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Why do firms issue bonds in the offshore market? Evidence from China[+]

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Abstract

International debt financing is important for the development of emerging economies, as it gives firms from emerging markets (EMs) access to greater liquidity, a wider investor base and more effective laws and regulations. However, the financial crisis in the late 1990s, coupled with recent rapid growth in corporate leverage in EMs forced policymakers to re-evaluate the risk of offshore financing, and its role in EMs' development. In this paper, we investigate the bonding/signalling effect of offshore financing in domestic market financing reflected by the improvement of information disclosure and creditability. Using a comprehensive database covering bond issuances by Chinese firms in domestic and offshore markets from 2010-2015, we find that: 1) The offshore bond issuance improves the funding conditions of the issuer in the subsequent domestic bond issuance, in terms of longer maturity of corporate issuance and lower funding cost. 2) The change of financing terms is more significant for domestic issuance by firms that have been issued bonds offshore under public issuance or with an international investment-grade rating. 3) Offshore debt financing improves long-term firm performance, especially for financially constrained companies. 4) Offshore bonds issued with a registration domain in Hong Kong, under Hong Kong law or listed on the Hong Kong exchange market have stronger signalling effects in the subsequent domestic issuance than other offshore locations. Our study underscores the role of offshore financing in promoting the institutional environment and firm growth of the domestic market, and offers policy suggestions for emerging economies in developing a broad offshore corporate bond market.

Keywords: Offshore Financing, Bonding Hypothesis, Signalling Effect, China's Corporate Bond Market

JEL classification: F34, G15, G3

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1. Introduction

Beginning in the 1990s, firms from emerging markets (EMs) began to tap into international debt markets under the trend of financial globalisation. More than 30% of capital raised through equity and debt issuances by developing countries occurred in markets outside their home countries (Gozzi, et al., 2010). After the 2008 financial crisis, the international market has been a more liquid place amid unprecedented monetary expansion in advanced economies, which gives EM firms greater incentive to run towards the international debt market (Elekdag, et al., 2015; Bruno and Shin, 2016). As a result, international debt issuance has risen sharply. It has accounted for almost 50% of total net issuance since 2010, becoming an important corporate financing source for emerging economies (Bruno and Shin, 2016).

In general, the domestic debt market in EMs functions poorly in providing funding to corporate debtors. It usually features a small market size with less liquidity, and is essentially segmented, leading to a high funding cost (Errunza and Miller, 2000; Allen, 2012). In contrast, the international market provides greater liquidity, a wider investor base and, more importantly, better-developed supporting institutions, which allows firms to more easily obtain long-term financing with lower funding costs (Errunza and Miller, 2000). However, the financial crisis in the late 1990s, associated with the risks of offshore financing, significantly shook up policymakers and scholars. The recent increase in corporate leverage in EMs also raises concerns[1]. Policymakers around the world question the role of offshore financing in EMs' development and continuously discuss whether controls on capital flows should be reinstated.

A large body of literature, using various research methodologies, argues that offshore financing could benefit emerging-market firms in the improvements of creditability and corporate governance. This view is often referred to as the "bonding" hypothesis (Coffee Jr, 1998; Licht, 2003; Doidge, et al., 2004). This hypothesis argues that, when emerging-market firms raise funding in offshore markets,

[1] Offshore financing inevitably increases cross-border capital flows and foreign debts, which induce risks to EMs. Kaminsky and Schmukler (2003) offer a detailed review on the benefits and risks of financial globalisation for developing countries. Elekdag, et al. (2015) and Bruno and Shin (2016) also shed light on potential risks of growth of offshore corporate debts from EMs. The costs and benefits of financial globalisation have been a subject of extensive literature that cannot be fully covered here. The main goal of our study is to evaluate the role of the offshore market in EMs' economic development, specifically from the institutional perspective.

which has a relative stricter jurisdiction associated with more effective protection to minority shareholders and stringent disclosure environments, these firms would face more scrutiny and monitoring from international investors, analysts and auditors than they did in home countries. Therefore, having raised funding under a regime with stricter market discipline and information disclosure would make the issuer more transparent and creditable, which, in turn, sends positive signals to the domestic market and improves the debtor's financing conditions afterwards (Licht, 2003; Doidge, et al., 2004).

Although the bonding hypothesis has been the topic of much discussion, the bonding/signalling effect of offshore financing on the domestic market remains controversial[2]. Some studies provide supporting evidence. Moel (2001) finds that raising funding in the form of ADRs in the US helps increase accounting and disclosure standards. Reese and Weisbach (2002) find that a weaker corporate governance framework in the home country will prompt firms to list their stocks on the NYSE or NASDAQ. Miller and Puthenpurackal (2002) argue that raising bonds in the US by firms from countries that do not protect investors' rights and do not have a disclosure history increases the price of their financial assets. Benos and Weisbach (2004), Doidge (2004) and Chung, et al. (2015) provide further supporting evidence for the bonding hypothesis from a variety of perspectives. However, some studies found there no link between offshore financing and institutional improvement. Saudagaran and Biddle (1995) argue that firms which attempt to raise funding internationally prefer markets with lower, rather than higher, disclosure standards. Bailey, et al. (2006) evaluate the effect of the increased disclosure on non-US firms when they list their shares on certain US markets and find little evidence that bonding to an increased disclosure regime generates beneficial effects. Similar evidence could be found in Licht (2003) and Chung, et al. (2015).

In this study, we investigate whether the bonding/signalling effect remains valid for EM firms after they have raised funding in international markets with more stringent regimes. Specifically, we investigate that: (1) Does the offshore financing serve as a signal and then influence the firm's funding conditions in the subsequent domestic issuance? (2) What is the difference in the magnitude of signalling effect to the domestic market, according to different settings of information disclosure? (3) Does offshore

[2] We use the bonding and signalling effect interchangeably in this paper. In fact, the bonding effect suggests that firms improve their corporate governance mechanisms, such as internal control and information disclosure, after capital raising in a more advanced market. The signalling effect may simply be that well-governed firms have incentives to go to better-regulated markets to raise capital to signal their quality to domestic investors. Empirically, it is rather difficult to distinguish these two effects.

financing have a better signalling effect on financially constrained companies after they commit themselves to a more stringent regime? Does offshore financing affect firm performance, especially for financially constrained companies? (4) What is the disparity of the signalling effect across financial centres?

To shed light on those issues, we construct a comprehensive dataset, including bond issuance internationally and domestically by Chinese firms from 2010-2015. A common characteristic of existing studies examining the bonding hypothesis is that they focus on cross listing of equity shares. However, little attention has been paid to the bonding/signalling role of offshore debt issuance due to data availability. In fact, information asymmetry issues are more critical in bond issuance, since bond investors often lack effective tools to monitor business activities of bond debtors and heavily rely on rating agencies and protection of laws and regulations, suggesting that bond investors most likely confront issues of asymmetric information and adverse selection.

China provides a good setting for investigating the bonding/signalling effect of offshore financing on the domestic market. China has always been cautious about permitting domestic firms to issue bonds internationally to avoid higher external debt and potential threats to the stability of the domestic financial system. However, in recent years, the authorities have gradually eased capital controls and have become more supportive of offshore financing. As a result, offshore bond issuances by Chinese corporates have recorded a sharp rise from almost nonexistence to US$458 billion as of end-2015[3]. Meanwhile, China has also made significant strides to reform domestic bond markets and promoted it to play a more prominent role in financial resource allocation. However, the domestic bond market remains under developed with less creditability and transparency compared to mature international peers. Based on the Chinese data, a country with strict capital control and large institutional disparity across markets, our study provides a micro-level investigation of the bonding/signalling effect on China's domestic market, which is associated with poor transparency and credit risks in large debt expansion. It also offers important policy suggestions for other EMs with similar institutional restrictions.

Our study confirms that offshore debt financing is associated with a better financing condition in the subsequent domestic issuance, in terms of longer maturity of corporate issuance and lower funding

[3] Data source: our database

cost, especially for financially constrained companies. The change of financing conditions is more significant for domestic issuance by issuers that have obtained offshore financing with a public issuance with stringent disclosure, or with an international investment-grade level rating. These findings are consistent with bonding hypothesis. We also empirically confirmed that companies which have issued internationally enjoy higher growth rates and better performance, especially for financially constrained companies. Finally, we discover if offshore bonds issued with a registration domain in Hong Kong, under Hong Kong law, or listed on the Hong Kong exchange market have stronger signalling effects in the subsequent domestic issuance than other offshore locations.

Compared to existing literature, this paper provides new evidence to support the bonding/signalling effect of offshore financing on the domestic market. A large body of literature argues that firms financing abroad render themselves to a better corporate governance framework, and could signal greater information, given their access to high-quality lenders and markets (Doidge, et al., 2004; Gozzi, et al., 2008). Our research empirically confirms the bonding/signalling effect, and is the first one with a special dataset of debt issuance, rather than equity market cross-listing.

Our study also expands empirical literature related to financial globalisation and international financing patterns. Gozzi, et al. (2012) compare issuing patterns across markets. Didier and Schmukler (2013) compare the characteristics of firms that raise funding internationally and domestically, and report the uneven financing behaviour between large and small firms. These studies provide abundant evidence of the disparity of financing patterns across markets. However, they did not give a clear explanation of the interaction effect or the link between international and domestic markets. Our research contributes to this literature by clarifying the mechanisms through which the international debt market sends signals and results in a spillover effect on the domestic market[4].

The rest of the paper is organised as follows. Section 2 introduces the institutional issues of China's domestic corporate bond market. Section 3 describes the data and variables. Section 4 reports the empirical results and our interpretation of the key findings. Section 5 further investigates the effect of

[4] There have been a few studies focusing on macro and financial market factors that influence firms' decisions to issue debt internationally or domestically. They argue that liquid market conditions, favourable swap rates and price differentials are major determinants in firms' decision to obtain offshore issuance (Black and Munro, 2010; Gozzi, et al., 2010; Mizen, et al., 2012), especially for firms from emerging economies. These literatures focus on the effect of macro-level factors on offshore financing. In contrast, our research focuses on the signalling effect of offshore financing to onshore issuance.

offshore financing on firms' performance. Section 6 discusses the location effect of offshore financing. Section 7 concludes the paper.

2. Institutional background: China's corporate bond market

2.1 The rapid growth of China's corporate bond market

Over the past decade, China's debt capital market has experienced a rapid expansion with an average annual increase of 19% during the 2009-2015 period. It has become the world's third largest at RMB35 trillion, or about US$5.38 trillion, behind only the US and Japan. In particular, the corporate bond segment, including non-financial corporate bonds, medium-term notes, enterprise bonds and commercial papers, has increasingly grown from non-existence to around RMB 14 trillion, or 40% of today's total bond market[5].

This rapid expansion and increasing diversification in China's corporate bond market reflects the enormous strides made by China's authorities over the past few years. These aim to shift away the lending concentration in the banking system, and develop the debt capital market as a "spare tyre" to provide a more sustainable funding source (Greenspan, 2000).

For a long time, Chinese private firms (non-state-owned and non-financial) have been limited in their ability to gain bond funding domestically, and have had to rely largely on bank loans to meet their financing needs. The corporate bond financings remain minimal at less than 5% of total social financing in 2000s, indicating room to develop a corporate bond market to serve as a substitute for other ways of financing. After 2005, continuous introductions of initiatives and product innovations triggered the growth of China's corporate bond market and further enriched the variety of corporate debt instruments[6]. By the end of 2015, the total outstanding amount of China's corporate bond market had reached RMB 14 trillion, an increase of 300% compared to 2010, and accounted for 15% of

[5] Data source: Wind, as of end-2015.

[6] The introduction of new corporate debt instruments in China's domestic bond market includes the launch of commercial paper (CP) in the interbank market in 2005, the introduction in 2007 of corporate bonds by CSRC, and the launch of medium-term notes (MTNs) in 2008. In 2009, the small and medium-sized enterprises collective notes was launched, which is regarded as a particularly positive way to help small and medium-sized enterprises overcome financing barriers.

banking loans and 10.5% of total social financing (See Chart 1). Since policy support will be in place to facilitate more corporate access to the bond market, and many private firms remain underserved, the rapid growth of China's corporate debt capital market can be expected to continue in the next few years.

2.2 The institutional issues in China's corporate bond market

Despite the rapid expansion, China's corporate bond market is still at an early stage. It remains associated with several crucial institutional issues, such as a high concentration of state-related issuers, a lack of transparency in credit assessment, and the implicit government guarantee with moral hazard risks.

Although China's bond market has become more diversified after introducing various debt instruments, more than 70% of the overall China bond market is dominated by central government bonds, local government bonds and financial bonds, most of which are issued by state-owned banks. The remaining segments, including enterprise bond, corporate bond, CP and MTNs are also dominated by state-owned enterprises and local government funding vehicles (LGFVs). This excess concentration in state-related issuers, to a large extent, crowds out private companies from the debt capital market, and leads to growth in shadow banking channels and poses a substantial risk to financial stability.

In addition, the credit ratings for corporate debt segments given by China's local credit agencies have long been questionable, due to poor transparency and credibility. To date, nearly 80% of domestic issues are given an AA or above grading by local rating agencies, making it difficult to identify credit differentials of Chinese corporate bonds (See Chart 3). The local rating agencies view most of the state-related issuers as having minimal credit risk because of the implied government guarantee, despite some of those issuers having weak financial performance. However, when these firms try to raise funding in offshore markets, most record a noticeable drop in credit rating[7]. The large

[7] For instance, Evergrande Real Estate Group is seen as among the safest issuers in China's domestic bond market, and obtained a triple-A rating by local rating agencies. However, when it issued offshore in 2015, S&P downgraded it to single-B-plus, due to the weakened ability to pay interest on bonds and bank debt. Similar cases can be found among other state-owned issuers, such as Sinopec and State Grid, both of which have been downgraded from domestic triple-A to international single-A-plus (See Chart 2).

discrepancy between local and international ratings shows the difficulties in differentiating the credit profiles of the issuers and to price properly their credit risk.

