PRICING OF INTERNATIONAL 144A DEBT:
EVIDENCE FROM THE US SECONDARY BOND MARKET

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Abstract

We provide a first comprehensive study of the secondary market pricing of 144A debt issues in the US market. The 144A debt refers to the private placement issues made typically by low-rated and high-risk foreign and domestic US firms that seek quick capital funding, without the onerous disclosure requirements mandated for public debt issues. For e.g. data sourced from FISD shows that foreign private issuances totaled over $2 trillion (from over 1600 issuers) overall compared to $3.5 trillion of global public issuances (emanating from over 1900 issuers) overall from 76 countries during 1994-2010.

Using an exhaustive sample of bond issues and secondary market trades during 1994-2010 period, we consider foreign 144A debt issuers from emerging and developed markets (constituting our treatment sample) and benchmark their performance to three different control samples: (a) Yankee debt issuers, (b) US 144A issuers, and (c) US public debt issuers. We examine the validity of competing hypotheses related to illiquidity, default, governance, familiarity and private information risks in explaining the 144A bond spreads across issuers, countries and over time. We further examine this issue through the lens of BRIC cohort countries and focus on Indian debt issues benchmarked to their emerging market peers. Overall we find that 144A transaction spreads in the US secondary market are significantly higher for foreign and emerging market 144A issuers compared to control samples. Illiquidity, default, governance and familiarity risks together can explain the emerging or BRIC market premium in bond spreads. The financial crisis has significant effects on 144A bond pricing and incrementally so by influencing the effect of order imbalance and primary dealer inventories on bond spreads. Interestingly the Indian firms pay a significant yield spread discount in the secondary market compared to other 144A issuers, which can be explained by favorable liquidity and credit risk parameters of the underlying firms.

Keywords: international debt market, 144A bonds, secondary market bond spreads
JEL Classification: G10, G14 G15, G30.

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1. INTRODUCTION

How do borrowing costs for international firms vary across private and public debt markets? We address this question in this paper by conducting an exhaustive study of the *secondary markets* of international firms raising debt capital in US. Specifically we conduct two lines of enquiry: *Firstly*, we examine how the borrowing costs differ between private (144 A) and public debt (Yankee[1]) issues of international firms in the US secondary market, and evaluate them when benchmarked to similar types of domestic debt issues by US firms. *Secondly*, we study the issue uniquely in the context of *emerging markets* and examine their external 144A versus Yankee debt financing costs vis-a-vis their developed market peers. We also examine this issue through the lens of BRIC nation countries and focus on Indian debt issues benchmarked to their BRIC counterparts to better decipher the debt financing challenges for a powerful and rapidly growing economic bloc. While previous work has mainly examined the comparative borrowing costs of domestic and foreign firms in the *primary* debt markets in the developed markets, we add to the literature by (a) studying *secondary* debt markets of international capital issues, and (b) providing detailed *secondary* market comparisons of the external private and public debt choices of emerging versus developed market firms.[2]

Firms primarily raise their external capital using debt, preferred stock and equity. For example, Henderson, Jegadeesh and Weisbach (2006) show that debt (both convertible and non-convertible), preferred stock and equity account for 83%, 1% 15% respectively for domestic capital issues during 1990-2001 period. Similar breakdown is found to be 90%, 1% and 9% for international capital issues.

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[1] Yankee bonds are US dollar denominated bonds issued by non-US borrowers to US investors.

[2] Henderson, Jegadeesh and Weisbach (2006) document that Eurobond market is far more popular than the US for foreign debt, Further their study reports that UK, US and Germany are the only net exporters of capital with capital export- to-import ratios of 300%, 116%; and 106% respectively. Gao (2011) notes that US bond market is second only to the Eurobond market as a forum for foreign companies to raise public debt Given that we do not have access to secondary market data for Eurobond issues, in this study we focus only on the US secondary market.

Debt capital represents firm's borrowings, and can be raised through four possible sources: publicly issued debt, bank loans, private placement debt (issued to captive institutional investors), and private debt (issued to a few qualified investors initially and gradually released into the public debt market over time as is the case for 144 A debt). Arena (2010), for example, documents that the above four sources respectively account for 21%, 57%, 7% and 15% respectively for US non-financial long-term debt issues during 1995-2003 period.

Moreover debt capital can be raised broadly through either domestic or international venues. International debt offerings can be made in three possible ways, i.e., foreign bonds, Eurobonds and global bonds (e.g., Resnick, 2012; Miller and Puthenpurackal, 2005). Foreign bonds are issued by foreign firms to local investors. Moreover foreign bonds can be issued in either public or private debt market. Eurobonds are issued by local or foreign firms simultaneously to a number of investors in other countries, and it is an off-shore market where issues are mostly listed on London or Luxembourg exchanges. Eurobonds are issued in different currency denominations, but bonds issued in US dollars (Eurodollar bonds) have been historically the largest single component of the market.[3] Global bonds encompass both domestic and international debt market issues, and constitute large debt issuances (each issue averaging about $1 billion) sold simultaneously in multiple markets at the same offer price.

Debt issued by foreign corporations in US is not only sizeable, but has significantly grown over time. For example, during the period 1994-2010, $5.6 trillion of total debt was issued by foreign corporates in US, compared to $18 trillion domestic debt issued by firms in US; and the ratio of foreign to domestic debt issuance has grown from only nine percent in 1990-1994 to 31 percent in 2006-2010.[4] Private debt issues, in turn, are a key foreign source of funding for corporations, and predominantly so for emerging market firms. About 37% of total foreign corporate debt issued in US comprises of private debt, compared to only 18% private debt for domestic US corporate debt issues.

[Insert Figures 1 and 2 here]

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[3] For example, Eurodollar bonds are US dollar denominated bonds sold by either a US or non-US issuer to foreign investors, and held outside both the US and the issuer's home nation. Eurodollar issues are exempt from SEC regulation.

[4] All the data referenced in this section is sourced from the Fixed Income Securities database or FISD.

Figures 1 and 2 present historical evolution of international and domestic debt offerings, affiliated to developed versus emerging economies, in the US market during 1990-2010. Figure 1 shows that private debt market grew in dollar volume for international issuers post year-2000 tech-bubble crash, whereas it was steady for local US issuers. Figure 2 further reveals that emerging market firms historically have resorted to private debt capital predominantly than Yankee debt issues.

The Rule 144A was approved by the US Securities and Exchanges Commission (SEC) in April 1990. This rule enabled borrowing firms to raise capital from "qualified institutional buyers" (or QIBs) without requiring SEC registration of the securities or compliance with the US accounting (GAAP and SOX) standards.[5] QIB market consists of large financial institutions and other accredited investors. The requirements to qualify as a QIB are as follows (Chaplinsky and Ramchand, 2004): (1) An institution (e.g., an insurance or investment company or pension plan) that owns or invests at least $100 million in securities of non-affiliates; (2) A bank or savings and loan (S&L) association that meets condition 1) and also has an audited net worth of at least $25 million; (3) A broker or dealer registered under the Exchange Act, acting for its own account or for that of QIBs that own and invest at least $10 million in securities of non-affiliates; or (4) An entity whose equity holders are all QIBs. Most of the US domestic 144A issues are subsequently registered in the public debt market within a three month period (Huang and Ramirez, 2000).

The goal of this present research is to better understand how the cost of private (144A) debt is determined in the *secondary market*, which refers to the trading of already issued securities among the QIBs. Extant work (details in Section 2) has mainly examined the offering yield characteristics of 144A issuers in the *primary market*. However this paper distinguishes from the earlier work by providing a comprehensive study of the *secondary market* pricing behavior in the 144 A debt market. We focus on foreign debt issues from emerging and developed markets (

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[5] There is an additional source of private debt capital for firms referred to as Regulation S (Reg S) where capital raising occurs by placing either equity (Depositary Receipts) or debt issues offshore to non-US investors and does not require SEC registration. Rule 144A and Reg S issues do not trade on the major exchanges. Rule 144A offers trade amongst QIBs on the Private Offerings Retail Trading Automated Linkage (PORTAL) trading system and Reg S issues trade on the Designated Offshore Securities Markets (DOSM) (e.g., Aggarwal, Gray and Singer, 1999).

comprising our treatment sample), and study their financing behavior relative to the performance of three control samples: (a) Yankee debt issues, (b) domestic US 144 A issues, and (c) US firm public debt issues. Further a case study based on BRIC nations and centered on Indian debt issues is conducted to shed light on the debt financing costs and underlying determinants of fast-growing emerging economies.[6] The study will thereby help us comprehend what risks are being priced in the 144A debt market, and hence if it is an effective borrowing channel for global firms. Given that managers of capital raising firms have discretion over three choice variables, i.e., (a) type of debt securities they issue, (b) location, and (c) timing of their debt issue, our results will also help us better understand the optimal decisions that managers make.

Extant literature documents several benefits of the 144A market. The adoption of Rule 144A had a favorable impact particularly for the risky borrowers issuing high-yield debt (Denis and Mihov, 2003; Huang and Ramirez, 2010). The Rule 144A market allowed speedy issuance for needy firms because a pre-issue registration with the SEC is no longer required (Huang and Ramirez, 2010). The rule 144A also allows QIBs to buy privately placed securities at issuance, and trade among themselves without having to hold them as mandated for two years (Fenn, 2000). Majority of such 144A issues get subsequently registered with SEC (Huang and Ramirez, 2010). By circumventing the time-consuming securities registration process at issuance, a norm for publicly issued debt, high-yield firms with a preference for convertible debt were able to issue securities with less ambiguity about the final borrowing terms and conditions, and receive funds more quickly, while apparently imposing no significant information costs on investors.

Corporate debt markets in emerging markets are undeveloped and lack market depth and liquidity.[7] Further informal finance sources, bank loans and private placement markets dominate as the primary source of domestic capital and crowd out any corporate debt issues (e.g., Allen, Chakatbarti, De, Qian and Qian, 2012) . As a result capital-hungry firms from emerging markets with strong potential tap into global debt issues.

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[6] BRIC member countries together encompass over 25% of the world's land coverage, 40% of the world's population, and about 25% of the global GDP in 2010, with significant increases in global GDP share expected over the next four decades.

[7] E.g., Business Week (Feb 10, 2011) article "India's Bond Market Needs to Bulk Up", which argues that India's ambitious $1 trillion infrastructure program will not succeed without a more robust corporate bond market.

For example, less than 3% of the newly issued domestic capital by Indian firms in 2007 was raised using debt capital (source: RBI). Banks have better access to private information on local firms and hence offer better capital financing terms. The ratio of corporate to sovereign debt as percentage of GDP in India is 4% in 2010 (vs. 22% in China) and also among the lowest among Asian countries (e.g., Chakarabarthi, 2007; Patil, 2001). Several structural factors have contributed to underdeveloped corporate bond markets in the Indian context. These include crowding-out by the government debt; high taxes and stamp duties on debt issues; withholding taxes on FIs; small issue size, and hence preponderance of bank loans and private placements; lack of centralized information on bond trading, prices and defaults; lack of electronic order-matching and clearing system; lack of uniformity in market practices like lot size and conventions for coupon calculations; lack of dealers and market makers and absence of secondary debt markets; non-transparent repo markets; government restrictions on FIs like provident and pension funds on quantity and type (i.e., ratings and maturity) of corporate bonds that can be held. [8]

Our analysis in this paper speaks more generally to the question of how secondary market prices are determined in private debt markets, and sheds light on the pricing behavior of the private and public debt markets. We provide a comprehensive study of the 144A secondary debt market of foreign issuers comprising of the treatment sample) and compare them with respect to three control samples: Yankee debt issuers, US domestic 144A issues and US public debt issues. We contextualize our study by including a sub-sample of BRIC nations and focusing on Indian debt to examine the debt financing challenges of those rapidly growing emerging markets.

We conduct our study by asking several related questions: How does the secondary market cost of borrowing in the 144A compare for emerging market borrowers versus those from developed countries? How do the costs compare benchmarked to public debt issues by such firms? How do

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[8] Indian market regulator (SEBI) has initiated several measures recently to promote and develop secondary bond markets in India, which in turn can lead to enhanced liquidity and ownership of the corporate bonds (e.g., Indian Express (Mar 31, 2011) article "SEBI eyes setting up corporate bond market"). Meanwhile several large Indian firms and banks tap debt capital through foreign debt issues to lower their borrowing costs (e.g., CMIE, May 21, 2013 article "Should Indian Corporates aggressively borrow overseas funds?").

the overall borrowing costs differ between foreign and domestic (US) firm issuers? What is the role of liquidity and credit risk on secondary market pricing of 144A debt? How do country-specific governance risks impact such bond pricing? Does familiarity risk matter for secondary 144A debt pricing (i.e., Are bond spreads impacted by the previous global equity issues of the underlying firms)? What is the role of private information in determining bond spreads? How has the financial crisis impacted the private debt market? By exploring these questions, we hope to better understand the functioning of the private debt markets.

We employ an exhaustive 144A bond sample of the secondary market trades of insurance companies for 561 issues belonging to 267 issuers from 40 different countries from the National Association of Insurance Commissioners (NAIC) database for the 1994-2010 period that have matching bond issuer data on Fixed Income Securities database (FISD) and equity data on COMPUSTAT (details in Section 4 and Appendices B, C and D). Our sample also consists of 60 issues of the 29 issuers from BRIC nations. Further, FISD records 18 Indian firms raising debt in US markets until 2010 using 35 debt issues, 28 of which comprise of Rule 144A issues (details in Appendix E) . NAIC database further reports over 600 trades of Indian debt issues by insurance companies during 1994-2010 in the secondary debt market.

Our main findings can be summarized as follows:
A) We notice that foreign 144A transaction spreads in the secondary market are significantly higher compared to Yankee and US domestic control samples, while being comparable to domestic 144A spreads. The initial offering spread for the foreign 144A issues is also much higher compared to control sample firms. Though the 144A offer spreads are significantly higher than those of US domestic 144A issues, such difference between the treatment and control sample spreads disappears in the secondary market.
B) While the transaction spreads are much higher compared to initial offering spreads for all the samples, such a differential (between secondary and offering spreads) is significantly lower for the treatment sample versus all the control samples. This implies that though secondary market spreads may be higher for foreign 144A issuers and hence it may be onerous for foreign firms issuing debt in US, such a secondary market yield premium compared to initial offering spreads is the lowest for foreign 144A issuers.

C) The probit regression model results of foreign firm choice of issuing 144A or Yankee debt indicate that the ex-ante probability of 144A issue in the primary market is higher for all lower rated bonds, callables, financial firms, large, high leverage and emerging market firms. Periods of high aggregate default risks as captured by high default spreads and VIX levels also induce higher probabilities of 144A issuance.

D) Yield spread premium observed by the foreign and emerging private debt in the secondary 144A markets when benchmarked to three types of control samples (Yankee, US 144A and US public debt issuers) seems to largely influenced by underlying liquidity and credit risks. Similar explanations hold for BRIC issuers.

E) Though the governance (or country specific) risk is a key pricing determinant in the secondary 144A debt market, it cannot fully account for the observed spreads for the foreign or merging market issuers.

F) Similarly, while the familiarity risk is a key pricing determinant in the secondary 144A debt market, and can perhaps partially explain the premium in bond spreads (especially for the BRIC cohort), it cannot fully explain the observed spreads for the foreign or merging market issuers.

G) Regressions with pooled risks indicate that illiquidity, default and governance factors and DR listing dummy all matter individually for foreign 144A spreads, and together can explain the emerging or BRIC market premium in bond spreads.

H) We notice significant declines in order imbalance especially for financial issuers mainly during the recent crisis and also during the economic downturn in the post-2000 tech-crash period. This corroborates the fact that QIBs or institutional investors (proxied here by Insurance companies) had excessive sell trades during the crisis motivated perhaps by portfolio or collateral funding concerns. The crisis has significant fixed effects on mean bond spreads and also by influencing order imbalance on bond spreads.

I) We further use inventories of corporate debt of primary dealers as another proxy for private information. We notice significant outflows of bonds from the primary dealers who were perhaps liquidating their inventories to meet margin calls or other funding needs. In general increased dealer inventories typically lead to significantly lower bond spreads and borrowing costs for the issuing firms. During the crisis-period however dealer inventories caused spreads to go implying that liquidity ran out in the crisis as dealers were unloading their

inventories causing higher credit and liquidity risk premia. In summary, the crisis has significant effects on mean bond spreads and incrementally so through the effect of order imbalance and aggregate dealer inventories on bond spreads

J) While BRIC firms pay a premium compared to other emerging markets, interestingly the Indian firms pay a significant discount compared to other BRIC 144A issuers. The Indian sample consists of large firms with large market capitalization and global presence. Our findings shows that the 144A bond spread discount of Indian 144A issuers is explained by favorable liquidity and credit risk parameters of the underlying firms.

Findings in this study will be of interest to a broad spectrum of groups. Borrowing firms can better understand the relative cost of issuing debt in private versus public debt markets. Regulators can gain better insights into the regulation and development of foreign private debt markets, and the relative costs of registration for Yankee debt issuers. Buy-side investors can better understand the implicit secondary market risks for foreign debt issues.

The rest of the paper proceeds as follows. In Section 2 we review related work and in Section 3 we present the key hypotheses in the context of earlier research. Section 4 describes the data set we employ in the study. This section is complemented by Appendices A, B, C, D and E that provide details on the sample construction and sample structure. Section 5 presents the robust model specification we employ and Section 6 provides results and evidence on different risk hypotheses. Conclusions and discussion are offered in Section 7.

2.   BACKGROUND LITERATURE

The objective of this study is to uncover the secondary market borrowing costs for private versus public debt issues of foreign and domestic (US) firms, and compare such differences between emerging and developed market issuers. Our research question is built on several different strands of literature, which are described below.

2.1 Domestic versus International debt Issuers

Chaplinsky and Ramchand (2004) examine the borrowing costs of international issuers in the 144A market, and find that 144A market is fast replacing the public debt market for high yield and non-rated international issues. They find that Investment grade 144A debt has significantly higher yield spreads, whereas high-yield 144A debt has yield spreads comparable to public debt. Their results suggest a bifurcation of the markets, where high-quality firms issue in both markets, but face higher spreads in the 144A market, and low quality firms issue only in the 144A market.

Miller and Puthenpurackal (2005) find that the issuance of global bonds can lower costs of borrowing through increased liquidity and lower issuing costs. Specifically, their results suggest that firms that issue globally are able to lower their borrowing costs by approximately 20 basis points relative to non-global bonds, ceteris paribus. The authors also document that the stock price reaction to the announcement of global bond issuance is positive and significant, while comparable domestic and Eurobond issues by U.S. firms over the same time period are associated with insignificant changes in shareholder wealth.

Henderson, Jegadeesh and Weisbach (2006) using a comprehensive sample of global (including several emerging market) firms during the 1990–2001 period find that international debt issuances are substantially more common than equity issuances, with debt (equity) issues accounting for 87% (9%) of all securities issued internationally; further international debt (equity) issues account for about 20% (12%) of all public debt (equity) issuances. The authors find that market timing considerations appear to be important in security issuance decisions in most countries.

McBrady and Schill (2007) consider foreign currency-denominated bonds issued by sovereign government and agency issuers with no foreign currency cash flows or foreign operations and find strong and consistent evidence that the borrowers consider cross-currency differences in covered and uncovered interest yields in choosing the currency in which to denominate their international debt. The authors estimate the average gains to opportunistic covered yield borrowing to be 4 to 18 basis points. They also find that the average bond offering in their sample precedes a large and beneficial depreciation of the issue currency over the course of the

following year. Overall their results support the "opportunistic'' motive for foreign currency-denominated borrowing in the foreign debt market.

Further, Mittoo and Zhang (2010) compare debt borrowing costs by US and international firms, and find that the yield spreads for emerging country issuers versus developed market issuers are significantly higher in the 144A market compared to public debt market.

Gao (2011) examines the economic impact of the Sarbanes-Oxley Act (SOX) by studying foreign firms' choice of whether to issue bonds in the US public bond market or elsewhere before and after the law's enactment in 2002. After controlling for firm characteristics, bond features, home-country attributes, and market conditions, the paper finds that foreign firms rely less on the US public bond market after SOX. Moreover firms listing equities on US stock exchanges, adopting International Financial Reporting Standards (IFRS), and doing large bond issuances are more likely to choose this market in the post-SOX period than in the pre-SOX period.

Resnik (2012) studies the comparative primary market borrowing costs for international and domestic issuers and records the following results: (a) ceteris paribus, both privately placed and Rule 144A Eurodollar issues have higher yields than publicly placed bonds; and, the bearer feature common to Eurodollar bonds is not prized enough by institutional investors for them to accept a lower yield relative to domestic or Yankee bonds; (b) no statistically significant differences are found between the yield spreads on US dollar global bonds and US domestic bonds, or Yankee bonds, or Eurodollar bonds; and finally (c) in terms of implicit underwriting costs, Eurodollar bonds are far more costly for the firm to issue than domestic bonds, Yankee bonds, or global bonds; domestic and Yankee bonds are more expensive than global bonds; and, there exists no significant cost differences between domestic and Yankee bonds.

In a related paper, Arena and Dewally (2012) examine the influence of a firm's geographical location on corporate debt and show that the higher cost of collecting information on firms distant from urban areas has significant implications on a wide array of corporate debt characteristics. They find that rural firms face higher debt yield spreads and attract smaller and

less prestigious bank syndicates than urban firms. Rural firms attempt to reduce their informational disadvantage by relying more on relationship banking.

2.2 Private (144A) versus Public (Yankee) Debt Markets

Miller and Puthenpurackal (2002) employ a sample of 260 public debt issues of non-US firms in th*e* Yankee bond market during 1987-98 and document several findings: (a) US investors demand economically significant premiums on bonds issued by firms that are located in countries that do not protect investors' rights and do not have a prior history of ongoing disclosure; (b) stock price reaction to an announcement of a Yankee bond offering is positive and statistically significant, providing evidence that firms benefit from Yankee debt issues; and (c) firms tend to issue in the Yankee market when the relative interest cost in the Eurodollar market is high, indicating that potential differences in borrowing costs influence where firms issue debt. They further show that US investors demand premiums on the bonds of first-time foreign issuers. For example, public borrowing costs were 41 basis points lower if the foreign firm had listed or issued public securities in the US, prior to the debt offering. Familiarity can play an important role for pricing of secondary private debt markets. Overall their results provide support for the literature that suggests better legal protections and more detailed information disclosure increases the price investors will pay for financial assets.

Other studies examine yield differentials for domestic borrowing firms in the US market between the public versus Rule 144A debt markets. For example, Fenn (2000) finds that, domestic high-yield issuers use Rule144A to issue securities that are subsequently registered, and are therefore fully public in nature. Investors require premiums on 144A securities; such premiums are largest for first-time bond issuers and privately owned firms, which are non-transparent. The 144A premiums have however vanished over time. Livingston and Zhou (2002) report that Rule 144A bond issues have higher yields to maturity than publicly issued debt on account of lower liquidity, higher information uncertainty and weaker legal protection for investors. Huang and Ramirez (2010) find that (a) the convertible debt issuers without a credit rating prefer to issue in the 144A market, (b) the 144A market has risen largely at the expense of the non-shelf public market, (c) the overwhelming majority of the 144A issues are subsequently registered, and (d)

straight debt issuers with the highest credit quality and transparency tend to use the shelf public market.

