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FIRM FINANCING AND GROWTH IN THE ARAB REGION

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Abstract

This paper provides a first analysis of the extent to which firms in the Arab region use capital markets to obtain financing and grow. It addresses two questions: First, how many and which firms issue equity, bonds, and syndicated loans in the Arab region? Second, how do these firms perform relative to non-issuing firms? To tackle these questions, a uniquely matched dataset of firm-level issuances and balance sheet information of 1,462 firms in the Arab region is constructed. Two main findings emerge from the analysis. (1) Over the last two decades, the amounts raised in equity, bond, and syndicated loan markets have considerably increased and been associated with an increasing number of issuing firms. (2) The typical issuing firm is larger, grows faster, is more leveraged, and holds more long-term debt relative to the typical non-issuer. Moreover, issuers seem to be initially larger than non-issuers in terms of assets, turnover, and the number of employees, and even grow faster over time. The firm size distribution of issuers lies to the right and shifts more rightwards over time compared to the distribution of non-issuers, indicating a divergence in firm size among listed firms.

JEL Classification: F21, F65, G00, G10, G15, G23, G31, L25

Keywords: capital raising, corporate bonds, domestic and international debt markets, equity, firm financing, global financial crisis, issuance maturity, syndicated loans, Arab countries

ملخص

تقدم هذه الورقة أول تحليل لمدى استخدام الشركات في المنطقة العربية لأسواق رأس المال للحصول على التمويل والنمو. وتتناول سؤالين: أولا، ما هو عدد الشركات التي تصدر الأسهم والسندات والقروض المشتركة في المنطقة العربية؟ ثانيا، مستوى اداء هذه الشركات نسبة إلى الشركات غير المصدرة؟ ومن أجل معالجة هذه الأسئلة، تم إنشاء مجموعة بيانات متقاربة بشكل فريد من االاصدارات على مستوى الشركة ومعلومات الميزانية العمومية من 1462 شركة في المنطقة العربية. وتظهر بعض النتائج الرئيسية من التحليل. (1) على مدى العقدين الماضيين، زادت المبالغ التي أثيرت في أسواق الأسهم والسندات والقروض المشتركة زيادة كبيرة وارتبطت بعدد متزايد من الشركات المصدرة. (2) شركة الإصدار تكون عادة أكبر، وتنمو بشكل أسرع، وتكون أكثر استدانة، وتحمل المزيد من الديون طويلة الأجل نسبة إلى شكل الشركات غير المصدر. وعلاوة على ذلك، يبدو أن المصدرين في البداية أكبر من غير المصدرين من حيث الأصول وعدد الموظفين، بل وينمو بشكل أسرع مع مرور الوقت. ويتوزع حجم الشركات المصدرة ويتحول أكثر على مر الزمن مقارنة بتوزيع غير المصدرين، مما يشير إلى تباين في حجم الشركات بين الشركات المدرجة.

1. Introduction

The use of capital and syndicated loan markets in the Arab region has expanded considerably during the last decades. For instance, bond and equity issuance increased more than 20-fold from 1991 through 2014, whereas the volume of syndicated loan deals increased around 5-fold during the same period. In this paper we use a unique dataset to provide a first analysis of the extent to which firms in the Arab region use capital markets and syndicated loans to obtain financing and grow. We address two main questions: (1) How many and which firms actually issue equity, bonds, and syndicated loans? (2) How do assets, turnover, and number of employees evolve for issuing relative to non-issuing firms?

To tackle these questions, we assemble a unique and comprehensive dataset on firm-level domestic and international issuances of equities, bonds, and syndicated loans by firms in the Arab region, during 1991-2014. We match this data to balance sheet information on publicly listed firms from 12 Arab countries. Our matched data comprises 1,462 firms over the period 2003-2011. This allows us to document new patterns about the comparative behavior of the size and growth of issuing and non-issuing firms.

Two interrelated findings emerge from our analysis. First, the growth in Arab capital and syndicated loan markets over 1991-2014 has been associated with growth in the extensive as well as the intensive margin. Not only did the amount raised in equity, bond, and syndicated loan markets considerably increase over time, but there has also been an expansion in the number of firms actually using these markets to obtain financing. The total amount of funds raised with equity, bonds, and syndicated loans, has increased almost 21-fold, 22-fold, and 5-fold, respectively, between 1991-1998 and 2007-2014. In parallel with this expansion, the number of issuing firms has increased by around 15 times in equity markets, 6 times in bond markets, and 3 times in syndicated loan markets. Although market concentration around the top issuers has decreased over the period, a large fraction of the issuance activity in the Arab region is still captured by a few number of firms. During 2007-2014, the top five issuing firms captured around 19 percent of the total amount raised in both equity and bond markets, and 12 percent in syndicated loan markets.

Second, firms that issue either equity, bonds, or syndicated loans are larger than non-issuing firms, as they have more assets, turnover, and number of employees. For instance, during 2003-2011 the median equity issuing firm had assets of around $240 million, which was almost 3 times the value of assets of the median non-issuer. Debt issuers are even larger than equity issuers. Despite being larger, issuers grow at a faster rate than non-issuers. For instance, the growth rates in assets (turnover) for the median equity issuer and non-issuer were around 14 (17) percent and 8 (13) percent per year, respectively. Issuing firms are also more leveraged and hold more long-term debt compared to non-issuers. A difference-in-differences analysis shows that issuing firms are ex ante larger than non-issuing firms in terms of assets, turnover, and the number of employees. While both issuers and non-issuers have grown in size over time, issuers have grown at a much higher rate, widening the size gap. Similar results are evident along the firm size distribution (FSD). Although we do not evaluate the causal impact of a firm issuing equity, bonds, or loans on its performance, the findings in this paper indicate that firms grow faster when they issue.

The analysis in this paper relates to several strands of literature. Our research questions contribute to the active debates on whether and through which channels capital market development might be related to economic growth and firm performance. At the aggregate level, the literature has long argued that well-functioning financial systems, and specifically capital markets, play an important role in promoting firm performance. Better functioning financial systems can improve information dissemination, reduce transaction and monitoring costs, and help diversify risk, leading to a more efficient allocation of resources (Grossman and Stiglitz, 1980; Levine, 1992; Holmström and Tirole, 1993; Obstfeld, 1994; Acemoglu and Zilibotti, 1997). More accessible financial sectors can also be beneficial for the development of small and medium enterprises (SMEs), which tend to be underserved in developing countries (Beck and Demirgüç-Kunt, 2006; Beck et al., 2011; de la Torre et al., 2010).

In fact, the evidence suggests that the size and liquidity of capital and other financial markets are positively associated with aggregate growth (e.g., Levine and Zervos, 1996, 1998; Demirguc-Kunt and Maksimovic, 1998; Henry, 2000; Beck and Levine, 2004; Bekaert et al., 2005; Levine, 2005). A number of studies have stressed the role of financial and capital market development in promoting aggregate economic growth in the MENA or Arab Region (Bolbol and Omran, 2005; Bolbol et al., 2005; Al-Zubi et al., 2006; Naceur and Ghazouani, 2007; Abu-Bader and Abu-Qarn, 2008a, 2008b; Kar, et al., 2011; Al-Malkawi, 2012; Falahaty and Hook, 2013). Nevertheless, no studies have investigated how and which firms in the Arab world issue equity, bonds, or syndicated loans to raise finance, or how this relates to their growth performance. Deeper and more liquid markets at the aggregate level do not necessarily imply a direct link between firm capital raising and firm performance at the micro-level. The benefits might be more diffuse. It is hence of great interest to study capital market performance in the Arab world at the firm level, especially because for the last three decades those countries have undergone a number of significant financial reforms. Our study contributes to the literature by using unique firm-level real issuance data to examine how widespread is the use of equity, bonds, and syndicated loans by firms in the Arab world, and how firms that actually issue in these markets evolve compared to non-issuers. While some interesting findings have been documented for several countries (e.g. Didier and Schmukler, 2013; Didier et al., 2015), none have specifically looked at firms in the Arab region.

Another relevant body of literature looks at the motives behind firms' issuance of capital. While firms can issue equity or debt to fund positive net present value investments, the literature has emphasized that they can also do so to alter their capital structure, substitute cheaper for more expensive financing, reduce free cash flows, minimize taxes, or change the duration of debt (e.g., Graham and Harvey, 2001; Kim and Weisbach, 2008; De Angelo et al. 2009; Hertzel and Li, 2010; Graham and Leary, 2011). Accordingly, it is not necessarily the case that the capital raising activity directly connects to firm expansion. While it is hard to distinguish between these different issuing motives as they involve corporate investment decisions, our results draw some insightful conclusions. Although we do not measure the causal impact of issuances, by showing that issuers of debt and equity grow relatively faster than non-issuers, our findings suggest that modifying the capital structure is not the only factor behind firms' issuance activity.

Our findings also relate to the growing literature on firm size and growth. Although early research found support for the Gibrat's law (1931), stating that firm growth is independent of firm size (Simon and Bonnini, 1958; Mansfield, 1962; Ijiri and Simon, 1964), later work argued that larger firms grow slower than smaller ones (e.g. Evans, 1987). In this paper, we contribute to this literature by examining firms in the Arab region, which have so far been overlooked in the academic literature. We focus only on listed firms, distinguishing by issuing and non-issuing firms. While listed firms are a small subset of the universe of firms, they are more homogeneous than non-listed firms and they usually account for a significant proportion of national sales and employment.[1] While previous studies have argued that smaller firms grow faster than larger ones, we find that even within a sample of large listed firms, on average, this difference in performance depends on whether firms are issuers or

[1] Several papers argue that the largest firms in a country play a crucial role in aggregate outcomes (e.g., Gabaix, 2011; di Giovanni and Levchenko, 2012; Eaton et al., 2012; Freund and Pierola, 2012).

non-issuers. The finding that issuing firms are ex ante larger and grow faster than non-issuing firms stresses the importance of considering corporate finance when assessing the evolution of the firm size distribution.

