals one for the year after the first offshore bond issue and zero otherwise. The *Permanent* dummy equals one in the period starting from two years after the first offshore bond issue event and remains one throughout all of the subsequent years in the sample. All models include firm and year dummies, albeit not reported in the table. A firm is considered as international if it raises capital in international markets at least once. The sample includes both firms that issue offshore BIPOs and matching domestic firms (firms that issue domestic bond IPO and not offshore bond IPO). The regressions are estimated with standard errors clustered by firm. The constant is estimated, albeit not reported in the table. t -statistics are reported in brackets. *, **, *** denote statistical significance at the 10%, 5% and 1% levels respectively.

issue domestic BIPOs only. For each of the firms that issue offshore BIPO (“treated” firm), we match a “control” firm that is as close as possible to treated firm ex ante (before the BIPO). Our matching technique used is the propensity score method for matching (Dawid, 1979; Dehejia & Wahba, 2002; Rosenbaum & Rubin, 1983).

To illustrate the similarity between the treated and matched control firms, we report the descriptive statistics of our PSM technique in Panel A of Table 6. In a similar manner with Flammer (2021) we measure

levels (e.g., Log (Total Assets)) in the year preceding the bond issue ($t - 1$), while pre-trends (e.g., Log (Sales Growth)) are measured in the two-year window preceding the bond issue (changes from $t - 2$ to $t - 1$). Panel A of Table 6 also reports the p -value of the difference-in-means and difference-in-medians test. After matching firms using 5 characteristics we report that null hypothesis of equal means cannot be rejected as p -values range from 0.24 to 0.97. Furthermore, Panel A of Table 6 confirms that the null hypothesis of equal medians cannot be rejected (p -

Table 5

Valuation effects by firm's characteristics.

Dependent variable: Tobin's q							
Variable	Liquidity			-	Leverage		
	Low	Med	High		Low	Med	High
	(1)	(2)	(3)		(4)	(5)	(6)
Anticipatory	-0.011 (-0.696)	0.106 (0.914)	0.075 (0.138)		0.196 (1.888)	0.003 (0.210)	-0.008 (-0.449)
Impact	0.024** (2.349)	0.142 (1.548)	0.005 (0.018)		0.136 (1.138)	0.032*** (3.301)	0.028** (2.599)
Intermediate	-0.037 (-1.989)	-0.053 (-0.278)	-0.042 (-0.110)		0.083 (0.396)	-0.023 (-1.325)	0.001 (0.067)
Permanent	-0.031 (-1.672)	-0.010 (-0.067)	0.209 (0.509)		0.078 (0.406)	-0.029 (-1.634)	-0.017 (-0.875)
Controls	Yes	Yes	Yes		Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes		Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes		Yes	Yes	Yes
R-squared	0.78	0.85	0.85		0.83	0.76	0.79
No. of Firms	112	112	112		112	112	112
Variable	Relative Size			-	Age		
	Small	Med	Large		Low	Med	High
	(7)	(8)	(9)		(10)	(11)	(12)
Anticipatory	-0.006 (-0.353)	-0.003 (-0.158)	-0.110 (-1.848)		-0.004 (-0.191)	-0.007 (-0.391)	0.033 (0.471)
Impact	0.023* (1.951)	0.021* (1.945)	0.003 (0.100)		0.029* (1.894)	0.021* (1.785)	0.049 (0.816)
Intermediate	-0.018 (-0.861)	-0.021 (-1.084)	-0.079 (-1.269)		-0.005 (-0.184)	-0.013 (-0.608)	-0.234 (-1.606)
Permanent	-0.018 (-0.842)	-0.021 (-1.023)	0.026 (0.611)		0.002 (0.079)	-0.012 (-0.007)	-0.256 (-1.721)
Controls	Yes	Yes	Yes		Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes		Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes		Yes	Yes	Yes
R-squared	0.75	0.76	0.92		0.72	0.70	0.89
No. of Firms	112	112	112		112	112	112