Several papers have explored the pecking order of costs in external debt financing. For example, Denis and Mihov (2003) examine the choice among bank, private nonbank (mostly 144A), and public straight debt, and find that firms with the highest credit quality borrow from public lenders, firms with shelf credit quality borrow from banks, and firms with the lowest credit quality borrow from nonbank private lenders (mostly QIBs).

Further, Arena and Howe (2009) examine how governance characteristics are related to the corporate choice between public and private debt, while Barry et al. (2009) find that 144A debt issuers were successful market timers, by issuing more debt right before periods of increasing interest rates.

Arena (2010) finds an implicit pecking order of debt choices, which is conditional on credit quality. High credit quality firms prefer public bond offerings, while small and good credit quality firms, facing high flotation and information asymmetry costs, are more likely to issue traditional private debt. A large group of firms characterized by moderate credit quality make extensive use of bank loans, and finally poor credit quality firms preferentially issue 144A debt.

Huang and Ramirez (2010) explain two possible reasons why debt raised via Rule 144A debt has become a popular source of funding for high-yield issuers. First, the speed of issuance is the main driving force behind such growth. Firms, mainly, cash-starved, lower credit quality firms, choose Rule 144A market since it allows them to issue securities quickly to take advantage of favorable market conditions. Second, private lenders (such as banks and QIBs) tend to have significant advantages over public lenders in handling credit risk and information asymmetry. This is more so under financial distress, which may offset their information monopoly concerns, especially for low credit quality and high information asymmetry firms.

Gomes and Phillips (2012) show that asymmetric information plays a major role in the choice of security type within public and private markets and in the choice of market in which to issue

securities. In the public market, firms' predicted probability of issuing equity declines and issuing debt increases with measures of asymmetric information. Firms that switch from issuing public securities to private equity and convertibles have increases in information asymmetry.

Hollifield, Neklyudov and Spatt (2013) study pricing and measurement of bid-ask spreads in securitized markets by comparing between registered securitizations, which require detailed disclosures in the issuance process, and Rule 144a instruments, which exempt private resale of restricted securities to QIBs (Qualified Institutional Buyers) from these disclosure requirements.

2.3 Debt issues in Emerging Markets

Eichengreen and Mody (1998) from their study of emerging market debt find that sentiment plays a key role while observed changes in fundamentals explain only a fraction of the observed emerging market yield spreads before the 1997-98 financial crisis. Cumby and Pastine (2001) estimate credit quality measures for Brady bonds issued by emerging market sovereign issuers and examine the relative pricing of these bonds.

Durbin and Ng (2005) report violations of sovereign ceiling from emerging markets where a firm's bond can trade at a lower spread than that of the firm's government; such firms are found to have substantial export earnings and/or a close relationship with either a foreign firm or with the home government.

Bunda, Hamann, and Lall (2009) examine the co-movement in emerging market bond returns and disentangle the influence of external and domestic factors.

Andritzky, Bannister and Tamirisa (2007) document that emerging market global bond spreads respond to rating actions and changes in U.S. interest rates rather than domestic data and policy announcements. Overall they find that Global emerging bond markets appear to respond mainly to announcements of changes in international ratings, which are designed to serve as composite forward-looking indicators of domestic fundamentals and policy developments and a broad measure of country risk.

Xioa (2007) studies emerging market bond holdings of international funds and analyzes economic and financial factors affecting their bond preferences. The paper shows that mutual funds prefer to invest in countries with sound fundamentals and more openness to trade. In addition, they favor bonds with high past returns and yields while averting bonds with high transaction costs and idiosyncratic risks.

Dittmar and Yuan (2008) analyze the impact of emerging-market sovereign bonds on emerging-market corporate debt, and find that the issuance of sovereign bonds in turn improves borrowing costs, liquidity and price discovery in the corporate debt market. Their results imply that sovereign securities act as benchmarks and thereby promote a vibrant corporate bond market.

Allen, Chakatbarti, De, Qian and Qian (2012) show that Indian firms face weak investor protection and poor institutions characterized by corruption and inefficiency. Alternative (i.e., non-bank and non-market) funding and bank loans serve as key external financing sources. The authors also find that firms with access to bank or market finance are not associated with higher growth rates, thereby indicating that bank and market finance are not superior to alternative finance in fast-growing economies such as India.

This paper distinguishes from the earlier work as it provides a comprehensive study of the secondary market pricing behavior in the 144A debt market of foreign issuers from emerging and developed markets (i.e., treatment sample) and benchmarking them against three control samples: (a) Yankee debt issuers, (b) public debt issuers by the US firms and (c) 144A issuers by US firms.

3.   HYPOTHESES DEVLOPMENT

In this paper we consider four main hypotheses about the key drivers of foreign 144A bond spreads and they are discussed below.

3.1 Illiquidity and Credit Risk Hypotheses

Extant studies reveal that credit risk determinants *alone* cannot adequately explain the levels or changes in the corporate bond spreads, and non-default sources of risk such as illiquidity matter (e.g., Collin-Dufresne et al., 2001; Huang and Huang, 2003).[9] Ignoring non-default sources of risk such as illiquidity can lead to structural models overpricing bonds, and resulting in the so-called "credit puzzle" (Covitz and Downing, 2007; Driessen, 2005).While the corporate debt constitutes a significant proportion of capital structure of firms, the underlying market remains highly illiquid

Several recent papers focus on disentangling credit and liquidity risks from yield spreads (e.g., Longstaff et al., 2005; Driessen, 2005; Covitz and Downing, 2007; Beber et al., 2009; and Schwartz, 2010). Acharya, Amihud and Bharath (2012) explore the presence of liquidity regimes in corporate debt markets. Recently Kalimipalli and Nayak (2012) and Kalimipalli, Nayak and Perez (2013) study the relative impact of idiosyncratic volatility (proxying the ex-ante credit risk) and bond liquidity on corporate spreads, and empirically disentangle both the effects.

We study the role of liquidity and credit risks on secondary bond market pricing. We propose to test the following hypotheses:

- H1: The illiquidity or credit risk variables have no effects on bond spreads in the secondary 144A bond market.
- H2: Such variables do not impact the bond spreads incrementally for foreign or emerging market firms relative to control group firms.
- H3: The illiquidity or credit risk variables have no impact in pricing of BRIC cohort issuers or Indian firms relative to matching control issues.

3.2 Governance Risk Hypothesis

Previous work has examined the role of governance and its impact on debt financing costs. E.g., Cremers, Nair and Wei (2007) investigate the impact of shareholder governance mechanisms on bondholders and find that stronger shareholder control is associated with higher credit risk,

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[9] Liquidity reflects the ability to trade large quantities of a security quickly with minimal trading costs and little price impact.

higher yields, lower ratings, and higher returns only if takeover vulnerability is high and for firms that are small. In the presence of bond covenants, shareholder governance reduces the conflict between shareholder and bondholder interests. Overall the authors show that strengthening shareholder control does not automatically benefit all bondholders, especially not those bondholders who are exposed to event risk through a lack of covenants and have few takeover defenses.

Boubakri and Ghouma (2010) find that ultimate ownership (i.e., the voting/cash-flow rights wedge) and family control positively (negatively) and significantly impact bond yield-spreads (bond ratings). Control in the hands of widely held financial firms has a positive effect on bond ratings. They also find that a higher protection of debt holders' rights generally reduces bond yield-spreads and increases bond ratings.

Ball, Hail and Vasvari (2011) find that cross-listed firms are more likely to conduct public bond offerings, at lower rates, instead of private placements. Moreover, cross-listed firms domiciled in countries with a relatively weak regulatory and reporting environment issue bonds more frequently outside the US, while those located in countries that protect lenders well, issue more Yankee bonds, again at a lower cost. These results support the notion that bonding, information disclosure, and liquidity benefits from US equity cross-listings extend to the debt holders of the firm.

Cumming and Fleming (2011) using sample of private issuers from 25 countries during 2001-2010 show that returns from private debt securities depend on (a) lender (fund manager) characteristics and (b) borrower (firm-specific) risk, and insignificantly related to market conditions such as TED spreads and country level legal factors such as creditor rights.

Claessens and Yurtoglu (2013) review corporate governance research in emerging markets , and find that better corporate governance benefit firms through greater access to financing, lower cost of capital, better performance, and more favorable treatment of all stakeholders.

We study the incremental impact of three types of governance variables: governance, investor protection, and disclosure. We propose to test the following hypotheses:

- H4: The governance variables have no effects on bond spreads in the secondary 144A bond market.
- H5: The governance variables do not impact the bond spreads incrementally for foreign or emerging market firms relative to control group firms.
- H6: The governance variables have no impact in pricing of BRIC cohort issuers or Indian firms relative to matching control issues.

3.3 Familiarity Risk Hypothesis

Miller and Puthenpurackal (2002) show that US investors demand premiums on the bonds of first-time foreign issuers implying that familiarity can play an important role for pricing of secondary private debt markets. Gao (2011) shows that firms with ADR listing are more likely to issue US public debt. Familiarity risk also manifests through home-bias in international portfolio diversification (e.g., 2004). We propose to test the following hypotheses:

- H7: The familiarity risk has no effects on bond spreads in the secondary 144A bond market.
- H8: The familiarity risk does not impact the bond spreads incrementally for foreign or emerging market firms compared to control group firms.
- H9: The familiarity risk has no impact in pricing of BRIC cohort issuers or Indian firms compared to control group firms.

3.3 Private Information Hypothesis

Corporate bond markets can be impacted by private information. Each market participant can have her own pricing model for deciphering underlying risk premia or even access to private information in the more traditional sense (e.g., a buy side investor, e.g., insurance company, with an ex board-member of the debt issuer).

We therefore finally examine how the private information flows could impact the bond spreads. We consider two proxies of private information: order imbalance of corporate bonds as based on trades of insurance companies; and inventories of corporate debt of primary dealers.

Prior work has examined the role of private information flows in asset pricing. Brandt and Kavajecz (2004) examine the role of price discovery on the U.S. Treasury markets. Order flow measured as order imbalance can be construed as an aggregation of heterogeneous private information (or heterogeneous interpretation of public information). They find that order flow imbalances (proxying private information) account for up to 26% of the day-to-day variation in yields on days without major macroeconomic announcements. The effect of order flow on yields is permanent and strongest when liquidity is low. Overall they find that price discovery plays a significant role in understanding the behavior of the yield curve.

Beber, Brandt and Kavajecz (2008) show that though bulk of sovereign yield spreads is explained by differences in credit quality, liquidity plays a nontrivial role, especially for low credit risk countries and during times of heightened market uncertainty. The authors also show that the large order flows in the bond market- captured using order imbalances- is determined almost exclusively by liquidity. Furthermore, during periods of large order imbalances in the bond market, liquidity explains a substantially greater proportion of sovereign yield spreads, consistent with a heightened impact of order flow on bond prices. This evidence suggests that, while credit quality matters for bond valuation, in times of market stress - evidenced by significant private information or high order imbalances- investors chase liquidity, not credit quality.

High order imbalances could signal private information, which can reduce liquidity at least temporarily and also move the market price permanently (e.g., Kyle, 1985; Chordia, Roll and Subrahmanyam, 2002). Further a random large order imbalance exacerbates the inventory problem faced by the market maker, who can be expected to respond by changing bid–ask spreads and revising price quotations. Hence, order imbalances can significantly impact asset returns and liquidity.

We also consider an alternative measure of order imbalance where we consider the inventories of corporate debt of primary dealers (e.g., Randall, 2013, Dick-Nielsen,2013). Dick-Nielsen (2013) shows that the recent 80% decrease in primary dealer inventories of corporate bonds has

increased the cost of immediacy. For safe bonds which are quickly turned over again by dealers the increase is up to 15%, while for risky bonds which are kept on inventory by dealers the increase is up to 100% on average. The drop in dealer inventories, and thus the rise in transaction costs, is a side-effect of anticipated tighter regulation, primarily Basel III and the Volcker Rule.

Randall (2013) shows that if dealers are risk averse, transaction prices, liquidity provision, and dealers' inventory positions depend on their inventory holding costs in over-the-counter, search markets. He shows that that liquidity in corporate bond market is worse when primary dealers become effectively more risk averse relative to customers. Also consistent with the model, (a) this effect is stronger for bonds with lower credit ratings and for customers with lower bargaining power; and (b) conditioning on customer bargaining power, the effect is more pronounced for larger trades.

Following the recent financial crisis, the dealer inventories of corporate bonds may have declined, especially when measured relative to the volume of corporate bonds that have been issued. For example, risky-assets attract greater regulatory capital after the crisis thereby leading to sell-off of such debt. One could therefore ask: How does this influence the inventory holdings of QIBs and primary dealers? In the context of 144a issues dominated by QIBs, what has been their response to the credit crisis? How does the order imbalance driver/ inventory channel affect borrowing costs in the event of crisis? Similarly what has been the response of primary dealers to the credit crisis? Have their inventory levels fallen? Are the "entry" and "exit" costs pre-crisis changed post-crisis? Does crisis intensify the private information channel for bond spreads?

We propose to test the following hypotheses:
- H10: Private information has no effects on bond spreads in the secondary 144A bond market.
- H11: Financial crisis does not impact private information risk and hence the private information channel does not have any incremental effect during the recent financial crisis.
- H12: Private information risks do not impact the bond spreads incrementally for foreign or emerging market firms relative to control group firms
- H13: Private information risk has no impact in pricing of BRIC cohort or Indian issuers.

4. DATA AND SUMMARY STATISTICS

We use corporate bond trades of the entire universe sample of 144A debt issues that covers a 17-year period from 1994 through 2010, and comes from two complementary sources: the Mergent Fixed Investment Securities Database (FISD) issuance data and the National Association of Insurance Commissioners (NAIC) pricing database, after intersecting with firm-specific and equity data from COMPSUSTAT (for US and Canadian firms) or COMPUSTAT global (for foreign firms).

[Insert Appendices A, B, C, D and E here]

Our final sample consists of secondary market trades of 561 bond issues for 267 issuers from 40 different countries with an issuing amount of over $ 325 billion during 19994-2010; on the other hand, the four-country BRIC sample consists of 60 bond issues of 29 issuers with issuing amount of over $30 billion. We employ several issue-, issuer- and transaction specific variables along with aggregate market factors and country specific attributes (Appendix A lists all the variables used in the study). The sample selection procedure is detailed in Appendix B. Appendix C presents the list of all foreign FISD public and 144A debt issuers in the primary market for each of the 76 countries. Public issuances totaled over $3.5 trillion (from over 1900 issuers) overall compared to $2 trillion of 144A issuances (emanating from over 1600 issuers) overall from 76 countries. However domestic US firms' issues dominate all foreign firms in number of issuers, and volume and dollar value of issues. Appendix D lists the country specific 144 A bond issues from FISD for 40 sample countries after intersecting with NAIC and COMPSTAT or COMPUSTAT Global (from Step 6 data filtering in Appendix B). Appendix E lists the Indian firms with 144 A and Yankee debt issues in both primary and secondary markets. The sample consists of large firms with large market capitalization and global presence. The offer spreads in the private debt market were on average 1.03% compared to 1.59% for the Yankee issues.

[Insert Figures 1, 2 and 3 here]

Next we examine the dollar value and number of debt offerings over time for different sub-samples of firms during 1990-2010. Figure 1 shows that US firms access debt capital using mostly public debt while International firms seem to prefer private debt issues. Though public debt issues outnumber 144A issues since 2000 for both US and international firms, international

firms clearly account for higher dollar volume of private debt. The dollar volume of debt issues peaked prior to the high-tech bubble crash in year 2000, and again witnessed large growth in the years prior to the 2007 financial crisis. The crisis seems to have eroded the firms' demand for debt issues as the borrowing cost rose and capital investments slowed down. Similarly Figure 2 implies that emerging market firms access debt capital primarily through private debt in comparison to developed economies both in dollar debt volume and number of issues. Finally Figure 3 indicates that BRIC countries too seem to witness preponderance of private debt issues relative to the public debt in terms of dollar volume, and more so for Indian firms which accessed over $7 bi during 2007-10 through 144A market.

[Insert Table 1 here]

Table 1 shows that the International sample of 144 A issues from the primary market (sourced from FISD) comprise of 6,151 issues of 1610 issuers from 76 different countries raising over $2 trillion capital during 1990-2001 period. European issues dominate in terms of the number of offerings followed by Latin America. European issuers account for more than 1/3 of the total Yankee debt issues in the primary market followed by issuers from Latin America (about 10%) and Asia (6%). Moreover firms from U.K, France, Netherlands and Canada dominate the foreign issuers in terms of dollar value of debt capital raised in U.S markets, indicating that U.S is a predominant source of external capital for those firms. There are also significant private debt issues made in offshore (island) venues that are primarily tax havens. BRIC countries account for 5.6% of the total dollar debt issues that seem to mainly come from Brazil and Russia followed by China and India.

[Insert Tables 2 A and 2B here]

Table 2A further presents the summary statistics (including illiquidity measures) for the treatment sample of 561 private debt issues from the FISD database that also trade in the secondary market. Over 73% of the traded foreign debt issues belong to European, Asian and Latin American firms. Most foreign issuers of traded debt tend to be industrial (55%) followed by financial (36%) firms.

Bonds do not trade frequently, and hence returns on a daily basis may not be available during a

given monthly time window. Comparing Tables 1 and 2, we observe that only about 10 % of the issues have active secondary market trades. Most such trades belong to issues that are senior-unsecured, non-convertible, investment grade and long-term (10 yrs). Further 19% of such issues have issuers with prior equity listings as depository receipts on the US exchange. Volume of such trades surged in the pre-2002 crisis period and subsequently fell; the yield spreads accordingly were high during the post-2000 recession and then went up significantly during the recent crisis period.

Table 2B shows that 144A bond trades for BRIC firms when compared to the rest of the sample from Table 2 are predominantly less investment grade, less illiquid (based on both number of trades and price impact measures), and carry much higher spreads.

[Insert Table 3 here]

Table 3 presents comparisons of the treatment sample (international 144 A debt issues) with the three control samples, i.e., Yankee debt, US private debt and US public debt.

Table 3 presents details of the construction of control samples. For each international 144A issue-year, we search for a control bond issue. The bond issues in the control sample must satisfy the following criteria: (i) the control issue and the treatment issue must have at least one bond transaction during the same year; (ii) they must have the same average rounded credit rating using the ratings from the three rating agencies during the year; (iii) they must be matched on callability; (iv) the control issue should have the closest maturity as of the transaction time, offer amount, and firm size to the treatment issue, where we create a decile rank at each of these dimensions, and measure the shortest aggregate absolute distance as the closest match; and (v) finally, if there are multiple matches from the above procedure, we pick the bond issue that is closest in exact credit rating then in transaction time. In sum, we pick a control sample that is matched on transaction year, current credit rating, callability, remaining bond maturity, firm size and bond size.[10]

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[10] The correlation between duration and maturity is 0.92, and between the logarithm of duration and the logarithm of maturity is 0.96 for the secondary international 144A sample. Our results are robust to matched samples formed based on duration in lieu of maturity.

We notice that international 144A issues have lower (higher) vintage compared to Yankee and US domestic (US 144A) issuers. The offering spread for the foreign 144A issues is also much higher compared to control sample firms. However liquidity for 144A issues ranks lower to the Yankee and US domestic samples based on number of trades, but higher compared to price compact measures. Further foreign 144A transaction spreads in the secondary market are significantly higher compared to Yankee and US domestic control samples, while being comparable to domestic 144A spreads.

While the transaction spreads are much higher compared to offering spreads for all the samples, such a differential is significantly lower for the treatment sample versus all the control samples. This implies that though market spreads may be higher for foreign 144A issuers and hence it may be onerous for foreign firms issuing debt in US, such a premium in subsequent secondary market spreads compared to offering spreads is the lowest for foreign 144A issuers.

5. PANEL REGRESSIONS

In this section we first develop parsimonious regression models to describe 144A bond spreads employing robust panel regression methods.

5.1 Baseline Regressions

We first consider preliminary baseline panel regressions in to examine the differential factors driving the international private debt spreads. Possible self-selection in our study arises from the fact that firms with certain characteristics are more likely to issue 144A debt. We use a matched sample approach to control for the potential endogeneity arising from the issuance of 144A debt. In particular we use foreign 144A issues as our treatment sample and obtain three different control samples matched based on International public (Yankee) issues, US 144A issues and US public debt issues.We formulate control samples based on industry, ratings, maturity and option attributes each year for three types of issuers.

We present separate regression results for the overall and emerging market samples (Panel A, Table 4), and BRIC and Indian firms (Panel B, Table 4).

We employ the following regression specification:

$$(bond\ spreads)_{i,t} = \alpha + \beta_0(issue\text{-}characteristics)_{i,t} + \beta_1(firm\text{-}characteristics)_{i,t} +$$

$$\beta_2(aggregate\_variables)_{i,t} + \beta_3(interaction\ variables)_{i,t} + error_{i,t}$$

for a given firm i and time t, The dependent variable is the secondary market spreads of 144 A bond transactions. Regression covariates consist of issue- and issuer- specific characteristics, and aggregate bond market credit and liquidity risk factors. All the variables are defined in Appendix A. All the variables are chosen minimizing the possible correlations across the variables. In addition, we employ the following dummy interaction variables: rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. The interaction variables are key variables of interest. We control for year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions.

[Insert Table 4 here]

Secondary market bond spreads are significantly positively related to credit risk variables such as ratings. High- yield debt dummy, and negatively to firm size; and significantly positively related to maturity, finance dummy and aggregate market factors. Financial bonds that are option-free and have large offer amount and firm size command significantly lower spreads based on (unreported) spearman correlation tables, though the signs are reversed in the regression perhaps due to possible multicollinearity.

The interaction variables indicate that spreads for foreign 144A issues are significantly higher compared to any of the control sample issues and more so if the foreign firms originate from emerging markets. Further issuers from the BRIC countries have significantly higher spreads compared to the other emerging market issuers implying the high implicit risks that markets perceive of them. Interestingly the Indian firms pay a significant discount compared to other BRIC 144A issuers as their spreads are much lower.

Next we report, in Table 5, baseline regression models using primary debt market issues for the treatment sample of 144A bonds versus three control samples.

[Insert Table 5 here]

 In the primary market, the key drivers are ratings, maturity, firm size and aggregate default risk factor. Foreign 144A issues have to pay significantly higher offering yields and more so if they belong to emerging markets. BRIC issuers need to entice markets with significantly higher spreads compared to the other emerging market issuers, while Indian firms seem to offer significantly lower spreads compared to other BRIC 144A issuers.