The remainder of the paper is organized as follows. Section 2 describes the data. Section 3 briefly describes the evolution of equity, bond, and syndicated loan markets, then documents how many firms use and capture issuance activity in the Arab region. Section 4 examines which firms use these markets, focusing on firm characteristics as size, growth, debt structure, and profitability. Section 5 studies the dynamics of ex ante and ex post firm performance and the evolution of FSD for issuing and non-issuing firms. Section 6 concludes.

2. Data

To assess which firms issue securities and the comparative performance of issuing and non-issuing firms in the Arab region, we assemble a comprehensive dataset covering equity, corporate bond, and syndicated loan issuances as well as balance sheet information on publicly listed Arab firms. The data on firm capital raising activity cover the period 1991-2014 and come from the Thomson Reuters Security Data Corporation (SDC) Platinum database, which provides transaction-level information on new issuances of equity, publicly and privately placed bonds, and syndicated loans with an original maturity of more than one year. The dataset includes 4,372 security issuances: 1,398 equity issuances, 650 bond issuances, and 2,324 syndicated loan issuances by listed and unlisted firms.

To examine the comparative characteristic and performance of issuing and non-issuing firms, we match the dataset on security issuances from SDC Platinum with 2003-2011 firm-level balance sheet information from the Orbis (Bureau van Dijk) database. The latter covers publicly listed companies, providing a rather homogeneous sample of firms. By omitting unlisted firms from the analysis using the matched data, the sample excludes firms that are (1) relatively small and sometimes informal, (2) likely to have different accounting standards, and (3) less likely to issue in capital markets. The final matched dataset covers 1,462 firms from 12 Arab countries. In particular, our sample includes firms from Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates.

We classify firms as issuers or non-issuers based on whether they issued equity, bonds, or syndicated loans at any point during our sample period. Because firm-level balance sheet information is only available from 2003 to 2011, we classify a firm as an issuer if it had at least one issuance during that period. We further classify whether firms are equity, bond, or loan issuers depending on whether firms issued any equity, bonds, or syndicated loans, respectively. The sample of non-issuing firms is held fixed throughout the paper. Non-issuing firms are those that did not have any issuance activity between 2003 and 2011. In the SDC-Orbis data, 384 firms are issuers and 1,078 are non-issuing firms.[2]

Our analysis focuses on firm size and growth, measured by the level and growth rate of total assets, turnover, and the number of employees. Firm assets and turnover are measured in constant 2011 U.S. dollars, using the U.S. consumer price index (CPI) to discount nominal values. The analysis also examines firm age (measured in 2011), firm profitability, and other financial indicators such as return on assets (ROA), leverage (including bank and other types of financing), and the maturity profile of liabilities.

[2] Appendix Table 1 reports the number of issuing and non-issuing firm per country.

3. How Widespread Is the Use of Capital Markets and Syndicated Loans?

The issuance data shows that there has been a sizable expansion in equity and debt markets in the Arab region since the early 1990s. The total values of issuances by firms in equity, bond, and syndicated loan markets have increased almost 21-fold, 22-fold, and 5-fold, respectively (Figure 1, Panel A).[3] Moreover, the bulk of debt issuances by Arab firms are concentrated in foreign markets. In 2007-2014, domestic market trading activity accounted for almost 96 percent of equity market issuances, while only 11 percent and 8 percent of bond and loan issuances, respectively. Comparing the different markets, the total amount raised in debt was larger than the total amount raised in equity during the last sample period (2007-2014). In particular, the total amounts raised through bonds and loans over equity were 1.4 and 4.3, respectively (Figure 1, Panel A).

To what extent does this expansion in capital and syndicated loan markets imply that a wider set of firms in fact use them? The growth in capital raising activity in the Arab region has been associated with a growth in the extensive margin. In other words, with the growth in market activity, a larger number of firms have been increasing their use of equity, bonds, and syndicated loan markets over the years. The number of issuing firms in Arab equity markets has increased by almost 15 times, from 44 issuers in 1991-1998 to 658 issuers in 2007-2014. Similarly, the number of issuers in Arab bond (syndicated loan) markets has increased almost 6-fold (3-fold), from 24 (141) issuers to 146 (483) issuers. These findings stand in contrast with other regions in the world, whose expansion in capital market issuance activity has been mainly associated with a growth in the intensive margin, that is, a small number of firms materially increasing their use of capital markets (Didier and Schmukler, 2013; Didier et al.; 2015).

Although the increasing number of issuing firms translated in a lower degree of market concentration around the top issuers over time, equity, bond, and loan market activity in the Arab region remains concentrated around a few number of firms. For instance, while the total amount raised in equity markets by the top-5 (top-20) equity issuers stood at 51 (88) percent of the total during 1991-1998, their market share dropped to 19 (45) percent during 2007-2014. Similar patterns are also observed in debt markets. Respectively, the top-5 (top-20) bond issuers accounted for 69 (99) percent of the market in 1991-1998, which declined to 19 (51) percent in 2007-2014. For loan markets, while the top-5 (top-20) issuers captured close to 35 (67) percent of the market in 1991-1998, their shares dropped to 12 (32) percent during the last period. These concentration figures remain high, especially in equity markets where the number of issuing firms is relatively larger (there were 658 equity issuers, 146 bond issuers, and 483 loan issuers during 2007-2014).

Pertaining to potential differences between various groups of countries within the Arab region, we separately study the issuance activity of the Gulf Cooperation Council (GCC) and non-GCC countries in Figures 2a and 2b.[4] Three patterns emerge from this analysis. First, the total amounts raised by firms in both the GCC and non-GCC countries increased over time, as it happened in the aggregate. An exception is bond markets in non-GCC countries, where the total amount raised remained practically flat between 1999-2006 and 2007-2014 (Figure 2, Panel A). Moreover, most of the aggregate expansion was driven by GCC nations, as the volume of these nations' activity is much larger than in non-GCC nations. Second, whereas debt markets in GCC countries have also grown in their extensive margins, this did not happened for the non-GCC ones. What is more, the number of firms issuing debt in non-GCC countries is much smaller. The number of firms issuing bonds and loans in 2007-2014 where 12 and 7 times larger in GCC countries (Figure 2, Panel B). The number of firms tapping

[3] The growth in market activity has also been sizable with respect to the region's GDP.

[4] The Gulf Cooperation Council states include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

equity markets, on the other hand, is very similar in both regions, and the extensive margin largely expanded in both regions over the year. In fact, the number of firms issuing equity was larger in non-GCC during the last sample period, although much larger volumes are traded in GCC countries.

Third, equity markets concentration for both regions have mirrored the aggregate pattern, showing a decreasing trend over the years. In fact, for both groups of countries, the top-5, top-10, and top-20 firms captured around 20 percent, 35 percent, and 50 percent of total equity issuances in the last period (Figure 2, Panel C). For debt markets, however, only GCC countries have shown a reduction in market concentration over the years. With a very small number of issuing firms in non-GCC countries, the issuance activity captured by the top-20 firms remains at a 100 percent. Moreover, both bond and loan markets have shown a deterioration in the concentration level of non-GCC countries. For instance, between 1999-2006 and 2007-2014, the fraction of issuance activity captured by the top-5 firms rose by 3 and 17 percentage points in bond and loan markets, respectively. Another measure of concentration that takes into account the number of firms in a market and the amount of competition among them is the Herfindahl Index (Figure 2, Panel C). The results of the index show similar patterns to those provided by the top-firm analysis.

4. Which Firms Use Equity, Bond, Syndicates Loan Markets?

To study which firms use capital and syndicated loan markets we merge the transaction-level dataset, from SDC Platinum database, with balance sheet information for listed firms from Orbis. We compare the characteristics of non-issuing firms with firms that issue different types of instruments. In particular, we compare: (1) firm size, measured by assets and turnover in 2011 U.S. dollars and the number of employees; (2) firm growth, measured by the annual growth rate of assets, turnover, and employees; (3) the liability structure of the firm, measured by the firm's leverage and the ratio of long-term debt to total firm liabilities; (4) firm profitability, measured by the ratio of retained earnings to assets, the return on assets (ROA), and the return on equity (ROE). When comparing those characteristics across issuers and non-issuers, we use the median firm for the sample period, after taking the average over time for each firm. For the rest of the paper, we use the matched SDC-Orbis dataset on capital raisings and balance sheet information for the period 2003-2011.

Issuing and non-issuing firms differ along several dimensions. Issuers are much larger than listed firms that do not issue equity, bonds, or syndicated loans (Table 1). Moreover, debt issuers, and especially bond issuers, tend to be much larger than equity issuers. During our study period, while the median non-issuing firm in the Arab region had around \$81 million in assets, the median equity issuer had assets of around \$240 million, the median bond issuer had assets of around \$10.4 billion, and the median loan issuer had assets of around \$5 billion. Similar qualitative results are found when looking at firm turnover and the number of employees; issuers are typically larger in size than non-issuers, debt issuers are larger than equity issuers, and bond issuers tend to be the largest.