Credit issues are further complicated by the absence of a default history and the weak investor protection in the bankruptcy procedure. China had not experienced a true corporate bond default until March 2014, when the wholly state-owned Baoding Tianwei Group Company missed an interest payment on its RMB 1.5 billion medium-term note, breaking the widespread belief that China's corporate debt carries implicit government support. A notable rise in debt defaults was recorded in the first half of 2016, nearly 40% of which had been granted AA or above rating at the issuance, about half of which were issued by state-owned enterprises (SOEs) (See Chart 3). The absence of clear rules or guidance in the default settlement leads to an uncertain and costly default enforcement process.

2.3 The rise of offshore issuance by China enterprises

Compared to the domestic bond market, well-developed offshore markets have enabled low-cost funding for Chinese companies, given its far-more-liquid market environment. Since 2010, Chinese companies keep tapping offshore bond markets to obtain long-term funds in keeping with China's "Go Out" policy. By the end of 2015, China's offshore bond issuance had exceeded US$458 billion. A detailed description of Chinese offshore issuance is presented in section 3.2.

It is worth noting that, overseas financing has, besides cheap funding, induced some important institutional changes to the domestic credit market, particularly improvements in rating creditability and investor protection. Since international rating agencies look more at the standalone credit strength of the issuers, in contrast to the relatively easy stance adopted by the domestic agencies. In this context, offshore debt issuance makes it easier to track the credit quality of Chinese issuers and to derive more accurate differentiation in credit ratings.

As international investors seek greater protection for bonds issued by Chinese corporates, the covenant structure of China's offshore bond issuance tends to employ a more-restrictive US investment-grade covenant structure with more investor protection. Even in the early stage of Dim-

Sum bond issuance, when most issuers tend to choose a "covenant-lite" structure with minimum protection, offshore Chinese bonds are still better documented with more protection covenants than the domestic issuance structure (Chung and Lau, 2011).

After the launch of the Bond Connect Scheme in July 2017, growing volume in China's cross-border issuance and transactions has made the domestic and offshore bond markets more inter-linked. Therefore, international ratings and information disclosure would be more valuable in analysing relevant corporate bonds in the domestic market.

3. Data and variables

3.1 Sample construction

To investigate the bonding/signalling effect of offshore financing on domestic bond markets, we assemble a comprehensive dataset with regard to Chinese firms' debt issuances from domestic and offshore markets from 2010- 2015.

Our database of Chinese corporate bonds is drawn from the Bloomberg financial database, which provides detailed information about bond issuance worldwide and the financial information of debt issuers. We first identify the bonds issued by Chinese entities, according to Bloomberg's criteria in nationality[8], and then narrow the selected sample to align with our research purposes. To restrict our sample to Chinese non-financial corporate bonds, we exclude debt securities issued by public sectors, including those issued by government agencies, policy banks and municipal bonds. Then, we exclude the debt securities from financial industry, including the debt securities from banks, asset management companies, non-banking financial institutions and insurance companies[9], since our analysis focuses on the corporate sector. We next filter out the debt securities with an original maturity of less than one year, including commercial papers, super commercial papers, structured notes and

[8] Bloomberg's criteria of nationality depends on management location, country of primary listing, or country of major revenue.
[9] In this paper, we use the Bloomberg industry classification standard (BICS). The BICS is an industry classification system developed and maintained by Bloomberg that classifies securities based on business, economic function and other characteristics. It is noteworthy that the financial industry sector of BICS includes real estate, which is not consistent with general industry classification. Therefore, we separate the real estate sector from the financial sector.

certificates of deposit (CDs), to ensure the bond attributes in our samples are in line with the standard corporate bond classification. In addition, we exclude the debt issued by Hong Kong and Taiwanese firms that are likely to be regarded as Chinese issuance according to Bloomberg nationality criteria.

To classify debt issuances as domestic or offshore, we follow Black and Munro (2010) and Gozzi, et al. (2010), and identify the issuance according to the main exchange where the issuance occurred. If a bond is issued in the China inter-bank market, Shenzhen Stock Exchange or Shanghai Stock Exchange, we define it as domestic issuances, otherwise as offshore issuance.

To compare the issuance pattern across markets and test the bonding/signalling effect of offshore financing on domestic bonds, we match the issuance history of every cross-border financing group between onshore and offshore markets. Specifically, we first identify offshore financing groups, if the issuers are under the same parent company and one of their subsidiaries has issued bonds offshore. Then we match the offshore issuances with the relevant debt funding history in the domestic bond market of the given group during the sample period. This matching offers sufficient data-pairs to compare the bond issuing pattern across markets, and allows us to easily track the evolution of domestic corporate bond characteristics before and after offshore financing.

Considering that financial data for some industries is available only from 2009, we set the sample period from 2010 to 2015. After eliminating issuance with missing financial data, we are left with a sample covering 2461 corporate bonds issued from 827 firms and 124 issuing groups from 2010-2015.

3.2 Data description

3.2.1 Onshore bond issuance

Table 1a reports the evolution of domestic corporate issuance in our sample. The aggregate funds raised in the domestic bond market increased significantly in the sample period, aligning with the growing pattern of the overall China bond market. The total issuance in the non-financial corporate sector increased from RMB 503 billion in 2010 to more than RMB one trillion in 2015. Although annual issuances have varied significantly, the total volume of domestic corporate issuance increased more than two-fold in a short period.

In Table 1b, our sample indicates a high concentration and significant skewness in issuers' distribution. In Table 1b, only a relatively small number of large entities dominate domestic corporate issuance. The debts issued by the top 100 large entities over the total 827 firms accounts for 69.2% of the total issuing volume, more than 90% of which is raised by State-Owned Enterprises (SOEs). For the industry distribution, issuers come mainly from energy, industrial and utilities industries. Especially in utilities industry, state-owned issuers account for a higher share, about 95%.

3.2.2 Offshore bond issuance

Our database gives an overall picture of offshore debt issuance by China's non-financial firms during the sample period. In Table 2a, the total issuance exceeded US$458 billion by 560 firms with an average annual increase of 28.7%, more than 80% of which was denominated in USD.

Table 2b reports the offshore issuance distribution across industries. Compared to the domestic market, the offshore issuances occur mainly in the energy sector, which accounts for 26% of total issuance, and the real estate sector, which was prevented from tapping into the domestic market before 2015 and accounts for 24%. High-tech companies from the communication industry are also active issuers in the offshore USD bond market, accounting for 12% of the offshore market, while their domestic issuance is less than 3%.

Table 2c indicates another significant disparity between onshore and offshore by the ownership of issuers. The offshore issuance by non-SOEs has reached US$215 billion, exceeding the total offshore issuance by SOE enterprises, suggesting that non-SOEs could reap the benefits of offshore financing.

Since our main research interests focus on the information disclosure and market discipline of the offshore market, Table 2d reports the distribution of international rating and different raising types of offshore issuance. In Panel A, 50.5% of offshore issuances have obtained international ratings during the sample period; and more than 33% are above investment-grade level. For ownership, SOEs are relatively easier to obtain investment-grade level rating than non-SOEs. However, more non-SOEs obtained international ratings, the median of which, though, is triple-C grade. This indicates that international agencies could identify the non-SOE sector's credit risks and offer more diversified ratings, compared to the domestic market.

For the offshore raising types, private placements were a normal practice in the early stages of dim sum bond issuance. However, in our database, 85% of bonds are conducted by public issuance, while private placement accounts for 15%. It may reflect the sample difference that most issuers in our sample are mostly denominated in USD, which generally employs a more restrictive offshore issuance structure than dim sum bond issuance in public issuance.

The above results indicate a clear variety in financing activates between onshore and offshore. The offshore market seems to offer more funding in favour of non-SOEs and yield more transparent credit information of Chinese corporate issuers.

3.3 Variable definition

The main goal of this study is to examine whether the "bonding" hypothesis remains applicable in the case of Chinese debt issuance after offshore financing. To shed light on this question, we construct the measures of interests as below:

Dependent variables:

To examine how offshore financing affects financial conditions of the subsequent debt issuance in the domestic market, we use three bond-specific attributes as our dependent variables: issuance size (bond size), the maturity of bond issuance (tenor) and the yield at issue (yield). Since the yield for floating-rate bonds are not available in our sample, we restrict our analysis to the issuance with fixed-rate yield.

Major independent variables:

We further construct three main independent variables following Gozzi, et al. (2008), including offshore financing dummy (offshore), before offshore financing dummy (before) and after offshore financing dummy (after).

The dummy variable offshore equals one for bonds issued by groups that have been issued offshore sometime during the entire sample period and zero for others. Given this definition, the domestic issuing groups are divided into two sections: offshore financing section (corporate groups in which

one of the subsidiaries have been issued offshore sometime during the sample period) and domestically issuing only section (corporate groups that are only active in the domestic bond market).

We introduce the offshore dummy to differentiate the domestic bonds issued by different corporate groups. One concern is that the difference of funding conditions of firms that have offshore issues and those firms which only issue domestically may stem from other firms' attributes, rather than the bonding/signalling effect of first-time offshore issue. To address this concern, we generate a dummy, after, which equals one on and after the year at the first offshore issuance of the given group, and a dummy variable, before, which equals one before the year at the first offshore issuance of the given group and zero otherwise. For the bonds issued by domestically issuing-only groups, the after dummy and before dummy equal zero throughout.

Table 3a reports the statistics of our main independent variables. It shows that 36% of domestic corporate bonds have been issued by offshore financing groups during the sample period. Table 3b reports the statistics of the independent variables on the basis of different group classification.

In Panel A, the domestic corporate issuance conducted by offshore financing groups tend to be of larger size (RMB 3.3 billion), longer maturities (6.9 years) and lower yield at issue (5.2%) than those issued by domestically issuing-only groups (with issuance size of RMB 1.2 billion, maturity of 5.1 years and yield at issue of 5.9% respectively).

In Panel B, we compare the domestic corporate bonds issued by offshore financing groups before and after their first offshore issuance. The domestic bond after the first offshore issuance will be of RMB 0.47 billion larger, 2.24 years longer and 0.13% lower than those before first offshore issuance.

These results suggest that the domestic bond issued by offshore financing groups possess better bond conditions in subsequent bond issuance, in terms of larger issuance size, longer maturity and lower yield at issue.

Control variables:

In addition to the main explanatory variables, we also incorporate several control variables that may influence the debt issuance. This sets our study apart from previous studies that only focus on country or industry-level factors.

For firm-level controls, we use the logarithm of the firm's total assets to measure firm size, use the long-term debt over total assets (LDEBT) to capture the leverage and the financial health of the firm, and also consider profitability (PROF), liquidity (LIQUID) and collateral ratio (COLL). Profitability ratio is defined as earnings before interest and taxes relative to total assets to measure a firm's ability to generate profits, used previously by Denis and Mihov (2003). The liquidity ratio is measured as current assets over total liabilities (Hale and Santos, 2008; Mizen, et al., 2012). The collateral ratio is tangible fixed assets over total assets (COLL), as suggested in Mizen, et al. (2012). We also include a measure of tangible assets that proxies for the firm's ability to pledge collateral for debt finance, defined as tangible assets over total assets (Demirgüç-Kunt and Maksimovic, 1999; Booth, et al., 2001).

At the market-level, we consider a set of macro-level characteristics that may potentially affect the probability of access to offshore bond markets and domestic bond characteristics. We include a measure of stock market turnover (STOCKTVR) to capture the capital market influence (Mizen, et al., 2012). We also include the repurchase rate (Reporate), defined as the average seven-day repurchase rate at issue month to capture the domestic liquidity conditions. Finally, we include the index of VIX to measure the global financial uncertainty. A higher VIX reading is related to a lower probability of issuance (Elekdag, et al., 2015; Bruno and Shin, 2016).

4. Domestic bond issuance after offshore financing

4.1 Empirical strategies

Our main regression is expressed as below:

$$Bond\ Characteristcs_{i,j,t} = \alpha + \beta U_{g,m} + \gamma X_{j,t-1} + \varphi Z_m + \delta + \varepsilon_i \quad (1)$$

Where $Bond\ Characteristcs_{i,j,t}$ indexes three domestic bond attributes, the issuance size (bond size), the maturity of bond issuance (tenor) and the yield at issue (yield). i indexes each bond issuance; j indexes each bond issuer; t indexes the issue year; g indexes cross-border financing group; m

indexes issuance month. U_(g,m) is our major explanatory variables, which include offshore financing dummy (offshore), before offshore financing dummy (before) and after offshore financing dummy (after). X_(j,t-1) is a vector of firm-specific variables, evaluated at time t-1 to mitigate potential endogeneity concerns, and Z_m is a vector of market-specific variables of issuance month. δ is the industry dummy and year dummy variables to capture the time trend and the differences across industries; and ε are error terms.

Following Gozzi, et al. (2008), we implement the empirical strategies in the following steps: we first include an offshore financing dummy, in equation, to investigate the effect of offshore financing on domestic bond conditions. The coefficient of offshore, β, reveals the variety of domestic bonds issued by different corporate groups. If β is significant, it suggests that the domestic bonds issued by groups that have been issued offshore sometime during the entire sample period will possess better bond conditions than those issued by groups without offshore financing events.

However, it could be possible that those better bond conditions do exist before offshore financing as a result of other firm-specific factors. To address this causality issue, we add the dummy variable “after” in the regression, which identifies the first offshore bond issuance as an external shock, following the methodology of Bertrand and Mullainathan (2003) and Gozzi, et al. (2008). If the inclusion of after drives out the significance of the estimate coefficient on offshore, it may reflect that the difference of bond conditions only exists after the occurrence of offshore financing, showing offshore financing serves as a signal and change to the domestic financing afterwards.

Furthermore, we simultaneously include the after and before variables to directly test bonding hypothesis. If the coefficient of after is significantly correlated to three characteristics of domestic bonds, while before is not, then this could statistically confirm that the offshore financing has a bonding/signalling effect on subsequent domestic capital raisings.

4.2 Basic regression

We report our basic results in Table 4. The dependent variable in columns 1-3 is issuance size; columns 4-6 is maturity of bond issuance; and columns 7-9 is yield at issue for fixed-rate bonds. All of

the regressions are estimated using ordinary least squares and the standard errors are adjusted for robustness.