In summary, we observe that (a) foreign and emerging market issuer spreads tend to trade at a premium, (b) BRIC cohort firms trade at a premium compared to emerging markets and (c) Indian firm debt issues carry a yield discount when benchmarked to BRIC issuer control sample. Similar trends both in the primary and secondary market from the interaction variables. We further evaluate robustness of the baseline regression model by considering additional control variables and alterative matched control sample method.

5.2 Robustness Tests

5.2.1 Effects of Bond Covenants

What kind of covenants do 144a market issues have relative to control group bonds? Do underlying covenants help explain 144A issue spreads. Using FISD, we consider three types of bond covenants: (a) bond holder, (b) issuer, and (c) issuer-subsidiaries covenants. The bondholder covenant is a dummy variable for the presence of any bondholder protection covenants. The issuer covenant is a dummy variable for the presence of any covenants that restrict the ability of the issuer to indulge in transactions that may be detrimental to bond holder (e.g., restrictions on mergers, funded debt and/or dividend payments). The subsidiary covenant is a dummy variable for the presence of any covenants that restrict the issuer's subsidiaries in indulging in possible transactions that may be detrimental to parent firm's bond holders. We also employ an additional catch-all dummy variable *all-covenants* that flags off if any of the above three covenants exist.

We first present univariate summary of the bond covenant for the treatment and control samples in Table 3. We observe that (a) bond holder, (b) issuer, and (c) issuer-subsidiaries covenants respectively account for 19%, 10%, 4% in the 144A international sample. Overall 19% of the 144A foreign sample issues have one or more of the three covenants. The distribution of the covenants is quite similar between 144A international and domestic sample. The Yankee sample however has stronger presence of each the covenants with (a), (b) and (c) covenants above accounting for 64%, 63% and 41% of the sample issues. Overall 66% of the Yankee sample and 88% of the US public issues have covenant presence.

Table 6, Panel A presents Table 4 regressions augmented by covenant variables as additional controls. The issuer covenants seem to significantly lower the bond borrowing costs when the US public sample is included as a control sample. Overall however covenants do not seem to significantly drive the bond spreads once controlled for other risk attributes. We find that Table 4 results are robust to the inclusion of bond covenants.

5.2.2 Propensity matched control Sample

Possible endogeneity arises in our tests as firms with certain characteristics are more likely to issue 144A debt. The self-section issue is addressed- and hence matched samples are constructed- in two ways in the paper. First as described under Section 5.1), we formulate control samples based on industry, ratings, maturity and option attributes each year for three types of issuers. As an alternative robustness test, we also create matched control sample based on propensity score matching for all foreign (144A and Yankee) issues. We run the first stage probit regression with several covariates: firm size, offer amount, offer maturity, leverage, ratings, rated vs. unrated dummy, callable dummy, finance dummy, developed dummy, term factor, and default factor. We then obtain ex-ante propensities for Yankee firms to issue 144A debt issues. Such propensities indicate the ex-ante probabilities for a given Yankee issue to have raised debt using 144A channel. Such propensies are then used to create control sample of Yankee firms in the second stage. The propensity score matching sample approach in our case applies only to the foreign firms who have the option of issuing as Yankee or 144A debt.

From Table 6, Panel B, we find that all the previous results are robust. We observe that foreign 144 A firms issuers pay premium yields mostly evident from emerging market issuers, the BRIC issuers too pay higher spreads compared to the emerging market borrowers and Indian issuers enjoy in a discount in yields vs. the BRIC cohort.

We next turn to evaluating alternative explanations behind the differential spreads that we observe in the 144A debt market.

6. TESTS OF COMPETING HYPOTHESES

In this section we employ the parsimonious regression models developed earlier to test several hypotheses.

6.1 Tests of Illiquidity and Credit Risk Hypotheses

We examine the potential impact of liquidity and credit risks on the secondary market pricing of foreign 144A debt. We therefore conduct baseline regression models augmented with liquidity and credit risk variables using secondary bond market trades for the treatment sample of 144A bonds versus three control samples.

We consider alternative proxies of bond liquidity and default risk both on a standalone and interactive basis, in addition to issue- and issuer- specific characteristics, and aggregate market variables (Panel A). The default proxies include leverage, interest coverage, idiosyncratic volatility; bond spreads volatility and the first principal component of all credit proxies. Liquidity proxies include price impact measures, turnover, trade frequency, % of zero-trading days, and the first principal component of all liquidity proxies. All the variables are defined in Appendix A.[11]

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[11] We notice that two price impact measures *liq_index1* and *liq_index2* (see Appendix A) are perfectly correlated; hence we use only *liq_index1* in most regressions. Again *frac_zeros* is highly correlated to *turnover* and *trade_freq*; hence they were dropped from most regressions. We found no multicollinearity issues in credit risk variables

In addition to the dummy interaction variables used previously in Tables 4 and 5, we also employ the following liquidity and default risk dummy interaction variables in Table 6 : rule144a_x_foreign x liquidity (or default) risk proxy= liquidity or credit risk of all foreign 144A issues (Panel B); rule144a_x_emerging x liquidity (or default) risk proxy = liquidity or credit risk of all foreign 144A issues from emerging markets (Panel B); rule144a_x_bric x liquidity (or default) risk proxy = liquidity or credit risk of all foreign emerging market 144A issues from BRIC counties (Panel C); rule144a_x_India x liquidity (or default) risk proxy = liquidity or credit risk of all foreign BRIC 144A issues from India (Panel C). The liquidity or credit risk interaction variables are key variables of interest.

[Insert Table 7 here]

Panel A, Table 7 reveals that both bond credit and liquidity risk proxies on a standalone basis are significantly reflected in bond spreads. Overall credit risks have a higher impact on bond spreads relative to liquidity, while for domestic 144A sample the relative importance of credit risks is much higher. Panel B further probes into the spreads for the foreign and emerging market issuers. Panel B implies that bond spread premium of the foreign 144A issuers can be explained by turnover (liquidity) and leverage (default risk) variables. Similarly the emerging market spreads seem to be on account of price impact (illiquidity) and leverage (default risk) risk variables. Panel C examines such effects for BRIC and Indian issuers. We again observe that price impact (illiquidity) and idiosyncratic volatility (default risk) risk variables can explain the BRIC spread premium. Discount paid by the Indian issuers seems be due to favorable price impact, turnover (liquidity) and idiosyncratic volatility (default) effects. The credit and illiquidity factors though are highly significant on standalone and interactive basis, can`t however fully seem to explain the premium or discount effects.

In summary, spread premium observed by the foreign and emerging private debt in the secondary markets when benchmarked to three types of control samples (Yankee, US 144A and US public debt issuers) seems to largely influenced by underlying liquidity and credit risks. Similar explanations hold for BRIC and Indian issuers.

6.2 Tests of Governance Risk Hypothesis

Next we examine the potential impact of country specific risks, i.e., the governance measures on pricing of foreign 144A bonds in the secondary bond markets. We study the incremental impact of the governance, investor protection, disclosure and variables. The key governance variables include legal system, investor protection, creditor rights, accounting standard index, law and order status, legal environment, enforcement and disclosure (defined in Appendix A). All the country specific variables are expected to be negatively related to bond spreads as the improvement in each of the measures for a given country is expected to cause bond spreads for an issuing firm from that country to go down. We also employ two principal components based on the above governance measures. We consider the governance variables both on a standalone and interactive basis. For interactive variables we only consider the governance factor as the four main governance variables - *legsys, investor_pr, crdright, cifar* - hardly vary within sample countries and render the panel estimations invalid.

[Insert Table 8 here]

The governance variables do not seem to hold much explanatory power for foreign 144A bond spreads in the secondary market. Legal system is the only variable that is unconditionally significant. Governance factors significantly impact bond spreads for foreign and emerging market firms as well as BRIC countries on an interactive basis. However the governance measures cannot explain the yield premium in the secondary 144A bond market spreads for foreign, emerging market or BRIC issuers.

In summary, though the governance (or country specific) is a key pricing determinant in the secondary 144A debt market, it cannot fully account for the observed spreads for the foreign or merging market issuers.

6.3 Tests of Familiarity Risk Hypothesis

We next examine the potential impact of familiarity risk on the secondary market pricing of 144A bonds. We consider regression models augmented with familiarity risk variable using the treatment sample of 144A bonds versus three control samples. Regression covariates consist of two familiarity risk proxies (*dr_existflag* that denotes whether an US depository receipt (DR) exists for the foreign issuer on or before the particular calendar year; and *dr_exchflag* denoting

whether the US DR trades in one of the three major exchanges), in addition to issue- and issuer-specific characteristics, and aggregate market variables The two DR variables are highly correlated with country variables. Hence, these two variables are not used in interaction form with the country-specific dummy variables. Moreover the DR variables exist for only the foreign issues. Hence, to avoid multicollinearity the rule144a_x_foreign interaction dummy is not used in regressions. We report results separately for the overall and emerging market samples (Panel A, Table 9), and BRIC and Indian firms (Panel B, Table 9).

[Insert Table 9 here]

We observe that US DR dummy *dr_existflag* is highly significant in all regressions indicating that familiarity risk is priced in all foreign 144 A bonds. However Panel A results show that the familiarity risk cannot by itself explain the foreign or emerging market premium (or Indian discount) in bond spreads. On the other hand Panel B shows that familiarity risk can perhaps explain the BRIC premium.

In summary, while the familiarity risk is a key pricing determinant in the secondary 144A debt market, and can perhaps partially explain the premium in bond spreads (especially for the BRIC cohort), it cannot fully account for the observed spreads for the foreign or merging market issuers.

6.4. Joint Tests of All Hypotheses

We next jointly test all the three (Illiquidity/credit risk, governance risk and familiarity risk) hypotheses to examine their combined ability when nested to explain the secondary market spreads in the 144A market. The objective is to study how different risks matter for bond investors when considered together.

Our regression covariates consist of all risk variables considered individually in Tables 7, 8 and 9 in addition to issue- and issuer- specific characteristics, and aggregate market variables. We report result separately for the emerging market samples (Panel A, Table 10), and BRIC and Indian firms (Panel B, Table 10).

[Insert Table 10 here]

We find that illiquidity, default and governance factors and DR listing dummy all matter individually for foreign 144A spreads, and together can explain the emerging or BRIC market premium in bond spreads. The discount on Indian firms however is still at large.

6.5. Impact of Financial Crisis (2007-10)

We finally examine how the financial crisis could have impacted the pricing in the secondary market. After the crisis, the dealer inventories of corporate bonds could have declined, especially when measured relative to the volume of corporate bonds that have been issued. For example, risky-assets attract greater regulatory capital after the crisis thereby leading to sell-off of such debt. One could therefore ask: How does this influence the inventory holdings of QIBs? In the context of 144a issues dominated by QIBs, what has been their response to the credit crisis? , Have their inventory levels fallen? Are the "entry" and "exit" costs post-crisis changed post-crisis? How does the order imbalance driver/channel affects costs to the borrower? We conduct two types of tests that are described in detail below.

6.5.1 Tests using Order Imbalance

We consider a standardized measure defined as % buy volume scaled by bond size minus % point sell volume scaled by bond size (*trade_imb*). We first plot the standardized order imbalance measures at a quarterly frequency for the aggregate industry and for specific industrial groups in both levels and changes respectively in Figures 4 and 5. We notice significant declines in order imbalance especially for financial issuers mainly during the recent crisis and also during the economic downturn in the post-2000 tech-crash period. We also observe increase order imbalances for Utilities around the same time windows indicating a migration to Utility bonds. This corroborates the fact that QIBs or institutional investors (proxied here by Insurance companies) had excessive sell trades compared to buy trades for financial issuers during the crisis motivated perhaps by portfolio or collateral funding concerns.

[Insert Figures 4 and 5 here]

We next consider how the crisis dummy can directly impact any the interaction effects we have documented earlier. We then examine an alternative crisis channel, where we study how the shocks to order imbalance during the crisis regime could lead to exaggerated bond spreads in the secondary market.

We present separate regression results documenting the direct effects of crisis on the bond spreads (Panel A, Table 11), and indirect effects though its impact on bond market ordered imbalance (Panel B, Table 11). Regression covariates comprising of crisis channel consist of stand-alone crisis dummy, ordered imbalance, and crisis dummy interaction with other country and ordered imbalance variables. We consider two types of order imbalance variables: absolute measure defined as % of buy orders in the total number of orders (*buy_perc)* and a standardized measure defined earlier. The ordered imbalance variables are measured at an industry level separately for industrial, financial and utility issuers.

[Insert Table 11 here]

We find that though crisis dummy is significant by itself it does not have an incremental effect on foreign, emerging, or BRIC cohort bond spreads. Order imbalance measures have significant impact on bonds, and the impact of the standardized measure is found to be mostly driven by the crisis period.

6.5.2 Tests Based on Primary Dealer Inventories

Finally we consider the crisis-induced impact of aggregate dealer inventories on bond spreads. Following the recent financial crisis, the primary dealer inventories of corporate bonds may have declined, especially when measured relative to the volume of corporate bonds that have been issued. In the context of Rule 144A issues dominated by QIBs, what has been the response of primary dealers to the credit crisis? Does crisis intensify the impact of dealer inventories channel for bond spreads?

[Insert Figure 6 here]

From Figure 6 we see that the corporate debt inventories of primary dealers measured in dollar or scaled terms experience significant increases during 2006-2008 and thereby upon the onset of the

crisis, plummet drastically starting in early 2009. This shows that there were significant outflows of bonds from the primary dealers who were perhaps liquidating their inventories to meet margin calls or other funding needs.

We next present regression results documenting the effects of dealer inventories and also conditional effects of inventories during the crisis-period on bond spreads. We use inventories of corporate debt of primary dealers as proxy for private information (e.g., Randall, 2013; Dick-Nielsen, 2013). Dealer inventory is constructed as a fraction of total interpolated monthly corporate debt outstanding. The weekly dealer inventory data is obtained from FRBNY and the yearly corporate debt outstanding numbers are obtained from FINRA. Linear interpolation is used to obtain the monthly corporate debt outstanding estimates.

[Insert Table 12 here]

Further Table 12, Panels A and B shows that increased dealer inventories typically lead to significantly lower bond spreads and borrowing costs for the issuing firms. However the beneficial effects of increased dealer inventories for borrowing firms is mainly significant during the non-crisis period (Panel A). During the crisis-period dealer inventories caused spreads to go up (Panel B). Significantly positive marginal effects of inventory on the bond spreads during the crisis period implies that liquidity ran out in the crisis as dealers were unloading their inventories causing higher credit and liquidity risk premia.

In summary, the crisis has significant effects on mean bond spreads and incrementally so through the effect of order imbalance and aggregate dealer inventories on bond spreads.

7. Domestic offer yields for Indian companies (traded on NSE)

Finally, we ask how do domestic debt issuers in Indian markets compare to foreign issuers in the 144A market from BRIC and emerging markets? We conduct some exploratory tests[12]. We wish

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[12] There is no historical data available for domestic corporate debt trades in the Indian secondary bond market. Hence we cannot form a control sample of domestic secondary market issues. All we have access to is the daily snapshot of traded debt private and public debt issues listed on NSE (disseminated on the NSE website), which is also very illiquid for any meaningful study. Similarly we do have access to primary market debt issuances from NSE.

to compare yields and yield spreads from primary and secondary market of Indian private issuers listed on NSE to the 144A issues of BRIC and emerging market firms in US markets. However since offer or traded yield data is not available, we use downloaded data from NSE on a given random day that gives us a snapshot of last traded prices and yields[13]. We report the number of issues and median yields (Panel A, Table 11) or yield spreads benchmarked to Treasury yields (Panel B, Table 11) by industry, maturity and ratings category. For Indian issues, the Treasury benchmark rate is linearly interpolated using 1 year, 5 year and 10 year Treasury yields (source: Datastream). We use Treasury vs. swap benchmark for Indian firms as the rupee swap yield history is limited. Short-, medium- and long-term maturities respectively denote bonds with maturities ≤ 5 years, 6-10 years and above 10 years. We highlight the issuer with highest yields or yield spreads under each category.

[Insert Table 11 here]

We observe from Panel A that 144A primary and secondary US market spreads for Indian issuers are much lower compared to domestic (Indian) market spreads, though there are few exceptions in the non-investment grade and short-term issues in Utilities. When we further compare the yield spread differences in the US market (in Panel B), we however observe that the BRIC issuers in 144A markets overall incur high borrowing costs, while Indian issuers in US seem to have an advantage over BRIC peers.[14] Given that Indian market spreads may be already lower on account of illiquidity in the local Treasury market, our findings imply that US markets offer competitive and cheaper funding costs for Indian issuers.

7. SUMMARY AND CONCLUSIONS

In this paper, we study if and how borrowing costs for international firms vary across private and public US secondary debt markets, and if such costs depend on whether issuing firms originate

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[13] The data for Indian firms traded on NSE is sourced from NSE website: (http://www.nseindia.com/products/content/debt/corp_bonds/cbm_corp_bonds.htm). The data download is for July 6, 2013, which shows that though there were 4,154 debt issued on NSE, only 1430 of them has valid last traded prices that were needed to compute traded yields.

[14] This evidence is preliminary and can be examined further provided NSE makes more data available.

from emerging markets. We also examine secondary market spreads through the lens of BRIC nation countries and focus on Indian debt issues benchmarked to their BRIC counterparts. We add to the literature by (a) studying *secondary* debt markets of international capital issues, and (b) providing detailed *secondary* market comparisons of the external private and public debt choices of emerging versus developed market firms.

We find that foreign private (144A) debt spreads in the secondary market are significantly higher compared to the three control samples, i.e., Yankee debt, US private debt and US public debt issues. The initial offering spread for the foreign 144A issues is also much higher compared to control sample firms.

While the transaction spreads are much higher compared to offering spreads for all the samples, such a differential is significantly lower for the foreign 144A (treatment) sample versus all the control samples. This implies that though secondary market spreads may be higher for foreign 144A issuers such a yield spread premium compared to initial offering spreads is the lowest for foreign 144A issuers.

We also notice significantly higher bond spreads for emerging market issuers in the US 144A debt market. BRIC cohort countries also pay significant yield spread premium while Indian firms seem to enjoy a discount. Most of the observed yield premium in bond spreads can be explained by illiquidity/credit, governance and familiarity risks. Financial crisis has also generated additional spreads for foreign issuers though it seems to mostly impact through the underlying ordered imbalance of the dealers or institutional players (such as insurance companies) and aggregate inventories of primary dealer.

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Appendix A: Variable Definitions

This table describes all the variables used in the analyses.

Variable	Definition and data source
Issue-specific characteristics	
rule144a	A dummy variable that equals one if the bond is a Rule 144 A issue.
offer_amt	Issue or offer amount of the bond (in millions).
maturity	Years to maturity of the bond on the transaction date.
rating	The average current credit rating by Moody's, Standard and Poor, and Fitch. If credit rating is missing, then use the nearest credit rating. Credit rating has the following coding: AAA = 1, AA = 2, A = 3, BBB = 4, BB = 5, B = 6, CCC = 7, CC = 8, C = 9, DDD and under = 10.
vintage	Bond age (years from issuance date) on the transaction date.
offer_cr	First available credit rating of the bond issue.
offer_yield	Primary market yield of the bond (in %).
offer_spread	Primary market yield spread of the bond benchmarked to interpolated swap yield (in %).
secured	A dummy variable that equals one if the bond is secured.
senior	A dummy variable that equals one if the bond is senior.
straight	A dummy variable that equals one if the bond non-callable, non-convertible, and non-putable.
callable	A dummy variable that equals one if the bond is convertible.
convertible	A dummy variable that equals one if the bond is convertible.
high_yield	A dummy variable that equals one if the bond is a junk bond.
bondholder_ cov	Bondholder covenant is a dummy variable for the presence of any bondholder protection covenants (source: FISD)
issuer_cov	The issuer covenant is a dummy variable for the presence of any covenants that restrict the ability of the issuer to indulge in transactions that may be detrimental to bond holder (source: FISD)
sub_cov	The subsidiary covenant is a dummy variable for the presence of any covenants that restrict the issuer's subsidiaries in indulging in possible transactions that may be detrimental to parent firm's bond holders.
all_covenants	An additional catch-all dummy variable that flags off if any of the above three covenants (bondholder, issuer, and/or subsidiary) exist
Issuer-specific characteristics	
firm_size	The logarithm of market cap as the product between the stock price and shares outstanding.
finance	A dummy variable that equals one if the issuer is a financial firm
utility	A dummy variable that equals one if the issuer is an utility firm
Default risk variables:	
ltdebt_ratio	The ratio of long-term debt to book total assets of a firm.

int_coverage	The operating income after depreciation plus interest expense divided by interest expense.
idios_vol	Standard deviation of underlying equity returns over previous six months.
spread_vol	Standard deviation of bond spreads over the preceding year.
credit_fac	First principal component of *ltdebt_ratio, int_coverage, idios_vol and spread_vol* variables.

Familiarity variables:

dr_existflag:	A dummy variable that equals one if U.S. depository receipt exists for the foreign issuer on or before the particular calendar year.
dr_exchflag:	A dummy variable that equals one if the issuing firm has a depositary receipt listed in NYSE, NASDAQ or AMEX on or before the particular calendar year.

Transaction variables

yield	Secondary market yield of the bond (in %).
spread	Secondary market yield spread of the bond benchmarked to linearly interpolated swap yield (in %).

Liquidity variables:

liq_index1	Bond price impact variable calculated based on the transaction prices of all trades in one year prior to the transaction date as: $10^8 \times \left(\sigma_{\text{prices}}\right)/\text{total volume}$, where σ_{prices} is the standard deviation of transaction prices of all trades and total volume is the dollar volume of all trades in the one-year window prior to the transaction date. Higher price impact values imply lower liquidity (see Kalimipalli et al., 2013).
liq_index2	Bond price impact variable calculated based on the transaction prices of all trades in the one-year window prior to the transaction date as: $10^8 \times \left(\dfrac{\text{maximum price} - \text{minimum price}}{\text{average price}}\right)/\text{total volume}$, where the maximum, minimum and average prices, respectively, denote the highest, lowest and mean prices based on all the observed trades over the last year, and total volume total volume is the dollar volume of all trades in the one-year window prior to the transaction date. Higher price impact values imply lower liquidity (see Kalimipalli et al., 2013).
turnover	Secondary market trading volume in the preceding year standardized by the underlying market capitalization of the issuer.
trade_freq	Total number of secondary market trades in the preceding year
frac_zeros	Number of non-trading days in the preceding year as a fraction of total number of potential trading days
illiq_fac	First principal component of *liq_index1, liq_index2, trade_freq, turnover and frac_zeros* variables.

Order Imbalance variables:

buy_perc	The percent of buy orders in the total number of orders (count based order imbalance).
trade_imb	The percentage buy volume scaled by bond size minus percentage point sell volume scaled by bond size (volume based order imbalance).

crisis   A dummy variable that equals one if the trade occurs during the crisis period 2007-10.