Issuing firms also tend to grow faster than non-issuing firms. While the median non-issuer grew at a rate of 7.5 percent per year (looking at assets), the median equity, bond, and syndicated loan issuer grew at a rate of 13.9 percent, 19.5 percent, and 18.2 percent, respectively. Differences between issuers and non-issuers are also sizable when looking at turnover growth rates. Turnover grew at a rate close to 17 percent per year for the median issuer between 2003 and 2011, compared to 12.9 percent for the median non-issuer. For the growth in employees, although issuers of equity, bonds, and syndicated loans seem to have quantitatively higher rates than non-issuers, only the difference for bond issuers is statistically significant. In particular, the growth in employees for the median firm that issued bonds was 7.66 percent per year, compared to only 0.06 percent for the median non-issuer.

Issuing and non-issuing firms also seem to significantly differ with respect to their liability structure. First of all, issuing firms tend to be more leveraged than non-issuing firms, especially those that issue either bonds or loans. While the leverage of the median non-issuer firm stood at 35.9 percent during our sample period, a firm that issued equity, bonds, or syndicated loans had a leverage of 44.2 percent, 60.4 percent, and 50.3 percent, respectively. Issuers also tend to have a longer-maturity liability structure. The share of long-term debt in total liabilities for the median non-issuer stood at 9.5 percent, whereas equity, bond, and syndicated loan issuers had 14.3 percent, 39.4 percent, and 38.7 percent of long-term debt over liabilities, respectively.

Looking at profitability for issuing and non-issuing firms, the findings are more ambiguous. According to the firm's ROE results, only bond and loan issuers seem to have significantly higher ratios than non-issuers, while the ROE for equity issuers is lower but insignificant. The ratio of retained earnings to assets show qualitatively similar results, although the estimates are barely significant. Comparisons of ROA, on the other hand, show that all issuers have lower returns on their assets than non-issuers.

5. How Does Firm Size Evolve for Issuing and Non-issuing Firms?

In this section we look at how firm dynamics are related to their capital raising activity. In particular, we look at ex ante and ex post differences in the assets, turnover, and the number of employees of issuing firms, compared to a control group of non-issuers. We examine whether firms that issue equity, bonds, or syndicated loans grow faster than non-issuing firms. Moreover, we investigate how the relative performance of both issuers and non-issuers evolve over the whole FSD.

We begin by estimating difference-in-differences regressions. More specifically, we use information on firm characteristics for 2003 and 2010 for all firms in the sample, and estimate mean regressions on a constant, a dummy variable for issuing firms, a dummy variable for 2010 observations, and the interaction term of those two dummy variables. All regressions include country fixed effects. To assess the evolution of firm size for issuers and non-issuers, we estimate the regression using the logs of assets, turnover, or the number of employees as dependent variables. The estimated coefficients from the difference-in-differences analysis are reported in Table 2 and should be interpreted as follows. The constant term reflects the average size of non-issuing firms in 2003. The issuer dummy coefficient measures the size of issuers relative to non-issuers in 2003. The 2010 dummy variable gauges the total growth of non-issuing firms between 2003 and 2010. The interaction term measures the additional growth of issuers, between 2003 and 2010, relative to non-issuers. That is, whether issuers grow on average more compared to non-issuers.

The results in Table 2 show that, on average, firms that issue equity, bonds, or syndicated loans are ex ante larger than non-issuing firms (Table 2, Panel A-C). The differences are also economically significant. The estimates suggest that in 2003, firms that issued equity in the Arab region had, on average, almost twice the total assets held by firms that did not issue equity, bonds, or syndicated loans. Bond and loan issuers were even larger in 2003, holding almost 23 and 16 times the assets of non-issuers, respectively.. Similar qualitative results are found for turnover. In particular, while non-issuers had a turnover of \$20 million in 2003, the values were almost \$27 million for equity issuers and around \$250 million for debt issuers. Looking at the number of employees, the estimates are only statistically significant for syndicated loan regressions. Compared to non-issuers in 2003, loan issuers had around 3 times the employees of non-issuers, respectively.

Issuing firms not only start larger than non-issuing firms, but they also grow much faster. The coefficients for the 2010 dummy are positive and statistically significant in all the specifications. The estimates imply that, on average, non-issuers have expanded their total assets, turnover, and number of employees by around 81 percent, 74 percent, and 25 percent, respectively. Importantly, the coefficients for the interaction term imply that issuing firms tend to grow even faster than non-issuers. That is, issuing firms are not only initially larger, but there is actually ex post divergence in firm size between issuers and non-issuers. Even after taking into account the initial size differences, the estimates imply a sizeable additional growth for issuing relative to non-issuing firms between 2003 and 2010. For example, equity issuing firms had an additional expansion of around 61 percent in their total assets, 63 percent in turnover, and 48 percent in the number of employees. The additional growth rates have been especially high for bond and syndicated loan issuers between 2003 and 2010. For example, the additional expansions in the value of total assets were around 74 percent and 96 percent for firms that issued bonds and syndicated loans, respectively.

Because the estimates of the difference-in-differences analysis show results for the entire 2003-2010 period, they do not show what happens in the year when firms actually issue. To assess whether growth increases at the time of issuance, we conduct an event study by computing the difference in the growth rates (of total assets) for issuers versus non-issuers in each year (+/- 3 years) around the time of issuance, grouping firms by the year of their first issuance. We then compute the average growth differential of issuers with respect to non-issuers as the mean of all growth differences over the 2003-2010 period. The results show that while issuers grow faster than non-issuers before and after they issue, the growth rate differential at the time of issuance increases significantly (Figure 6). Following the year of issuance, issuers keep growing at a faster rate than non issuers, while returning to the pre-issuance growth rate differential after 2-3 years.

To further assess the dynamics of firm size for issuing vis-à-vis non-issuing firms across the entire distribution of firm size, we estimate four probability density functions that capture the FSD. More specifically, we estimate two kernel density functions for 2003 (one for issuers of either equity, bonds, or syndicated loans and one for non-issuers) and two analogous ones for 2010. The distributions are estimated for the logs of assets, turnover, and the number of employees as proxies for firm size. The results are presented in Figure 2 for equity issuers, Figure 3 for corporate bond issuers, and Figure 4 for syndicated loan issuers.

Consistent with the previous analysis, three main findings emerge about the FSD. First, the 2003 distribution of issuers falls to the right of non-issuers across every firm size decile, implying that issuing firms are typically larger ex ante than non-issuing firms. Second, the FSD for both issuers and non-issuers shifted to the right between 2003 and 2010, implying that firms grew over this time period. Third, the distribution of issuing firms shifted more to the right compared to that of non-issuing firms, indicating that the former grew relatively faster. This is especially true for the FSD of bond and syndicated loan issuers, for which the distributions stand even farther to the right. These patterns complement the previous results from the difference-in-differences analysis and confirm that the results not only hold for the mean firm, but issuers tend to be ex ante larger and grow even faster than non-issuers along the whole FSD.[5]

6. Conclusion

During a period of fast expansion in the Arab region financial markets that started in the 1990s, how many and which firms issued equity, bonds, and syndicated loans? How do the assets, turnover, and number of employees of issuing firms evolve relative to non-issuing

[5] These results hold when dividing the sample between firms of GCC and non-GCC countries issuing in equity markets, although for the former issuers seem to grow faster compared to non-issuers (Appendix Figure 1). Given that the number of firms in non-GCC countries issuing in debt markets is very low, it is then natural that most of the effect is coming from GCC countries when looking at those markets.

firms? Despite their importance, these questions have never been previously researched for firms in the Arab world.

Two main patterns are documented. First, between 1991 and 2014 there has been a fast increase in the total amount raised in equity, bond, and syndicated loan markets by firms in the Arab region. This increase has not been limited to an increase in the intensive margin, but also the number of issuing firms has substantially risen, indicating an expansion in the extensive margin. In particular the total amounts raised (number of issuers) have increased by a factor of 21 (15) in equity markets, 22 (6) in bond markets, and 5 (3) in syndicated loan markets. Moreover, this expansion has also been associated with a decrease in firm concentration in these markets, as shown by the decreasing proportion of capital raising activity captured by the top-5 and top-20 issuing firms.

Second, issuers of either equity, bonds, or syndicated loans are larger and grow faster than non-issuers, in terms of total assets, turnover, and the number of employees. Issuers also tend to be more leveraged and hold more long-term debt, compared to non-issuers. All these patterns are more evident for debt issuers, and especially bond issuers. Moreover, while issuers tend to be ex ante larger than non-issuers, the size gap seems to widen over time. Difference-in-differences results for issuers vis-à-vis non-issuers between 2003 and 2010 show that, on average, the total assets of non-issuing firms in 2003 stood at around $73 million, compared to around $150 million for equity issuers, $3.5 billion for bond issuers, and $2.1 billion for loans issuers. Between 2003 and 2010 there has been an additional growth of 61 percent, 74 percent, and 96 percent over non-issuers in the value of assets of equity, bond, and syndicated loan issuers, respectively. The reported differences hold over the whole FSD.

The findings in this paper suggest that while only a small number of firms issue equity, bonds, and syndicated loans in the Arab region, they do not just do so to shape their capital structure, but to finance investment opportunities and grow. This is important as issuing firms account for a significant part of the total business investment. For example, Farrant et al. (2013) report that bond issuers account for around one third of the total investment in the UK. Accordingly, these firms have a big economic impact, with arguably extensive spillover effects over the rest of the economy. These results suggest that a wider availability of external finance might allow Arab economies to grow faster.