The dependent variable is Tobin's q . The baseline models are estimated. The sample is divided into terciles based on the liquidity ratio, leverage ratio, the age, and relative size of the US firm at the time of first offshore bond issues. The *Anticipatory* dummy equals one for the year prior to the first overseas bond issue by US firm and zero otherwise. The *Impact* dummy captures the impact effect of the first offshore BIPO and takes the value of one in the year of offshore bond issue and zero otherwise, while *Intermediate* represents a dummy variable that equals one for the year after the first offshore bond issue and zero otherwise. The *Permanent* dummy equals one in the period starting from two years after the first offshore bond issue event and remains one throughout all of the subsequent years in the sample. All models include firm and year dummies, albeit not reported in the table. A firm is considered international if it raises capital in international markets at least once. The sample includes both firms that issue offshore BIPOs and matching domestic firms (firms that issue domestic bond IPO and not offshore bond IPO). The regressions are estimated with standard errors clustered by firm. The constant is estimated, albeit not reported in the table. t -statistics are reported in brackets. *, **, *** denote statistical significance at the 10%, 5% and 1% levels respectively.

values range between 0.32 and 0.77). Overall, Panel A of Table 6 confirms that our treated and control firms are very similar prior to their BIPOs.

To examine the valuation effect following the first offshore bond issuance we estimate difference-in-differences specification using treated group of international firms and a control group of their domestic counterparts. By conducting a difference-in-differences test, we examine whether firms issuing offshore BIPOs have significantly different valuation effect from firms issuing only domestic BIPOs. For difference-in-differences analysis, we use four years before the BIPO and four years after the BIPO event for each firm.²³ Specifically, we estimate the following regression:

$$Y_{i,t} = \mu + n_i + \tau_t + \beta_2 Post_{i,t} + \beta_1 Inter_i \times Post_{i,t} + \theta X_{i,t} + \varepsilon_{i,t} \quad (3)$$

where $Y_{i,t}$ is the variable of interest (Tobin's q), n_i are firm fixed effects, τ_t are year fixed effects, $Inter_{i,t}$ represents an indicator variable if a firm is an international firm, $Post_{i,t}$ is an indicator variable whether year t is after the first offshore BIPO event, and $X_{i,t}$ is a set of control variables

(size, growth prospects, and leverage).²⁴

Results from our main difference-in-differences regression are reported in Panel B of Table 6. A positive and significant coefficient on *Post* \times *International* variable indicates that firms issuing offshore BIPOs are experiencing significantly higher valuation effect compared to firms that only issue domestic BIPOs. The statistically significant coefficient at 5% level on *Post* \times *International* variable shows that Tobin's q for *international* firms is 1.5 percentage points higher than for *domestic* firms. Overall, difference-in-differences results strengthen our previous findings regarding positive valuation effect for firms that undertake offshore initial corporate debt offerings, lending further support for our Hypothesis 1.

4.5. Instrumental variable analysis

Endogeneity issue might be a concern when examining Tobin's q in a cross-section because high valuation may cause firms to issue offshore BIPOs. In this subsection, we provide identification of causality and

²³ We limit our observations for these tests in order to mitigate potential correlation bias from difference-in-differences approach (Bertrand, Duflo, & Mullainathan, 2004; Huang & Kisgen, 2013).

²⁴ As discussed in Huang and Kisgen (2013) inclusion of *Inter* dummy variable is unnecessary for this type of specification since firm fixed effects are already included.

Table 6
Difference-in-differences analysis.