Aggregate variables

def	Default factor obtained as Moody's BAA yield *minus* 10-year swap rate.
term	Term-structure factor obtained as 10-year swap rate minus 2-year swap rate
vix	Equity market volatility factor obtained as VIX index
ted	Aggregate liquidity factor (or TED spread) obtained as 30-day LIBOR *minus* 3-month T-Bill rate
dlr_inv_val	Weekly unscaled primary dealer inventory in dollar millions (converted into logarithm in the regressions for scaling purposes) (Source: FRBNY)
dlr_frac_val	Primary Dealer inventory as a % of total interpolated monthly corporate debt outstanding (Source: FRBNY, FINRA)

Country characteristics

legsys	Overall score of legal system & property rights. The data are from the Economic Freedom Dataset by Fraser Institute.
investor_pr	Index of investor protection from Djankov et al. (2008).
crdright	Index of creditor rights for a country. The data are from La Porta et al. (1998).
cifar	Index of accounting standard of a country. The data are from Bushman, Piotroski, and Smith (2004).
common_law	A dummy variable equal to one if the legal origin of a country is common law, and zero otherwise. The raw data are from La Porta et al. (1998).
rule	Assessment of the law and order tradition in the country produced by the country-risk rating agency *International Country Risk* (ICR). The data are from La Porta et al. (1998).
judicial	Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country-risk rating agency *Business International Corporation.* The data are from La Porta et al. (1998).
enforcement	2F legal enforcement of contracts.
disclose	Index of accounting disclosure for a country. The data are from La Porta et al. (1998).
r2	Country specific R2 score. The data are from Morck et al.
gov_fac1	First principal component of *legsys, investor_pr, crdright* and *cifar* variables.
gov_fac2	First principal component of *legsys, investor_pr, crdright, cifar, common_law, rule, judicial, enforcement, disclose* and *r2* variables.
Foreign	Dummy variable that equals one if the country of domicile of the bond issuer is not U.S.
Emerging	Dummy variable that equals one if the country is an emerging market, and zero otherwise. The data are from Standard and Poor's Global Stock Markets Factbooks 2004. [These include the following 15 countries in our sample: Brazil, Chile, China, Colombia, Indonesia, India, Israel, Mexico, Malaysia, Peru, Philippines, Poland, Russia, South Korea, and Thailand]
Bric	Dummy variable that equals one if the debt issuing country is one of the BRIC

nation countries, i.e., Brazil, Russia, India and China

India Dummy variable that equals one if the debt issuing country is India.

Appendix B: Sample Selection

The following table details the sample selection process for the 144A international bond sample used in this paper.

	Full sample		BRICs	
	# of issues	# of issuers	# of issues	# of issuers
1. Non-governmental international bonds in FISD	29,550	3,475	492	222
2. 144A bonds, 1990-2010	6,151	1,610	345	184
3. Require appearance in NAIC (trading in 1994-2010)	2,267	1,184	184	113
4. Require data availability to calculate yields	1,900	1,019	168	100
5. Intersection with Compustat and Compustat Global	729	338	72	35
6. Require each bond to be rated and its issuer to be a publicly listed firm during the sample period	561	267	60	29

We extract non-governmental bond issues and issue traits from FISD, and bond transactions from NAIC. NAIC only reports clean prices of bond transactions. We calculate bond transaction yield from accrued interest and clean price. We categorize a bond issue as 144A as long as the bond issue is flagged as a Rule 144A issue in FISD. For bond credit ratings, we use the average of the credit ratings, if available, issued by Standard & Poor, Moody, and Fitch. We obtain yield spreads for each bond transaction using matching maturity swap rates as benchmark (Houweling et al., 2005). Daily swap rates for 15 different maturities (ranging between 1 and 30 years) are obtained from DATASTREAM. Each bond trade is matched to a corresponding swap rate based on linear interpolation of the two closest neighboring maturity swap yields.

We then intersect the bond transaction panel data with Compustat or Compustat Global to get issuer attributes. We employ Compustat Global for stock price and accounting data for all foreign issuers; however for Canadian firms, we rely on Compustat for issuer stock price and accounting data. We match non-Canadian firms between Compustat Global and FISD/NAIC primarily by company name. Similar we match Canadian firms between Compustat and FISD/NAIC using 6-digit CUSIP number. Specifically, for each FISD/NAIC company name, we first find the two closest matches that have the same country of domicile, based on the degree of textual similarity, from the Compustat Global company name population; we then manually pick one match (or none) based on internet search and NAICS industry classification.

After merging the datasets, we employ the following filters: i) remove all bond transactions that are dated before the bond issuance date (less than 1% of the sample), and ii) each bond issue must be rated and issuer must be a publicly listed firm during the sample period

All computed bond measures (yield-to-maturity, yield spread and duration) are winsorized at the 1% and 99% levels. The final matched dataset consists of issuer-, issuance-, and transaction-related information on international corporate bond trades by all insurance companies for firms with publicly traded equities.

Appendix C: Public and 144A Primary Market Debt Issues by Country (Source: FISD bond Database) (1990-2010)

Country	Public Debt			144A Debt		
	# of issues	# of issuers	Issuing amt. (bln $)	# of issues	# of issuers	Issuing amt. (bln $)
Anguilla	-	-	-	1	1	0.09
Argentina	82	28	11.86	110	59	15.57
Aruba	1	1	1.50			
Australia	332	59	199.93	353	56	235.81
Austria	55	17	38.33	9	4	3.48
Bahamas	106	8	7.95	17	8	2.61
Bahrain	1	1	0.33	-	-	-
Barbados	-	-	-	3	2	0.65
Belgium	13	9	4.47	14	10	4.77
Bermuda	137	60	65.24	160	45	57.17
Brazil	90	42	145.27	224	119	56.02
British Indian Ocean Territory	1	1	0.35	1	1	0.35
Canada	3,969	367	405.65	341	184	120.92
Cayman Islands	450	101	178.03	1,441	117	189.41
Chile	34	13	8.20	44	23	15.63
China (Peoples Republic of)	16	14	3.44	41	34	11.76
Colombia	6	4	3.27	17	14	6.18
Croatia (Hrvatska)	2	2	0.17	-	-	-
Cyprus	3	2	0.87	2	2	1.10
Czech Republic	1	1	0.35	3	3	0.77
Denmark	23	10	7.98	21	7	20.11
Dominican Republic	1	1	0.20	5	4	1.00
Ecuador	1	1	0.13	2	2	0.25
Egypt	-	-	-	3	1	1.55
El Salvador	-	-	-	1	1	0.20
Estonia	1	1	0.03	-	-	-
Fiji	-	-	-	1	1	0.20
Finland	21	14	8.70	15	8	4.57
France	729	104	476.36	113	40	143.46
Germany	408	100	290.12	64	34	24.25
Greece	11	10	3.18	10	8	1.79
Guatemala	-	-	-	1	1	0.05
Guernsey	12	1	6.20	-	-	-
Hong Kong	15	12	5.36	35	25	13.21
Hungary	1	1	20.00	1	1	0.13
Iceland	5	3	2.15	39	3	17.15
India	6	6	1.89	26	11	10.24
Indonesia	15	11	3.23	27	19	9.95
Ireland	78	30	30.89	138	27	52.07
Isle of Man	2	1	1.00	-	-	-
Israel	12	10	2.07	21	9	6.77
Italy	123	60	51.99	24	13	20.47
Jamaica	-	-	-	2	2	0.28
Japan	41	32	56.01	22	16	19.11
Jordan	1	1	0.04	-	-	-
Kazakhstan	4	4	0.55	27	11	10.13
Korea, Democratic People's Republic (North)	2	1	0.85	-	-	-
Korea, Republic of (South)	64	17	26.21	95	42	37.71
Kuwait	3	2	0.65	-	-	-
Lebanon	5	4	0.36	3	3	0.35
Liberia	17	1	5.90	-	-	-
Lithuania	1	1	0.15	-	-	-
Luxembourg	102	38	70.01	54	27	40.41
Malaysia	4	4	0.98	25	12	10.38
Martinique	-	-	-	1	1	1.50
Mauritius	1	1	1.25	-	-	-
Mexico	102	42	47.57	148	83	54.59

Appendix C Contd.:

Country	Public Debt			144A Debt		
	# of issues	# of issuers	Issuing amt. (bln $)	# of issues	# of issuers	Issuing amt. (bln $)
Netherlands	2,956	134	467.12	268	92	125.45
Netherlands Antilles	28	11	12.19	5	4	2.21
New Zealand	8	5	26.68	23	4	15.37
Norway	61	17	21.86	22	11	11.84
Pakistan	1	1	0.25	1	1	0.25
Panama	19	5	5.76	59	10	4.90
Peru	4	1	2.29	11	8	3.04
Philippines	21	10	3.93	17	11	3.95
Poland	11	4	2.00	10	4	1.76
Portugal	14	9	7.38	-	-	-
Puerto Rico	15	4	1.96	4	2	1.22
Qatar	-	-	-	15	6	13.80
Romania	1	1	0.13	2	2	0.09
Russian Federation	10	7	3.70	54	20	37.48
Saint Lucia	-	-	-	2	1	0.20
Singapore	281	10	6.99	42	22	24.51
Slovakia	1	1	0.10	1	1	0.20
South Africa	5	5	5.28	4	4	0.73
Spain	59	19	39.93	51	19	50.04
Sri Lanka	1	1	0.10	-	-	-
Swaziland	1	1	0.15	-	-	-
Sweden	87	32	31.33	65	18	54.24
Switzerland	1,683	18	43.55	194	15	29.96
Taiwan (Province of China)	3	3	0.39	25	22	4.37
Thailand	-	-	-	27	15	6.68
Trinidad and Tobago	-	-	-	3	2	1.71
Turkey	-	-	-	8	7	2.49
Ukraine	-	-	-	4	2	0.95
United Arab Emirates	1	1	0.23	18	8	18.64
United Kingdom (Great Britain)	8,322	250	649.21	1,446	154	413.65
United States Minor Outlying Islands	1	1	0.15	-	-	-
Uruguay				2	1	0.20
Venezuela	2	1	0.20	4	2	1.26
Virgin Islands (British)	4	3	0.36	16	13	4.23
Wallis and Futuna Islands				5	1	1.00
Country missing	126	99	18.21	38	34	5.13
Total	20,836	1,908	3,548.58	6,151	1,610	2,065.69
Number of countries	76			76		
United States of America (U.S.)	83,051	6,749	14,619.29	12,509	4,059	3,371.61

Appendix D: Secondary Market Bond Trades of International 144A Debt Issues (Source: FISD + NAIC + Compustat/Compustat Global Databases) (1994-2010)

Country	# of issues	# of issuers	Issuing amt. (bln $)	# of bond trades
Argentina	12	8	2.54	83
Australia	75	26	54.22	2,287
Belgium	2	2	0.95	31
Bermuda	1	1	0.43	6
Brazil	29	21	13.42	411
Canada	56	35	24.19	2,483
Cayman Islands	3	3	0.88	36
Chile	11	8	3.95	265
Colombia	1	1	0.50	58
Denmark	2	1	3.00	29
Finland	6	2	2.16	583
France	22	7	23.84	1,709
Germany	3	3	1.02	39
Hong Kong	9	8	4.50	336
Iceland	15	3	8.63	202
India	16	4	7.81	373
Indonesia	9	4	4.80	57
Ireland	6	2	4.14	188
Italy	6	2	8.00	23
Japan	7	4	3.31	337
Kazakhstan	6	1	2.25	282
Korea, Republic of (South)	25	15	10.75	512
Luxembourg	3	2	3.55	8
Malaysia	9	3	2.97	258
Mexico	42	22	19.53	1,123
Netherlands	13	7	4.69	294
New Zealand	1	1	0.15	17
Norway	12	6	3.98	839
Pakistan	1	1	0.25	6
Peru	2	1	1.05	10
Philippines	3	2	0.67	62
Russian Federation	15	4	10.45	335
Singapore	11	5	7.82	701
Spain	4	3	3.15	18
Sweden	13	6	10.90	821
Switzerland	4	1	0.03	7
Thailand	8	3	2.58	233
United Arab Emirates	10	3	10.14	382
United Kingdom (Great Britain)	85	33	58.83	3,517
Venezuela	1	1	0.26	11
Country missing	2	2	0.39	45
Total	**561**	**267**	**326.65**	**19,017**
BRICs	**60**	**29**	**31.68**	**1,119**

Appendix E: Sample of Indian Yankee and 144A Issuers (1994-2010)

(I)   Primary market issuers from FISD Database

Type	Name	offering_ date	issuing_ amount ($ mi)	offer_maturity (yrs)	rating	offer_spread (%)	secondary market spread (%)
144A	RELIANCE INDS LTD	27-Sep-95	150	9.98	4.5	1.41	1.38
144A	RELIANCE INDS LTD	17-Jun-96	100	30.01	4.5	1.81	2.63
144A	RELIANCE INDS LTD	17-Jun-96	100	20.01	4.5	2.83	2.79
144A	RELIANCE INDS LTD	30-Jul-96	100	49.78	4.5	3.06	3.87
144A	RELIANCE INDS LTD	09-Jan-97	214	30.02	4.5	1.10	5.17
144A	RELIANCE INDS LTD	09-Jan-97	100	99.89	4.5	3.19	2.34
144A	TATA ENGR & LOCOMOTIVE LTD	10-Jul-97	200	10.01	4	1.28	5.64
144A	POWER FIN LTD	25-Jul-97	100	7.10	4	0.87	3.10
144A	TATA ELEC COS	12-Aug-97	150	20.02	5	1.59	1.93
144A	TATA ELEC COS	12-Aug-97	150	10.02	5	1.17	3.68
144A	ICICI BK LTD	09-Nov-05	500	5.02	4.5	0.83	2.47
144A	ICICI BK LTD	09-Jan-07	750	15.30	4.5	1.20	1.44
144A	ICICI BK LTD	09-Jan-07	500	1.31	4	-4.23	2.05
144A	ICICI BK LTD	09-Jan-07	750	5.01	4.5	0.76	2.38
144A	ICICI BK LTD	08-Jul-10	500	5.52	4	2.79	1.77
144A	ICICI BK LTD	08-Nov-10	1,000	10.02	4	3.14	3.09
144A	ICICI BK LTD BAHRAIN BRH	26-Sep-07	2,000	5.02	4	1.71	3.35
144A	ICICI BK LTD BAHRAIN BRH	20-Nov-09	750	5.34	4	2.96	3.32
144A	STATE BK INDIA LONDON BRH	22-Jul-10	1,000	5.01	4	2.71	0.67
Yankee	INDUSTRIAL DEV BK INDIA	25-Feb-04	300	4.75	4.5	1.49	3.33
Yankee	ICICI BK LTD	15-Oct-03	300	4.77	4.5	1.07	3.15
Yankee	EXPORT IMPORT BK INDIA	07-Jul-04	250	3.51	4.5	1.42	0.15

(II)   Summary statistics of the Primary market issues from FISD Database

Type	# of Issues	# of Issuers		Issuing_ amount ($ mi)	offer_maturity (yrs)	rating	offer_spread (%)
144A	5	5		352.75	5.99	4.5	1.03
Yankee	19	7		479.68	18.13	4.34	1.59
Total	24	24	11	453.24	15.6	4.36	1.47

(III) **Secondary market issues from secondary market (i.e. intersection of FISD, NAIC+Compustat/Compustat Global Databases)**

Company name	# of issues	Issuing_amount ($ mi)	# of bond trades
ICICI BK LTD	6	4000	79
ICICI BK LTD BAHRAIN BRH	2	2750	78
RELIANCE INDS LTD	6	764	161
TATA ELEC COS	2	300	55

Note: FISD treats ICICI BK LTD and ICICI BK LTD BAHRAIN BRH as two different issuers.

Figure 1. Public and 144A Debt Offerings (both $ amount and # of issues): US vs. International Issues (source: FISD)
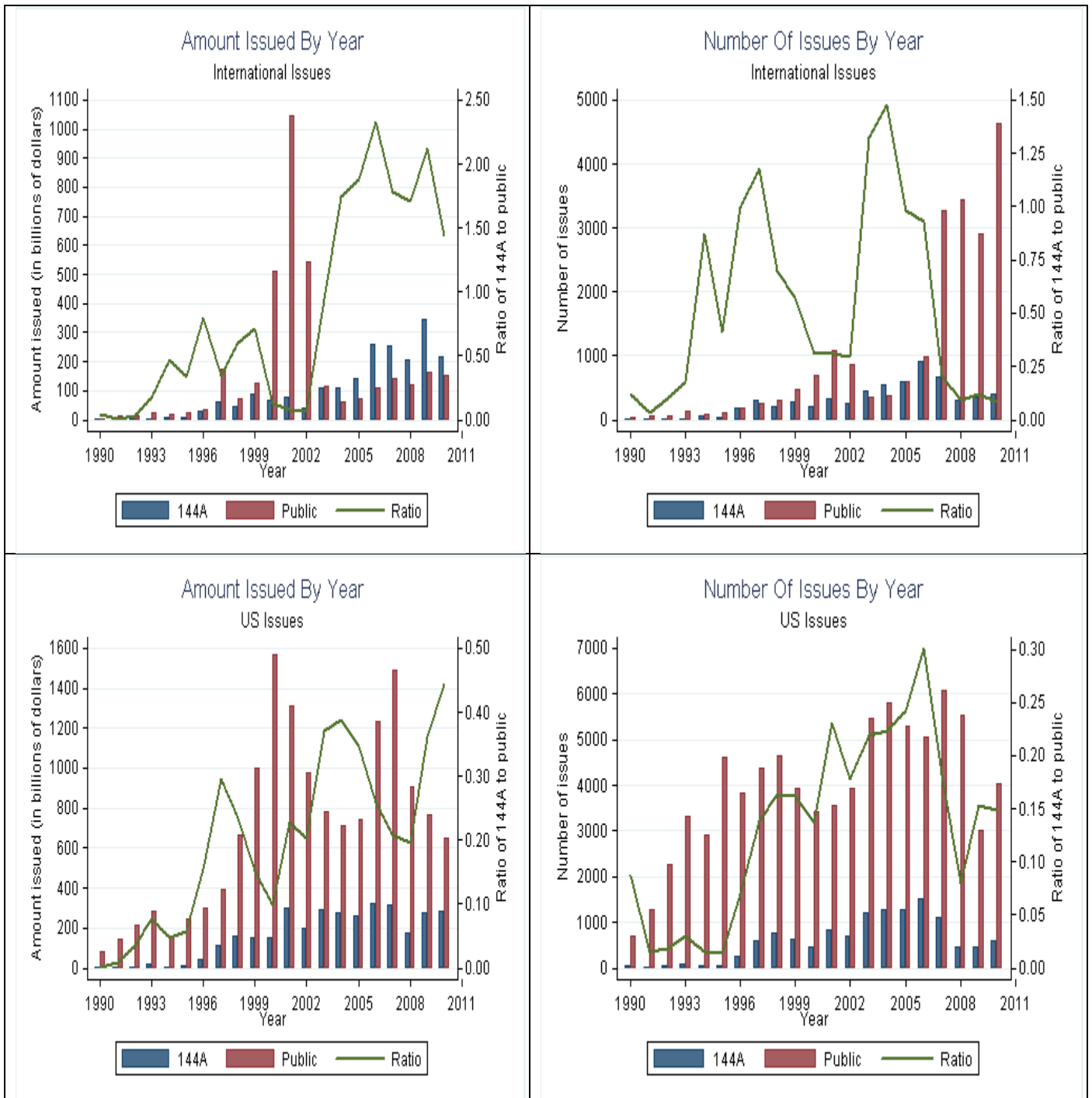
Figure 2. Public and 144A Debt Offerings (both $ amount and # of issues): Developed vs. Emerging Markets (source: FISD)
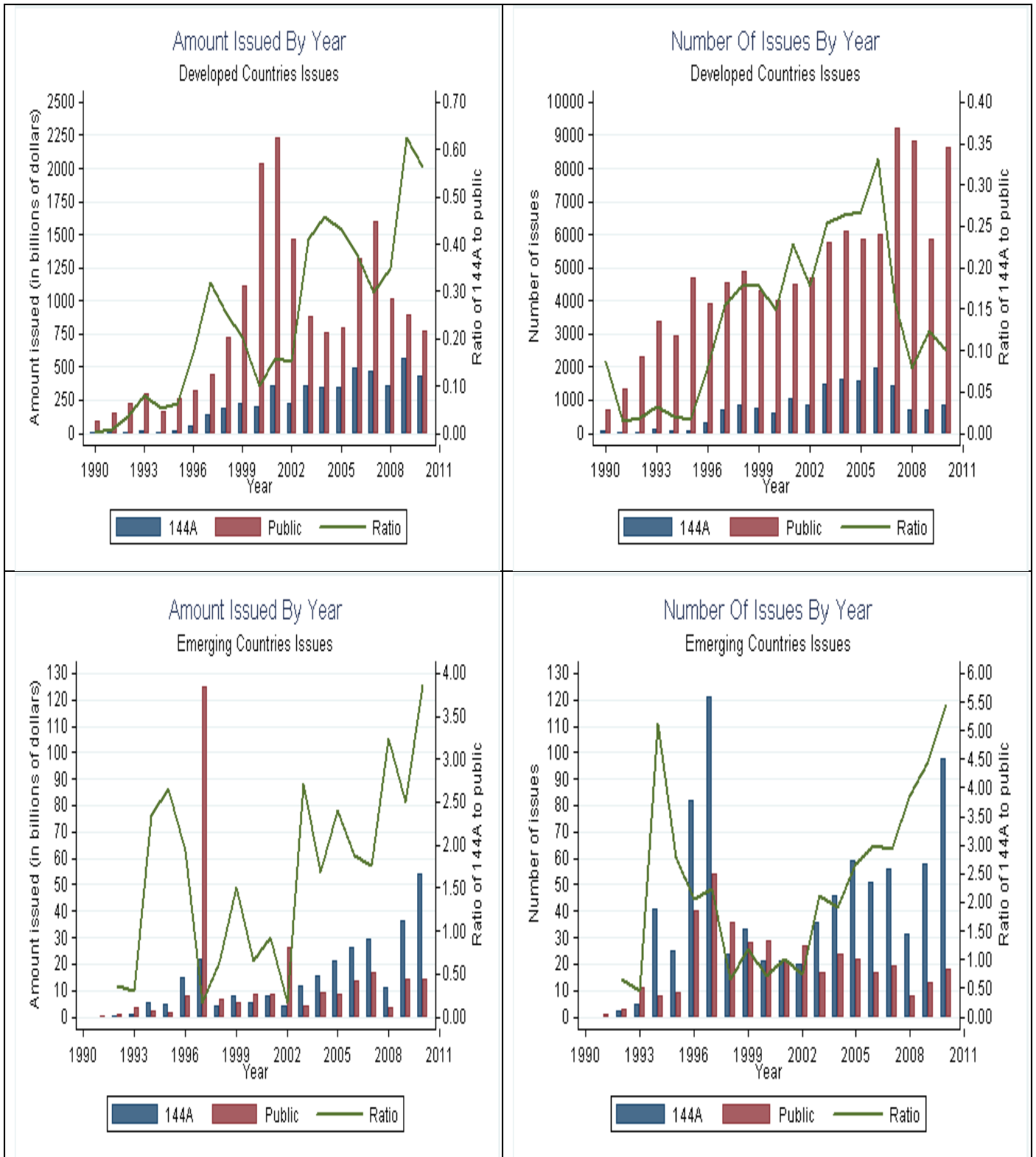
Figure 3. Public and 144A Debt Offerings (both $ amount and # of issues): India vs. BRIC Countries (source: FISD)
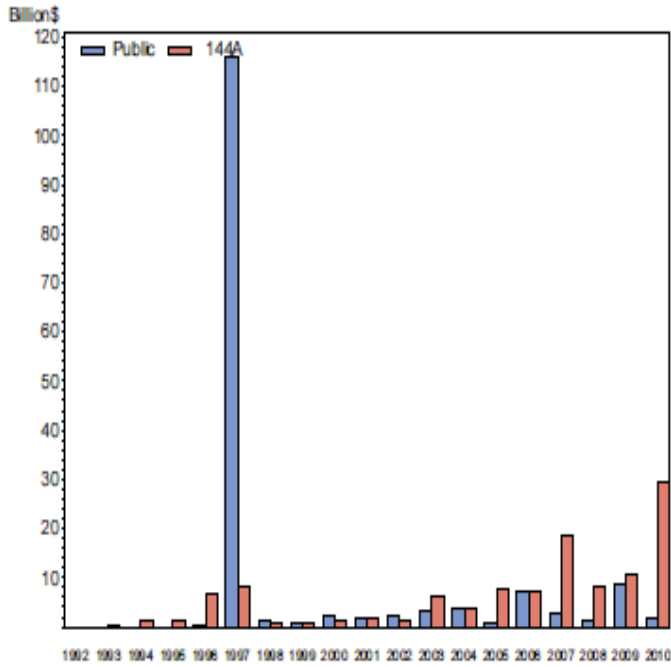
(a) BRIC issue amount
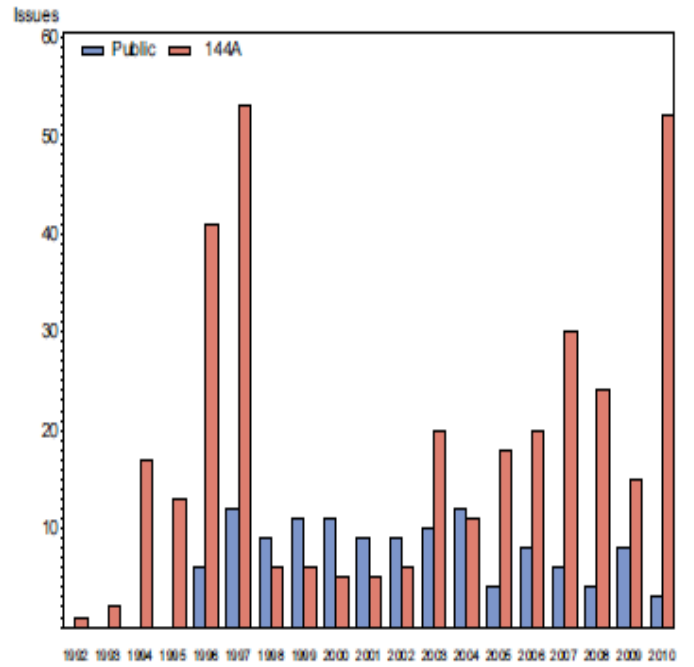
(b) BRIC # of issues
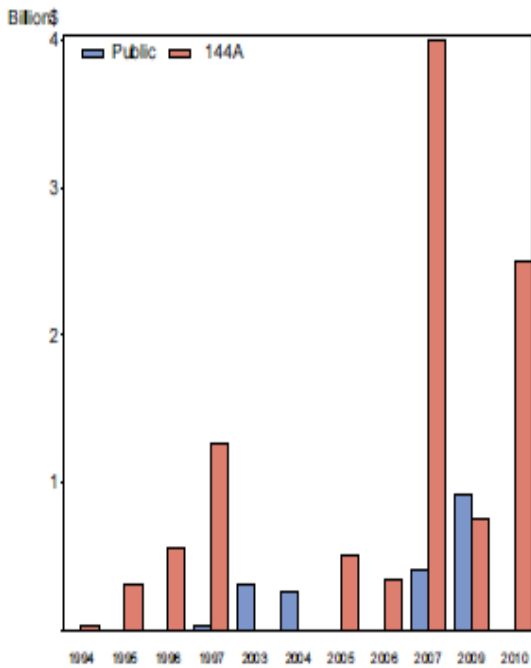
(c) India issue amount
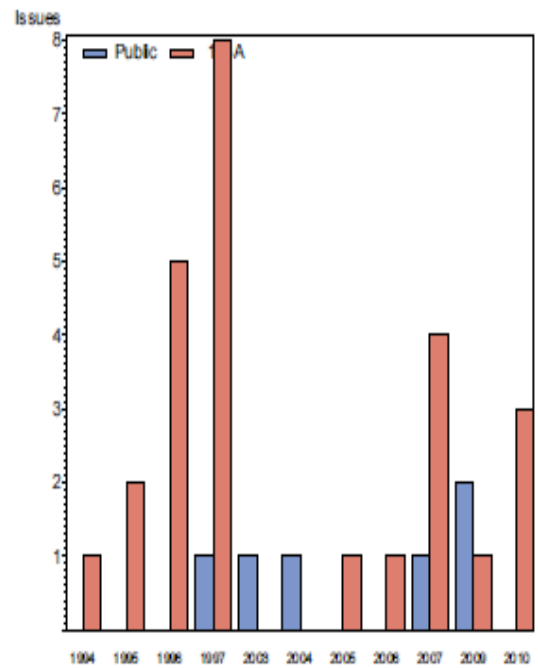
(d) India # of issues