We first estimate the basic regression and include only the dummy variable offshore in columns 1, 4 and 7. The coefficients of offshore are statistically significantly positive and exhibit the expected signs in the three specifications. These results hold for firm-specific characteristics, market-level factors and industry and year dummies. It seems to support that domestic bonds issued by groups with offshore financing events generally enjoy larger issuance size, longer maturity and lower funding cost.

In columns 2, 5 and 8, we include the after offshore financing dummy. Compared to the results in columns 1, 4 and 7, the significance of the offshore dummy only holds for the issuance size, while no longer significant in maturity and yield at issue. Specifically, column 2 indicates that the variety of domestic issuance size already exists before the offshore financing, but is not significantly correlated with the occurrence of offshore financing. In columns 5 and 8, the coefficients of the after dummy are statistically significant at the 1% level, while the coefficient of the offshore dummy loses significance. In other words, the inclusion of the after dummy drives out the significance of the offshore dummy, suggesting that only the maturity and funding cost of domestic bond issuance change after their groups first raise funding offshore.

Even after controlling for firm and market-specific characteristics, and industry and year dummy variables, we still have the same results, confirming that offshore financing could help reduce the domestic funding cost and expand the lending maturity.

In Table 4's columns 3, 6 and 9, we include the after dummy and a before offshore financing dummy variable (before). They show the similar pattern as above. In column 3, after controlling for firm, industry and market-level characteristics, the coefficient of the before dummy is positive and significant, but not significant for the after dummy. In columns 6 and 9, the estimated coefficients of the before dummy are not significant, however, the coefficients of the after dummy are significant and exhibit the same signs as previous. Those results are consistent with the above finding, and confirm that offshore financing has an effect on the increase of maturity and the decrease of yield, while not enlarging the issuance size in the subsequent domestic issuances.

The lower part of Table 4 reports the effects of firm-specific attributes and market conditions on domestic bond issuance.

For firm-level control variables, the results indicate that firms with large size (SIZE) and better profitability (PROF) tend to raise capital with larger amounts, longer maturities and lower cost in bond markets, while firms with high leverage tend to raise debt capitals with less amounts, higher costs but longer maturities. This is consistent with the findings in Pagano, et al. (1998), Denis and Mihov (2003) and Mizen, et al. (2012).

For the market condition factors, the seven-day repurchase rate (Reporate) is positively related to the yield at issue and negatively related to the issuance size, suggesting that the lower liquidity will result in a higher cost and less amount of debt capital raisings. The VIX is positively related to the issuance size and maturity, suggesting that firms tend to raise more in domestic markets and need longer maturities of debt when faced with financial uncertainty on global markets, which is consistent with the pecking order theory (Myers and Majluf, 1984; Allayannis, et al., 2003).

4.3 The time evolution of bonding/signalling effect

To provide additional evidence on bonding/signalling effect, Table 5 traces the time-series pattern of offshore financing to examine whether its effects vary over time.

Following the work of Gozzi, et al. (2008), we include a series of year dummy variables in place of the after dummy. The dummy variable current equals one on the year when the issuers access the offshore market at the first time and zero otherwise. The dummy variable after1 equals one at the time of one year after the first offshore issuance and zero otherwise, and then we define after2 and after3 in the similar way. Specifically, after3 measures the effect for more than two years after the first offshore issuance. The inclusion of a set of year dummies allow us to trace the evolution of the bonding/signalling effect of offshore financing for a relatively long period.

As shown in Table 5's column 1, the effect of offshore financing on issuance size only exists before, which is consistent with the previous result. For the maturity and funding cost, showing in columns 2 and 3, the coefficients of the before and current dummies are not significant. However, the

coefficients of the after1 dummy are significant above the 5% level, suggesting that the bonding/signalling effect of the offshore financing arises one year after the first offshore issuance. Moreover, we see the distinct stories in the patterns for maturity and funding cost of domestic bonds for a longer period. In column 2, the coefficients of after1, after2 and after3 on the maturity of issuance remain significantly positive, while with a fall in their coefficients, which indicates a decrease in the effect of offshore financing on domestic bond maturity. By contrast, the coefficients of those year dummies in column 3 are increased, and after3 is significant at the 1% level, showing that the bonding/signalling effect of offshore financing on domestic funding cost experiences an enduring effect.

4.4 Spillover channels of bonding hypothesis

The “bonding” theories argue that firms which bond themselves to an international market with a stricter information disclosure and better investor protection environment could yield a positive influence on domestic financing. That suggests that the degree of influence of bonding on domestic markets may vary according to offshore debt-raising settings.

To differentiate the bonding/signalling effects generated under different offshore financing regimes, we classify subsamples according to: (i) whether the issuers have obtained an investment-grade level rating or lower rating from offshore markets, (ii) whether issuers have raised capital offshore through public issuance or private placement.

Since issuers may have multiple-round offshore issuances during the sample period, during which the ratings of offshore issuance may vary over time, or the issuers may employ different raising arrangements, we identity the subsamples based on the attributes in their latest offshore issuance to circumvent the time-varying effect.

4.4.1 Splitting the sample by international ratings

Ratings play a critical role in the bond market. They represent the credit worthiness of corporate bonds and are largely used by external investors. Traditionally, the investment-grade rating is regarded as a basis for investment, which most likely guarantees the payment obligations. However,

the ratings given by China's local agencies have often been challenged due to the absence of transparency and implicit government guarantee. Hence, the ratings given by foreign agencies have been considered of greater importance when evaluating the creditability of Chinese corporate debts.

To test the bonding/signalling effect of offshore financing through international ratings channels, we classify domestic bonds according to the international ratings obtained by their issuers in the latest offshore issuance. One subsample includes the domestic corporate bonds under the issuers that obtained international ratings above investment-grade level in the latest offshore issuance, and the other includes those under the issuers whose latest international rating was below investment-grade level. We then merge these two split samples with the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control.

We estimate our main specification using each subsample and report the results in Table 6. In columns 1-6, we regress on the subsample covering issuances related to higher international rating above investment-grade level, and in columns 7-12, on the samples related to lower international rating.

The coefficients of the proximity variables are mostly significant and show the expected signs. The coefficients of the after dummy are significant in columns 3, 4, 5 and 6 at the 5% level. This suggests that the international rating above investment-grade level has significantly affected the subsequent domestic debt capital raisings, in terms of lengthening the maturity of debt issuance and lowering the funding cost. However, different from the previous results above, the coefficient of the after dummy in columns 1 and 2 is negatively significant at the 1% level. This suggests that the offshore issuance with an investment-grade rating may reduce the subsequent domestic issuance size than others. We interpret this conversion as the complementary effect of offshore financing. That is, after the offshore issuance raised more capital with high rating in the latest offshore issuance, the financial constraints of the groups has been relieved to a large extent, therefore reducing the domestic financing need accordingly.

For the subsample that related to lower international ratings, we obtain contrary results in columns 7-12. The coefficient of the after dummy in columns 9, 10, 11 and 12 is insignificant, although in column

8 it is marginally significant. This subsample analysis suggests that offshore financing with lower international ratings does not improve subsequent domestic financing.

4.4.2 Splitting the sample by offshore raising settings

Basically, the public issuances are required to disclose more information than those through private placements, suggesting that offshore financing through public raisings may have a stronger bonding/signalling effect than private fund raisings.

We use a similar empirical approach as above and re-split the domestic corporate bonds according to raising setting in their latest offshore issuance. One subsample includes domestic bonds by the issuer that have been issued through public issuance in the latest offshore issuance, and the other includes those that have been issued with private placements. Then we append the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance to these two split samples as the controls.

Table 7 shows the regression results, most of which are consistent with bonding hypotheses. The coefficients of the after dummy in columns 3, 4, 5, and 6 are significant at the 1% level, but not significant in columns 1 and 2. This suggests that offshore financing through public issuance can significantly change the domestic bond conditions in terms of lengthening the maturity and lowering the funding cost, but does not change the issuance size of subsequent domestic debt. For the private placements subsample, it does not enter significantly for the issuance size and maturity. The after dummy is significant at the 5% level in columns 11 and 12, however, the value and significance are lower than those in columns 5 and 6. These results suggest that offshore financing through public issuance could serve as a better signal than those through private placements to the afterwards domestic issuance.

4.5 Robust checks

4.5.1 Redefining offshore-financing groups

One potential concern comes from the classification of cross-border issuing groups. Since Chinese corporates have not been allowed to directly raise funding offshore subject to China's policy, the way to circumvent stringent controls is to set up offshore subsidiaries to issue debt in the offshore market. In this context, the debt issuances by one of the subsidiaries across markets can be regarded as one of the financing activities of their parent companies. Given this, we combine the issuers in the same offshore issuing groups if they are under the same parent companies in the previous analysis.

However, it may result in an over-combination of the issuers as one group. To address this concern, we redefine the sample based on the issuer-level identification, rather than parent company-level definition. In Table 8a, we obtain similar results as previous, suggesting that the change of group definition does not bias results.

4.5.2 Replacing dependent variable

The difference in funding conditions may come from abundant liquidity conditions and industry-specific characteristics. Especially, China's policies may favour some specific industries that result in extra financing activities than other industries. Although we have estimated regressions, including industry dummy and liquidity variables as control variables, this may not drive out all the industry-level effects. To address this, we replace the dependent variables with additional proxies, such as the relative value of issuance size, maturity of bond issuance and yield at issue, which are defined as the absolute value of each bond attribute minus the average value of the given industry at the same year.

Relative value of dependent variables focuses more on within-industry variation. In Table 8b, the replacement of dependent variables does not change our main findings, suggesting that the result in basic equation is robust after controlling for industry-level effect.

5. The bonding/signalling effect on financially constrained firms

5.1 SOEs versus non-SOEs

Compared to developed countries, China bears more institutional imperfections and, therefore, private firms face more severe financing constraints. The preferential treatment for SOEs still prevails in various aspects, while private firms are discriminated, in particular in credit allocations. There was a legal bias against private firms that made it harder for banks to lend to private firms (Brandt and Li, 2003). Even though financial liberalisation has taken place since the late 1990s, the "political pecking order" of firms remains, which hampers channelling of financial resources to the private sector (Poncet, et al., 2010).

Given that the private sector is subject to more constraints compared to its state counterpart, private firms may be more motivated to raise capital offshore. Besides achieving cheap funding from the far-more-liquid offshore market, offshore financing may potentially signal more information with regard to private firms, which, in turn, is likely to improve their weak financial position in the domestic market, as private firms bond themselves to a better information disclosure and investor protection framework.

To test the role of offshore financing in improving the financial status of private firms (non-SOEs) in the domestic market, we split our domestic bond sample based on the ownership of issuers. We draw the shareholder information of issuers from the Wind financial database and merge it with our bond samples. If the largest shareholder of issuer is classified as the government, we define it as SOEs, otherwise as non-SOEs. Although this is an admittedly crude measure of identifying SOE/non-SOE firms, it is nevertheless one feasible approach, given data availability.

We regress on each subsample and report the results in Table 9. Columns 1-6 report the results for the issuances of SOEs. The coefficients of the after dummy in columns 3, 4, 5 and 6 are significant at the 1% level but not significant in columns 1 and 2. It suggests that offshore financing can significantly change the domestic bond conditions of the SOEs in the maturity and funding cost, but does not change the issuance size in subsequent domestic debt issuances.

Once we turn to the result for the issuances by private firms, the results are, however, quite contrary. Unlike SOEs' offshore financing, the coefficient of the after dummy is significant only on the variable yield at issues. It is worth noting that the magnitude of the coefficient after dummy in column 11 is roughly three times that in column 5 and is statistically significant at the 1% level. This suggests that offshore financing can mitigate only the financial constraint of the private firms by lowering the financial cost in subsequent domestic issuance, but not change other financial conditions.

5.2 Does offshore financing affect firm performance?

In addition to the effect of offshore financing on subsequent bond issuance, we also investigate whether offshore financing affects firms' performance and growth afterwards, and whether the influence varies across ownerships.

As in previous studies, we consider a set of variables to measure firms' performance and growth, including the return on assets (ROA), return of equity (ROE), the total investment to total assets (INV), the growth rate of total assets (AssetGrow) and of total revenue (SaleGrow). All of these dependent variables are evaluated at time t+1, since we focus on the effect of offshore financing on firms' performance of next year. It also helps mitigate potential endogeneity concerns.

To directly compare the effects of offshore financing relative to domestic financing on firms' performance, we include a dummy variable, ACCESS, which equals one on the year when the issuer has an offshore issuance, and zero at the year when the issuers only issue at home. Then we regress on the firm-level sample.

Table 10a reports the empirical results. After controlling the firm-specific attributes, industry dummy and year dummy, the coefficients of the ACCESS dummy are positive and statistically significant at the 1% level. This suggests that offshore financing contributes more to firms' performance and growth than domestic financing.

We differentiate our samples by ownership to investigate the role of offshore financing in promoting non-SOEs' growth and performance relative to that of SOEs. That is because many studies argue that

international markets can mitigate the financial constraint faced by private firms (Allen, 2012; Gozzi, et al., 2012).

In Table 10b's columns 2, 4, 6, 8 and 10, which regressed upon the subsample of non-SOEs issuers, the coefficients of the ACCESS dummy on firms' performance and growth are positively significant. By contrast, in columns 1, 3, 5 and 9, which regressed upon the subsample of SOEs issuers, all the coefficients of the ACCESS dummy lose their significances. Only in column 7 is the coefficient of the ACCESS dummy significant at 5%. These results strongly suggest that, compared to SOEs, offshore financing can significantly improve the performance and growth of non-SOEs than domestic financing.

6. Discussion and policy implication: the disparity of the bonding effects across locations

The bonding hypothesis argues that raising funding in offshore markets with more transparent disclosure and better investor protection will be a signal to the domestic market. That suggests issuing at offshore financial centres around the world may show different degrees of signalling effect, given their own requirements of information disclosure and investor protection. In our database, offshore bonds issued by Chinese firms are scattered around the world, but are mainly traded in Hong Kong and partly in the US and Singapore. The comparison of signalling effects from offshore locations around the world can provide policy suggestions to evaluate the role of different offshore markets in the development of domestic markets.