References

Abu-Bader, S., Abu-Qarn, A.S., 2008a. "Financail Development and Economic Growth: Empirical Evidence from Six MENA Countries." *Review of Development Economics* 12(4), 803-817.

Abu-Bader, S., Abu-Qarn, A.S., 2008b. "Financial development and economic growth: The Egyptian experience." *Journal of Policy Modeling* 30(5), 887-898.

Acemoglu, D., Zilibotti, F., 1997. "Was Prometheus unbound by chance? Risk, diversification, and growth." *Journal of Political Economy* 105(4): 709-51.

Al-Malkawi, H., 2012. "Financial Development and Economic Growth in the UAE: Empirical Assessment Using ARDL Approach to Co-integration." *International Journal of Economics and Finance* 4(5), 105-115.

Al-Zubi, K., Al-Rjoub, S., Abu-Mhareb, E., 2006. "Financial Development and Economic Growth: A New Wmpirical Evidence from the MENA Countries, 1989-2001." *Applied Econometrics and International Development* 6(3), 137-150.

Beck, T., Demirgüç-Kunt, A., 2006. "Small and Medium-Size Enterprises: Access to Finance as a Growth Constraint." *Journal of Banking and Finance* 30(11): 2931–43.

Beck, T., Demirgüç-Kunt, A., Martínez Pería, M.S., 2011. "Bank Financing for SMEs around the World: Evidence Across Countries and Bank Ownership Types." *Journal of Financial Services Research* 39(1): 35–54.

Beck, T., Levine, R., 2004. "Stock markets, banks, and growth: panel evidence." *Journal of Banking and Finance* 28(3), 423-442.

Bekaert, G., Harvey, C., Lundblad C., 2005. "Does financial liberalization spur economic growth?" *Journal of Financial Economics* 77(1), 3-55.

Bolbol, A., Fatheldin, A., Omran, M., 2005. "Financial development, structure, and economic growth: the case of Egypt, 1974–2002." *Research in International Business and Finance* 19(1), 171-194.

Bolbol, A., Omran, M., 2005. "Investment and the stock market: evidence from Arab firm-level panel data." *Emerging Markets Review* 6(1), 85–106.

De Angelo, H., De Angelo, L., Stulz, R., 2009. "Seasoned equity offerings, market timing, and the corporate lifecycle." *Journal of Financial Economics* 95(1): 275-295.

de la Torre, A., Martínez Pería, M.S., Schmukler, S. , 2010. "Bank Involvement with SMEs: Beyond Relationship Lending." *Journal of Banking and Finance* 34(9): 2280–93.

Demirgüç-Kunt, A., Maksimovic, V., 1998. "Law, Finance, and Firm Growth." *Journal of Finance* 53(6): 2107–2137.

di Giovanni, J., Levchenko, A., 2012. "Country size, international trade, and aggregate fluctuations in granular economies." *Journal of Political Economy* 120(6): 1083-1132.

Didier, T., Levine, R., Schmukler, S., 2015. "Capital Market Financing, Firm Growth, and Firm Size Distribution." NBER Working Paper 20336, National Bureau of Economic Research, Cambridge, MA.

Didier, T., Schmukler, S., 2013. "The Financing and Growth of Firms in China and India: Evidence from Capital Markets." *Journal of International Money and Finance* 39, 111-137.

Eaton, J., Kortum, S., Sotelo, S., 2012. "International trade: linking micro and macro." NBER Working Paper 17864, National Bureau of Economic Research, Cambridge, MA.

Evans, D., 1987. "The relationship between firm growth, size, and age: estimates for 100 manufacturing industries." *Journal of Industrial Economics* 35(4): 567-81.

Falahaty, M., Hook, L. S., 2013. "The Effect of Financial Development on Economic Growth in the MENA Region." *Journal of Economic Cooperation and Development* 35(3), 35-60.

Farrant, K., Inkinen, M., Rutkowska, M., Theodoridis, K., 2013. "What Can Company Data Tell us About Financing and Investment Decisions?" *Bank of England Quarterly Bulleting*, 53 (4), 361-70.

Freund, C., Pierola, M., 2012. "Export superstars." Policy Research Working Paper 6222, the World Bank, Washington, DC.

Gabaix, X., 2011. "The granular origins of aggregate fluctuations." *Econometrica* 79(3): 733-772.

Gibrat, R., 1931. "Les Inegalites Economiques." Librairie du Recueil Sirey, Paris.

Graham, J., Harvey, C., 2001. "The theory and practice of corporate finance: Evidence from the field." *Journal of Financial Economics* 60(2): 187-243.

Graham, J., Leary, M., 2011. "A review of empirical capital structure research and directions for the future." *Annual Review of Financial Economics* 3: 309-345.

Grossman, S., Stiglitz, J., 1980. "Stockholder unanimity in making production and financial decisions." *Quarterly Journal of Economics* 94(3): 543-66.

Henry, P.B., 2000. "Stock market liberalization, economic reform, and emerging market equity prices." *Journal of Finance* 55(2), 529-564.

Hertzel, M., Li, Z., 2010. "Behavioral and rational explanations of stock price performance around SEOs: evidence from a decomposition of market-to-book ratios." *Journal of Financial and Quantitative Analysis* 45(4): 935-958.

Holmström, B., Tirole, J., 1993. "Market liquidity and performance monitoring." *Journal of Political Economy* 101(4): 678-709.

Ijiri, Y., Simon, H., 1964. "Business firm growth and size." *American Economic Review* 54(2): 77-89.

Kar, M., Şaban, N., Ağır, H., 2011. "Financial development and economic growth nexus in the MENA countries: Bootstrap panel granger causality analysis." *Economic Modelling* 28(1-2), 685–693.

Kim, W., Weisbach, M., 2008. "Motivations for public equity offers: an international perspective." *Journal of Financial Economics* 87(3): 281-307.

Levine, R., 1992. "Financial structures and economic development." Policy Research Working Paper 849, the World Bank, Washington, DC.

Levine, R., 2005. "Finance and Growth: Theory and Evidence." In *Handbook of Economic Growth,* edited by P. Aghion and S. Durlauf, Edition1, volume 1, chapter 12, 865-934. Amsterdam: Elsevier.

Levine, R., Zervos, S., 1996. "Stock Market Development and Long-Run Growth." *World Bank Economic Review* 10(2): 323-339.

Levine, R., Zervos, S., 1998. "Stock Markets, Banks, and Economic Growth." *American Economic Review* 88(3): 559-586.

Mansfield, E., 1962. "Entry, Gibrat's law, innovation, and the growth of firms." *American Economic Review* 52(5): 1023-1051.

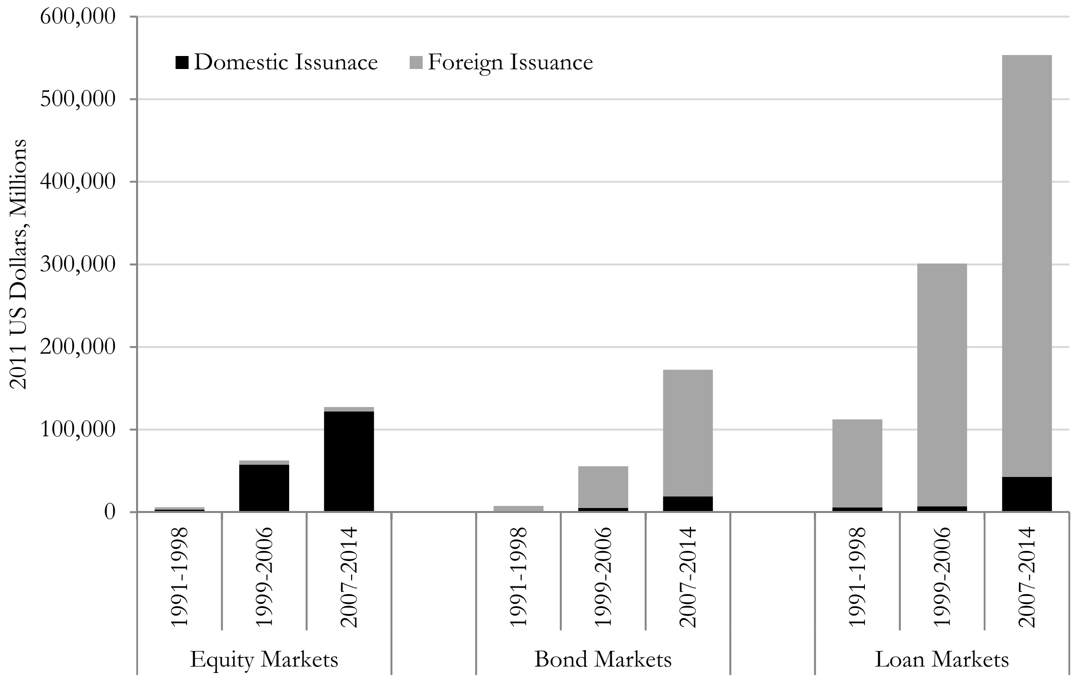
Naceur, S., Ghazouani, S., 2007. "Stock markets, banks, and economic growth: Empirical evidence from the MENA region." *Research in International Business and Finance* 21(2): 297-315.

Obstfeld, M., 1994. "Risk-taking, global diversification, and growth." *American Economic Review* 84(5): 1310-1329.