Figure 4. Standardized Ordered Imbalance levels (defined as *trade_imb in Appendix A) for Aggregate Secondary Bond Market and by Specific Industry Sample (FISD +NAIC databases) (1995-2010)
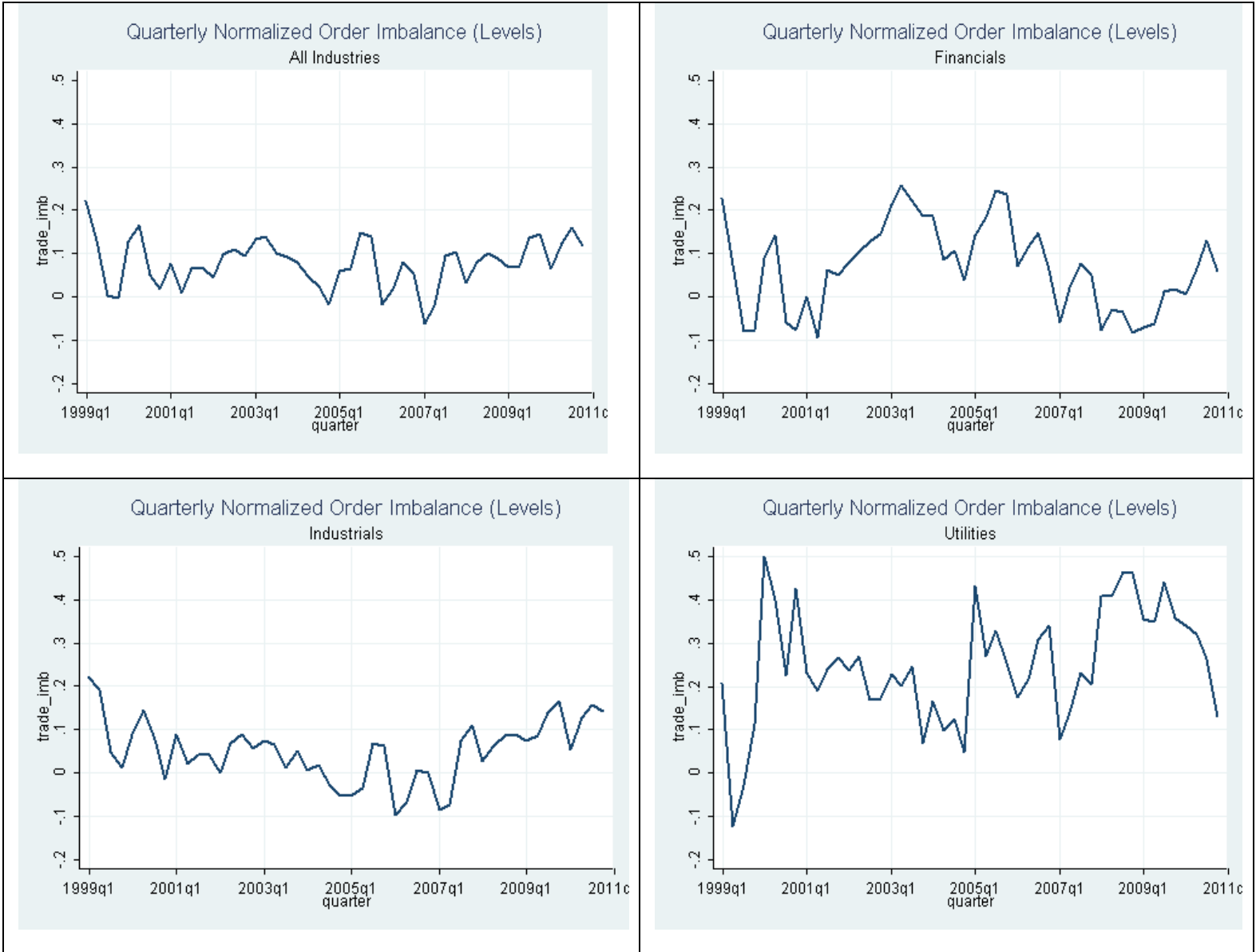
Figure 5. Corporate Debt Inventory of Primary Dealers.

The top figure presents the weekly dealer $ inventory of corporate debt, and the bottom figure presents the dealer $ inventory as proportion of aggregate corporate debt outstanding (source: FRBNY, FINRA) (1995-2012)
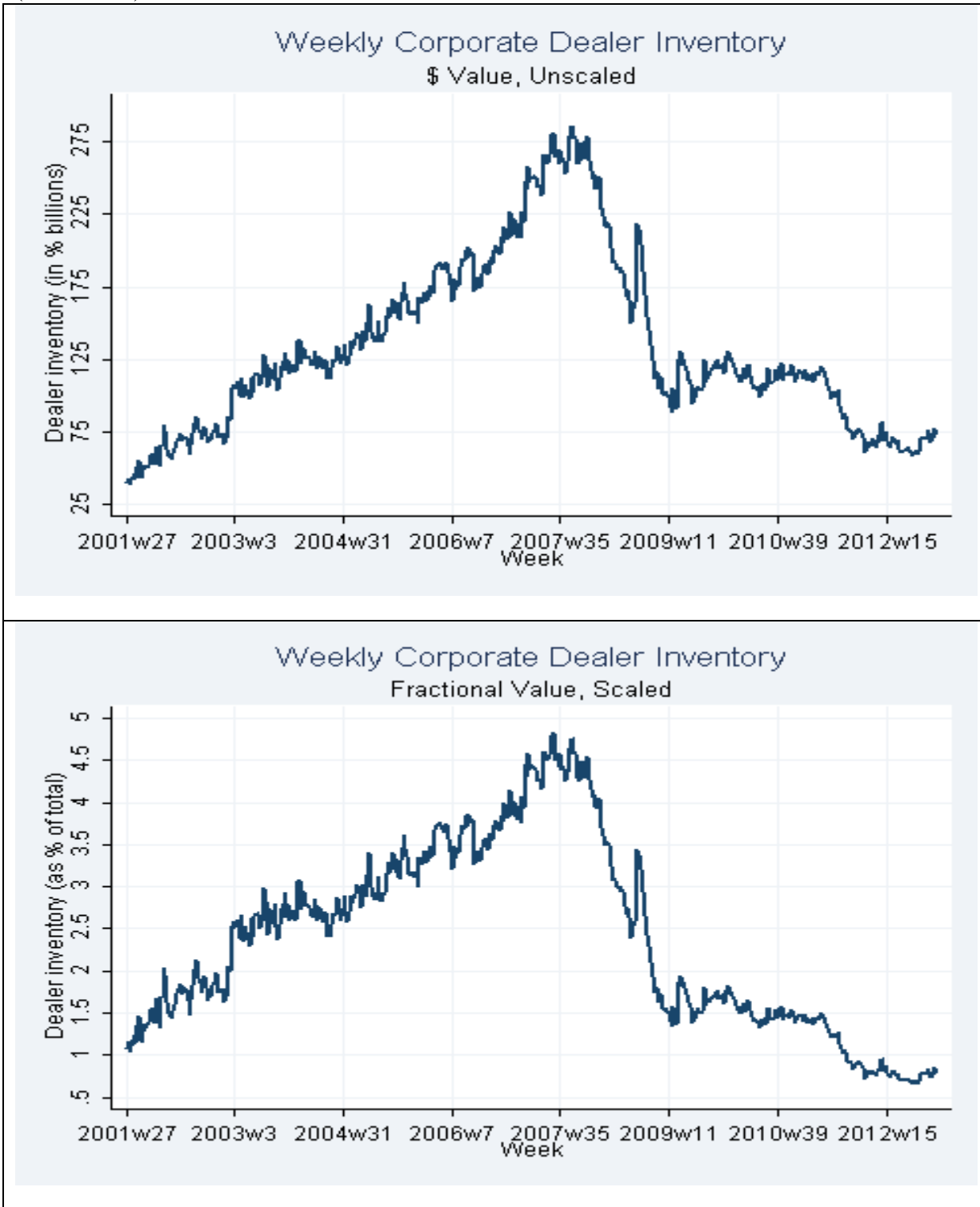
Table 1. All International 144A Debt Issues from the FISD Database (1990-2010)

This table shows the overall international 144A issues from the entire Mergent FISD database from 1990 to 2010. When the "# of issues from" is in "Other", it refers to Bermuda, Cayman Islands, and Virgin Islands (British).

Panel A: All international 144A issues

Issuing Period	# of issues	# of issuers	# of issuing countries	Total amt. issued ($ ban)	# of issues from						
					Canada	Europe	Asia	Latin America	Australia/ New Zealand	Africa/ Middle East	Other
1990-1993	34	30	13	5	3	6	3	8	1	0	13
1994-1998	808	555	60	150	71	175	130	260	31	17	124
1999-2003	1,534	460	48	382	94	736	61	149	30	16	448
2004-2008	3,031	584	60	968	119	1,420	118	154	138	47	1,035
2009-2010	744	320	47	560	54	288	71	95	182	19	35
Total	6,151	1,610	76	2,066	341	2,625	383	666	382	99	1,655

Panel B: International 144A issues from BRICs only

Period	# of issues	# of issuers	Total amt. issued ($ ban)	# of issues from			
				India	Brazil	China	Russia
1990-1993	3	3	0	0	3	0	0
1994-1998	130	86	19	16	102	9	3
1999-2003	42	29	11	0	29	4	9
2004-2008	103	55	45	6	53	12	32
2009-2010	67	49	40	4	37	16	10
Total	345	184	115	26	224	41	54

Table 2A. International 144A Issues: Summary statistics for the Final (FISD+NAIC+COMPUSTAT/Compustat Global) Sample (1994-2010)

This table shows the primary- and secondary-market properties of international 144A issues that appear in NAIC and Compustat/Compustat Global. In Panel A, when the issues from "Other" refers to those from Bermuda, Cayman Islands, and Virgin Islands (British). In Panel B, all of the primary-market characteristics refer to those at the time of issuance or to observations immediately prior to the time of issuance. In Panel D, "# of trades" refers to the total number of trades of the bond issue in NAIC. All the other variables are defined in Appendix A.

Panel A: Number of international 144A issues that appear in NAIC and Compustat/Compustat Global

Issuing Period	# of issues	# of issuers	# of issuing countries	Total amt. issued ($ ban)	# of issues from						
					Canada	Europe	Asia	Latin America	Australia/ New Zealand	Africa/ Middle East	Other
1990-1993	6	6	5	1.09	1	2	1	0	1	0	1
1994-1998	77	53	16	17.66	10	16	29	12	9	0	1
1999-2003	135	92	26	61.58	26	46	22	25	14	2	0
2004-2008	199	110	33	110.91	8	99	30	30	17	12	3
2009-2010	144	78	22	135.42	11	48	16	31	35	2	1
Total	561	267	40	326.65	56	211	98	98	76	16	6

Panel B: Primary market characteristics of the 561 international 144A debt issues

	Market equity (US $ban)	Interest coverage	Leverage	US DR	Offer size (US $ million)	Maturity	Offering yield (%)	Secured	Senior	Callable	Convertible	Straight
Mean	31.71	12.36	0.24	19.3%	576.06	9.65	6.96	2.1%	94.3%	43.0%	2.5%	54.2%
Media	7.39	2.78	0.22	0	425.00	10.00	6.81	0	1	0	0	1

Panel C: Primary market characteristics by Industry type of the 561 international 144A debt issues

Total firms	Industrial	Financial	Utility
561	311	202	46
	(55%)	(36%)	(8%)

Panel D: Secondary market characteristics of international 144A debts (N = 19,017)

	Yield (%)	Spread (%)	maturity	investment grade	# of trades	Liquidity index1	Liquidity index2
Mean	6.74	2.31	10.03	74.77%	37.18	11.32	0.31
Median	6.42	1.68	9.09	100.00%	22.00	1.94	0.06

Table 2A. contd.

Panel E: Secondary market trend

	N	Yield (%)	Spread (%)
1994-1998	966	8.47	2.15
1999-2003	5,927	7.71	2.39
2004-2008	7,088	6.64	1.97
2009-2010	5,036	5.40	2.73

Table 2B. BRICs 144A Issues: Summary statistics for the Final (FISD+NAIC+COMPUSTAT/Compustat Global) Sample (1994-2010)

This table shows the primary- and secondary-market properties of the BRIC 144A issues that appear in NAIC and Compustat/Compustat Global. In Panel A, when the issues from "Other" refers to those from Bermuda, Cayman Islands, and Virgin Islands (British). In Panel B, all of the primary-market characteristics refer to those at the time of issuance or to observations immediately prior to the time of issuance. In Panel D, "# of trades" refers to the total number of trades of the bond issue in NAIC. All the other variables are defined in Appendix A.

Panel A: Number of international 144A issues that appear in NAIC and Compustat/Compustat Global

Issuing Period	# of issues	# of issuers	Total amt. issued ($ ban)	# of issues from India	Brazil	China	Russia
1990-1993	0	0	0.00	0	0	0	0
1994-1998	10	4	1.68	8	2	0	0
1999-2003	9	7	4.13	0	6	0	3
2004-2008	19	13	10.66	5	7	0	7
2009-2010	22	15	15.21	3	14	0	5
Total	60	29	31.68	16	29	0	15

Panel B: Primary market characteristics of the 60 BRIC international 144A debt issues

	Market equity (US $ban)	Interest coverage	Leverage	US DR	Offer size (US $ million)	Maturity	Offering yield (%)	Secured	Senior	Callable	Convertible	Straight
Mean	151.14	9.88	0.21	31.67%	528.02	10.06	8.01	0	96.67%	31.67%	0	68.33%
Median	17.61	2.78	0.22	0	450.00	10.01	8.05	0	1	0	0	1

Panel C: Primary market characteristics by Industry type of the 60 BRIC international 144A debt issues

Country	Industrial	Financial	Utility
Brazil	17	7	5
India	6	8	2
Russia	15	0	0
Total (60)	38 (63%)	15(25%)	7 (12%)

Panel D: Secondary market characteristics of the international 144A debts (N=1,119)

	Yield (%)	Spread (%)	maturity	investment grade	# of trades	Liquidity index1	Liquidity index2
Mean	8.25	3.81	10.18	36.55%	13.66	24.85	0.60
Median	8.13	3.46	9.25	0.00%	9.00	4.81	0.14

Table 2B contd.

Panel E: Secondary market trend

	N	Yield (%)	Spread (%)
1994-1998	105	9.65	3.15
1999-2003	233	10.00	4.53
2004-2008	471	7.95	3.33
2009-2010	310	6.92	4.20

Table 3. Comparison of International 144A Primary- and Secondary-Market Debt and Firm Characteristics with Various Control Samples (1994-2010)

We create the control sample for the international 144A bond transactions using the following steps. For each treatment issue-year (i.e. an international 144A bond issue) we search for a control issue within i). international public (Yankee) debt transactions, ii). U.S. 144A debt transactions, or iii). U.S. public debt transactions. The control samples are matched on transaction year, offer amount, maturity, credit rating, firm size, and callability. Specifically each bond issue in the control sample needs to satisfy the following criteria: i) the control issue and the treatment issue must have at least one bond transaction during the same year; ii) they must have the same average rounded credit rating using the ratings from the three rating agencies during the year; iii) they must be matched on callability; iv) the control issue should have the closest maturity as of the transaction time, offer amount, and firm size to the treatment issue, where we create a decile rank at each of these dimensions, and measure the shortest aggregate absolute distance as the closest match; and v) finally, if there are multiple matches from the above procedure, we pick the bond issue that is closest in exact credit rating then in transaction time.

We report matching control attributes, and issue, transaction and issuer related characteristics for both treatment and control samples. All the variables are all defined in Appendix A. Except for credit rating, all measures shown below are winsorized at 1 and 99 percentiles at their respective sample. "Excess transaction spread" refers to difference between secondary market spread and offering spread. "Transaction spread diff." refers to the spread difference between the treatment group and the control group. "Excess transaction spread diff." refers to secondary vs. offer spread differences between the treatment group and the control group. Robust *t*-statistics are in square brackets. *** ** and * indicate, respectively, significance at 1, 5, and 10% levels.