Panel A: Matching						
		Mean	Median	St. Dev.	p-value (diff. in means)	p-value (diff. in medians)
Tobin's q	Treated	1.485	1.188	0.614	0.257	0.329
	Control	1.460	1.172	0.600		
Log (Total Assets)	Treated	16.082	16.072	1.842	0.240	0.231
	Control	16.041	16.035	1.830		
Log (Sales Growth)	Treated	0.051	0.069	0.047	0.860	0.777
	Control	0.049	0.069	0.046		
Leverage	Treated	0.629	0.340	0.355	0.975	0.331
	Control	0.601	0.334	0.318		
Quick Ratio	Treated	0.874	0.789	0.346	0.513	0.645
	Control	0.852	0.776	0.331		

Panel B: Difference-in-differences regression		Dependent variable: Tobin's q
Post x International		0.015** (1.991)
Post		0.029 (1.477)
Size (Log of Total Assets)		-0.093*** (-12.411)
Log of (Sales Growth)		0.048* (1.750)
Leverage		0.001*** (5.293)
Firm Fixed Effects		Yes
Year Fixed Effects		Yes
R-squared		0.76
No. of Firms		336

Panel A presents descriptive statistics comparing treated and matched control firms. For each of the firm that issue offshore BIPO ("treated" firm), we match a "control" firm that is as close as possible ex ante (before the BIPO). Levels (e.g., Log(Total Assets)) are measured in the year preceding the bond issue ($t - 1$), while pre-trends (e.g., Log(Sales Growth)) are measured in the two-year window preceding the bond issue (changes from $t - 2$ to $t - 1$). The last two columns report the p -value of the difference-in-means and difference-in-medians test, respectively. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels respectively. Panel B reports the difference-in-differences specification in Eq. (3). The regressions are estimated with standard errors clustered by firm. The constant is estimated, albeit not reported in the table. t -statistics are reported in brackets and denoted by *, **, and *** which indicate statistical significance at the 10%, 5% and 1% levels respectively.

discuss an instrumental variables strategy to further confirm our previous results regarding the offshore BIPO's valuation effect. Therefore, we perform instrumental variable analysis on the subsample of the firms issuing offshore BIPOs and identify suitable instruments accordingly.

In the instrumental variable analysis, we use three instruments, namely (i) the percentage of peer firms that issued bonds abroad, (ii) the percentage of peer firms that experienced Tobin's q increase after their first foreign debt issuance, and (iii) the percentage of peer firms that recorded Tobin's q growth higher than average industry growth after their first foreign debt issuance. All of the instruments are recorded one year prior to the firm's i BIPO, because we do not want actual BIPOs to affect the instrument, but the other way around. Firms are identified as peers based on their industry classification. For a meaningful calculation of the instruments, we take into account only peer firms' bond issuances that occurred during five years prior to firm's i initial offshore bond offering. Lastly, to guard against the shortcomings of small peer groups, we exclude observations with the industry peer groups of fewer than five

firms. The total number of firms in this restricted subsample is 90. The aforementioned instruments have the following desirable properties.

First, past peers activity is likely to influence firm's decisions and actions through social learning from peers' actions and outcomes. Indeed, we observe that past peers' foreign bond market entries and auspicious value effects of these actions are strongly positively associated with the likelihood of firm's i undertaking foreign bond IPO.²⁵ This observation resonates with work on social learning and corporate peer effects (see, e.g., Bizjak, Lemmon, and Naveen (2008), and Kaustia and Rantala (2015)) showing that some firm- or management-specific decisions are subject to peer effects, that is, influenced by the actions of comparison others.

Second, there is no reason that the instrument, calculated based on firm i 's industry peers, should directly affect internationalizing firm's Tobin's q . All three instruments are poor predictors of firm i 's Tobin's q at the time of the issuance. To test the exclusion restriction, we regress Tobin's q on the endogenous *impact* variable and the instrument (the percentage of peer firms that issued bonds abroad) while keeping standard controls and settings. This results in the following estimates:

$$T_{i,t}^I = \alpha_0 + \frac{0.055^{**}}{(2.236)} (Impact)_{i,t} + \frac{0.228}{(1.495)} (\% \text{ of peers with BIPO})_{i,t} + Cntrl_{i,t} + \varepsilon_{i,t} \quad (4)$$

The coefficient estimates for the endogenous *impact* variable are almost identical to the baseline regression (1) of Table 7, while the instrument enters insignificantly. The two other instruments yield similar regression results. This suggests that each of the instruments influences the dependent variable only through its effect on initial offshore bond offerings, but not directly.