We follow the methodology of the Bank for International Settlements, which provides the standard classifications of international bond issuance. We then use three characteristics of each security to identify the market of issue: the registration domain (ISIN), governing law of offshore issuance and listing place[10]. The appendix presents a detailed regression analysis on location effects across financial centres, and we only discuss main results here.

Our results indicate that offshore bonds issued with a registration domain in Hong Kong, under Hong Kong law or listed in Hong Kong have a stronger signalling effect on the maturity and yield in the

[10] Please see details in "Enhancements to the BIS debt securities statistics", BIS Quarterly Review, December 2012.

subsequent domestic issuance than other locations. This seems inconsistent with traditional literature, assuming that the offshore financing in the US should send a clearer signalling effect than other countries that offer a stricter jurisdiction with better protection of minority shareholder interests.

A possible explanation is that, owing to closer financial and industrial-links between Hong Kong and China than other centres, the analysts, investment bankers, auditors and other capital market participants in the Hong Kong market have better information access to China's issuer, and therefore have a stronger capability to identify credit risk and resolve internal governance issues. This is in line with literature which argues that, besides firm-specific characteristics, the destination-specific characteristics, including disclosure requirements, geographic distance from home countries, and cultural factors, would be important determinants in firms' choice of offshore-financing destinations (Saudagaran and Biddle, 1995; Doidge, et al., 2009).

Our results reflect that special geographic and culture connections between Hong Kong and China play a more dominant role in determining the signalling effect of offshore financing on domestic markets, and may support the argument of reputational bonding (Siegel, 2005) that the quality and the scope of information disclosure matter more than investor protection mechanisms in bonding hypothesis.

7. Conclusions

In this paper, we construct a unique database of Chinese bond issues onshore and offshore from 2010- 2015 and confirm the well-known bonding/signalling hypothesis in international finance literature. The bonding/signalling hypothesis states that firms in emerging countries have incentives to raise capital in a more advanced market with better laws, regulations and governance, and these offshore capital raisings, in turn, help firm valuations and domestic finance conditions.

Specifically, we arrive at five main conclusions. First, the firms that have access to offshore bond financing indeed improve their funding conditions in terms of the issue maturity and the yield in their subsequent bond financing domestically. Second, these improvements are more significant for firms with better international ratings and those offshore bonds with public issuance, suggesting that better

information disclosure and public monitoring enhance the effect of bonding/signalling. Third, the offshore debt markets favour those financially constrained firms than their less-constrained peers in their subsequent domestic financing. Fourth, firms with access to offshore debt markets record significant improvement in their performance, especially for financially constrained firms. Finally, Hong Kong has better ability to reveal information, indicating that the destination-specific factors, including cultural factors and geographic distance from home countries, are important determinants in the degree of signalling effect.

The empirical results contribute to the literature of bonding hypothesis in the following ways. As indicated in the introduction, although the bonding hypothesis is rather straight forward, it remains subject to great debate and the empirical evidence is also mixed. In addition, most studies are based on cross-listing of equities. We use debt issues offshore and on domestic market to study the hypothesis. Our results strongly support the bonding hypothesis in the bond markets.

Our research also provides policy implications by highlighting the importance of a broad offshore bond market in China's financial openness. Over the past decade, China's authorities have launched a wide range of policies to allow Chinese firms to raise funds internationally as a critical step for liberalizing capital accounts. Recently, large-scale lending in serving China's "One Belt, One Road" strategy has also required wider access to offshore markets which aim at cheap funding and international visibility. However, there has been yet no systematic analysis of the role of the offshore bond market in promoting China's financial openness and the development of domestic market. In this paper, we provide the first documentation about the interaction mechanism across markets as well as its role in the development of China's corporate bond market.

Appendix: More detailed discussion on the location effect

To date, the signalling effects from different offshore-financing destinations have not been extensively studied in the literature, especially for firms from emerging markets, due largely to data unavailability and identification issue. In this section, we will compile special subsamples according to several location classifications, and then investigate the location effects on Chinese domestic debt issuance.

1. Construction of variables

Our major data source, Bloomberg, does not provide specific information on issue location. Therefore we follow the methodology of the Bank for International Settlements (Gruić and Wooldridge, 2012) and consider three characteristics of each security to identify the market of issue: the registration domain (ISIN), governing law of offshore issuance and listing place.

1.1 The classification based on the ISIN code of offshore bonds

Most offshore bonds have an ISIN code as their sole identification in global trading and transactions. The ISIN code is a 12-digit number and the first two letters are the country code assigned as the registration domain. Based on ISIN code, offshore bonds issued by firmslocated in Hong Kong account for 12% of total offshore issuance in our data sample. Those by US and European firms[11] account for 30% and 46% respectively. In the onshore market, a total of 566 onshore bonds are affected by those offshore financing issuances, accounting for 23% of total onshore bonds.

Chart A1: The groups classified by the ISIN code of offshore bonds

ISIN		Offshore bonds		Related onshore bonds	
Country Code	Location	N	Percentage of total offshore bonds	N	Percentage of total onshore bonds
HK	Hong Kong	91	12.20%	107	4.35%
US	United States	221	29.62%	58	2.36%
XS	Europe	342	45.84%	297	12.07%
Others	--	53	7.10%	88	3.58%
Missing	--	39	5.23%	16	0.65%
Total		746	100%	566	23.00%

Notes: “Others” includes Australia (5), Brazil (4), Canada (5), Switzerland (2), China (17), Germany (3), France (2), Israel (3), Cayman Islands (1), Malaysia (1), Norway (1) and Singapore (7).

[11] We identify the bonds with the country code of “XS” as the ones issued in European countries. “XS” in ISIN code refers to international securities cleared through pan-European clearing systems, such as Euroclear and CEDEL.

1.2 The classification based on the governing law

We also consider the types of governing law under which an offshore issuance occurs as another proxy. In our database, 18% of offshore bond issuances by Chinese firms choose Hong Kong law as governing law. Another 35% and 27% of offshore bonds are governed by New York law and English law.

In general, the main differences among these foreign laws are the absence of Collective Action Clauses in New York law. While most English law bonds are featured with majority voting to change financial and non-financial terms, collective representation and sharing clauses (Eichengreen and Mody, 2004). Similar to English law, Hong Kong law is often chosen as a neutral law in international contracts and is more popular in China-related financial contracts.

Many researchers have examined different effects of these foreign laws on bond performance. For example, Petas and Rahman (1999) found that English law bonds traded at a slightly higher valuation than New York law bonds. However, another study by Tsatsaronis (1999) compared primary market data on yields at the date of issuance and found no statistically significant difference in bond yields among different governing laws. Due to different levels of investor protections among governing laws, English law and neutral law generally have more positive influence on bond issuance.

Chart A2: The groups classified by the governing law

Code	Governing law	Offshore bonds		Related onshore bonds	
		N	Percentage of total offshore bonds	N	Percentage of total onshore bonds
HK	Hong Kong law	132	17.69%	169	6.87%
NY	New York law	264	35.39%	90	3.66%
ENGLISH	British law	203	27.21%	183	7.44%
Others		49	6.57%	80	3.26%
Missing		98	13.14%	44	1.79%
Total		746	100%	566	23.00%

Notes: “Others” includes China (23), Australia (2), Brazil (4), Germany (3), France (1), United Kingdom (1), Israel (2), Cayman Islands (1), Malaysia (1), New South Wales (5) and Singapore (3).

1.3 Subsample of listed bonds

In our database, some offshore bonds are listed on international exchanges, including Hong Kong, Singapore, the US[12] and other exchanges. Hong Kong is the biggest exchange market for listed bonds issued by Chinese firms, accounting for 35% of offshore bond issuance in our database. Then are Singapore and the US, accounting for 15% and 11% respectively. There are 443 onshore bonds that belong to the same group related to these offshore listed bonds.

Chart A3: The identification based on the exchanges

Exchange Code	Location	Offshore bonds		Related onshore bonds	
		N	Percentage of total offshore bonds	N	Percentage of onshore bonds that related to those offshore listed bonds
HK	Hong Kong	260	34.85%	232	9.91%
TRACE	United States	84	11.26%	20	0.85%
SG	Singapore	110	14.75%	110	4.70%
Others		56	7.51%	81	3.46%
Non-listed		235	31.50%	--	--
Missing		1	0.13%	0	0
Total		746	100%	443	18.92%

Notes: "Others" includes Ireland (16), Germany (16), Australia (1), Cayman Islands (3), Luxembourg (4), France (3), Brazil (4), Switzerland (2), Israel (3), Toronto (1), Taiwan (1) and Austria (2).

2. Empirical analysis

We construct subsamples according to above location classifications and then follow a similar empirical strategy in Section 4 for regression analysis.

2.1 Splitting the sample by ISIN country code

Firstly, we classify the offshore issuances in three groups: HK, US and EU according to ISIN country code, and then match the domestic bonds with these three groups if they belong to the same issuer or parent company. Secondly, we merge this set with the ones issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance (the latter two sets of domestic bonds are treated as controls in the regression). We did the similar matches and merges to conduct another two subsamples for US and EU-related domestic bonds.

[12] We define the bonds whose OTC secondary market transactions are reported in The Trade Reporting and Compliance Engine (TRACE) as US-related issuance.

We estimate our main specification using each subsample and report the results in Table 1. For the HK subsample, the results in our basic regressions still hold, and the coefficients and significance of the after dummies on the HK subsample are bigger than those on the UK subsample. Those results indicate that the offshore bonds issued by Hong Kong and UK-based companies have the signalling effects on the maturity and yield in the subsequent domestic issuance, and the effect from HK companies are stronger than UK. For the US subsample, the coefficients of the after dummy variable are only statistically significant in dependent variable yield, indicating a weaker effect of US offshore issuance on domestic markets.

2.2 Splitting the sample by governing law of offshore issuance

Similarly, we separate the offshore issuances into several subsamples according to the type of governing law: Hong Kong law, English law and New York law. For example, in the Hong Kong law subsample, we first obtain a set of domestic bonds issued by companies whose parent companies have been issued offshore bonds governed by Hong Kong law in the latest offshore issuance. This set is regarded as domestic bonds that are possibly affected by Hong Kong law. We then did the similar matches and merges as the above classification for another two sets of domestic bonds.

Table 2 reports the empirical results. In all regressions, we include firm-level and market-level control variables, but we only report the coefficients of after, offshore and before in the tables for brevity. For the dependent variable, tenor, the coefficients of explanatory variable after are only statistically significant in Hong Kong law and English law subsamples, showing that offshore bonds governed by Hong Kong and English law have a signalling effect on the maturity of bonds in the subsequent domestic issuance, and the effect of Hong Kong law and English law is stronger than New York law. These results are mostly consistent with literature and bonding hypothesis that English law or neutral law could have more positive influence on bond issuance than New York law.

For the dependent variable yield, the coefficients of the after dummy are statistically significant in all subsamples. The magnitude of these coefficients in HK subsamples is larger than those in New York law and English law subsamples. It shows that offshore issuance under Hong Kong law has a stronger effect on the yield of domestic bonds than other laws.

2.3 Splitting the sample by exchanges

Thirdly, we separate the offshore issuances in three subsamples by exchanges. We did the similar matches and merges as above and obtain three sets of subsamples related to Hong Kong exchanges, the US and Singapore.

Table 3 shows similar patterns. The coefficients of major explanatory variables are statistically significant and exhibit the expected signs in the specifications in HK and US subsamples, while lose the significance in the specifications in Singapore subsample. This confirms a stronger effect from the Hong Kong market on domestic issuance than other locations.

The above comparisons should be interpreted with caution. For listed bonds, although exchanges can identify the location of listed bonds, we found that US exchanges show weaker effects than HK and UK exchanges, which seems inconsistent with literature. This may be due to the identification error. In our sample, we identify the bonds of which the OTC secondary market transactions are reported in The Trade Reporting and Compliance Engine (TRACE) as the bonds listed on US, not listed on New York exchanges. In addition, compared to stock listings, the requirements of bond listings are generally not as strict. Therefore, listing on different exchanges may not suggest that the bonds are under different governing regimens, which generate different degrees of signals to domestic markets.