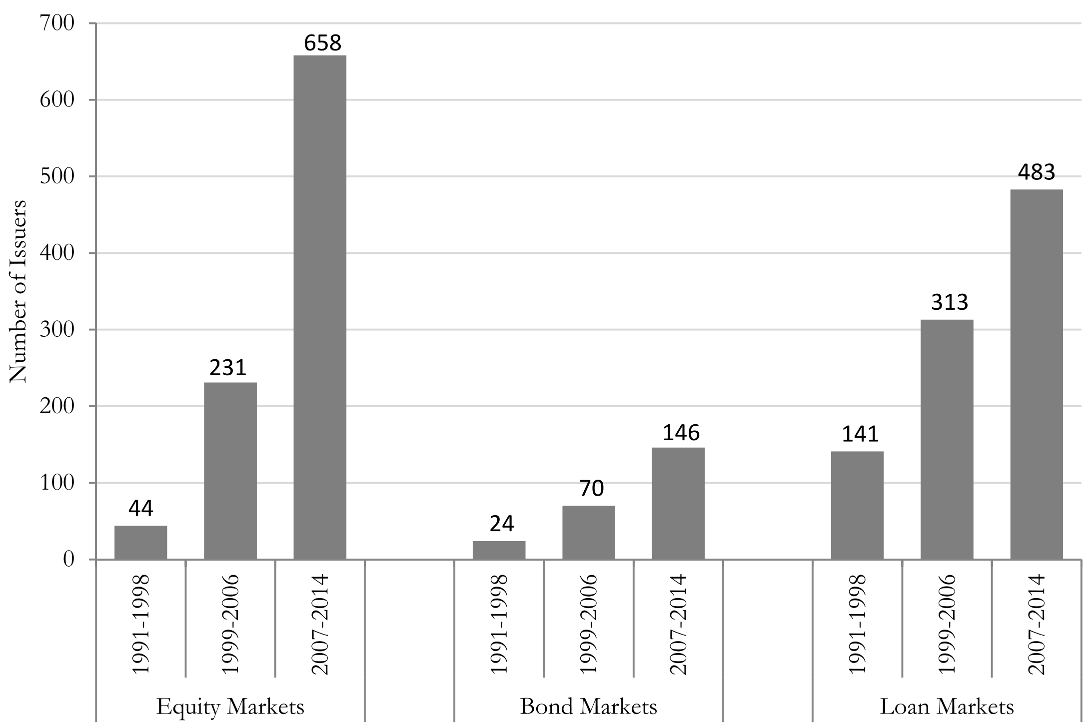
Simon, H., Bonini, C., 1958. "The size distribution of business firms." *American Economic Review* 48(4): 607-617.

Figure 1: Issuance Activity in the Arab Region

A. Amount Raised

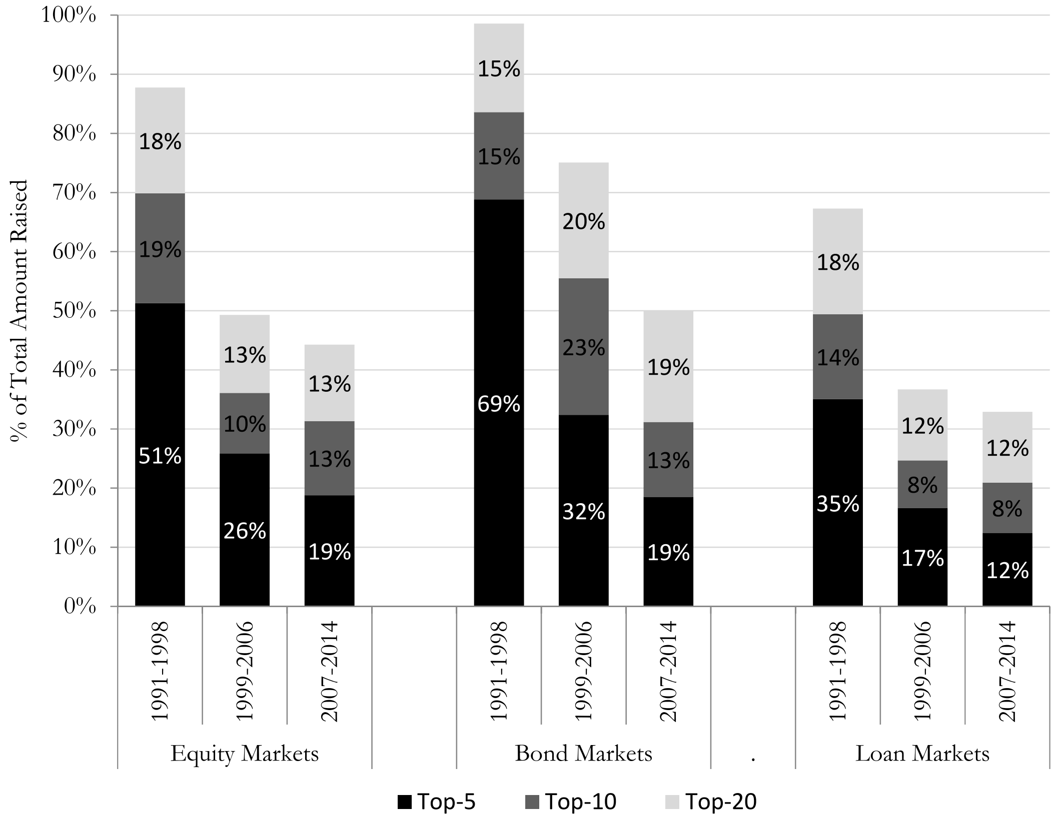


B. Number of Issuing Firms



C. Concentration in Equity, Bond, and Loan Markets

Total Raised by the Top-5, Top-10, and Top-20 Issuers as a % of the Total Amount Raised



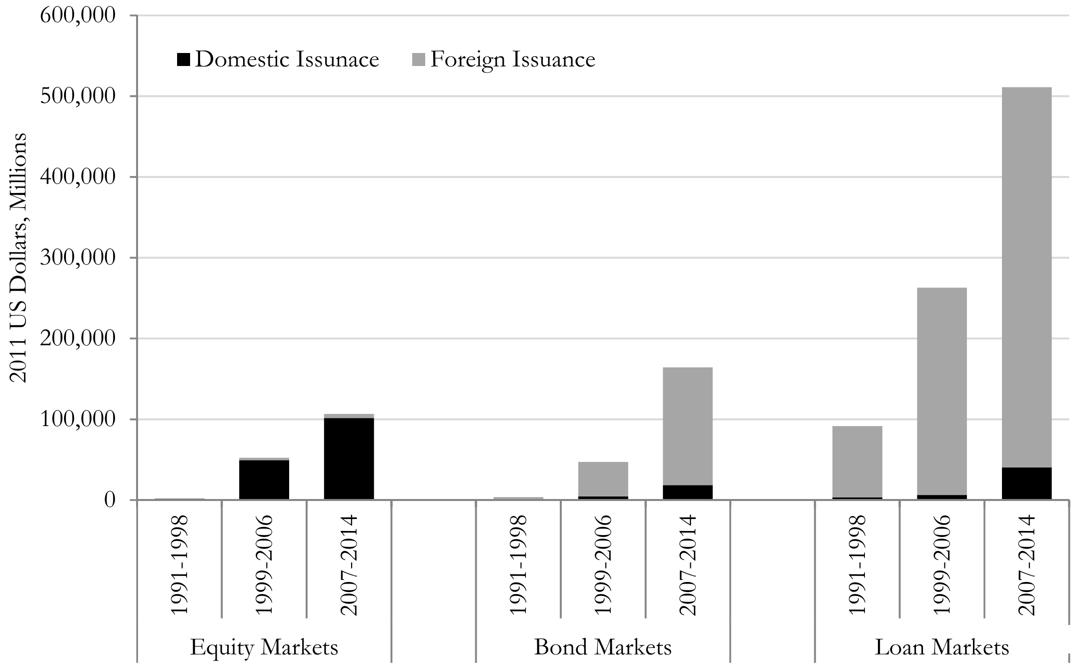
Herfindahl Index of the Total Amount Raised

	Equity Markets	Bond Markets	Loan Markets
1991-1998	0.07	0.14	0.04
1999-2006	0.02	0.04	0.01
2007-2014	0.01	0.02	0.01