Next, we conduct the two-stage IV analysis. In the first stage, we perform OLS regression of endogenous *impact* variable on all exogenous variables and the instrument. The dependent variable in the second regression stage is Tobin's q and the independent variables include exogenous variables and the fitted propensities for *impact* obtained in the first stage. Table 7 reports the results.

The results of the first stage OLS regressions (Models 2, 4, and 6 of Table 7) indicate that each of the three instruments is a strong predictor of firm's activity of issuing offshore BIPO. Moreover, we find that the propensity to undertake initial bond offering abroad increases with the success (valuation increase) of the past peers' issues, as indicated in the regressions (4) and (6). Importantly, the second stage regression results show that the instrumented *impact* variable is statistically significant in all of the model specifications (Models 3, 5, and 7 of Table 7). Overall, the instrumental variable results of this section provide evidence against some of the alternative explanations and reassure that the baseline results presented so far are unlikely to be driven by reverse causality, validating the offshore BIPO's valuation effect story.

5. Decision to enter the international bond market

Next, we investigate potential determinants of the decision to enter the foreign public bond market. We apply survival analysis and explore how firm-specific financial metrics and overall bond market conditions influence the timing of the firm's decision to issue bonds overseas. In this case, the outcome variable is the age of the firm, the event is the first issue, and the resulting coefficient—the hazard rate—is the instantaneous rate at which events occur due to changes in the associated explanatory variable, given no previous events.

²⁵ Note, that in this section we do not try to prove that the decision to undertake the foreign bond IPO is exclusively driven by peer effects. Instead, we argue that foreign bond issuances could be a potential domain for such peer effects and peer actions could be one of the fundamental drivers of the decision to internationalize.

Table 7
Instrumental variable regressions.

Variable	Baseline regression	Instrument 1		Instrument 2		Instrument 3	
		First stage	Second stage	First stage	Second stage	First stage	Second stage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Impact	0.051** (2.201)		0.178*** (2.858)		0.405*** (2.640)		0.692** (2.094)
Peers Issued %		1.231*** (10.467)					
Peers with Q Increase. %				3.287*** (3.539)			
Peers with Q Growth above Industry. %						5.718*** (5.788)	
Size (Log of Total Assets)	−0.109*** (−3.997)	0.022*** (3.564)	−0.113*** (−4.035)	0.025*** (3.876)	−0.119*** (−4.370)	0.024*** (3.254)	−0.126*** (−4.489)
Log of (Sales Growth)	0.079*** (3.029)	−0.015 (−0.858)	0.082*** (3.116)	−0.017 (−0.677)	0.087 (3.258)	−0.019 (−0.752)	0.094*** (3.157)
Leverage	−0.004* (−1.724)	0.008*** (7.929)	−0.006** (−2.171)	0.010*** (6.570)	−0.007*** (−2.734)	0.010** (6.737)	−0.011 (−2.643)
Firm Dummies	Yes	Yes	Yes	Yes	Yes	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.69	0.44	0.68	0.18	0.65	0.17	0.60
No. of firms	90	90	90	90	90	90	90

This table reports results of instrumental variable regressions applied to the subsample of the firms that issue offshore BIPOs. The instrumented variable is the *impact* dummy that captures the impact effect of the first offshore BIPO and takes the value of one in the year of offshore bond issue and zero otherwise. The instruments are: (i) the percentage of peer firms that have issued bonds overseas during the previous five years before the firm *i*'s bond IPO (*instrument 1*); (ii) the percentage of peer firms whose Tobin's *q* increased after the issuance (*instrument 2*); and (iii) the percentage of peer firms that experienced Tobin's *q* growth above the average industry growth after the issuance (*instrument 3*). The dependent variable in the first stage OLS regressions is the *impact* dummy. The dependent variable in the second stage regressions is firm's *i* Tobin's *q* in month *t*, and the main explanatory variable is the instrumented *impact*. Table also reports the baseline regression as in Table 3 for the subsample. The regressions are estimated with standard errors clustered by firm. The constant is estimated, albeit not reported in the table. *t*-statistics are reported in brackets. *, **, *** denote statistical significance at the 10%, 5% and 1% levels respectively.