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Chart 1: The outstanding amount of China's non-financial corporate debts in 2010 and 2015 (RMB billion)

Major types of debt instruments	2010		2015		Growth rate
	volume	%	volume	%	
Enterprise bonds	1055	29.0%	3037	21.0%	188.0%
Corporate bonds	157	4.3%	1516	10.5%	863.2%
Medium-term notes	1355	37.3%	4087	28.3%	201.6%
CP and super CP	656	18.1%	2405	16.7%	266.4%
Total corporate bond market	3632		14433		297.4%

Source: Chinabond, Wind, as of end-2015

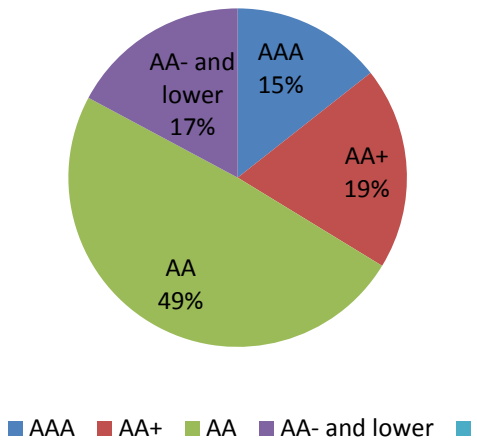
Chart 2: Some Chinese companies with rating gaps

Company		International Rating	Domestic Rating
Sinopec	Top state-owned oil refiner	A+	AAA
State Grid	Top state-owned grid operator	A+	AAA
Yanzhou Coal Mining	State-owned coal miner	BBB+	AAA
China Vanke	Largest property developer	BB-	AAA
Evergrande	Privately owned property developer	B+	AAA

Source: Chinabond, WSJ

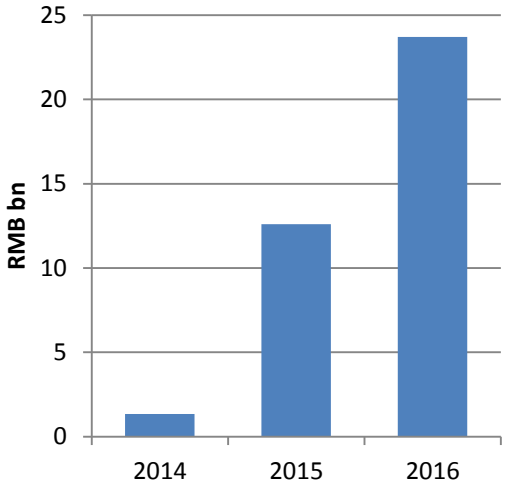
Chart 3 Credit issues of China's domestic debt issuance

Panel A: Rating distribution of domestic China's corporate bonds



Source: Wind, as of end-2015

Panel B: Recent defaults in China's bond market



Source: Wind, as of June, 2016

Summary Statistics

Table 1a: Total domestic corporate issuance (RMB billion)

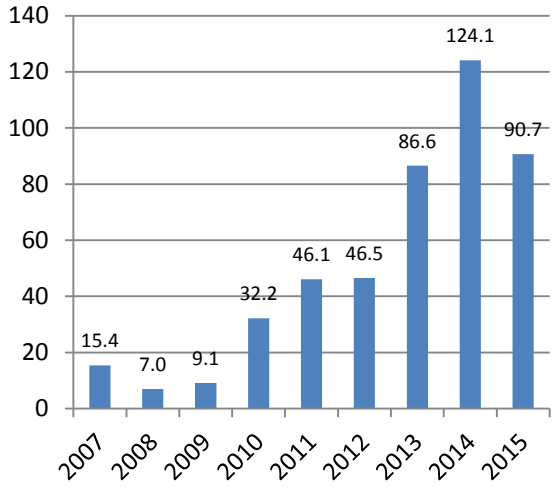
Year	N	Total volume of domestic issuance (RMB billion)						
		2010	2011	2012	2013	2014	2015	Total Size
Full sample	2461	503	692	1036	701	735	1030	4698
Basic materials	419	81	119	125	99	81	106	609
Communications	46	18	2	9	10	19	31	89
Consumer cyclical	284	23	36	77	73	49	37	295
Consumer non-cyclical	210	16	55	34	50	35	40	230
Diversified	91	15	28	17	15	33	35	143
Energy	354	179	156	378	194	168	197	1272
Industrial	567	72	133	188	75	115	122	705
Real estate	168	12	16	4	3	24	303	361
Technology	36	2	6	8	4	6	3	28
Utilities	286	86	142	197	179	204	158	966
SOE	1794	470	591	909	613	656	705	3944
Non-SOE	667	33	101	127	88	79	325	754

Table 1b: Domestic issuer's distribution: SOEs versus non-SOEs (RMB billion)

Sample	SOE		non-SOE		% of total
	Issuing volume	%	Issuing volume	%	
largest 100 entities	3045	93.6%	208	6.4%	69.2%
Basic materials	513	84.3%	96	15.7%	13.0%
Communications	67	75.3%	22	24.7%	1.9%
Consumer cyclical	200	67.9%	95	32.1%	6.3%
Consumer non-cyclical	134	58.3%	96	41.7%	4.9%
Diversified	124	86.6%	19	13.4%	3.0%
Energy	1238	97.3%	34	2.7%	27.1%
Industrial	573	81.3%	132	18.7%	15.0%
Real estate	154	42.7%	207	57.3%	7.7%
Technology	19	66.8%	9	33.2%	0.6%
Utilities	922	95.5%	44	4.5%	20.6%
Total	3944	84.0%	754	16.0%	100.0%

Table 2a: Total offshore corporate issuance (USD billion)

Panel A: The offshore corporate bond issuance



Panel B: Offshore issuance composition: by currencies

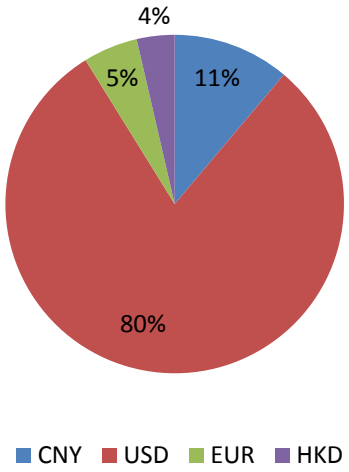
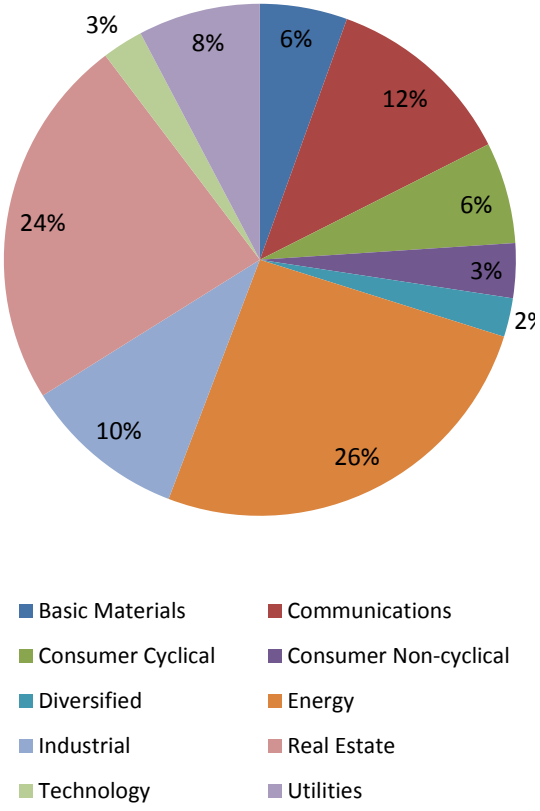


Table 2b: The industry distribution of offshore issuance, compared with domestic market

Panel A: Offshore bond composition: by industries



Panel B: Onshore bond composition: by industries

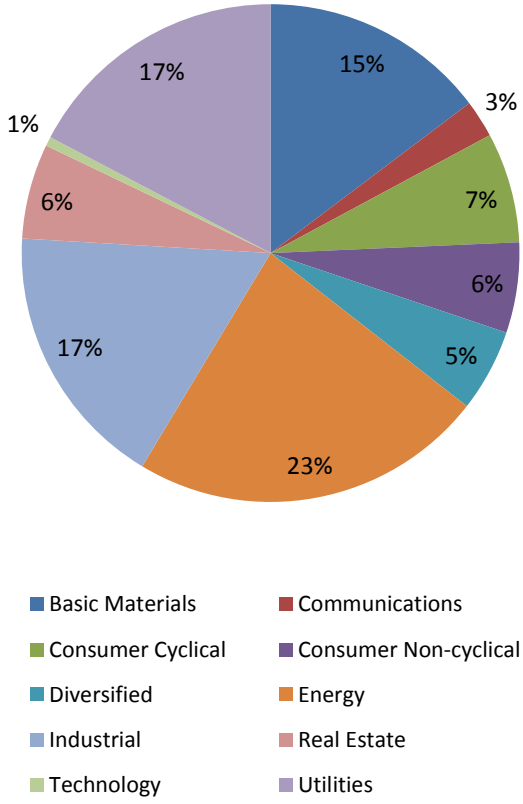


Table 2c: The offshore issuance by SOE/non-SOE, compared with domestic market (USD billion)

	Offshore			Onshore			Total		
	N	Issuing volume	%	N	Issuing volume	%	N	Issuing volume	%
SOE	184	82	27.6%	1794	623	83.9%	1978	705	67.8%
non-SOE	517	215	72.4%	667	120	16.1%	1184	335	32.2%
Total	701	297	100.0%	2461	743	100.0%	3162	1040	100.0%

Table 2d: The distribution of international ratings and raising types of offshore issuance

	N	Panel A: International ratings			Panel B: Raising types of offshore issuance	
		Median	Ratings	Investment grade	Private placement	Public issuance
Full sample	701	B	354(50.5%)	236(33.7%)	107(15.3%)	594 (84.7%)
SOE	184	BBB	122(66.3%)	114(62%)	31(16.8%)	153(83.2%)
non-SOE	517	CCC	232(44.9%)	122(23.6%)	76(14.7%)	441(85.3%)

Table 3a: Statistics of main explanatory variables

Variable	N	mean	sd	min	p25	p50	p75	max
Offshore	2461	0.364	0.481	0	0	0	1	1
After	2461	0.277	0.448	0	0	0	1	1
Before	2461	0.0874	0.282	0	0	0	0	1
ACCESS	2257	0.196	0.397	0	0	0	0	1

Table 3b: Statistics of explanatory variables on the basis of different group classification

Panel A: Differences between corporate bonds issued by offshore financing and domestically only groups

Variables	Offshore financing groups		Domestically issuing-only groups		Mean diff
	N	Mean	N	Mean	
Bond size	820	3.33	1641	1.20	2.13***
Tenor	820	6.90	1641	5.07	1.83***
Yield	650	5.20	1113	5.91	-0.71***

Panel B: Differences between corporate bonds issued before and after the first offshore issuance

Variables	After offshore financing		Before offshore financing		Mean diff
	N	Mean	N	Mean	
Bond size	513	3.51	307	3.04	0.47*
Tenor	513	7.74	307	5.50	2.24***
Yield	397	5.15	253	5.28	-0.13*

Regression tables

Table 4: Basic regression: the bonding/signalling effect of offshore financing

	(1) Bond size	(2) Bond size	(3) Bond size	(4) Tenor	(5) Tenor	(6) Tenor	(7) Yield	(8) Yield	(9) Yield
After		-0.034	0.054		1.348***	1.575***		-0.206***	-0.278***
		(-0.70)	(1.25)		(3.70)	(3.85)		(-3.59)	(-4.53)
Offshore	0.085**	0.102**		1.117***	0.424		-0.184***	-0.086	
	(2.21)	(2.25)		(3.33)	(1.46)		(-3.29)	(-1.49)	
Before			0.105**			-0.048			-0.085
			(2.15)			(-0.16)			(-1.40)
SIZE	0.365***	0.366***	0.368***	0.252***	0.223***	0.271***	-0.244***	-0.237***	-0.239***
	(28.58)	(28.60)	(29.33)	(3.04)	(2.65)	(3.36)	(-12.85)	(-12.37)	(-13.16)
LDEBT	-0.641***	-0.641***	-0.650***	3.243***	3.233***	3.253***	0.838***	0.844***	0.852***
	(-4.91)	(-4.90)	(-4.95)	(3.02)	(3.03)	(3.05)	(4.28)	(4.34)	(4.37)
PROF	0.910**	0.905**	0.936**	-1.512	-1.324	-0.986	-2.238***	-2.285***	-2.318***
	(2.18)	(2.17)	(2.25)	(-0.54)	(-0.47)	(-0.36)	(-3.64)	(-3.72)	(-3.80)
COLL	0.107	0.118	0.116	-2.901	-3.339	-3.454	0.718	0.833*	0.833*
	(0.56)	(0.62)	(0.61)	(-1.33)	(-1.53)	(-1.58)	(1.61)	(1.85)	(1.85)
LIQUID	3.386	3.315	3.305	0.797	3.616	5.527	-0.913	-1.415	-1.408
	(1.33)	(1.30)	(1.30)	(0.07)	(0.30)	(0.46)	(-0.20)	(-0.31)	(-0.31)
STOCKTVR	0.056	0.057	0.056	1.102**	1.094**	1.092**	-0.099	-0.096	-0.095
	(1.34)	(1.35)	(1.34)	(2.37)	(2.35)	(2.35)	(-1.35)	(-1.31)	(-1.30)
RepoRate	-0.041**	-0.041**	-0.041**	-0.093	-0.097	-0.096	0.197***	0.197***	0.196***
	(-2.07)	(-2.07)	(-2.06)	(-0.60)	(-0.63)	(-0.62)	(6.05)	(6.07)	(6.05)
VIX	0.010**	0.010**	0.010**	0.054*	0.053*	0.052*	-0.000	0.000	0.000
	(2.55)	(2.56)	(2.52)	(1.90)	(1.85)	(1.82)	(-0.01)	(0.05)	(0.09)
_cons	-3.920***	-3.944***	-3.961***	2.154	3.101	2.835	6.220***	5.995***	6.017***
	(-15.03)	(-15.13)	(-15.22)	(0.85)	(1.22)	(1.11)	(11.89)	(11.33)	(11.38)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2461	2461	2461	2461	2461	2461	1763	1763	1763
r2_a	0.521	0.521	0.521	0.086	0.090	0.090	0.405	0.409	0.408
b_diff[After-Before]			-0.051			1.623			-0.193
p_diff			0.352			0.000			0.003

This table reports the effect of offshore financing on domestic bond conditions by an ordinary least square model, as shown in equation (1). Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The dependent variables are issuance size (bond size) in columns 1-3, maturity of bond issuance (tenor) in columns 4-6 and yield at issue for fixed-rate bonds (yield) in columns 7-9, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 5: The evolution of the bonding/signalling effect of offshore financing

	(1) Bond size	(2) Tenor	(3) Yield
Before	0.117**	0.058	-0.068
	(2.01)	(0.20)	(-1.10)
Current	-0.026	0.013	-0.020
	(-0.30)	(0.02)	(-0.20)
After1	0.011	2.521***	-0.204**
	(0.14)	(3.10)	(-2.35)
After2	0.126	2.317**	-0.230**
	(1.34)	(2.47)	(-2.34)
After3	0.070	1.693***	-0.335***
	(1.32)	(2.98)	(-3.90)
SIZE	0.366***	0.209**	-0.237***
	(28.53)	(2.48)	(-12.23)
LDEBT	-0.649***	3.445***	0.834***
	(-4.95)	(3.21)	(4.25)
PROF	0.908**	-1.407	-2.163***
	(2.18)	(-0.49)	(-3.47)
COLL	0.129	-3.293	0.827*
	(0.69)	(-1.50)	(1.82)
LIQUID	3.280	4.489	-1.591
	(1.29)	(0.38)	(-0.34)
STOCKTVR	0.057	1.110**	-0.096
	(1.36)	(2.38)	(-1.31)
RepoRate	-0.041**	-0.103	0.197***
	(-2.06)	(-0.66)	(6.08)
VIX	0.010**	0.055*	-0.000
	(2.55)	(1.94)	(-0.01)
_cons	-3.957***	3.264	5.998***
	(-15.28)	(1.27)	(11.22)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	2461	2461	1763
adj. R2	0.521	0.093	0.407