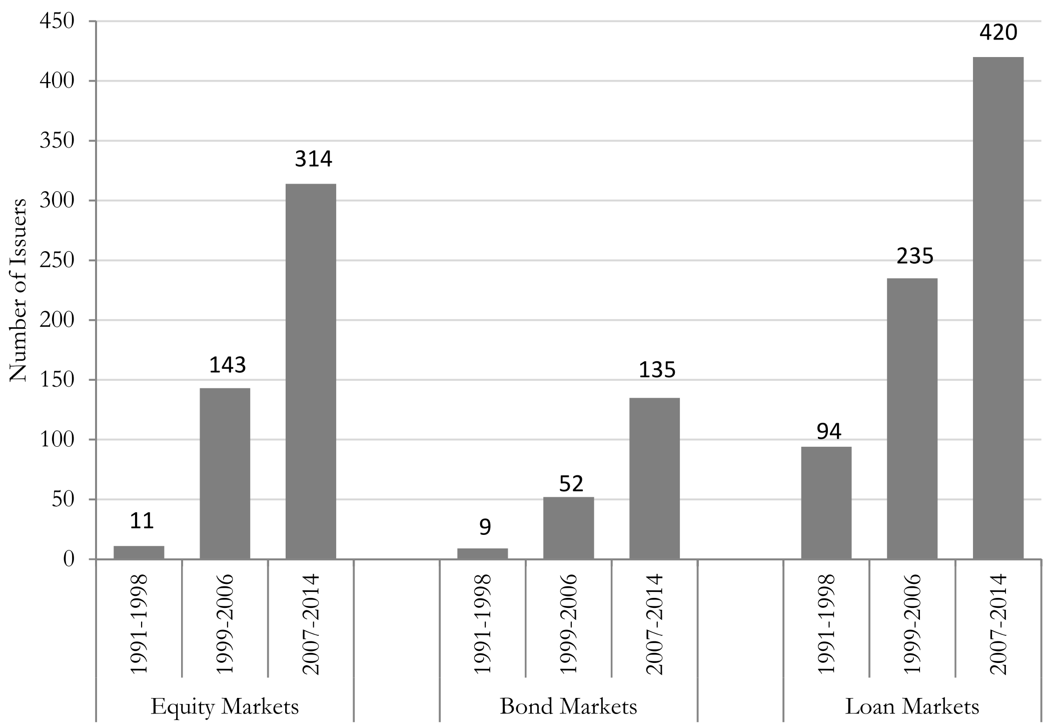
Notes: This figure shows in panel A the total amount raised in equity, bond, and syndicated loan markets per period. Panel B shows the total number of issuing firms per period in equity, bond, and syndicated loan markets. Panel C shows the total amount raised per period by the top-5, top-10, and top-20 issuers in equity, bond, and syndicated loan markets, as share of the total amount raised by firms in each of those markets, in addition to the Herfindhal Index of the total amount raised.

Figure 2a: Issuance Activity in GCC Countries

A. Amount Raised

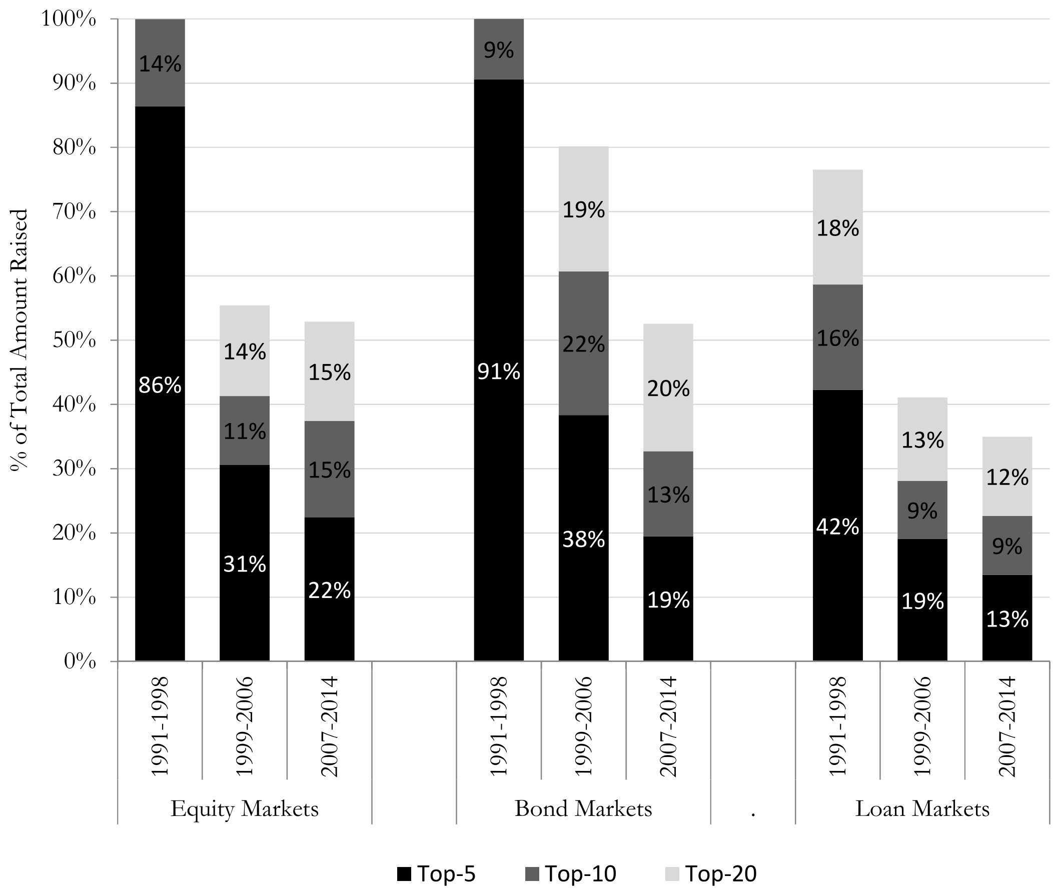


B. Number of Issuing Firms



C. Concentration in Equity, Bond, and Loan Markets

Total Raised by the Top-5, Top-10, and Top-20 Issuers as a % of the Total Amount Raised



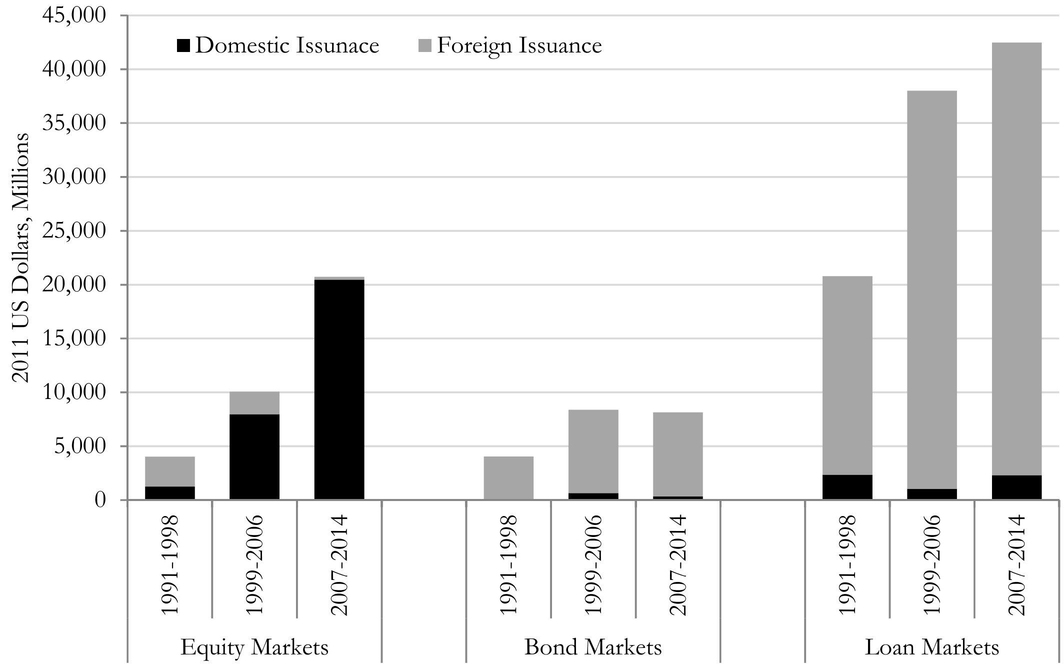
Herfindahl Index of the Total Amount Raised

	Equity Markets	Bond Markets	Loan Markets
1991-1998	0.21	0.29	0.05
1999-2006	0.03	0.05	0.01
2007-2014	0.02	0.02	0.01

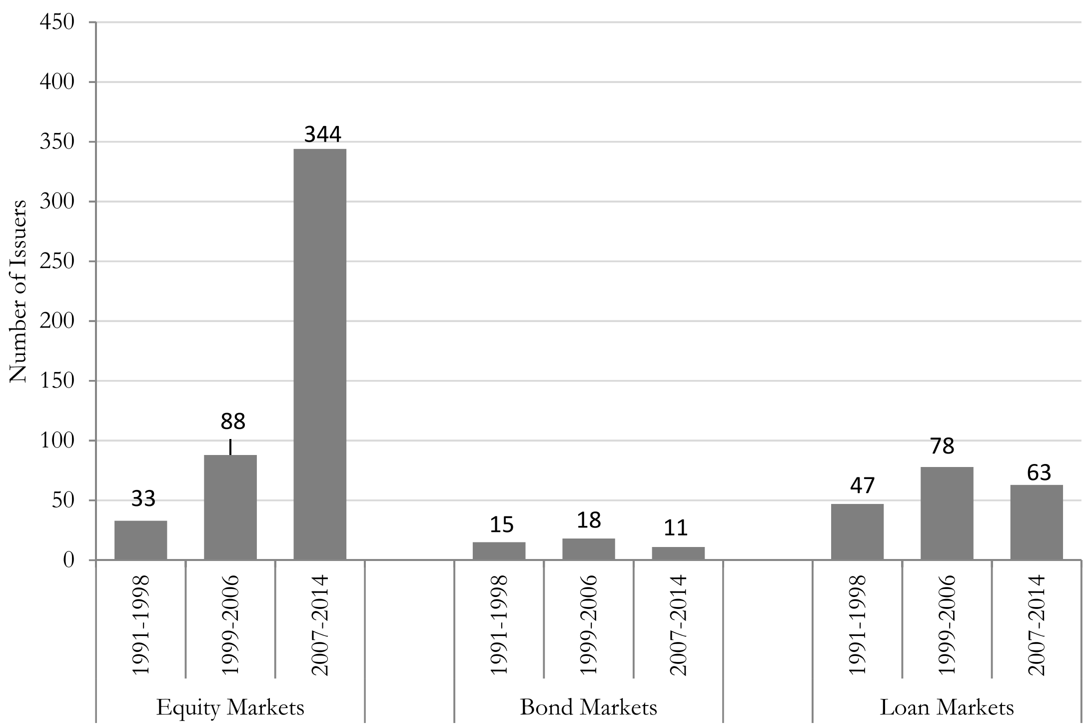
Notes: This figure presents the issuance activity for GCC countries. Panel A shows the total amount raised in equity, bond, and syndicated loan markets per period. Panel B shows the total number of issuing firms per period in equity, bond, and syndicated loan markets. Panel C shows the total amount raised per period by the top-5, top-10, and top-20 issuers in equity, bond, and syndicated loan markets, as share of the total amount raised by firms in each of those markets, in addition to the Herfindhal Index of the total amount raised.