The explanatory variables in our survival analysis cover a firm's growth opportunities, liquidity, creditworthiness, and the overall bond market conditions. In total, we investigate eight variables that have previously been found to affect a firm's decision to undertake an initial public offering of straight debt in the US market. In particular, Datta et al. (2000) shows that firm size and growth opportunities positively affect the probability of issuing public debt. Krishnaswami et al. (1999) and Cantillo and Wright (2000) show that more creditworthy firms issue relatively more public debt, while Hale and Santos (2008) suggest that both creditworthiness and demand for external funds, measured by the liquidity ratio, speed the firm's entry on to the public bond market. Lastly, a considerable body of research suggests that general condition of equity (see, e.g., Ljungqvist, 1995; Pagano et al., 1998) and debt (see, e.g., Helwege & Liang, 1996; Datta et al., 2000) markets affect the propensity of a firm to undertake an IPO.

Table 8, Models 1 through 6, reports the results of the survival analysis as coefficient estimates, such that a positive coefficient suggests that the increase in an explanatory variable leads to a greater hazard rate, or put simply, a shorter period before a firm decides to issue bonds abroad.²⁶ Based on the discussion in the Section 3.2, we estimate semiparametric Cox proportional hazards regression models. We use two proxies for a firm's demand for external funds and investments-to-assets. The size of the firm is defined as the natural logarithm of the book value of total assets. We use return-on-assets, leverage, and quick ratios to assess the financial condition of the sample firm at the time of issue. The recession and offshore bond market conditions variables are as defined above.

Firms with more investments (scaled by assets) tend to issue public

debt abroad earlier. Model 1 shows that the coefficient of the investments-to-assets variable is positive and significant, influencing the timing of a firm's decision to issue offshore BIPO. This result is consistent with evidence that firms that have undertaken significant investments prior to the debt offer are more likely to issue a straight bond (see, e.g., Datta et al., 2000) and to do so earlier (see, e.g., Hale & Santos, 2008) than others that have taken no such action.

Models 2 and 3 show that return-on-assets and quick ratio, the proxies for the firm's profitability and financing needs, have a negative impact on the timing of the firm's entry to the public bond market. In other words, firms with a greater need for external funds, manifested in lower profitability and a lack of internal funds to cover current liabilities, wait for a shorter period before they undertake their first bond IPO overseas. Contrary to expectations and previous evidence on domestic initial bond offerings (see, e.g., Cantillo & Wright, 2000; Datta et al., 2000), profitability has a negative coefficient sign. On the contrary, finding that firms with less liquidity issue earlier is consistent with the evidence from domestic bond offerings (see, e.g., Hale & Santos, 2008).

Finally, in models 4–6, we investigate whether these findings hold when we include a firm's leverage, size and the bond market state in our jointly specified models. Not surprisingly, the size of the firm has a positive coefficient, such that larger firms issue bonds earlier. Offshore bond market conditions, as defined by the total number of foreign BIPOs, is a significant determinant of how quickly firm chooses to issue a debt IPO overseas. In conjunction with a negative coefficient on recession, this suggests that firms tend to issue bonds abroad when the market conditions are advantageous, which corroborates the evidence in Figs. 1 and 2. Importantly, results on liquidity, profitability, size and amount of investments hold in the jointly specified models.²⁷

In summary, the results suggest that firms that have made significant

²⁶ While the sample characteristics offer reassurance of the reliability of the duration analysis, it is important to remember the possible duality in any interpretation of the result. Alternatively, in dynamic terms, a positive coefficient could also mean that firms with lower characteristics (e.g., smaller size) do not usually undertake bond IPOs, but as their financial characteristics evolve over time, the probability of undertaking an IPO increases.