	Int'l 144A		Control Sample					
			Int'l public (Yankee) debt		U.S. private (144A) debt		U.S. public debt	
	mean	std	mean	std	mean	std	mean	std
NOBS	19,016		27,921		25,829		38,478	
control sample atrributes								
offer_amt	750.84	665.59	887.32	855.98	665.35	866.19	772.20	653.79
maturity	10.03	7.14	7.88	5.81	8.63	5.25	8.44	5.74
credit rating	3.79	1.20	3.63	1.36	4.17	1.05	3.65	1.24
firm_size	21.20	29.10	26.52	32.40	26.84	56.39	34.13	54.38
callable	0.52	0.50	0.54	0.50	0.53	0.50	0.45	0.50
duration	6.32	2.60	5.47	2.38	5.97	2.24	5.84	2.46
issue characteresitics								
secured	0.01	0.10	0.02	0.14	0.03	0.16	0.01	0.11
senior	0.92	0.27	0.95	0.22	0.94	0.24	0.93	0.25
convertible	0.02	0.13	0.01	0.10	0.06	0.24	0.01	0.08
straight	0.47	0.50	0.45	0.50	0.41	0.49	0.54	0.50
vintage (years)	1.11	1.80	1.89	2.58	0.51	1.10	2.17	2.96
offer_cr.	3.74	1.19	3.57	1.36	4.28	1.07	3.47	1.24
offer_yield	6.70	1.92	5.63	2.05	6.44	1.94	5.95	1.80
offer_spread	1.95	1.61	1.20	1.11	1.67	1.75	1.15	1.10
transaction characteresitics								
yield (%)	6.74	2.30	5.96	2.57	6.80	2.45	6.15	2.88
spread (%)	2.31	2.01	2.02	2.11	2.28	2.52	2.03	2.61
# of trades	37.18	44.20	45.01	50.17	55.38	79.98	45.77	39.32
liq_index1	11.32	31.74	11.47	28.56	7.77	22.47	12.73	33.42
liq_index2	0.31	0.88	0.34	0.83	0.24	0.67	0.40	1.00
spread_vol	0.55	0.85	0.62	0.89	0.56	0.87	0.67	1.02
issuer characteresitics								
int_coverage	15.24	68.54	5.43	5.93	9.28	11.87	46.38	128.32
leaverage	0.26	0.16	0.23	0.15	0.27	0.19	0.25	0.17
US DR	0.09	0.29	0.15	0.36				
# of issues	561		481		564		1089	
# of issuers	267		206		369		536	
covenants								
bondholder covenants	0.19	0.39	0.64	0.48	0.20	0.40	0.80	0.40
issuer covenants	0.10	0.30	0.63	0.48	0.10	0.30	0.78	0.41
issuer subsidiary covenants	0.04	0.19	0.41	0.49	0.04	0.19	0.50	0.50
overall covenants	0.19	0.40	0.66	0.47	0.20	0.40	0.84	0.37
Excess transaction spread	0.36		0.82		0.61		0.88	
Tansaction spread diff. from Int'l 144As			0.29		0.03		0.28	
			[2.02]**		[0.21]		[1.96]**	
Excess transaction spread diff. from Int'l 144As			-0.46		-0.25		-0.52	
			[-1.94]*		[-.151]		[-2.32]**	

Table 4. Panel Regressions of Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report baseline regression models using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. We present separate regression results for the overall and emerging market samples (Panel A), and BRIC and Indian firms (Panel B). Regression covariates consist of issue- and issuer-specific characteristics, and aggregate market variables. All the variables are defined in Appendix A. In addition we employ the following dummy interaction variables: rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. The above interaction variables are key variables of interest. We control for year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of t-statistics are reported in square brackets. ** and * indicate significance at 1 and 5 percent levels respectively.

Panel A: Foreign 144 A and Emerging market effects

VARIABLES	Control sample - Int'l public debt		Control sample - U.S. 144A debt		Control sample - U.S. public debt	
	(1) Uncond	(2) Emerging	(1) Uncond	(2) Emerging	(1) Uncond	(2) Emerging
Issue characteresitics						
rating	0.82**	0.76**	0.50**	0.46**	0.71**	0.70**
	(9.19)	(8.80)	(3.66)	(3.44)	(8.88)	(9.10)
high_yield_x_rating	0.29**	0.30**	0.28**	0.28**	0.29**	0.29**
	(6.67)	(7.21)	(6.68)	(6.92)	(9.11)	(9.58)
maturity	0.02**	0.02**	-0.00	-0.00	0.01**	0.01*
	(4.28)	(3.89)	(-0.02)	(-0.16)	(2.78)	(2.32)
vintage	0.02	0.04	0.08*	0.07*	0.03	0.06**
	(0.92)	(1.54)	(2.47)	(2.08)	(1.74)	(2.91)
offer_amt	0.09	0.10	0.29**	0.29**	0.21**	0.20**
	(1.17)	(1.33)	(2.78)	(2.86)	(2.59)	(2.66)
senior	0.11	0.13	0.44	0.38	0.18	0.21
	(0.61)	(0.72)	(1.81)	(1.65)	(0.99)	(1.16)
straight	0.39**	0.25*	0.09	-0.03	0.45**	0.36**
	(3.95)	(2.39)	(0.73)	(-0.26)	(3.96)	(3.14)
Issuer characteresitics						
firm_size	-0.13*	-0.14*	-0.28**	-0.29**	-0.31**	-0.30**
	(-2.38)	(-2.51)	(-4.04)	(-4.36)	(-5.29)	(-5.21)
ltdebt_ratio	0.53	0.54	0.16	0.29	0.07	0.20
	(1.29)	(1.35)	(0.44)	(0.85)	(0.22)	(0.66)
finance	0.67**	0.68**	0.55**	0.58**	0.73**	0.82**
	(5.27)	(5.28)	(2.94)	(3.08)	(5.56)	(6.29)
utility	0.25	0.18	0.45	0.37	-0.14	-0.19
	(1.24)	(1.03)	(1.32)	(1.10)	(-0.65)	(-1.08)
Aggragte varaibles						
def	0.61**	0.63**	0.87**	0.91**	0.49**	0.53**
	(5.38)	(5.55)	(4.70)	(4.92)	(5.22)	(5.80)
term	-0.32**	-0.31**	-0.29*	-0.30*	-0.31**	-0.31**
	(-2.81)	(-2.77)	(-2.10)	(-2.26)	(-2.93)	(-2.98)
vix	0.03**	0.03**	0.03*	0.03*	0.04**	0.04**
	(4.40)	(4.27)	(2.55)	(2.52)	(4.58)	(4.39)
ted	0.36**	0.35**	0.47*	0.46*	0.28**	0.26*
	(3.22)	(3.07)	(2.27)	(2.18)	(2.62)	(2.42)
Ineraction varaibles						
rule144a_x_foreign		0.21**		0.04		0.34**
		(2.60)		(0.33)		(4.04)
rule144a_x_emerging		0.43**		0.67**		0.53**
		(2.85)		(3.87)		(3.16)
Constant	-3.64**	-3.73**	-4.29**	-4.08**	-3.28**	-3.49**
	(-3.50)	(-3.57)	(-2.93)	(-2.84)	(-3.34)	(-3.76)
Observations	35,450	35,450	31,901	31,901	49,673	49,673
Adjusted R-squared	0.575	0.581	0.544	0.550	0.544	0.553
Year fixed effcts	Y	Y	Y	Y	Y	Y
Clustering by issuer	Y	Y	Y	Y	Y	Y

Panel B: BRIC and India specific effects

VARIABLES	Control sample - Int'l public debt		Control sample - U.S. 144A debt		Control sample - U.S. public debt	
	(1) Bric	(2) India	(1) Bric	(2) India	(1) Bric	(2) India
Issue characteresitics						
rating	0.74**	0.75**	0.44**	0.44**	0.69**	0.69**
	(8.47)	(8.51)	(3.28)	(3.31)	(8.85)	(8.84)
high_yield_x_rating	0.30**	0.30**	0.28**	0.28**	0.29**	0.29**
	(7.19)	(7.07)	(6.89)	(6.74)	(9.53)	(9.43)
maturity	0.02**	0.02**	-0.00	-0.00	0.01*	0.01*
	(3.94)	(3.91)	(-0.06)	(-0.05)	(2.41)	(2.40)
vintage	0.04	0.04	0.07*	0.07*	0.06**	0.06**
	(1.57)	(1.61)	(2.15)	(2.18)	(2.97)	(3.05)
offer_amt	0.10	0.10	0.29**	0.30**	0.20**	0.21**
	(1.30)	(1.33)	(2.90)	(3.02)	(2.66)	(2.70)
senior	0.12	0.13	0.35	0.36	0.21	0.21
	(0.68)	(0.72)	(1.50)	(1.56)	(1.15)	(1.16)
straight	0.24*	0.22*	-0.04	-0.07	0.36**	0.34**
	(2.30)	(2.07)	(-0.30)	(-0.52)	(3.10)	(2.95)
Issuer characteresitics						
firm_size	-0.15**	-0.15**	-0.31**	-0.31**	-0.31**	-0.31**
	(-2.66)	(-2.70)	(-4.70)	(-4.78)	(-5.41)	(-5.47)
ltdebt_ratio	0.56	0.58	0.33	0.34	0.21	0.22
	(1.40)	(1.43)	(0.94)	(0.99)	(0.68)	(0.73)
finance	0.67**	0.71**	0.56**	0.62**	0.82**	0.85**
	(5.22)	(5.35)	(2.98)	(3.23)	(6.27)	(6.40)
utility	0.20	0.21	0.40	0.41	-0.18	-0.17
	(1.14)	(1.19)	(1.21)	(1.25)	(-0.97)	(-0.95)
Aggragte varaibles						
def	0.63**	0.63**	0.90**	0.90**	0.53**	0.53**
	(5.52)	(5.51)	(4.88)	(4.89)	(5.77)	(5.79)
term	-0.31**	-0.31**	-0.30*	-0.30*	-0.31**	-0.31**
	(-2.79)	(-2.79)	(-2.28)	(-2.29)	(-2.99)	(-2.99)
vix	0.03**	0.03**	0.03*	0.03*	0.04**	0.04**
	(4.23)	(4.21)	(2.52)	(2.50)	(4.39)	(4.38)
ted	0.35**	0.36**	0.46*	0.48*	0.26*	0.27*
	(3.02)	(3.14)	(2.17)	(2.29)	(2.38)	(2.49)
Ineraction varaibles						
rule144a_x_foreign	0.21*	0.21*	0.04	0.03	0.34**	0.34**
	(2.56)	(2.53)	(0.31)	(0.24)	(4.00)	(4.01)
rule144a_x_emerging	0.33*	0.34*	0.48**	0.50**	0.39*	0.40*
	(1.99)	(2.06)	(2.71)	(2.81)	(2.15)	(2.20)
rule144a_x_bric	0.42	0.62*	0.70*	0.98**	0.50	0.77*
	(1.51)	(2.19)	(2.20)	(2.99)	(1.60)	(2.46)
rule144a_x_India		-1.05*		-1.50**		-1.39**
		(-2.16)		(-3.84)		(-2.91)
Constant	-3.55**	-3.60**	-3.79**	-3.91**	-3.33**	-3.37**
	(-3.28)	(-3.29)	(-2.60)	(-2.68)	(-3.51)	(-3.53)
Observations	35,450	35,450	31,901	31,901	49,673	49,673
Adjusted R-squared	0.582	0.583	0.552	0.553	0.554	0.555
Year fixed effcts	Y	Y	Y	Y	Y	Y
Clustering by issuer	Y	Y	Y	Y	Y	Y

Table 5. Panel Regressions of Primary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report baseline regression models using primary debt market issues for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the offering spread of 144 A bond transaction. Regression covariates consist of issue- and issuer- specific characteristics, and aggregate market variables. All the variables are defined in Appendix A. In addition we employ the following dummy interaction variables as in Table 4): rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. The above interaction variables are key variables of interest. We control for year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate significance at 1 and 5 percent levels respectively.

VARIABLES	Panel A: Control sample - Int'l public debt				Panel B: Control sample - U.S. 144A debt				Panel C: Control sample - U.S. public			
	(1) Baseline	(2) Emerging	(3) Bric	(4) India	(1) Baseline	(2) Emerging	(3) Bric	(4) India	(1) Baseline	(2) Emerging	(3) Bric	(4) India
Issue characeresitics												
rating	0.61**	0.55**	0.50**	0.51**	0.27**	0.28**	0.21*	0.21*	0.48**	0.44**	0.41**	0.41**
	(8.22)	(7.29)	(6.43)	(6.54)	(2.87)	(2.95)	(2.19)	(2.23)	(8.78)	(8.44)	(7.62)	(7.63)
high_yield_x_rating	0.25**	0.24**	0.25**	0.24**	0.26**	0.25**	0.26**	0.26**	0.21**	0.19**	0.19**	0.19**
	(7.50)	(7.58)	(7.83)	(7.48)	(7.17)	(7.07)	(7.42)	(7.33)	(7.73)	(7.00)	(7.19)	(7.10)
maturity	0.01	0.01*	0.01*	0.01*	0.01	0.00	0.01	0.01	0.01**	0.01**	0.01**	0.01**
	(1.90)	(2.11)	(2.18)	(2.18)	(1.17)	(0.62)	(0.90)	(0.86)	(3.27)	(3.54)	(3.63)	(3.63)
offer_amt	-0.08	-0.09	-0.08	-0.07	-0.01	-0.02	-0.01	0.00	0.01	0.02	0.03	0.04
	(-1.06)	(-1.10)	(-1.05)	(-0.87)	(-0.09)	(-0.26)	(-0.15)	(0.02)	(0.19)	(0.31)	(0.43)	(0.58)
senior	-0.03	-0.04	-0.05	-0.02	0.20	0.21	0.23	0.24	0.35*	0.33*	0.33*	0.33*
	(-0.16)	(-0.28)	(-0.31)	(-0.16)	(1.00)	(1.06)	(1.23)	(1.26)	(2.12)	(2.01)	(2.10)	(2.11)
straight	0.11	0.03	0.00	-0.02	0.31**	0.13	0.08	0.06	0.09	-0.03	-0.05	-0.08
	(1.15)	(0.35)	(0.04)	(-0.26)	(2.90)	(1.30)	(0.80)	(0.56)	(1.07)	(-0.39)	(-0.72)	(-1.04)
Issuer characeresitics												
firm_size	0.03	0.02	0.00	-0.01	-0.09	-0.11*	-0.14**	-0.15**	-0.04	-0.03	-0.05	-0.06
	(0.78)	(0.58)	(0.02)	(-0.15)	(-1.71)	(-2.35)	(-3.23)	(-3.41)	(-0.93)	(-0.79)	(-1.41)	(-1.56)
ltdebt_ratio	0.20	0.26	0.29	0.34	0.02	0.23	0.25	0.28	-0.04	0.16	0.16	0.20
	(0.55)	(0.74)	(0.83)	(0.97)	(0.06)	(0.83)	(0.89)	(0.98)	(-0.13)	(0.61)	(0.63)	(0.78)
finance	0.03	0.02	-0.00	0.09	-0.11	-0.18	-0.21	-0.14	0.02	0.08	0.07	0.12
	(0.19)	(0.13)	(-0.00)	(0.60)	(-0.80)	(-1.39)	(-1.55)	(-1.05)	(0.20)	(0.90)	(0.84)	(1.48)
utility	0.07	-0.02	-0.00	0.01	0.13	0.06	0.10	0.10	0.05	-0.01	0.01	0.01
	(0.66)	(-0.18)	(-0.03)	(0.09)	(0.75)	(0.32)	(0.55)	(0.55)	(0.42)	(-0.07)	(0.10)	(0.10)
Aggragte varaibles												
def	0.36*	0.40**	0.40**	0.39**	0.28	0.31	0.30	0.29	0.27*	0.35**	0.34**	0.33**
	(2.54)	(2.89)	(2.89)	(2.83)	(1.38)	(1.61)	(1.58)	(1.54)	(2.24)	(2.95)	(2.91)	(2.88)
term	-0.13	-0.15	-0.16	-0.19	0.03	-0.05	-0.06	-0.09	-0.10	-0.13	-0.12	-0.15
	(-0.77)	(-0.84)	(-0.90)	(-1.11)	(0.17)	(-0.30)	(-0.33)	(-0.47)	(-0.71)	(-0.94)	(-0.93)	(-1.16)
vix	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01
	(-1.26)	(-1.37)	(-1.41)	(-1.31)	(-1.15)	(-1.03)	(-1.06)	(-1.02)	(-0.51)	(-0.74)	(-0.70)	(-0.67)
ted	0.31	0.25	0.25	0.24	0.13	0.12	0.15	0.13	0.08	0.08	0.09	0.08
	(1.45)	(1.16)	(1.15)	(1.15)	(0.58)	(0.58)	(0.67)	(0.63)	(0.46)	(0.45)	(0.47)	(0.43)
Ineraction varaibles												
rule144a_x_foreign		0.23*	0.24*	0.23*		0.56**	0.57**	0.56**		0.41**	0.41**	0.41**
		(2.50)	(2.55)	(2.50)		(4.97)	(5.06)	(4.99)		(4.31)	(4.33)	(4.35)
rule144a_x_emerging		0.41**	0.22	0.24		0.36*	0.05	0.06		0.56**	0.32*	0.33*
		(2.61)	(1.52)	(1.65)		(2.20)	(0.31)	(0.42)		(3.35)	(1.98)	(2.06)
rule144a_x_bric			0.62*	0.90**			1.02**	1.27**			0.76*	1.08**
			(2.06)	(4.06)			(3.41)	(5.00)			(2.43)	(4.49)
rule144a_x_India				-1.75**				-1.55**				-1.90**
				(-4.46)				(-4.25)				(-5.90)
Constant	-0.54	-0.33	0.00	-0.16	0.58	0.71	1.14	1.01	-1.12	-1.43	-1.22	-1.28
	(-0.52)	(-0.31)	(0.00)	(-0.15)	(0.46)	(0.57)	(0.91)	(0.80)	(-1.26)	(-1.67)	(-1.43)	(-1.49)
Observations	874	874	874	874	998	998	998	998	1,346	1,346	1,346	1,346
Adjusted R-squared	0.593	0.605	0.610	0.617	0.478	0.507	0.516	0.520	0.513	0.544	0.549	0.556

Table 6. Robustness Tests: Panel Regressions of Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report two robustness tests of the baseline regression models reported in Table 4). We consider secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. We present regression results with controls for bond covenants (Panel A), and propensity matched control sample (Panel B). Regression covariates consist of issue- and issuer- specific characteristics, and aggregate market variables. All the variables are defined in Appendix A. In addition we employ the following dummy interaction variables: rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. The above interaction variables are key variables of interest. We control for year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. For brevity we report results only for the interaction and covenant variables. Values of *t*-statistics are reported in square brackets. ** and * indicate significance at 1 and 5 percent levels respectively.

Panel A. Effect of Bond Covenants

VARIABLES	Control sample - Int'l public debt				Control sample - U.S. 144A debt				Control sample - U.S. public debt			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Ineraction varaibles												
rule144a_x_foreign	0.24**	0.22	0.17	0.26**	0.04	0.04	0.04	0.04	0.23*	0.14	0.28**	0.25*
	(2.75)	(1.94)	(1.86)	(2.95)	(0.31)	(0.32)	(0.31)	(0.31)	(1.98)	(1.01)	(2.78)	(2.14)
rule144a_x_emerging	0.44**	0.43**	0.43**	0.44**	0.67**	0.67**	0.67**	0.67**	0.51**	0.52**	0.53**	0.51**
	(2.88)	(2.85)	(2.86)	(2.89)	(3.80)	(3.86)	(3.84)	(3.80)	(3.07)	(3.16)	(3.17)	(3.08)
Covenants												
bondholder_cov	0.06				0.03				-0.18			
	(0.66)				(0.22)				(-1.49)			
issuer_cov		0.01				0.05				-0.28*		
		(0.07)				(0.30)				(-1.98)		
sub_cov			-0.10				0.15				-0.13	
			(-0.83)				(0.61)				(-1.07)	
All covenants				0.09				0.03				-0.14
				(0.97)				(0.21)				(-1.21)
Constant	-3.74**	-3.73**	-3.56**	-3.75**	-4.06**	-4.03**	-4.15**	-4.06**	-3.38**	-3.29**	-3.28**	-3.35**
	(-3.54)	(-3.54)	(-3.49)	(-3.54)	(-2.76)	(-2.71)	(-2.85)	(-2.77)	(-3.69)	(-3.56)	(-3.55)	(-3.64)
Observations	35,450	35,450	35,450	35,450	31,901	31,901	31,901	31,901	49,673	49,673	49,673	49,673
Adjusted R-squared	0.581	0.581	0.581	0.581	0.550	0.550	0.550	0.550	0.554	0.555	0.554	0.554
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Clustering by Issuer	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Panel B: Propensity Score matching Control sample - Int'l public debt

VARIABLES	(1) Baseline	(2) Foreign	(3) Emerging	(4) Bric	(5) Bric	(6) India	(7) India
Issue characteresitics							
rating	0.71**	0.70**	0.66**		0.64**		0.64**
	(7.08)	(7.07)	(6.60)		(6.39)		(6.35)
high_yield_x_rating	0.33**	0.34**	0.34**		0.34**		0.33**
	(7.65)	(7.79)	(7.88)		(7.86)		(7.66)
maturity	0.01**	0.01**	0.01**		0.01**		0.01**
	(4.31)	(4.28)	(4.24)		(4.33)		(4.28)
vintage	0.01	0.02	0.02		0.02		0.02
	(0.49)	(0.79)	(0.80)		(0.86)		(0.86)
offer_amt	0.12	0.13	0.13		0.13		0.13
	(1.58)	(1.68)	(1.71)		(1.69)		(1.72)
senior	-0.05	-0.04	-0.03		-0.03		-0.03
	(-0.31)	(-0.25)	(-0.19)		(-0.21)		(-0.16)
straight	0.24*	0.20	0.13		0.13		0.11
	(2.37)	(1.93)	(1.28)		(1.20)		(1.04)
Issuer characteresitics							
firm_size	-0.17**	-0.16**	-0.17**		-0.18**		-0.19**
	(-3.08)	(-2.82)	(-3.12)		(-3.34)		(-3.40)
ltdebt_ratio	0.35	0.36	0.45		0.46		0.48
	(0.80)	(0.82)	(1.01)		(1.05)		(1.07)
finance	0.46*	0.46*	0.48**		0.47**		0.50**
	(2.48)	(2.57)	(2.63)		(2.61)		(2.66)
utility	0.10	0.10	0.01		0.04		0.04
	(0.58)	(0.59)	(0.07)		(0.25)		(0.28)
Aggragte varaibles							
def	0.62**	0.62**	0.64**		0.63**		0.63**
	(5.92)	(5.98)	(6.04)		(6.00)		(5.96)
term	-0.33**	-0.32**	-0.32**		-0.32**		-0.32**
	(-3.01)	(-3.06)	(-2.99)		(-3.02)		(-3.02)
vix	0.03**	0.03**	0.03**		0.03**		0.03**
	(4.53)	(4.50)	(4.41)		(4.37)		(4.34)
ted	0.32**	0.32**	0.31**		0.30**		0.32**
	(3.67)	(3.67)	(3.43)		(3.33)		(3.53)
Ineraction varaibles							
rule144a_x_foreign		0.14	0.06	0.26	0.06	0.26	0.06
		(1.35)	(0.61)	(1.41)	(0.55)	(1.41)	(0.55)
rule144a_x_emerging			0.47**	0.69*	0.35*	0.69*	0.36*
			(3.06)	(2.01)	(2.14)	(2.01)	(2.19)
rule144a_x_bric				1.22**	0.47	1.43**	0.67*
				(3.13)	(1.61)	(3.66)	(2.29)
rule144a_x_india						-1.14**	-1.11*
						(-3.60)	(-2.03)
Constant	-2.93**	-3.16**	-2.99**	1.86**	-2.79**	1.86**	-2.82**
	(-2.81)	(-3.13)	(-2.90)	(12.18)	(-2.62)	(12.18)	(-2.61)
Observations	36,898	36,898	36,898	36,913	36,898	36,913	36,898
Adjusted R-squared	0.580	0.581	0.584	0.120	0.584	0.121	0.585
Year fixed effcts	Y	Y	Y	Y	Y	Y	Y
Clustering by issuer	Y	Y	Y	Y	Y	Y	Y

Table 7. Liquidity and Credit risks: Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report baseline regression models augmented with liquidity and credit risk variables using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. Regression covariates consist of different liquidity and default risk variables in addition to issue- and issuer- specific characteristics, and aggregate market variables (Panel A). All the variables are defined in Appendix A. In addition to the dummy interaction variables used in Table 4, we also employ the following liquidity and default risk dummy interaction variables: rule144a_x_foreign x liquidity (or default) risk proxy= liquidity or credit risk of all foreign 144A issues (Panel B); rule144a_x_emerging x liquidity (or default) risk proxy = liquidity or credit risk of all foreign 144A issues from emerging markets (Panel B); rule144a_x_bric x liquidity (or default) risk proxy = liquidity or credit risk of all foreign emerging market 144A issues from BRIC counties (Panel C); rule144a_x_India x liquidity (or default) risk proxy = liquidity or credit risk of all foreign BRIC 144A issues from India (Panel C). The liquidity or credit risk interaction variables are key variables of interest. Further while all regressions include issue-, and issuer- specific variables and aggregate market factors, they are not reported for brevity. We also control for Year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate, respectively; indicate significance at 1 and 5 percent levels.