This table traces the evolution of the bonding/signalling effect of offshore financing for a relatively long period by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The dependent variables are issuance size (bond size) in column 1, maturity of bond issuance (tenor) in column 2 and yield at issue for fixed-rate bonds (yield) in column 3, respectively. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. The dummy variable current equals one on the year when the issuers access the offshore market at the first time and zero otherwise. The dummy variable after1 equals one at the time of one year after the first offshore issuance and zero otherwise, and then we define after2 and after3 in the similar way. Specifically, after3 measures the effect for more than two years after the first offshore issuance. See the appendix for the definition of the remaining variables. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 6: Potential channels of bonding/signalling effect: International ratings

	The domestic corporate bonds under the issuers who obtained international ratings above investment-grade level in the latest offshore issuance +controls						The domestic corporate bonds under the issuers who obtained international ratings below investment-grade level in the latest offshore issuance +controls					
	(1) Bond size	(2) Bond size	(3) Tenor	(4) Tenor	(5) Yield	(6) Yield	(7) Bond size	(8) Bond size	(9) Tenor	(10) Tenor	(11) Yield	(12) Yield
After	-0.199***	-0.160***	0.783**	0.828**	-0.167**	-0.198**	0.093	0.129*	-0.342	-0.329	-0.143	-0.134
	(-3.63)	(-2.95)	(1.97)	(2.10)	(-2.10)	(-2.48)	(1.37)	(1.91)	(-0.73)	(-0.71)	(-1.31)	(-1.22)
Offshore	0.034		0.218		-0.044		0.091**		0.039		0.037	
	(0.76)		(0.67)		(-0.68)		(2.09)		(0.13)		(0.57)	
Before		0.081*		-0.112		-0.049		0.063		0.009		0.021
		(1.72)		(-0.33)		(-0.73)		(1.39)		(0.03)		(0.31)
SIZE	0.385***	0.382***	0.265***	0.301***	-0.254***	-0.255***	0.398***	0.402***	0.254***	0.257***	-0.290***	-0.288***
	(31.84)	(32.80)	(3.02)	(3.57)	(-13.53)	(-14.20)	(32.33)	(32.81)	(3.02)	(3.08)	(-14.47)	(-14.45)
LDEBT	-0.661***	-0.672***	1.912*	1.899*	0.648***	0.659***	-0.645***	-0.651***	0.946	0.943	0.807***	0.805***
	(-4.64)	(-4.72)	(1.85)	(1.84)	(2.96)	(3.01)	(-4.51)	(-4.55)	(0.97)	(0.97)	(3.50)	(3.50)
PROF	1.070**	1.058**	1.444	1.686	-2.596***	-2.609***	1.319***	1.357***	-0.004	0.023	-2.605***	-2.587***
	(2.55)	(2.53)	(0.47)	(0.56)	(-4.13)	(-4.16)	(3.25)	(3.35)	(-0.00)	(0.01)	(-4.12)	(-4.10)
COLL	0.180	0.190	-1.983	-2.036	0.767*	0.761*	0.214	0.203	-0.590	-0.597	0.731*	0.722*
	(0.77)	(0.81)	(-1.17)	(-1.20)	(1.84)	(1.82)	(0.96)	(0.91)	(-0.39)	(-0.39)	(1.78)	(1.76)
LIQUID	4.577**	4.378*	-7.079	-5.451	-2.592	-2.589	5.733**	5.854***	-5.776	-5.630	-3.342	-3.248
	(1.98)	(1.89)	(-0.42)	(-0.33)	(-0.66)	(-0.66)	(2.57)	(2.62)	(-0.38)	(-0.37)	(-0.84)	(-0.82)
STOCKTVR	0.038	0.038	0.630**	0.633**	-0.109*	-0.109*	0.032	0.031	0.113	0.113	-0.039	-0.039
	(0.97)	(0.96)	(2.20)	(2.22)	(-1.77)	(-1.77)	(0.80)	(0.78)	(0.42)	(0.41)	(-0.59)	(-0.58)
RepoRate	-0.031	-0.031	-0.080	-0.079	0.197***	0.197***	-0.014	-0.014	-0.123	-0.123	0.192***	0.193***
	(-1.50)	(-1.51)	(-0.53)	(-0.52)	(6.11)	(6.11)	(-0.67)	(-0.67)	(-0.88)	(-0.88)	(5.75)	(5.75)
VIX	0.010**	0.010**	0.029	0.028	0.001	0.001	0.006	0.006	0.026	0.026	0.006	0.006
	(2.35)	(2.34)	(0.93)	(0.91)	(0.20)	(0.21)	(1.56)	(1.54)	(0.92)	(0.91)	(0.95)	(0.93)
_cons	-4.188***	-4.171***	2.635	2.376	6.276***	6.293***	-4.369***	-4.391***	2.657	2.633	6.477***	6.468***
	(-13.77)	(-13.79)	(1.20)	(1.08)	(12.03)	(12.12)	(-14.73)	(-14.79)	(1.31)	(1.30)	(12.31)	(12.28)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2131	2131	2131	2131	1519	1519	2006	2006	2006	2006	1391	1391
r2_a	0.508	0.509	0.066	0.066	0.400	0.400	0.497	0.497	0.056	0.056	0.388	0.387
b_diff_After_Before		-0.241		0.940		-0.149		0.066		-0.338		-0.155
p_diff		0.000		0.034		0.092		0.392		0.519		0.204

This table tests the signaling effect of offshore financing through international ratings channels by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The sample in columns 1-6 includes the domestic corporate bonds under the issuers that obtained international ratings above investment-grade level in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control;

the sample in columns 7-12 includes the domestic corporate bonds under the issuers that obtained international ratings below investment-grade level in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control. The dependent variables are issuance size (bond size) in columns 1, 2, 7 and 8, maturity of bond issuance (tenor) in columns 3, 4, 9 and 10 and yield at issue for fixed-rate bonds (yield) in columns 5, 6, 11 and 12, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 7: Potential channels of bonding/signalling effect: Public issuance versus Private placement

	The domestic corporate bonds under the issuers which have issued through public issuance in the latest offshore issuance +controls						The domestic corporate bonds under the issuers which have issued through private placements in the latest offshore issuance +controls					
	(1) Bond size	(2) Bond size	(3) Tenor	(4) Tenor	(5) Yield	(6) Yield	(7) Bond size	(8) Bond size	(9) Tenor	(10) Tenor	(11) Yield	(12) Yield
After	-0.040	0.047	1.353***	1.579***	-0.203***	-0.267***	0.042	0.060	0.118	0.107	-0.199**	-0.197**
	(-0.82)	(1.06)	(3.66)	(3.80)	(-3.49)	(-4.28)	(0.58)	(0.82)	(0.25)	(0.22)	(-2.34)	(-2.30)
Offshore	0.101**		0.427		-0.077		0.075		0.066		0.008	
	(2.22)		(1.47)		(-1.32)		(1.56)		(0.22)		(0.13)	
Before		0.105**		-0.047		-0.078		0.061		-0.077		0.008
		(2.16)		(-0.16)		(-1.27)		(1.22)		(-0.26)		(0.12)
SIZE	0.365***	0.367***	0.228***	0.276***	-0.241***	-0.243***	0.400***	0.402***	0.282***	0.298***	-0.282***	-0.282***
	(28.26)	(29.00)	(2.71)	(3.44)	(-12.44)	(-13.24)	(26.96)	(27.44)	(3.36)	(3.62)	(-12.75)	(-12.91)
LDEBT	-0.629***	-0.638***	3.227***	3.243***	0.866***	0.873***	-0.629***	-0.634***	1.137	1.130	0.713***	0.712***
	(-4.77)	(-4.82)	(3.02)	(3.03)	(4.45)	(4.48)	(-4.17)	(-4.20)	(1.20)	(1.20)	(3.27)	(3.26)
PROF	0.880**	0.911**	-1.368	-1.027	-2.270***	-2.299***	1.354***	1.372***	1.452	1.543	-2.729***	-2.727***
	(2.10)	(2.19)	(-0.49)	(-0.37)	(-3.68)	(-3.75)	(3.25)	(3.29)	(0.63)	(0.67)	(-4.30)	(-4.31)
COLL	0.123	0.122	-3.425	-3.532	0.851*	0.849*	0.199	0.195	-0.517	-0.541	0.727	0.726
	(0.65)	(0.65)	(-1.56)	(-1.60)	(1.83)	(1.83)	(1.01)	(0.99)	(-0.33)	(-0.35)	(1.48)	(1.48)
LIQUID	3.330	3.317	5.014	6.977	-1.513	-1.499	5.754**	5.817**	-5.630	-4.919	-3.193	-3.193
	(1.30)	(1.30)	(0.42)	(0.59)	(-0.33)	(-0.33)	(2.12)	(2.14)	(-0.56)	(-0.49)	(-0.66)	(-0.66)
STOCKTVR1	0.057	0.057	1.077**	1.076**	-0.102	-0.102	0.007	0.007	0.237	0.238	-0.036	-0.036
	(1.36)	(1.35)	(2.31)	(2.30)	(-1.39)	(-1.39)	(0.16)	(0.16)	(0.48)	(0.48)	(-0.46)	(-0.46)
RepoRate	-0.039**	-0.039*	-0.103	-0.102	0.195***	0.194***	-0.020	-0.020	-0.093	-0.092	0.201***	0.201***
	(-1.97)	(-1.95)	(-0.66)	(-0.66)	(5.99)	(5.97)	(-0.98)	(-0.98)	(-0.62)	(-0.61)	(5.29)	(5.29)
VIX	0.010**	0.010**	0.051*	0.051*	-0.000	-0.000	0.007*	0.007*	0.020	0.020	0.007	0.007
	(2.51)	(2.47)	(1.80)	(1.77)	(-0.04)	(-0.01)	(1.70)	(1.68)	(0.78)	(0.77)	(1.21)	(1.20)
_cons	-3.944***	-3.962***	3.186	2.901	6.039***	6.060***	-4.322***	-4.337***	2.028	1.919	6.381***	6.381***
	(-15.07)	(-15.18)	(1.24)	(1.13)	(11.08)	(11.14)	(-15.99)	(-16.05)	(0.97)	(0.91)	(10.44)	(10.43)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2440	2440	2440	2440	1745	1745	1969	1969	1969	1969	1384	1384
r2_a	0.515	0.515	0.090	0.089	0.408	0.408	0.503	0.503	0.062	0.062	0.391	0.391
b_diff_After_Before		-0.059		1.626		-0.189		-0.001		0.184		-0.205
p_diff		0.291		0.000		0.005		0.991		0.726		0.040

This table tests the signalling effect of offshore financing through public issuance channels by an ordinary least square model. Time dummies and industry dummies were included in the model. Robust t-statistics are reported in the parentheses. The sample in columns 1-6 includes the domestic corporate bonds under the issuers that have issued through public issuance in the latest offshore issuance, and the bonds issued by the domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control; the sample in columns 7-12 includes the domestic corporate bonds under the issuers that have issued through private placement in the latest offshore issuance, and the bonds issued by the domestically issuing-

only groups and the ones issued by offshore financing groups before their first offshore issuance as the control. The dependent variable are issuance size (bond size) in columns 1, 2, 7 and 8, maturity of bond issuance (tenor) in columns 3, 4, 9 and 10 and yield at issue for fixed-rate bonds (yield) in columns 5, 6, 11 and 12, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 8a: Robustness test: redefine offshore financing groups based on the issuer-level identification rather than parent companies

	(1) Bond size	(2) Bond size	(3) Bond size	(4) Tenor	(5) Tenor	(6) Tenor	(7) Yield	(8) Yield	(9) Yield
After		0.065	0.181***		1.677***	1.992***		-0.213***	-0.190**
		(1.11)	(3.40)		(2.78)	(3.41)		(-2.75)	(-2.43)
Offshore	0.167***	0.138***		1.143***	0.397		-0.047	0.039	
	(3.77)	(2.75)		(2.87)	(1.03)		(-0.83)	(0.71)	
Before			0.142***			0.300			-0.008
			(2.59)			(0.81)			(-0.14)
SIZE	0.364***	0.364***	0.365***	0.318***	0.303***	0.313***	-0.274***	-0.271***	-0.268***
	(29.74)	(29.60)	(30.19)	(4.32)	(4.09)	(4.28)	(-16.93)	(-16.52)	(-16.68)
LDEBT	-0.616***	-0.613***	-0.623***	3.295***	3.380***	3.354***	0.789***	0.775***	0.773***
	(-4.76)	(-4.74)	(-4.81)	(3.07)	(3.16)	(3.13)	(4.11)	(4.06)	(4.04)
PROF	1.024**	1.001**	1.013**	-0.260	-0.838	-0.860	-2.552***	-2.496***	-2.516***
	(2.50)	(2.44)	(2.47)	(-0.10)	(-0.31)	(-0.32)	(-4.23)	(-4.12)	(-4.15)
COLL	0.214	0.211	0.202	-2.318	-2.413	-2.476	0.655	0.679	0.644
	(1.12)	(1.10)	(1.06)	(-1.09)	(-1.15)	(-1.18)	(1.46)	(1.51)	(1.44)
LIQUID	3.393	3.502	3.549	2.101	4.906	5.328	-2.043	-2.418	-2.251
	(1.34)	(1.38)	(1.40)	(0.17)	(0.41)	(0.45)	(-0.44)	(-0.52)	(-0.49)
STOCKTVR	0.059	0.060	0.060	1.124**	1.143**	1.141**	-0.101	-0.102	-0.102
	(1.42)	(1.44)	(1.43)	(2.42)	(2.45)	(2.44)	(-1.36)	(-1.38)	(-1.38)
RepoRate	-0.040**	-0.039*	-0.039**	-0.072	-0.040	-0.040	0.194***	0.189***	0.190***
	(-2.03)	(-1.95)	(-1.97)	(-0.47)	(-0.26)	(-0.26)	(5.90)	(5.73)	(5.75)
VIX	0.009**	0.009**	0.009**	0.050*	0.046	0.046	0.002	0.002	0.002
	(2.46)	(2.42)	(2.40)	(1.75)	(1.61)	(1.60)	(0.34)	(0.44)	(0.42)
_cons	-4.017***	-4.005***	-4.011***	0.952	1.261	1.240	6.566***	6.496***	6.508***
	(-15.79)	(-15.71)	(-15.75)	(0.38)	(0.51)	(0.50)	(12.65)	(12.55)	(12.59)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2477	2477	2477	2477	2477	2477	1772	1772	1772
r2_a	0.523	0.523	0.523	0.085	0.090	0.090	0.402	0.404	0.404
b_diff_After_Before			0.039			1.691			-0.181
p_diff			0.562			0.009			0.035