²⁷ We also examine whether firm's valuation (Tobin's *q*) has an impact on the timing decision to enter the foreign bond markets. The results indicate that Tobin's *q* does not influence the timing of a firm's decision to issue offshore bond IPO. These results are available upon request.

Table 8
Timing and firm characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)
Investments/Assets	0.224*** (3.588)				0.835** (2.441)	0.304** (2.677)
ROA		−0.026*** (−5.210)			−0.024*** (−3.283)	−0.021** (−2.379)
Quick ratio			−0.062** (−2.237)		−0.079** (−2.035)	−0.112* (−1.657)
Leverage ratio				0.000 (0.031)		
Size (Log of Total Assets)				0.250*** (4.253)	0.243*** (3.713)	0.214*** (3.292)
Offshore bond market condition						0.013*** (6.889)
Recession indicator						−0.183 (−0.791)
No. of Observations	13,611	9993	9908	13,568	9908	9275
LR X2	13.15	15.49	3.41	17.64	17.92	65.55
Prob >X2	0.00	0.00	0.07	0.00	0.00	0.00

This table presents coefficient estimates of semiparametric Cox proportional hazards regression models. The outcome variable in each of the models is the firm's age and the failure event is the offshore bond IPO. The outcome variable is estimated against the set of explanatory variables, namely, Investments-to-Assets, Quick ratio, ROA, Leverage, Size, Offshore bond market conditions, and the Recession indicator. We use a χ^2 test to assess whether the assumption of proportional hazard is appropriate.

investments prior to the debt offer, firms that are large in size, and firms with lower profitability and liquidity, are more likely to undertake bond financing in foreign markets earlier than other firms that do not have these characteristics, lending support to our [Hypothesis 5](#). In addition, firms seem to time overseas bond offerings to align with favorable market conditions.

6. Robustness tests

In addition to the robustness tests discussed throughout the paper, we also perform a number of supplementary robustness checks of various types.

First, we check that the dynamic patterns of q 's components are consistent with the segmentation hypothesis ([Hypothesis 2](#)). The positive information content of issuing offshore BIPO is reflected in market capitalization (part of numerator) dynamics, as it increases before the issuance and remains high in the following years. However, total assets (denominator) rise only after the issuing offshore BIPO when firms respond by raising new capital and expanding, causing q to revert to around the pre-issuance level. This is consistent with the dynamics of q in [Table 3](#).

Second, we ensure that the main results of the paper are not sample-specific. The sample of this study starts in January 1984, but the majority of the firms in the sample were founded in the first half of the twentieth century, meaning that for some of the firms the data on the early years of their financial operations is somewhat limited. While we do manually screen each firm against the pre-sample foreign market entries, a possible concern is that we mistakenly coded some firms as new issuers when in fact the firm had already been issuing offshore BIPO prior to 1984. To guard against this mistake and to eliminate the left-censoring issue of survival analysis arising from the properties of the SDC database, we: (i) re-estimate our models starting from 1987, when the peak in the number of internationalizations seems to have disappeared; (ii) we repeat the empirical analysis with firms entered Compustat after January 1984. Imposing these restrictions produced a sample shorter than the original by about a third and two thirds, respectively. Nevertheless, most of the test estimates are similar to the counterpart values in the benchmark specifications of the previous sections.

Third, we check the reliability of our empirical strategy and rule out

some of the alternative explanations of our results. The outcome variable in the survival analysis in Section 5 is an age of the firm coded based on the appearance of the firm in Compustat (which starts in 1950), which results in left-truncated estimates. Alternatively, to make sure that such truncation does not affect results, we redefine the age variable using the CRSP appearance date and trace the firm age as far back as 1925. Additionally, we check that the results of the survival analysis hold when we impose restrictions on the underlying distribution of the outcome variable and estimate parametric models with Weibull and Gompertz distributions.