Figure 2b: Issuance Activity in Non-GCC Countries

A. Amount Raised

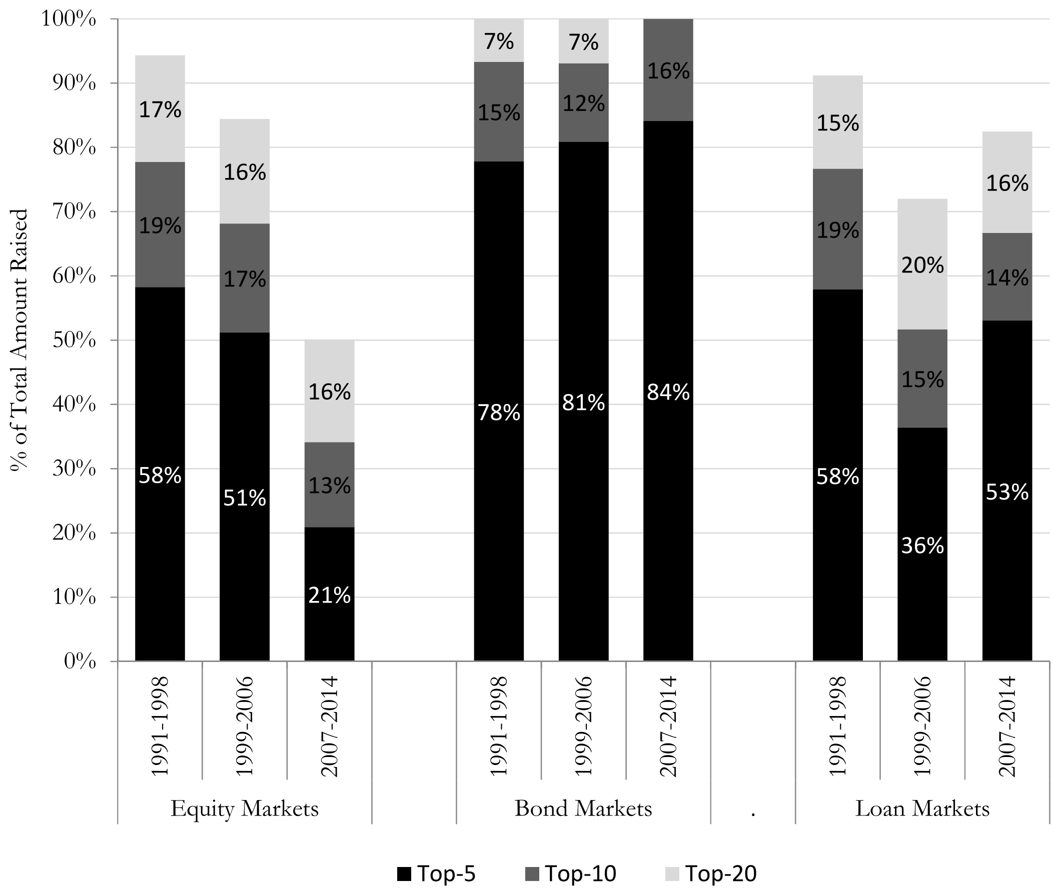


B. Number of Issuing Firms



C. Concentration in Equity, Bond, and Loan Markets

Total Raised by the Top-5, Top-10, and Top-20 Issuers as a % of the Total Amount Raised



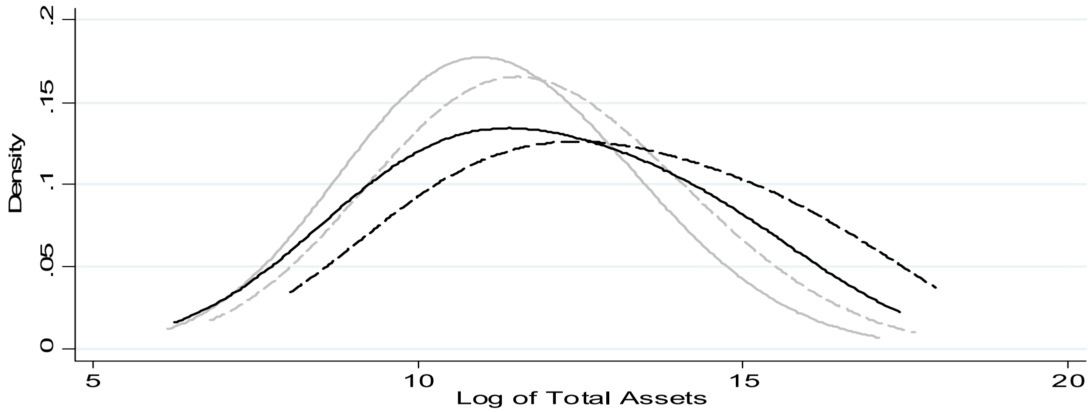
Herfindahl Index of the Total Amount Raised

	Equity Markets	Bond Markets	Loan Markets
1991-1998	0.11	0.27	0.09
1999-2006	0.07	0.22	0.04
2007-2014	0.02	0.17	0.08

Notes: This figure presents the issuance activity for Non-GCC countries. Panel A shows the total amount raised in equity, bond, and syndicated loan markets per period. Panel B shows the total number of issuing firms per period in equity, bond, and syndicated loan markets. Panel C shows the total amount raised per period by the top-5, top-10, and top-20 issuers in equity, bond, and syndicated loan markets, as share of the total amount raised by firms in each of those markets, in addition to the Herfindhal Index of the total amount raised.

Figure 3: Firm Size Distribution: Equity Issuers vs. Non-Issuers

A. Total Assets



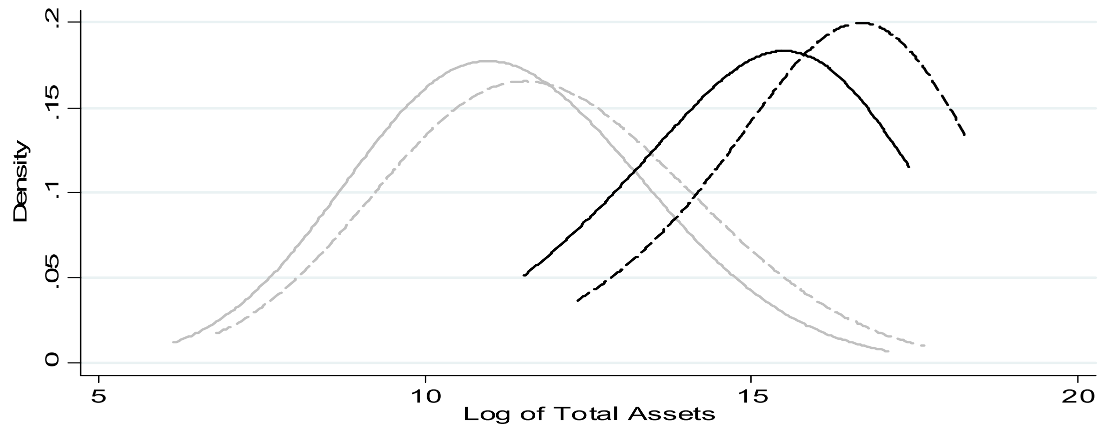
B. Turnover

C. Number of Employees

Notes: This figure shows the estimated kernel distributions for firm size for equity-issuing and non-issuing firms in 2003 and 2010. Panel A uses the log of total assets as a proxy for size, whereas panels B and C use the log of turnover and the log of the number of employees, respectively. Issuing firms are those that raised capital through equity between 2003 and 2010. Non-issuers are the firms that did not issue equity, bonds, or syndicated loans in our sample. Only firms with data in both 2003 and 2010 are included in this figure. The kernel type used is a Gaussian with a band-width of 1.5.