This table reports the results of robust checks using the sample redefined based on the issuer-level identification rather than parent companies by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The dependent variables are issuance size (bond size) in columns 1-3, maturity of bond issuance (tenor) in columns 4-6 and yield at issue for fixed-rate bonds (yield) in columns 7-9, respectively. The offshore dummy equals one for the bonds issued by the firms that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given firm and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given firm and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 8b: Robustness test: relative value of bond characteristics

	(1) Bond size	(2) Bond size	(3) Bond size	(4) Tenor	(5) Tenor	(6) Tenor	(7) Yield	(8) Yield	(9) Yield
After		-0.058	0.019		1.315***	1.505***		-0.137**	-0.207***
		(-1.05)	(0.40)		(3.69)	(3.77)		(-2.44)	(-3.61)
Offshore	0.060	0.089*		1.034***	0.359		-0.147***	-0.081	
	(1.42)	(1.75)		(3.16)	(1.26)		(-2.81)	(-1.47)	
Before			0.091*			-0.049			-0.088
			(1.66)			(-0.16)			(-1.50)
SIZE	0.343***	0.344***	0.346***	0.256***	0.226***	0.267***	-0.226***	-0.221***	-0.223***
	(24.58)	(24.66)	(25.12)	(3.12)	(2.72)	(3.37)	(-12.81)	(-12.43)	(-13.10)
LDEBT	-0.446***	-0.445***	-0.453***	3.213***	3.199***	3.216***	0.758***	0.762***	0.771***
	(-3.14)	(-3.13)	(-3.17)	(3.01)	(3.02)	(3.04)	(3.96)	(4.00)	(4.04)
PROF	0.166	0.157	0.190	-0.790	-0.586	-0.272	-1.319**	-1.356**	-1.390**
	(0.34)	(0.32)	(0.39)	(-0.28)	(-0.21)	(-0.10)	(-2.16)	(-2.22)	(-2.29)
COLL	-0.206	-0.182	-0.183	-3.508	-4.037*	-4.159*	1.120***	1.202***	1.199***
	(-0.81)	(-0.72)	(-0.73)	(-1.53)	(-1.76)	(-1.81)	(2.63)	(2.80)	(2.79)
LIQUID	2.858	2.745	2.710	5.834	8.407	10.075	0.287	0.015	0.098
	(0.97)	(0.93)	(0.92)	(0.41)	(0.59)	(0.70)	(0.06)	(0.00)	(0.02)
STOCKTVR	0.054	0.055	0.054	1.011**	1.002**	1.000**	-0.078	-0.076	-0.075
	(1.26)	(1.27)	(1.26)	(2.23)	(2.21)	(2.21)	(-1.21)	(-1.18)	(-1.17)
RepoRate	-0.059***	-0.059***	-0.059***	-0.151	-0.155	-0.155	0.201***	0.202***	0.201***
	(-2.81)	(-2.81)	(-2.80)	(-1.00)	(-1.03)	(-1.03)	(6.42)	(6.43)	(6.42)
VIX	0.010**	0.010**	0.010**	0.053*	0.051*	0.050*	0.002	0.002	0.002
	(2.26)	(2.27)	(2.24)	(1.90)	(1.85)	(1.82)	(0.36)	(0.41)	(0.44)
_cons	-5.234***	-5.280***	-5.295***	-2.819	-1.783	-1.990	1.000**	0.842*	0.861*
	(-16.13)	(-16.29)	(-16.34)	(-1.09)	(-0.68)	(-0.76)	(2.01)	(1.67)	(1.71)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2461	2461	2461	2461	2461	2461	1763	1763	1763
r2_a	0.445	0.445	0.445	0.030	0.034	0.034	0.205	0.206	0.206
b_diff_After_Before			-0.072			1.554			-0.119
p_diff			0.239			0.000			0.063

This table reports the results of robust checks using the dependent variable of relative value of bond characteristics by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The dependent variables are relative issuance size (bond size) in columns 1-3, relative maturity of bond issuance (tenor) in columns 4-6 and relative yield at issue for fixed-rate bonds (yield) in columns 7-9, respectively. The relative value of issuance size, maturity of bond issuance and yield at issue, which are defined as the absolute value of each bond attribute subtract average value of the given industry at the same year. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 9: The bonding/signalling effect on financially constrained firms: SOEs versus non-SOEs

	SOE						Non SOE					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Bond size	Bond size	Tenor	Tenor	Yield	Yield	Bond size	Bond size	Tenor	Tenor	Yield	Yield
After	-0.013	0.017	1.453***	1.907***	-0.168***	-0.228***	-0.044	0.163*	0.672	0.167	-0.613***	-0.674***
	(-0.24)	(0.35)	(3.41)	(3.89)	(-2.87)	(-3.52)	(-0.44)	(1.87)	(1.31)	(0.40)	(-3.65)	(-3.82)
Offshore	0.029		0.693**		-0.070		0.285***		-0.570		-0.138	
	(0.58)		(1.99)		(-1.20)		(2.92)		(-1.47)		(-0.84)	
Before		0.044		0.232		-0.068		0.201*		-1.124**		0.047
		(0.82)		(0.65)		(-1.12)		(1.85)		(-2.04)		(0.26)
SIZE	0.382***	0.381***	0.145	0.204**	-0.190***	-0.192***	0.333***	0.339***	0.121	0.124	-0.333***	-0.340***
	(27.55)	(28.10)	(1.39)	(2.05)	(-9.43)	(-9.96)	(10.16)	(10.39)	(0.82)	(0.87)	(-6.98)	(-7.20)
LDEBT	-0.873***	-0.876***	4.351***	4.276***	0.900***	0.908***	-0.015	0.024	0.658	0.937	1.076*	0.936*
	(-5.70)	(-5.69)	(3.29)	(3.24)	(4.39)	(4.41)	(-0.06)	(0.09)	(0.44)	(0.58)	(1.96)	(1.73)
PROF	1.023*	1.017*	-0.211	0.341	-3.733***	-3.754***	0.099	0.234	2.107	1.657	-3.631***	-3.641***
	(1.87)	(1.87)	(-0.05)	(0.09)	(-5.27)	(-5.34)	(0.15)	(0.36)	(0.87)	(0.68)	(-2.78)	(-2.78)
COLL	-0.076	-0.070	-7.039**	-7.214**	0.570	0.570	0.318	0.275	1.670*	1.687*	0.108	0.217
	(-0.30)	(-0.28)	(-1.98)	(-2.02)	(1.51)	(1.51)	(1.04)	(0.90)	(1.74)	(1.75)	(0.10)	(0.19)
LIQUID	-0.950	-1.029	-24.671	-23.828	-15.250**	-15.179**	3.527	3.985	6.840	8.043	-0.320	-1.330
	(-0.24)	(-0.26)	(-0.97)	(-0.93)	(-2.49)	(-2.47)	(0.98)	(1.10)	(0.76)	(0.92)	(-0.05)	(-0.19)
STOCKTVR	-0.005	-0.005	1.232**	1.228**	-0.103	-0.102	0.191***	0.187***	0.824	0.845	-0.096	-0.105
	(-0.10)	(-0.10)	(2.04)	(2.03)	(-1.27)	(-1.26)	(2.98)	(2.92)	(1.50)	(1.53)	(-0.65)	(-0.71)
RepoRate	-0.044*	-0.044*	-0.218	-0.215	0.189***	0.189***	-0.021	-0.021	-0.147	-0.156	0.250***	0.253***
	(-1.88)	(-1.88)	(-1.05)	(-1.04)	(5.58)	(5.57)	(-0.55)	(-0.55)	(-1.06)	(-1.16)	(2.70)	(2.72)
VIX	0.010**	0.010**	0.072**	0.071**	0.002	0.002	0.008	0.007	0.035	0.035	-0.010	-0.009
	(2.19)	(2.18)	(2.03)	(2.00)	(0.34)	(0.36)	(1.06)	(0.93)	(0.87)	(0.87)	(-0.66)	(-0.60)
_cons	-3.689***	-3.690***	7.226*	6.928*	5.898***	5.915***	-4.251***	-4.260***	-0.189	-0.173	7.693***	7.658***
	(-10.88)	(-10.90)	(1.84)	(1.76)	(12.56)	(12.60)	(-8.74)	(-8.76)	(-0.07)	(-0.06)	(5.71)	(5.62)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1794	1794	1794	1794	1408	1408	667	667	667	667	355	355
r2_a	0.503	0.503	0.113	0.112	0.436	0.436	0.468	0.464	0.026	0.030	0.352	0.351
b_diff_After_Before		-0.027		1.675		-0.160		-0.038		1.291		-0.720
p_diff		0.653		0.000		0.014		0.754		0.083		0.001

This table reports the bonding/signalling effect on financially constrained firms by an ordinary least square model. Time dummies and industry dummies were included in the model. Robust t-statistics are reported in the parentheses. The sample in columns 1-6 is issuances of SOEs; in columns 7-12 is issuances of non-SOEs. The dependent variables are issuance size (bond size) in columns 1, 2, 7 and 8, maturity of bond issuance (tenor) in columns 3, 4, 9 and 10 and yield at issue for fixed-rate bonds (yield) in columns 5, 6, 11 and 12, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Table 10a: The impact of offshore financing on firm performance

	(1) ROA	(2) ROE	(3) INV	(4) AssetGrow	(5) SaleGrow
ACCESS	0.00798***	0.0251***	0.0192***	0.141***	0.0695***
	(2.63)	(3.11)	(3.27)	(6.63)	(3.08)
SIZE	0.00163**	0.00807***	0.000812	-0.0423***	-0.0279***
	(2.17)	(4.20)	(0.56)	(-6.17)	(-3.32)
LEV	-0.0523***	-0.0575**	0.0255	-0.0430	0.0274
	(-5.45)	(-2.12)	(1.38)	(-0.58)	(0.30)
FCF	0.130***	0.252***	0.129***	-0.311***	-0.356***
	(9.41)	(7.32)	(5.55)	(-2.94)	(-2.91)
COLL	0.0188	0.0433	0.0498***	-0.0789	-0.379**
	(1.11)	(1.23)	(2.99)	(-0.76)	(-2.36)
LIQUID	0.599***	0.497	0.898***	4.972***	1.330
	(3.38)	(1.53)	(2.77)	(4.13)	(0.90)
_cons	0.00757	-0.0231	-0.0574**	0.642***	0.935***
	(0.41)	(-0.57)	(-2.46)	(5.19)	(5.15)
Year	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes
N	2257	2251	2257	2257	2256
adj. R2	0.150	0.118	0.131	0.167	0.090

This table reports the impact of offshore financing on firm performance by an ordinary least square model. The data we use in this table is firm-year level data. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. ACCESS is a dummy variable, which equals one on the year when the issuer has an offshore issuance, and zero at the year when the issuers only issue at home. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively

Table 10b: The impact of offshore financing on firm performance: SOE versus non-SOE

	ROA		ROE		INV		AssetGrow		SaleGrow	
	(1) SOE	(2) NonSOE	(3) SOE	(4) NonSOE	(5) SOE	(6) NonSOE	(7) SOE	(8) NonSOE	(9) SOE	(10) NonSOE
ACCESS	0.001	0.008**	0.0045	0.0247**	0.006	0.024***	0.065**	0.160***	0.0203	0.0665**
	(0.22)	(2.04)	(0.33)	(2.48)	(1.02)	(3.02)	(2.30)	(5.48)	(0.42)	(2.29)
SIZE	0.0002	0.0045***	0.0091***	0.0108***	-0.004***	0.008***	-0.016***	-0.0625***	-0.005	-0.0388***
	(0.27)	(3.33)	(4.14)	(3.41)	(-2.61)	(3.07)	(-3.10)	(-4.97)	(-0.51)	(-2.77)
LEV	-0.042***	-0.0517***	-0.0298	-0.0705*	-0.001	0.027	-0.102*	-0.031	0.160	-0.0810
	(-4.52)	(-3.34)	(-0.95)	(-1.66)	(-0.08)	(0.89)	(-1.79)	(-0.25)	(1.35)	(-0.61)
FCF	0.113***	0.135***	0.175***	0.288***	0.050*	0.149***	-0.570***	-0.199	-0.596***	-0.216
	(7.28)	(7.34)	(3.88)	(6.46)	(1.87)	(4.94)	(-4.83)	(-1.42)	(-2.87)	(-1.45)
COLL	-0.0811***	0.0649***	-0.138***	0.121**	0.015	0.056**	-0.281***	0.0075	-0.319**	-0.468**
	(-5.32)	(2.84)	(-3.74)	(2.47)	(1.07)	(2.32)	(-3.13)	(0.05)	(-2.36)	(-2.06)
LIQUID	0.587*	0.644***	0.105	0.530	0.338	1.091***	5.917*	4.003***	1.394	0.937
	(1.65)	(3.26)	(0.14)	(1.49)	(1.06)	(2.76)	(1.92)	(3.11)	(0.49)	(0.53)
_cons	0.110***	-0.0565**	0.122***	-0.102*	0.029	-0.128***	0.602***	0.732***	0.605***	1.156***
	(5.80)	(-2.19)	(2.66)	(-1.79)	(1.63)	(-3.43)	(5.05)	(3.94)	(3.40)	(4.42)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	893	1364	893	1358	893	1364	893	1364	893	1363
adj. R2	0.215	0.145	0.144	0.131	0.079	0.169	0.166	0.167	0.121	0.084