In addition, we check that the observed valuation effect is robust against an alternative proxy for Tobin's q —the relative Tobin's q —that essentially is the firm's Tobin's q divided by the average q of all the firms in the USA in the same year. We also check that market timing theory is unable to fully explain the results for the observed dynamics of valuation around the initial offshore bond offerings. Market timing theory predicts that firms raise capital abroad to exploit *hot* markets and temporarily high prices for their securities ([Errunza & Miller, 2000](#); [Henderson, Jegadeesh, & Weisbach, 2006](#)). To ensure that market timing does not completely account for an observed effect, we additionally control for average industry Tobin's q , alongside the return and the price-earnings ratio of the S&P 500 index. The inclusion of these controls does not alter the results on the valuation effect.

7. Conclusions

This paper examines the effects of the first offshore bond initial public offerings on firm valuation. The empirical study employs a sample of US firms that have issued debt in foreign markets over the 31-year period from 1984 to 2015. Specifically, we test five hypotheses. Hypotheses 1 refers to an increase in firm valuation following the initial corporate debt offerings in the foreign market, while [Hypothesis 2](#) postulates that the positive valuation effect exists only around the offering, without a long-term effect. Both hypotheses are supported by the results. Furthermore, we perform difference-in-differences analysis using the sample of both international firms and their counterparts that issue domestic BIPOs only. We use propensity score method as a matching technique where we match firms based on Tobin's q . By using treatment and control groups of firms we show that the increase in firms' valuation is due to the issuing offshore BIPO event. The positive

valuation effect for international firms is further confirmed using an instrumental variables approach.

Hypotheses 3 refers to reverse bonding hypothesis that is testing whether BIPOs in countries with less rigorous governance mechanisms (emerging markets) have a negative valuation impact. The results are in contrast to the expectations, even for alternative subsamples by differentiating BIPOs on the World Bank's strength of investor protection index, strength of shareholders rights index, and other investor protection law characteristics. Hypothesis 4 tests whether the firms with relatively high information asymmetry are more affected by the first offshore BIPO issuance. The results validate the hypothesis and they are consistent with previous finding of short-term valuation effect. Finally, Hypothesis 5 focuses on the determinants of the decision to enter international bond market. In particular, we test whether the foreign public debt market entry depends on the firm size and need for external funds. The hypothesis is verified, as we find that larger firms issue bonds earlier and that firms with a need of external funds prior to the debt offer (indicated by low profitability and lack of internal funds) accelerate the offshore public debt market entry.

We performed the survival analysis to ensure that our results are not sample-specific and to rule out some alternative explanations of our results. The baseline results withstand various robustness checks, including matched samples, and the positive valuation effect does not vary in the face of the introduction of controls for the firms' size, growth prospects, and leverage; on the industry of the issuer; on the alternative measure of valuation (the relative Tobin's q); and cannot be explained by the market timing theory.

With regard to the theoretical considerations, our main finding that overseas corporate debt offerings exert a positive valuation effect lends support to the predictions of (i) models of debt financing choice premised on the resolution of asymmetries of information and the reduced agency costs, and (ii) the segmentation theory of internationalization that predicates an interim valuation effect. Further, the heterogeneity in the valuation effect between relatively established and relatively small and young firms is consistent with Diamond's (1991) reputation-developing assertion, implying less incidence of information asymmetry for older firms.

To conclude, it is important to notice that the practice of raising international capital through issuing debt is growing rapidly, and financial internationalization is becoming a multidirectional phenomenon as US firms issue BIPOs into an increasing variety of markets. As more data becomes available, future research could further investigate the causes and effects of US firms' foreign capital raisings. It would be also useful to explore to what extent raising capital overseas affects the competitiveness of the domestic and foreign financial markets.

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