Panel A: Overall 144 A market

VARIABLES	Int'l public debt		U.S. 144A debt		U.S. public debt	
	(1)	(2)	(1)	(2)	(1)	(2)
	Uncond	Uncond	Uncond	Uncond	Uncond	Uncond
liq_index1	0.00		0.00		0.00	
	(1.61)		(0.84)		(0.56)	
trade_freq	-0.00**		0.00		-0.00	
	(-2.78)		(1.80)		(-1.47)	
turnover	-0.13		-0.85**		-0.14	
	(-0.55)		(-3.02)		(-0.67)	
illiq_fac		0.23**		0.16*		0.14**
		(5.35)		(2.50)		(3.17)
idios_vol	45.55**		56.13**		61.87**	
	(5.85)		(5.22)		(8.56)	
spread_vol	0.63**		0.60**		0.82**	
	(5.09)		(3.56)		(6.70)	
ltdebt_ratio	0.67*		0.23		0.38	
	(2.22)		(0.58)		(1.38)	
int_coverage	0.01*		0.00		0.01*	
	(2.43)		(0.88)		(2.35)	
credit_fac		0.54**		0.51**		0.81**
		(6.79)		(5.32)		(10.44)
Constant	-0.90	-0.33	-0.23	-1.98	-1.41	-0.06
	(-0.68)	(-0.28)	(-0.12)	(-1.17)	(-1.09)	(-0.05)
Observations	25,567	25,567	21,102	21,102	37,179	37,179
Adjusted R-squared	0.657	0.637	0.617	0.583	0.659	0.636

Panel B: Foreign and Emerging market effects

VARIABLES	Int'l public debt					U.S. 144A debt					U.S. public debt				
	(1) Foreign	(2) Foreign	(3) Emerging	(4) Emerging	(5) Emerging	(1) Foreign	(2) Foreign	(3) Emerging	(4) Emerging	(5) Emerging	(1) Foreign	(2) Foreign	(3) Emerging	(4) Emerging	(5) Emerging
liq_index1	0.00	0.01**	0.00	0.00		0.00	0.01	0.00	0.00		0.00	0.00	0.00	0.00	
	(1.50)	(3.82)	(1.42)	(1.73)		(0.83)	(1.51)	(0.75)	(1.00)		(0.50)	(1.87)	(0.44)	(0.73)	
trade_freq	-0.00*	-0.00*	-0.00*	-0.00*		0.00	0.00	0.00*	0.00*		-0.00	-0.00	-0.00	-0.00	
	(-2.37)	(-2.32)	(-2.26)	(-2.17)		(1.79)	(1.88)	(2.08)	(2.08)		(-0.73)	(-0.68)	(-0.62)	(-0.63)	
turnover	-0.23	0.06	-0.18	-0.15		-0.86**	-0.33	-0.79**	-0.74**		-0.25	0.08	-0.20	-0.17	
	(-0.97)	(0.19)	(-0.77)	(-0.67)		(-3.00)	(-1.11)	(-2.90)	(-2.74)		(-1.20)	(0.36)	(-0.96)	(-0.82)	
illiq_fac					0.23**					0.15*					0.12**
					(5.10)					(2.18)					(2.70)
idios_vol	44.76**	44.62**	44.40**	43.37**		55.89**	70.34**	55.92**	55.29**		58.52**	62.24**	58.13**	57.56**	
	(5.70)	(4.53)	(5.82)	(5.58)		(4.98)	(5.00)	(5.09)	(4.87)		(7.76)	(7.26)	(7.79)	(7.63)	
spread_vol	0.64**	0.64**	0.65**	0.64**		0.60**	0.59**	0.61**	0.60**		0.83**	0.83**	0.83**	0.83**	
	(5.04)	(5.30)	(5.15)	(5.04)		(3.56)	(3.61)	(3.64)	(3.61)		(6.72)	(6.80)	(6.77)	(6.79)	
ltdebt_ratio	0.62*	-0.13	0.71*	0.57		0.23	-0.41	0.34	0.24		0.42	0.07	0.49	0.39	
	(2.04)	(-0.34)	(2.38)	(1.85)		(0.58)	(-0.75)	(0.85)	(0.59)		(1.50)	(0.20)	(1.79)	(1.40)	
int_coverage	0.01*	0.01*	0.01*	0.01*		0.00	0.00	0.00	0.00		0.01*	0.01*	0.01*	0.01*	
	(2.06)	(2.15)	(1.99)	(2.20)		(0.88)	(0.97)	(0.67)	(0.95)		(2.09)	(2.13)	(1.97)	(2.32)	
credit_fac					0.55**					0.52**					0.81**
					(6.45)					(5.02)					(10.10)
rule144a_x_foreign	0.21**	0.19	0.13	0.13	0.12	0.01	0.48	-0.11	-0.12	-0.14	0.22**	0.46*	0.12	0.12	0.13
	(3.22)	(0.76)	(1.78)	(1.86)	(1.42)	(0.13)	(1.37)	(-1.09)	(-1.19)	(-1.09)	(3.17)	(1.98)	(1.76)	(1.81)	(1.66)
rule144a_x_foreign_x_liq_index1		-0.01**					-0.01					-0.01			
		(-2.64)					(-1.11)					(-1.20)			
rule144a_x_foreign_x_turnover		-0.53					-0.87*					-0.75**			
		(-1.79)					(-2.50)					(-3.20)			
rule144a_x_foreign_x_ltdebt		1.24**					1.30*					0.95*			
		(3.02)					(2.03)					(2.13)			
rule144a_x_emerging			0.49**	-0.25	0.72**			0.66**	0.10	0.83**			0.63**	-0.05	0.84**
			(3.07)	(-0.67)	(4.22)			(3.87)	(0.28)	(4.47)			(3.62)	(-0.15)	(4.92)
rule144a_x_emerging_x_liq_index1				-0.01**					-0.01					-0.01*	
				(-2.89)					(-1.93)					(-2.58)	
rule144a_x_emerging_x_ltdebt				2.31*					1.95					3.00*	
				(2.03)					(1.56)					(2.51)	
rule144a_x_emerging_x_illiq_fac					-0.22*					-0.12					-0.14
					(-2.45)					(-1.15)					(-1.65)
Constant	-0.77	-1.33	-0.58	-0.84	-0.35	-0.20	-1.30	-0.26	-0.42	-1.96	-1.01	-1.43	-0.93	-1.10	0.10
	(-0.59)	(-1.10)	(-0.45)	(-0.63)	(-0.29)	(-0.10)	(-0.72)	(-0.14)	(-0.22)	(-1.18)	(-0.78)	(-1.16)	(-0.72)	(-0.85)	(0.09)
Observations	25,567	25,567	25,567	25,567	25,567	21,102	21,102	21,102	21,102	21,102	37,179	37,179	37,179	37,179	37,179
Adjusted R-squared	0.659	0.666	0.662	0.665	0.643	0.617	0.622	0.621	0.624	0.589	0.661	0.663	0.663	0.665	0.642

Panel C: BRIC and India specific effects

VARIABLES	Int'l public debt					U.S. 144A debt					U.S. public debt				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
	Bric	Bric	India	India	India	Bric	Bric	India	India	India	Bric	Bric	India	India	India
liq_index1	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	(1.42)	(1.56)	(1.41)	(1.48)		(0.75)	(0.88)	(0.74)	(0.79)		(0.44)	(0.56)	(0.44)	(0.49)	
trade_freq	-0.00*	-0.00*	-0.00*	-0.00*		0.00*	0.00*	0.00*	0.00*		-0.00	-0.00	-0.00	-0.00	
	(-2.22)	(-2.22)	(-2.19)	(-2.15)		(2.10)	(2.10)	(2.12)	(2.15)		(-0.61)	(-0.62)	(-0.61)	(-0.58)	
turnover	-0.18	-0.17	-0.18	-0.18		-0.79**	-0.78**	-0.79**	-0.78**		-0.20	-0.19	-0.19	-0.20	
	(-0.77)	(-0.73)	(-0.77)	(-0.77)		(-2.91)	(-2.84)	(-2.91)	(-2.90)		(-0.96)	(-0.92)	(-0.95)	(-0.95)	
illiq_fac					0.21**					0.14*					0.11**
					(5.16)					(2.19)					(2.63)
idios_vol	44.34**	43.34**	44.42**	44.19**		55.58**	54.63**	55.96**	55.67**		58.13**	57.51**	58.16**	58.03**	
	(5.86)	(5.75)	(5.86)	(5.83)		(5.09)	(4.98)	(5.11)	(5.07)		(7.78)	(7.69)	(7.79)	(7.76)	
spread_vol	0.65**	0.64**	0.65**	0.65**		0.61**	0.61**	0.61**	0.61**		0.83**	0.83**	0.83**	0.83**	
	(5.14)	(5.09)	(5.15)	(5.14)		(3.64)	(3.62)	(3.64)	(3.64)		(6.77)	(6.77)	(6.76)	(6.76)	
ltdebt_ratio	0.72*	0.71*	0.73*	0.73*		0.35	0.34	0.35	0.36		0.49	0.48	0.50	0.50	
	(2.38)	(2.33)	(2.41)	(2.42)		(0.86)	(0.85)	(0.88)	(0.89)		(1.79)	(1.75)	(1.83)	(1.83)	
int_coverage	0.01	0.01*	0.01	0.01		0.00	0.00	0.00	0.00		0.01*	0.01*	0.01	0.01	
	(1.96)	(1.98)	(1.82)	(1.82)		(0.62)	(0.68)	(0.47)	(0.47)		(1.98)	(2.05)	(1.86)	(1.85)	
credit_fac					0.56**					0.54**					0.81**
					(6.83)					(5.41)					(10.38)
rule144a_x_foreign	0.13	0.13	0.12	0.13	0.12	-0.11	-0.11	-0.12	-0.12	-0.15	0.12	0.12	0.12	0.12	0.13
	(1.78)	(1.79)	(1.74)	(1.75)	(1.36)	(-1.08)	(-1.09)	(-1.16)	(-1.15)	(-1.15)	(1.76)	(1.77)	(1.77)	(1.79)	(1.65)
rule144a_x_emerging	0.48*	0.48*	0.49*	0.48*	0.49**	0.62**	0.61**	0.63**	0.62**	0.63**	0.63**	0.63**	0.63**	0.63**	0.68**
	(2.45)	(2.41)	(2.46)	(2.44)	(2.66)	(3.07)	(3.02)	(3.09)	(3.07)	(3.10)	(2.94)	(2.92)	(2.94)	(2.93)	(3.38)
rule144a_x_bric	0.04	-1.73**	0.23	0.23	0.44	0.16	-1.02	0.41	0.41	0.70*	0.00	-1.57**	0.26	0.26	0.53
	(0.16)	(-3.42)	(0.85)	(0.86)	(1.67)	(0.51)	(-1.82)	(1.35)	(1.35)	(2.10)	(0.00)	(-3.38)	(0.90)	(0.90)	(1.89)
rule144a_x_bric_x_liq_index1		-0.01**					-0.01*					-0.01*			
		(-3.03)					(-2.07)					(-2.31)			
rule144a_x_bric_x_idios_vol		74.62**					45.81					61.10*			
		(3.24)					(1.85)					(2.54)			
rule144a_x_india			-0.94	-1.30	-0.75*			-1.30**	-0.86	-1.30**			-1.31**	-2.17	-1.32**
			(-1.91)	(-0.87)	(-2.27)			(-3.47)	(-0.65)	(-3.81)			(-3.01)	(-1.31)	(-4.40)
rule144a_x_india_x_liq_index1			-0.02**					-0.01**					-0.02**		
			(-4.09)					(-3.02)					(-3.51)		
rule144a_x_india_x_turnover			-13.34**					-10.96*					-15.61**		
			(-3.61)					(-2.41)					(-3.95)		
rule144a_x_india_x_idios_vol			80.45*					42.04					65.34		
			(2.05)					(1.05)					(1.62)		
rule144a_x_india_x_illiq_fac					-0.70**					-0.43**					-0.55**
					(-5.37)					(-3.62)					(-4.33)
rule144a_x_india_x_credit_fac					0.68*					0.44					0.43
					(2.44)					(1.30)					(1.51)
Constant	-0.55	-0.59	-0.56	-0.49	-0.04	-0.18	-0.21	-0.23	-0.17	-1.75	-0.93	-0.96	-0.94	-0.90	0.24
	(-0.41)	(-0.44)	(-0.41)	(-0.37)	(-0.03)	(-0.09)	(-0.11)	(-0.12)	(-0.09)	(-1.07)	(-0.70)	(-0.72)	(-0.71)	(-0.68)	(0.20)
Observations	25,567	25,567	25,567	25,567	25,567	21,102	21,102	21,102	21,102	21,102	37,179	37,179	37,179	37,179	37,179
Adjusted R-squared	0.662	0.663	0.662	0.663	0.643	0.621	0.623	0.622	0.623	0.590	0.663	0.664	0.664	0.664	0.643

32

Table 8. Governance risk: Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report baseline regression models augmented with governance risk variables using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. Regression covariates consist of different governance risk measures in addition to dummy interaction variables used in Table 4, All the variables are defined in Appendix A. We also employ the following governance risk dummy interaction variables: rule144a_x_foreign x governance risk proxy= governance risk of all foreign 144A issues (Panel A); rule144a_x_emerging x governance risk proxy = governance risk of all foreign 144A issues from emerging markets (Panel A); rule144a_x_bric x governance risk proxy = governance risk of all foreign emerging market 144A issues from BRIC counties (Panel B); rule144a_x_India x governance risk proxy = governance risk of all foreign BRIC 144A issues from India (Panel B). The governance interaction variables are key variables of interest. Further all regressions include issue-, and issuer- specific variables and aggregate market factors, but are not reported for brevity. We also control for Year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate, respectively; indicate significance at 1 and 5 percent levels.

Panel A: Foreign and Emerging market effects

VARIABLES	Int'l public debt						U.S. 144A debt						U.S. public debt					
	(1) Foreign	(2) Foreign	(3) Foreign	(4) Emerging	(5) Emerging	(6) Emerging	(1) Foreign	(2) Foreign	(3) Foreign	(4) Emerging	(5) Emerging	(6) Emerging	(1) Foreign	(2) Foreign	(3) Foreign	(4) Emerging	(5) Emerging	(6) Emerging
legsys	-0.21**			-0.23**			-0.07			-0.10			-0.11			-0.12		
	(-2.74)			(-2.72)			(-0.88)			(-1.18)			(-1.44)			(-1.50)		
investor_pr	-0.02			-0.02			-0.03			-0.03			-0.01			-0.02		
	(-0.46)			(-0.46)			(-0.54)			(-0.63)			(-0.30)			(-0.33)		
crdright	0.06			0.07			0.04			0.05			-0.02			-0.01		
	(1.39)			(1.53)			(0.57)			(0.75)			(-0.31)			(-0.22)		
cifar	0.01			0.01			-0.01			-0.01			-0.01			-0.02		
	(0.60)			(0.42)			(-0.64)			(-0.87)			(-1.02)			(-1.13)		
gov_fact1		-0.05			-0.07			0.41			0.01			-0.20			-0.06	
		(-0.99)			(-1.60)			(1.34)			(0.10)			(-0.98)			(-1.18)	
gov_fact2			-0.02			-0.05			1.32			0.04			-0.87			-0.01
			(-0.51)			(-1.32)			(0.98)			(0.57)			(-0.81)			(-0.11)
rule144a_x_foreign	0.16	0.26**	0.27**	0.18	0.21*	0.26**	0.47*	0.78**	2.28	0.48*	0.55**	0.61**	0.46*	0.38**	-0.75	0.47*	0.41**	0.35*
	(1.66)	(3.36)	(3.14)	(1.71)	(2.51)	(3.05)	(2.18)	(3.70)	(1.22)	(2.23)	(4.67)	(2.95)	(2.10)	(3.11)	(-0.59)	(2.13)	(4.14)	(2.03)
rule144a_x_foreign_x_gov_fact1		-0.08						-0.52						0.07				
		(-1.50)						(-1.69)						(0.34)				
rule144a_x_foreign_x_gov_fact2			-0.08*						-1.40						0.77			
			(-2.15)						(-1.05)						(0.72)			
rule144a_x_emerging				-0.13	0.24	-1.12*				-0.22	-0.57*	-2.67**				-0.09	-0.52	-2.72**
				(-0.65)	(0.75)	(-2.16)				(-0.81)	(-2.12)	(-3.98)				(-0.37)	(-1.82)	(-3.42)
rule144a_x_emerging_x_gov_fact1					-0.03						-0.30**						-0.21*	
					(-0.27)						(-2.87)						(-2.48)	
rule144a_x_emerging_x_gov_fact2						-0.23*						-0.56**						-0.47**
						(-2.34)						(-4.25)						(-3.77)
Constant	-1.67	-3.16*	-4.33**	-1.34	-3.24**	-4.23*	2.65	0.94	-1.47	3.24	1.20	0.07	1.13	-0.89	-2.22	1.37	-0.95	-3.17**
	(-1.22)	(-2.52)	(-2.71)	(-0.88)	(-2.61)	(-2.56)	(1.67)	(0.68)	(-0.56)	(1.86)	(0.88)	(0.04)	(0.98)	(-1.02)	(-1.38)	(1.10)	(-1.09)	(-3.08)
Observations	33,108	33,108	25,618	33,108	33,108	25,618	930	930	592	930	930	592	1,277	1,277	751	1,277	1,277	751
Adjusted R-squared	0.582	0.575	0.589	0.582	0.576	0.589	0.500	0.503	0.479	0.500	0.504	0.490	0.532	0.532	0.469	0.531	0.535	0.481

Panel B: BRIC and India specific effects

VARIABLES	Int'l public debt						U.S. 144A debt						U.S. public debt					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
	Bric	Bric	Bric	India	India	India	Bric	Bric	Bric	India	India	India	Bric	Bric	Bric	India	India	India
legsys	-0.23**			-0.23**			-0.17			-0.17			-0.16			-0.16		
	(-2.78)			(-2.79)			(-1.84)			(-1.88)			(-1.95)			(-1.96)		
investor_pr	-0.02			-0.01			-0.04			-0.02			-0.02			0.00		
	(-0.49)			(-0.35)			(-0.86)			(-0.39)			(-0.44)			(0.06)		
crdright	0.05			0.06			0.00			0.02			-0.04			-0.03		
	(1.17)			(1.28)			(0.01)			(0.26)			(-0.72)			(-0.41)		
cifar	0.01			0.01			0.03			0.03			0.01			0.01		
	(0.96)			(0.94)			(1.70)			(1.69)			(0.57)			(0.49)		
gov_fact1		-0.06			-0.06			-0.03			-0.04			-0.08			-0.09	
		(-1.39)			(-1.43)			(-0.59)			(-0.74)			(-1.73)			(-1.84)	
gov_fact2			-0.05			-0.05			0.01			0.01			-0.03			-0.03
			(-1.32)			(-1.36)			(0.17)			(0.13)			(-0.44)			(-0.47)
rule144a_x_foreign	0.16	0.21*	0.26**	0.16	0.21*	0.26**	0.42*	0.55**	0.57**	0.46*	0.56**	0.57**	0.42	0.41**	0.31	0.48**	0.41**	0.31
	(1.53)	(2.47)	(3.04)	(1.55)	(2.48)	(3.04)	(1.97)	(4.71)	(2.75)	(2.16)	(4.75)	(2.74)	(1.91)	(4.14)	(1.82)	(2.15)	(4.17)	(1.82)
rule144a_x_emerging	-0.18	0.29	-0.04	-0.16	0.29	-0.05	-0.36	-0.03	-0.06	-0.28	-0.05	-0.08	-0.18	0.05	0.12	-0.09	0.03	0.11
	(-0.92)	(1.52)	(-0.17)	(-0.82)	(1.48)	(-0.20)	(-1.43)	(-0.11)	(-0.17)	(-1.16)	(-0.22)	(-0.20)	(-0.75)	(0.21)	(0.30)	(-0.40)	(0.12)	(0.29)
rule144a_x_bric	0.57	-1.16	-1.15	0.88*	0.64	0.80*	1.35**	-1.83**	-2.63**	1.62**	1.15**	1.47**	0.83*	-2.87**	-4.37**	1.17**	0.90**	1.14**
	(1.53)	(-1.76)	(-1.47)	(2.39)	(1.84)	(2.06)	(3.30)	(-3.29)	(-2.61)	(4.25)	(3.90)	(3.47)	(2.03)	(-4.73)	(-4.08)	(3.28)	(3.17)	(2.92)
rule144a_x_bric_x_gov_fact1		-0.43*						-0.67**						-0.69**				
		(-2.39)						(-4.40)						(-5.28)				
rule144a_x_bric_x_gov_fact2			-0.25*						-0.54**						-0.62**			
			(-2.16)						(-3.57)						(-4.50)			
rule144a_x_india				-1.09*	-3.85	-7.08				-1.37**	-13.45**	-45.26**				-1.68**	-17.12**	-56.96**
				(-2.06)	(-1.32)	(-1.20)				(-3.12)	(-8.96)	(-8.63)				(-3.91)	(-14.49)	(-12.66)
rule144a_x_india_x_gov_fact1					-1.95						-5.98**						-5.53**	
					(-1.07)						(-9.44)						(-15.14)	
rule144a_x_india_x_gov_fact2						-1.95						-9.26**						-9.46**
						(-1.08)						(-8.69)						(-12.27)
Constant	-1.68	-3.36**	-4.17*	-1.87	-3.32**	-4.13*	0.84	1.22	0.23	0.58	1.26	0.25	-0.05	-0.99	-3.23**	-0.27	-0.98	-3.25**
	(-1.10)	(-2.67)	(-2.50)	(-1.23)	(-2.65)	(-2.48)	(0.49)	(0.88)	(0.14)	(0.34)	(0.91)	(0.15)	(-0.04)	(-1.11)	(-3.12)	(-0.22)	(-1.11)	(-3.12)
Observations	33,108	33,108	25,618	33,108	33,108	25,618	930	930	592	930	930	592	1,277	1,277	751	1,277	1,277	751
Adjusted R-squared	0.582	0.577	0.589	0.583	0.577	0.589	0.507	0.509	0.486	0.509	0.509	0.488	0.534	0.540	0.479	0.539	0.540	0.481

Table 9. Familiarity Risk: Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report baseline regression models augmented with familiarity risk variable using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. Regression covariates consist of two familiarity risk proxies (*dr_existflag* that denotes whether an US DR exists for the foreign issuer on or before the particular calendar year; and *dr_exchflag* denoting whether the US DR trades in one of the three major exchanges), in addition to issue- and issuer- specific characteristics, and aggregate market variables All the variables are defined in Appendix A. In addition we employ the following dummy interaction variables as in Table 4): rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. The above interaction variables are key variables of interest. We report results separately for the overall and emerging market samples (Panel A), and BRIC and Indian firms (Panel B). Further while all regressions include issue-, and issuer- specific variables and aggregate market factors, they are not reported for brevity. We also control for Year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate, respectively; indicate significance at 1 and 5 percent levels.