This table reports the impact of offshore financing on firm performance using the subsample of SOEs and non-SOEs by an ordinary least square model. The data we use in this table is firm-year level data. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. We use the sample of SOEs in columns 1, 3, 5, 7 and 9, and sample of non-SOEs in columns 2, 4, 6, 8 and 10. ACCESS is a dummy variable, which equals one on the year when the issuer has an offshore issuance, and zero at the year when the issuers only issue at home. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Appendix_Table 1: The location effect of offshore financing classified by ISIN code

	The domestic corporate bonds issued by the companies who/whose parent companies have been issued offshore bonds with an ISIN country code of HK in the latest offshore issuance +controls				The domestic corporate bonds issued by the companies who/whose parent companies have been issued offshore bonds with an ISIN country code of US in the latest offshore issuance +controls				The domestic corporate bonds issued by the companies who/whose parent companies have been issued offshore bonds with an ISIN country code of XS in the latest offshore issuance +controls			
	(1) Tenor	(2) Tenor	(3) Yield	(4) Yield	(5) Tenor	(6) Tenor	(7) Yield	(8) Yield	(9) Tenor	(10) Tenor	(11) Yield	(12) Yield
After	1.741***	1.837***	-0.296***	-0.293***	-0.082	-0.111	-0.183***	-0.179***	0.759*	0.917*	-0.196***	-0.238***
	(3.04)	(3.02)	(-4.78)	(-4.74)	(-0.29)	(-0.38)	(-2.66)	(-2.59)	(1.74)	(1.90)	(-2.78)	(-3.10)
Offshore	0.407		-0.006		-0.010		0.009		0.317		-0.055	
	(1.32)		(-0.10)		(-0.04)		(0.15)		(1.09)		(-0.92)	
Before		-0.178		0.015		-0.102		0.005		0.001		-0.056
		(-0.58)		(0.24)		(-0.34)		(0.08)		(0.00)		(-0.90)
SIZE	0.268***	0.335***	-0.285***	-0.287***	0.299***	0.308***	-0.282***	-0.281***	0.241***	0.277***	-0.250***	-0.251***
	(3.19)	(4.15)	(-13.37)	(-14.06)	(3.72)	(3.93)	(-13.23)	(-13.66)	(2.83)	(3.38)	(-11.99)	(-12.76)
LDEBT	2.252**	2.214**	0.835***	0.835***	1.143	1.146	0.706***	0.705***	1.874*	1.851*	0.814***	0.821***
	(2.22)	(2.19)	(4.01)	(4.01)	(1.25)	(1.25)	(3.32)	(3.31)	(1.87)	(1.85)	(3.88)	(3.91)
PROF	1.609	1.989	-2.672***	-2.685***	1.365	1.410	-2.721***	-2.716***	0.083	0.325	-2.340***	-2.358***
	(0.64)	(0.80)	(-4.28)	(-4.31)	(0.60)	(0.62)	(-4.34)	(-4.35)	(0.03)	(0.13)	(-3.66)	(-3.72)
COLL	0.099	0.004	0.816*	0.822*	-0.514	-0.530	0.729	0.728	-1.777	-1.838	0.776	0.778
	(0.06)	(0.00)	(1.66)	(1.67)	(-0.34)	(-0.35)	(1.51)	(1.51)	(-1.08)	(-1.11)	(1.60)	(1.60)
LIQUID	-3.438	-0.662	-2.591	-2.699	-3.567	-3.115	-3.238	-3.217	-3.298	-1.847	-1.570	-1.580
	(-0.33)	(-0.06)	(-0.54)	(-0.56)	(-0.37)	(-0.32)	(-0.67)	(-0.67)	(-0.31)	(-0.17)	(-0.34)	(-0.34)
STOCKTVR1	0.588	0.597	-0.035	-0.035	0.242	0.243	-0.039	-0.039	0.651	0.650	-0.105	-0.105
	(1.13)	(1.14)	(-0.46)	(-0.46)	(0.49)	(0.49)	(-0.49)	(-0.50)	(1.44)	(1.43)	(-1.33)	(-1.32)
RepoRate	-0.063	-0.063	0.202***	0.202***	-0.091	-0.090	0.199***	0.199***	-0.086	-0.084	0.178***	0.177***
	(-0.40)	(-0.40)	(5.51)	(5.51)	(-0.61)	(-0.60)	(5.25)	(5.25)	(-0.57)	(-0.56)	(5.29)	(5.27)
VIX_mean	0.046	0.045	0.007	0.007	0.019	0.019	0.007	0.007	0.027	0.027	-0.002	-0.001
	(1.62)	(1.58)	(1.27)	(1.29)	(0.77)	(0.77)	(1.24)	(1.24)	(1.02)	(1.00)	(-0.26)	(-0.24)
_cons	0.101	-0.381	6.308***	6.321***	1.850	1.789	6.385***	6.381***	2.982	2.754	6.267***	6.280***
	(0.05)	(-0.18)	(10.63)	(10.71)	(0.90)	(0.87)	(10.77)	(10.77)	(1.40)	(1.30)	(10.71)	(10.75)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2050	2050	1448	1448	1996	1996	1409	1409	2239	2239	1578	1578
r2_a	0.083	0.082	0.410	0.410	0.059	0.059	0.398	0.398	0.064	0.063	0.391	0.391
b_diff_After_Before		2.014		-0.308		-0.009		-0.184		0.916		-0.182
p_diff		0.002		0.000		0.981		0.024		0.067		0.023

This table tests the location effect of offshore financing classified by ISIN code by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The sample in columns 1-4 includes the domestic corporate bonds issued by the companies whose parent companies have been issued offshore bonds with an ISIN country code of HK in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore

issuance as the control; the sample in columns 5-8 includes the domestic corporate bonds issued by the companies whose parent companies have been issued offshore bonds with an ISIN country code of US in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control; the sample in columns 9-12 includes the domestic corporate bonds issued by the companies whose parent companies have been issued offshore bonds with an ISIN country code of XS in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control. The dependent variables are maturity of bond issuance (tenor) in columns 1, 2, 5, 6, 9 and 10 and yield at issue for fixed-rate bonds (yield) in 3, 4, 7, 8, 11 and 12, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively.

Appendix_Table 2: The location effect of offshore financing classified by governing law

	The domestic bonds issued by the companies who/whose parent companies have been issued offshore bonds governed by Hong Kong law in the latest offshore issuance + controls				The domestic bonds issued by the companies who/whose parent companies have been issued offshore bonds governed by English law in the latest offshore issuance + controls				The domestic bonds issued by the companies who/whose parent companies have been issued offshore bonds governed by New York law in the latest offshore issuance + controls			
	(1) Tenor	(2) Tenor	(3) Yield	(4) Yield	(5) Tenor	(6) Tenor	(7) Yield	(8) Yield	(9) Tenor	(10) Tenor	(11) Yield	(12) Yield
After	1.449***	1.636***	-0.329***	-0.347***	1.155**	1.292**	-0.130*	-0.141*	-0.375	-0.423	-0.155**	-0.146*
	(3.08)	(3.12)	(-4.60)	(-4.48)	(2.17)	(2.23)	(-1.86)	(-1.94)	(-1.45)	(-1.64)	(-2.05)	(-1.90)
Offshore	0.457		-0.039		0.368		-0.007		-0.072		0.022	
	(1.48)		(-0.64)		(1.23)		(-0.11)		(-0.26)		(0.36)	
Before		-0.046		-0.007		-0.062		-0.028		-0.088		0.009
		(-0.15)		(-0.12)		(-0.21)		(-0.46)		(-0.30)		(0.14)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2113	2113	1503	1503	2131	2131	1506	1506	2045	2045	1428	1428
r2_a	0.083	0.082	0.394	0.394	0.067	0.066	0.407	0.407	0.058	0.058	0.397	0.397
b_diff_After_Before		1.683		-0.339		1.354		-0.113		-0.335		-0.155
p_diff		0.002		0.000		0.025		0.159		0.314		0.078

This table tests the location effect of offshore financing classified by governing law by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The sample in columns 1-4 includes the domestic bonds issued by the companies whose parent companies have been issued offshore bonds governed by Hong Kong law in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control; the sample in columns 5-8 includes the domestic bonds issued by the companies whose parent companies have been issued offshore bonds governed by English law in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control; the sample in columns 9-12 includes the domestic bonds issued by the companies whose parent companies have been issued offshore bonds governed by New York law in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control. The dependent variables are maturity of bond issuance (tenor) in columns 1, 2, 5, 6, 9 and 10, yield at issue for fixed-rate bonds (yield) in 3, 4, 7, 8, 11 and 12, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. In all regressions, we include both the firm-level and market-level control variables*, **, *** mean significance at 10%, 5%, and 1%, respectively. We only report the coefficients of after, offshore and before in the tables for brevity.

Appendix_Table 3: The location effect of offshore financing classified by exchanges

	The domestic bonds issued by the companies who/whose parent companies have been issued offshore bonds listed on Hong Kong exchanges in the latest offshore issuance +controls				The domestic bonds issued by the companies who/whose parent companies have been issued offshore bonds listed on USA in the latest offshore issuance +controls				The domestic bonds issued by the companies who/whose parent companies have been issued offshore bonds listed on Singapore exchanges in the latest offshore issuance +controls			
	(1) Tenor	(2) Tenor	(3) Yield	(4) Yield	(5) Tenor	(6) Tenor	(7) Yield	(8) Yield	(9) Tenor	(10) Tenor	(11) Yield	(12) Yield
After	2.067***	2.242***	-0.236***	-0.293***	-0.953***	-0.952***	-0.209**	-0.203**	0.581	0.570	-0.050	-0.051
	(3.21)	(3.30)	(-2.74)	(-3.21)	(-2.58)	(-2.61)	(-2.05)	(-2.04)	(0.93)	(0.94)	(-0.43)	(-0.43)
Offshore	0.233		-0.060		0.000		0.012		0.008		0.004	
	(0.73)		(-0.96)		(0.00)		(0.20)		(0.03)		(0.07)	
Before		0.088		-0.061		0.005		0.005		-0.057		-0.010
		(0.28)		(-0.98)		(0.02)		(0.08)		(-0.19)		(-0.15)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2132	2132	1503	1503	1909	1909	1333	1333	1992	1992	1388	1388
r2_a	0.087	0.087	0.403	0.403	0.061	0.061	0.394	0.393	0.057	0.057	0.387	0.387
b_diff_After_Before		2.154		-0.231		-0.957		-0.208		0.627		-0.042
p_diff		0.001		0.010		0.022		0.059		0.334		0.735

This table tests the location effect of offshore financing classified by exchanges by an ordinary least square model. Time dummies and industry dummies are included in the model. Robust t-statistics are reported in the parentheses. The sample in columns 1-4 includes the domestic bonds issued by the companies whose parent companies have been issued offshore bonds listed on Hong Kong exchanges in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control; the sample in columns 5-8 includes the domestic bonds issued by the companies whose parent companies have been issued offshore bonds listed in US in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control; the sample in columns 9-12 includes the domestic bonds issued by the companies whose parent companies have been issued offshore bonds listed on Singapore exchanges in the latest offshore issuance, and the bonds issued by domestically issuing-only groups and the ones issued by offshore financing groups before their first offshore issuance as the control. The dependent variables are maturity of bond issuance (tenor) in columns 1, 2, 5, 6, 9 and 10 and yield at issue for fixed-rate bonds (yield) in 3, 4, 7, 8, 11 and 12, respectively. The offshore dummy equals one for the bonds issued by the groups that have been issued offshore sometime during the entire sample period and zero for others. The after dummy equals one on and after the year at the first offshore issuance of the given group and zero otherwise. The before dummy equals one before the year at the first offshore issuance of the given group and zero otherwise. See the appendix for the definition of the remaining variables. *, **, *** mean significance at 10%, 5%, and 1%, respectively. In all regressions, we include both the firm-level and market-level control variables. We only report the coefficients of after, offshore and before in the tables for brevity.

Appendix Definitions of main variables

Variables	Definition	Data source
Dependent variables		
Bond characteristics		
Bond size	The logarithm of the issue amount in billion RMB	Bloomberg
Tenor	The number of years between the date of issuance and the final maturity date	Bloomberg
Yield	The annualised yield of a bond at the time of issuance	Bloomberg
Firm performance		
ROA	Net income divided by total assets	Bloomberg
ROE	Net income divided by shareholders' equity	Bloomberg
AssetGrow	The growth rate of total assets	Bloomberg
SaleGrow	The growth rate of total revenue	Bloomberg
Independent variables		
Offshore	A dummy variable, which equals one for the bonds issued by the groups within which have been issued offshore sometime during the entire sample period and zero for those issued by groups without offshore financing events	
After	A dummy variable, which equals one on and after the year when the first offshore issuance of the given group and zero otherwise	
Before	A dummy variable, which equals one before the year when the first offshore issuance of the given group and zero otherwise	
ACCESS	A dummy variable, which equals one on the year when the issuer has an offshore issuance, and zero at the year when the issuers only issue at home countries	
Firm-level control variables		Bloomberg
SIZE	The logarithm of the firm's total assets	Bloomberg
LDEBT	The long-term debt over total assets	Bloomberg
PROF	The earnings before interest and taxes relative to total assets	Bloomberg
LIQUID	The current assets over total liabilities	Bloomberg
COLL	Tangible fixed assets over total assets	Bloomberg
SOE	A dummy variable, which equal to one if the largest shareholder of a company is the government	Wind
Market-level control variables		
STOCKTVR	The averagely stock market turnover at issue month	Wind
Reporate	The averagely seven-day repurchase rate at issue month	Wind
VIX	The averagely Chicago Board Options Exchange Market Volatility Index at issue month	Bloomberg