Panel A: Foreign and Emerging market effects

VARIABLES	Int'l public debt		U.S. 144A debt		U.S. public debt	
	(1)	(2)	(1)	(2)	(1)	(2)
	Uncond	Emerging	Uncond	Emerging	Uncond	Emerging
rule144a_x_emerging		0.62**		0.69**		0.84**
		(4.51)		(4.38)		(5.53)
dr_existflag	0.40**	0.39**	0.19	0.17	0.35**	0.31**
	(2.76)	(2.84)	(1.19)	(1.19)	(2.69)	(2.67)
dr_exchflag	-0.06	-0.11	0.05	-0.18	0.06	-0.20
	(-0.39)	(-0.73)	(0.28)	(-0.99)	(0.33)	(-1.19)
Constant	-3.31**	-3.35**	-3.49*	-3.46*	-3.03**	-3.04**
	(-2.88)	(-2.94)	(-2.29)	(-2.34)	(-3.10)	(-3.12)
Observations	35,450	35,450	31,901	31,901	49,673	49,673
Adjusted R-squared	0.575	0.581	0.543	0.550	0.540	0.547

Panel B: BRIC and India specific effects

VARIABLES	Int'l public debt		U.S. 144A debt		U.S. public debt	
	(1)	(2)	(1)	(2)	(1)	(2)
	Bric	India	Bric	India	Bric	India
rule144a_x_emerging	0.47**	0.47**	0.49**	0.48**	0.68**	0.67**
	(3.29)	(3.28)	(2.96)	(2.87)	(4.09)	(4.00)
rule144a_x_bric	0.54	0.81**	0.76*	1.03**	0.59	0.92**
	(1.91)	(3.03)	(2.43)	(3.14)	(1.90)	(3.13)
rule144a_x_india		-1.44**		-1.46**		-1.79**
		(-3.20)		(-3.65)		(-4.01)
dr_existflag	0.40**	0.40**	0.20	0.20	0.32**	0.32**
	(2.92)	(2.96)	(1.35)	(1.38)	(2.71)	(2.78)
dr_exchflag	-0.12	-0.07	-0.22	-0.11	-0.23	-0.11
	(-0.78)	(-0.47)	(-1.18)	(-0.59)	(-1.30)	(-0.66)
Constant	-3.16**	-3.26**	-3.22*	-3.35*	-2.86**	-2.95**
	(-2.71)	(-2.79)	(-2.20)	(-2.28)	(-2.88)	(-2.95)
Observations	35,450	35,450	31,901	31,901	49,673	49,673
Adjusted R-squared	0.582	0.583	0.552	0.553	0.548	0.549

Table 10. Nesting All Risks: Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report baseline regression models for all (i.e. liquidity, default, governance and familiarity) risk variables using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. Regression covariates consist of all risk variables considered individually in Tables 6, 7 and 8 in addition to issue- and issuer- specific characteristics, and aggregate market variables. All the variables are defined in Appendix A. The objective is to study how different risks matter for bond investors when considered together. In addition we employ the following dummy interaction variables from Table 4): rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. The above interaction variables are key variables of interest. We report result separately for the emerging market samples (Panel A), and BRIC and Indian firms (Panel B). Further while all regressions include issue-, and issuer- specific variables and aggregate market factors, they are not reported for brevity. We also control for Year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate, respectively; indicate significance at 1 and 5 percent levels..

Panel A: Emerging market effects

VARIABLES	Int'l public debt			U.S. 144A debt			U.S. public debt		
	(1) Emerging	(2) Emerging	(3) Emerging	(1) Emerging	(2) Emerging	(3) Emerging	(1) Emerging	(2) Emerging	(3) Emerging
dr_existflag	0.39**	0.37*	0.44**	0.17	0.10	0.23	0.31**	0.26	0.36*
	(2.84)	(2.46)	(2.78)	(1.19)	(0.53)	(1.09)	(2.67)	(1.80)	(2.01)
dr_exchflag	-0.11	0.01	-0.00	-0.18	-0.18	-0.10	-0.20	-0.27	-0.27
	(-0.73)	(0.07)	(-0.02)	(-0.99)	(-0.82)	(-0.48)	(-1.19)	(-1.35)	(-1.33)
illiq_fac		0.18**	0.16**		0.11	0.11		0.10*	0.09
		(3.62)	(3.10)		(1.54)	(1.47)		(2.04)	(1.78)
credit_fac		0.70**	0.72**		0.75**	0.79**		0.93**	0.95**
		(6.92)	(6.37)		(6.16)	(6.38)		(10.81)	(10.83)
gov_fact1			-0.08*			-0.17*			-0.07
			(-2.18)			(-2.36)			(-1.52)
rule144a_x_emerging	0.62**	0.56**	0.27	0.69**	0.59**	-0.11	0.84**	0.73**	0.42
	(4.51)	(3.73)	(1.58)	(4.38)	(3.31)	(-0.30)	(5.53)	(4.24)	(1.58)
Constant	-3.35**	0.76	1.74	-3.46*	-0.44	0.43	-3.04**	1.26	1.80
	(-2.94)	(0.57)	(1.17)	(-2.34)	(-0.25)	(0.25)	(-3.12)	(0.99)	(1.37)
Observations	35,450	25,567	23,795	31,901	21,102	20,023	49,673	37,179	35,991
Adjusted R-squared	0.581	0.651	0.645	0.550	0.599	0.598	0.547	0.650	0.650

Panel B: BRIC and India specific effects

VARIABLES	Int'l public debt				U.S. 144A debt				U.S. public debt			
	(1) Bric	(2) Bric	(3) India	(4) India	(1) Bric	(2) Bric	(3) India	(4) India	(1) Bric	(2) Bric	(3) India	(4) India
dr_existflag	0.38*	0.44**	0.38*	0.43**	0.11	0.23	0.11	0.22	0.27	0.36*	0.27	0.35
	(2.48)	(2.78)	(2.50)	(2.76)	(0.59)	(1.08)	(0.60)	(1.03)	(1.82)	(2.00)	(1.86)	(1.95)
dr_exchflag	0.01	-0.00	0.05	0.03	-0.20	-0.10	-0.08	-0.04	-0.28	-0.27	-0.17	-0.20
	(0.04)	(-0.02)	(0.30)	(0.13)	(-0.89)	(-0.50)	(-0.38)	(-0.19)	(-1.41)	(-1.37)	(-0.88)	(-1.00)
illiq_fac	0.18**	0.16**	0.18**	0.16**	0.11	0.11	0.11	0.11	0.10*	0.09	0.09*	0.09
	(3.57)	(3.09)	(3.55)	(3.09)	(1.52)	(1.47)	(1.49)	(1.45)	(2.01)	(1.78)	(2.00)	(1.78)
credit_fac	0.70**	0.72**	0.70**	0.72**	0.75**	0.79**	0.75**	0.79**	0.93**	0.95**	0.93**	0.95**
	(6.91)	(6.37)	(6.94)	(6.38)	(6.17)	(6.39)	(6.20)	(6.39)	(10.81)	(10.83)	(10.81)	(10.81)
gov_fact1		-0.08*		-0.07		-0.17*		-0.16*		-0.07		-0.06
		(-2.15)		(-1.93)		(-2.28)		(-2.11)		(-1.47)		(-1.26)
rule144a_x_emerging	0.50**	0.27	0.50**	0.29	0.51*	-0.11	0.50*	-0.07	0.67**	0.43	0.66**	0.46
	(2.71)	(1.48)	(2.70)	(1.61)	(2.46)	(-0.30)	(2.39)	(-0.19)	(3.18)	(1.56)	(3.11)	(1.68)
rule144a_x_bric	0.24	-0.00	0.53	0.39	0.33	0.03	0.62	0.41	0.23	-0.01	0.54	0.47
	(0.79)	(-0.01)	(1.91)	(1.18)	(1.02)	(0.08)	(1.80)	(0.87)	(0.74)	(-0.03)	(1.78)	(1.23)
rule144a_x_india			-1.52**	-1.18*			-1.52**	-1.17*			-1.62**	-1.50**
			(-2.90)	(-2.03)			(-3.32)	(-2.13)			(-3.27)	(-2.77)
Constant	0.86	1.74	0.84	1.60	-0.33	0.43	-0.41	0.29	1.33	1.80	1.28	1.68
	(0.62)	(1.16)	(0.60)	(1.07)	(-0.18)	(0.25)	(-0.23)	(0.16)	(1.04)	(1.37)	(1.00)	(1.28)
Observations	25,567	23,795	25,567	23,795	21,102	20,023	21,102	20,023	37,179	35,991	37,179	35,991
Adjusted R-squared	0.651	0.645	0.652	0.646	0.599	0.598	0.600	0.599	0.650	0.650	0.651	0.651

Table 11. Effect of Financial Crisis: Panel Regressions of Secondary Market Foreign 144 A Bond Spreads (1994-2010)

Here we report the effects of financial crisis (2007-10) using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. We present separate regression results documenting the direct effects of crisis on the bond spreads (Panel A), and indirect effects though its impact on bond market ordered imbalance (Panel B). Regression covariates comprising of crisis channel consist of stand-alone crisis dummy, ordered imbalance, and crisis dummy interaction with other country and order imbalance variables. All the variables are defined in Appendix A. We also employ the standard dummy interaction variables as in Table 4: rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. Further while all regressions include issue-, and issuer- specific variables and aggregate market factors, they are not reported for brevity. We control for year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate significance at 1 and 5 percent levels respectively.

Panel A: Effect of financial crisis

VARIABLES	Control sample - Int'l public debt		Control sample - U.S. 144A debt		Control sample - U.S. public debt	
	(1)	(2)	(1)	(2)	(1)	(2)
crisis	0.35**	0.20	0.24	0.30	0.32**	0.24
	(3.21)	(1.37)	(1.78)	(1.24)	(3.16)	(1.90)
rule144a_x_foreign		0.07		0.01		0.19
		(0.70)		(0.04)		(1.48)
rule144a_x_emerging		0.60**		0.65**		0.67**
		(2.93)		(3.17)		(2.99)
rule144a_x_bric		0.73		1.34*		1.05
		(1.17)		(1.97)		(1.53)
rule144a_x_india		-1.80		-2.10		-2.11
		(-1.77)		(-1.96)		(-1.85)
rule144a_x_foreign_x_crisis		0.37*		-0.02		0.33
		(2.34)		(-0.06)		(1.66)
rule144a_x_emerging_x_crisis		-0.51*		-0.52		-0.42
		(-2.01)		(-1.88)		(-1.48)
rule144a_x_bric_x_crisis		-0.13		-0.61		-0.50
		(-0.17)		(-0.72)		(-0.58)
rule144a_x_india_x_crisis		0.84		1.16		0.79
		(0.79)		(1.02)		(0.67)
Constant	-4.05**	-4.22**	-4.08**	-4.11**	-4.35**	-4.57**
	(-4.24)	(-4.36)	(-2.61)	(-2.74)	(-4.41)	(-4.71)
Observations	35,450	35,450	31,901	31,901	49,673	49,673
Adjusted R-squared	0.561	0.573	0.535	0.547	0.525	0.539

Panel B: Effect of Order Imbalance

VARIABLES	Control sample - Int'l public debt				Control sample - U.S. 144A debt				Control sample - U.S. public debt			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
rule144a_x_foreign		0.22**		0.24**		0.02		0.03		0.32**		0.32**
		(2.78)		(2.88)		(0.18)		(0.25)		(3.69)		(3.63)
rule144a_x_emerging		0.40*		0.39*		0.47**		0.45**		0.50**		0.49**
		(2.58)		(2.51)		(2.80)		(2.68)		(2.95)		(2.96)
rule144a_x_bric		0.69*		0.69*		1.00**		0.97**		0.85**		0.85**
		(2.55)		(2.55)		(3.11)		(3.02)		(2.99)		(3.00)
rule144a_x_india		-1.22**		-1.20**		-1.55**		-1.52**		-1.71**		-1.68**
		(-2.67)		(-2.62)		(-3.97)		(-3.77)		(-3.88)		(-3.78)
buy_perc_ind	-1.76*	-1.30			-4.25**	-4.49**			-4.80**	-4.72**		
	(-2.10)	(-1.36)			(-3.40)	(-3.62)			(-5.72)	(-5.28)		
buy_perc_ind_x_crisis		-1.06				0.69				0.21		
		(-0.77)				(0.40)				(0.18)		
trade_imb_ind			0.02	-0.05			-1.13	-1.11			-1.73**	-1.67**
			(0.06)	(-0.11)			(-1.85)	(-1.83)			(-3.55)	(-3.51)
trade_imb_ind_x_crisis			-2.03*	-1.98*			-4.00**	-3.78**			-1.22	-1.07
			(-2.27)	(-2.24)			(-2.81)	(-2.66)			(-1.13)	(-1.04)
Constant	-2.00	-2.22*	-2.88*	-3.07**	-1.21	-1.06	-3.30*	-3.20*	-0.09	-0.33	-2.42**	-2.58**
	(-1.83)	(-2.07)	(-2.51)	(-2.71)	(-0.71)	(-0.66)	(-2.27)	(-2.29)	(-0.10)	(-0.36)	(-2.59)	(-2.81)
Observations	35,450	35,450	35,450	35,450	31,901	31,901	31,901	31,901	49,673	49,673	49,673	49,673
Adjusted R-squared	0.572	0.582	0.572	0.583	0.547	0.557	0.552	0.561	0.545	0.558	0.543	0.556

Table 12. Effect of Primary Dealer Inventories: Panel Regressions of Secondary Market 144 A Bond Spreads for Foreign Debt Issuers (1994-2010)

Here we report the effects of primary-dealer inventories of corporate debt using secondary bond market trades for the treatment sample of 144A bonds versus three control samples i.e. International public (Yankee) issues, U.S. 144 A issues and US public debt issues. The dependent variable is the secondary market spreads of 144 A bond transactions. We present regression results documenting the direct effects of dealer inventories and also inventories conditional on the non-crisis period (Panel A) and crisis-period (Panel B). The regression covariates comprise of the dealer inventory as a fraction of total interpolated monthly corporate debt outstanding. The weekly dealer inventory data is obtained from FRBNY and the yearly corporate debt outstanding numbers are obtained from FINRA. Linear interpolation is used to obtain the monthly corporate debt outstanding estimates. All the variables are defined in Appendix A. We also employ the standard dummy interaction variables as in Table 4: rule144a_x_foreign= all foreign 144A issues; rule144a_x_emerging= all foreign 144A issues from emerging markets; rule144a_x_bric= all foreign emerging market 144A issues from BRIC counties; rule144a_x_India= all foreign BRIC 144A issues from India. Further while all regressions include issue-, and issuer- specific variables and aggregate market factors, they are not reported for brevity. We control for year-specific fixed effects and clustering effects by issuer, and also employ heteroscedasticity adjustments in all regressions. Values of *t*-statistics are reported in square brackets. ** and * indicate significance at 1 and 5 percent levels respectively.

Panel A: Non-crisis interaction dummy

VARIABLES	Control sample - Int'l public debt		Control sample - U.S. 144A debt		Control sample - U.S. public debt	
	(1)	(2)	(1)	(2)	(1)	(2)
rule144a_x_foreign	0.21*	0.22*	-0.04	-0.04	0.30**	0.31**
	(2.34)	(2.36)	(-0.25)	(-0.28)	(3.36)	(3.44)
rule144a_x_emerging	0.37*	0.37*	0.41*	0.41*	0.49**	0.49**
	(2.19)	(2.19)	(2.00)	(2.00)	(2.77)	(2.75)
rule144a_x_bric	0.72*	0.69*	1.12**	1.12**	0.83**	0.83**
	(2.40)	(2.31)	(3.06)	(3.04)	(2.66)	(2.68)
rule144a_x_india	-1.21*	-1.27**	-1.48**	-1.51**	-1.65**	-1.72**
	(-2.58)	(-2.61)	(-3.61)	(-3.65)	(-3.96)	(-3.93)
dlr_frac_val	-22.59*	-14.78	-17.86	-15.44	-8.55	-2.50
	(-2.01)	(-1.37)	(-1.57)	(-1.37)	(-1.30)	(-0.40)
dlr_frac_val_x_noncrisis		-11.48**		-3.76		-11.98**
		(-3.99)		(-0.80)		(-3.97)
Constant	-3.27	-3.10	-2.96	-2.86	-4.66**	-4.05**
	(-1.90)	(-1.92)	(-1.58)	(-1.52)	(-4.19)	(-3.62)
Observations	30,617	30,617	26,722	26,722	42,916	42,916
Adjusted R-squared	0.575	0.578	0.559	0.559	0.558	0.561

Panel B: Crisis interaction dummy

VARIABLES	Control sample - Int'l public debt		Control sample - U.S. 144A debt		Control sample - U.S. public debt	
	(1)	(2)	(1)	(2)	(1)	(2)
rule144a_x_foreign	-0.04	0.22*	0.21*	-0.04	0.30**	0.31**
	(-0.25)	(2.36)	(2.34)	(-0.28)	(3.36)	(3.44)
rule144a_x_emerging	0.41*	0.37*	0.37*	0.41*	0.49**	0.49**
	(2.00)	(2.19)	(2.19)	(2.00)	(2.77)	(2.75)
rule144a_x_bric	1.12**	0.69*	0.72*	1.12**	0.83**	0.83**
	(3.06)	(2.31)	(2.40)	(3.04)	(2.66)	(2.68)
rule144a_x_india	-1.48**	-1.27**	-1.21*	-1.51**	-1.65**	-1.72**
	(-3.61)	(-2.61)	(-2.58)	(-3.65)	(-3.96)	(-3.93)
dlr_frac_val	-17.86	-26.26*	-22.59*	-19.20	-8.55	-14.49*
	(-1.57)	(-2.31)	(-2.01)	(-1.63)	(-1.30)	(-2.04)
dlr_frac_val_x_crisis		11.48**		3.76		11.98**
		(3.99)		(0.80)		(3.97)
Constant	-2.96	-3.10	-3.27	-2.86	-4.66**	-4.05**
	(-1.58)	(-1.92)	(-1.90)	(-1.52)	(-4.19)	(-3.62)
Observations	26,722	30,617	30,617	26,722	42,916	42,916
Adjusted R-squared	0.559	0.578	0.575	0.559	0.558	0.561

Table 13. Domestic yields for Indian companies (traded on NSE) compared to 144A offer yields of BRIC and Emerging market firms (1999-2010)

Here we report the yields and yield spreads from Indian issuers listed on NSE (http://www.nseindia.com/products/content/debt/corp_bonds/cbm_corp_bonds.htm) relative to the 144A issues of BRIC and emerging market firms. We report the number of issues and median yields (Panel A) or yield spreads benchmarked to Treasury yields (Panel B) by industry, maturity and ratings category. For Indian issues, the Treasury benchmark rate is linearly interpolated using 1 year, 5 year and 10 year Treasury yields (source: Datastream). We use Treasury in lieu of swap benchmark for Indian firms as the rupee swap yield history is limited. Short-, medium- and long-term maturities respectively denote bonds with maturities ≤ 5 years, 6-10 years and above 10 years. We highlight the issuer with highest yields or yield spreads under each category.

Panel A: Yield comparisions

Domestic Indian Issues:			144A BRIC Issues: U.S. Primary debt market			144A Domestic Emerging Issues: U.S. Primary debt market		
	NOBS	Median yield		NOBS	Median yield		NOBS	Median yield
by Industry								
Financials	972	8.85	Financials	167	8.17	Financials	351	7.27
Industrials	96	9.03	Industrials	160	8.95	Industrials	476	8.55
Utilities	362	8.75	Utilities	25	9.91	Utilities	108	7.77
by Maturity								
Long-term	322	8.75	Long-term	195	8.62	Long-term	600	7.95
Medium-term	383	8.77	Medium-term	147	8.78	Medium-term	322	7.63
Short-term	591	8.85	Short-term	16	9.51	Short-term	19	9.71
by Ratings								
AAA	16	10.34	AAA	1	3.75	AAA	9	6.22
AA	267	9.24	AA	3	4.43	AA	21	5.75
A	1,137	8.76	A	5	7.70	A	158	6.07
BBB	1	11.28	BBB	115	6.66	BBB	264	6.67
BB	3	8.37	BB	98	8.60	BB	234	8.88
UR	5	8.98	UR	136	10.03	UR	255	10.5
Total	1,430	8.88	Total	352	9.01	Total	935	7.86

Panel B: yield spread comparisions

Indian Issues:			144A BRIC Issues: U.S. Primary debt market			144A Emerging Issues: U.S. Primary debt market		
	NOBS	Median yield spread		NOBS	Median yield spread		NOBS	Median yield spread
by Industry								
Financials	9	1.71	Financials	167	3.08	Financials	351	2.37
Industrials	7	1.81	Industrials	160	4.01	Industrials	476	3.21
Utilities	2	1.38	Utilities	25	3.49	Utilities	108	1.9
by Maturity								
Long-term	10	1.70	Long-term	195	3.27	Long-term	600	2.64
Medium-term	8	1.56	Medium-term	147	3.88	Medium-term	322	2.8
Short-term			Short-term	16	4.76	Short-term	19	4.78
by Ratings								
AAA			AAA	1	0	AAA	9	0.83
AA			AA	3	0.96	AA	21	0.74
A			A	5	3.55	A	158	0.83
BBB	8	1.40	BBB	115	2.4	BBB	264	1.77
BB	11	1.72	BB	98	4.17	BB	234	3.64
UR			UR	136	4.01	UR	255	4.6
Total	18	1.59	Total	352	3.53	Total	935	2.49