Figure 4: Firm Size Distribution: Bond Issuers vs. Non-Issuers

A. Total Assets



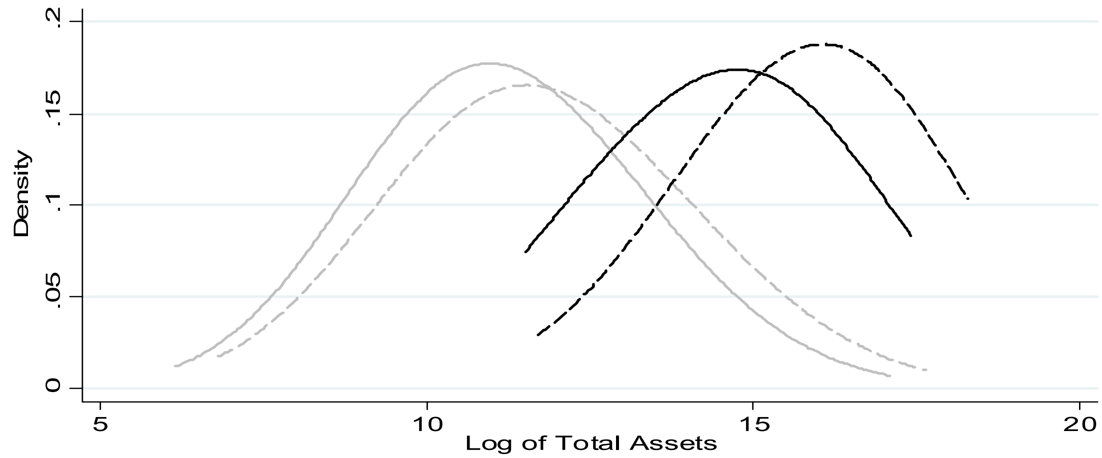
B. Turnover

C. Number of Employees

Notes: This figure shows the estimated kernel distributions for firm size for bond-issuing and non-issuing firms in 2003 and 2010. Panel A uses the log of total assets as a proxy for size, whereas panels B and C use the log of turnover and the log of the number of employees, respectively. Issuing firms are those that raised capital through bonds between 2003 and 2010. Non-issuers are the firms that did not issue equity, bonds, or syndicated loans in our sample. Only firms with data in both 2003 and 2010 are included in this figure. The kernel type used is a Gaussian with a band-width of 1.5.

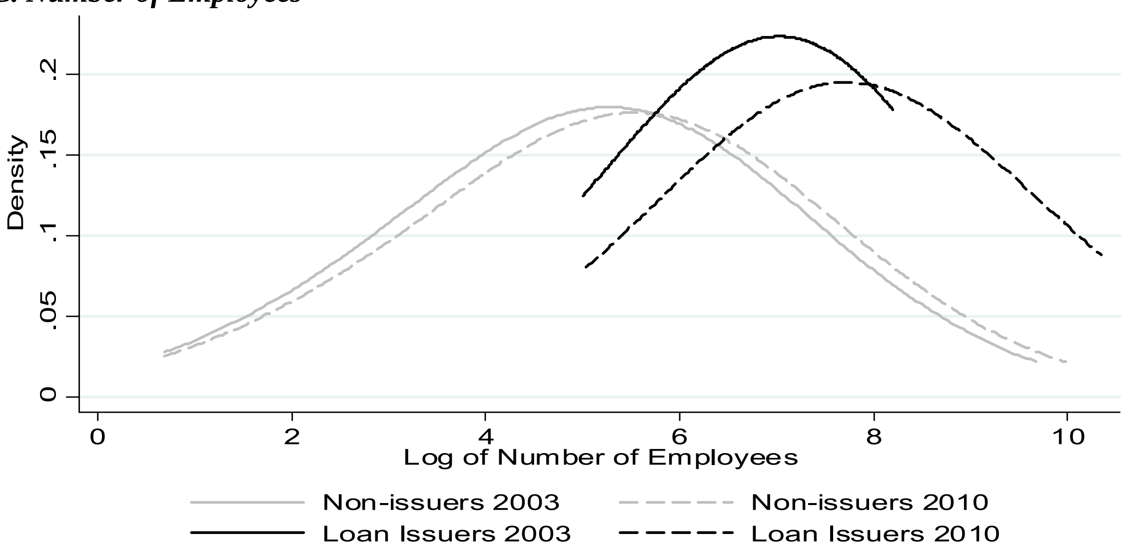
Figure 5: Firm Size Distribution: Loan Issuers vs. Non-Issuers

A. Total Assets



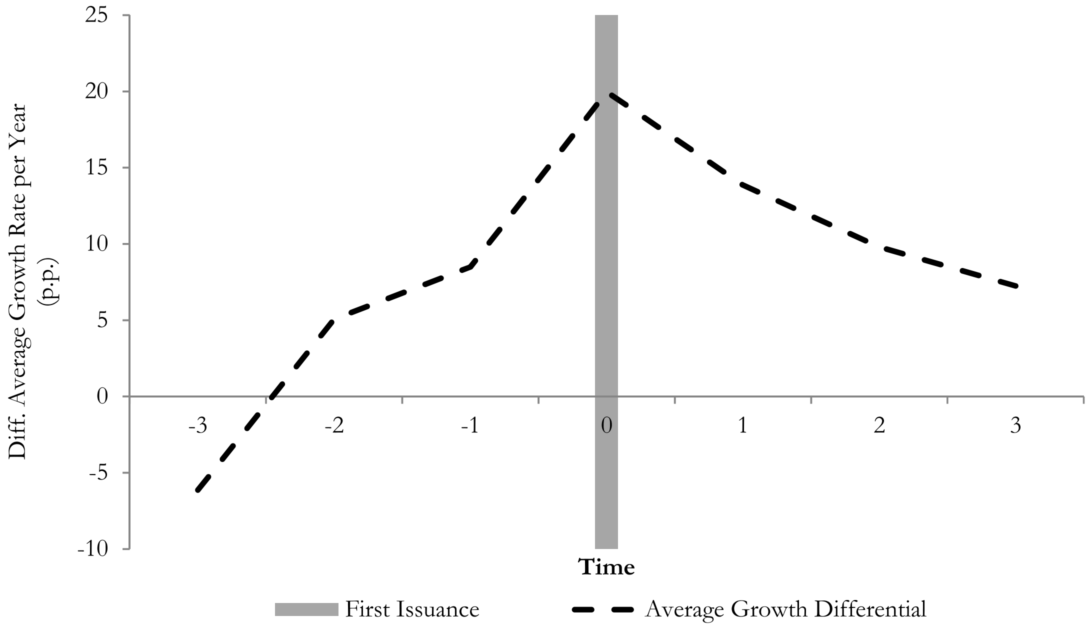
B. Turnover

C. Number of Employees



Notes: This figure shows the estimated kernel distributions for firm size for loan-issuing and non-issuing firms in 2003 and 2010. Panel A uses the log of total assets as a proxy for size, whereas panels B and C use the log of turnover and the log of the number of employees, respectively. Issuing firms are those that raised capital through syndicated loans between 2003 and 2010. Non-issuers are the firms that did not issue equity, bonds, or syndicated loans in our sample. Only firms with data in both 2003 and 2010 are included in this figure. The kernel type used is a Gaussian with a band-width of 1.5.

Figure 6: Event Studies: Issuers vs. Non-issuers



Notes: This figure shows the average growth differential (in percentage points, p.p.) of the mean annual growth rate of total assets for issuers relative to non-issuers for the 2003-2010 period. First, the difference in average growth for issuers and non-issuers is calculated per year. The Average growth differential is then computed as the mean of all growth differences over 2003-2010. Time 0 represents the year of the first issuance for issuing firms. Issuing firms are those that raised capital through equity, bonds, or syndicated loans between 2003 and 2010. Firms that issued only in 2011 are excluded from this figure. Non-issuers are the other firms in our sample.

Table 1: Firm Characteristics

	Non Issuers	Equity Issuers		Bond Issuers		Loan Issuers	
Total Assets	80,991	239,950	***	10,432,456	***	5,036,655	***
Turnover	28,291	61,212	***	524,464	***	518,808	***
Sales	24,901	40,988	*	678,293	***	537,257	***
Number of Employees	213	384	***	1,397	***	1,072	***
Asset Growth	7.52%	13.89%	***	19.51%	***	18.15%	***
Turnover Growth	12.87%	17.24%	***	17.35%		17.80%	*
Number of Employees Growth	0.06%	0.49%		7.66%	***	0.77%	
Leverage	35.94%	44.25%	***	60.44%	***	50.27%	***
Long Term Debt/Total Liabilities	9.51%	14.33%	***	39.38%	***	38.65%	***
Current Ratio	1.92%	1.85%		1.84%		1.45%	***
Retained Earnings/Total Assets	6.48%	5.28%	*	7.21%		8.50%	
ROA	5.29%	3.05%	***	2.42%	***	3.29%	***
ROE	10.42%	8.60%		13.98%	**	14.99%	***
Firm Age (2011)	22	17	**	31	*	24	
Number of Firms	1,078	356		52		78	
No. Observations for Total Assets	7,877	2,450		432		619	

Notes: This table reports the median firm attributes for the 2003-2011 period. The firm-level data are averages across time per firm. The table also reports the statistical significance of median tests for each group (in the different columns) vs. non-issuers (in the first column). Issuing firms are those with at least one capital raising issuance between 2003 and 2011. Non-issuing firms are those that did not issue during this period. Total assets and sales are reported in thousands of 2011 U.S. dollars. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 2: Difference in Differences Regressions

	Assets		Turnover		Employees	
A. Equity						
Constant	12.637	***	11.544	***	4.810	***
	[0.017]		[0.029]		[0.643]	
Issuer Dummy	0.487	***	0.120		-0.135	
	[0.173]		[0.191]		[0.263]	
2010 Dummy	0.593	***	0.554	***	0.220	***
	[0.033]		[0.058]		[0.066]	
Issuer Dummy x 2010 Dummy	0.476	***	0.491	***	0.389	**
	[0.089]		[0.116]		[0.167]	
Country FE	Yes		Yes		Yes	
No. of Observations	1,508		1,118		516	
B. Bonds						
Constant	12.637	***	11.544	***	4.810	***
	[0.017]		[0.029]		[0.644]	
Issuer Dummy	3.121	***	1.840	***	0.470	
	[0.285]		[0.307]		[0.523]	
2010 Dummy	0.593	***	0.554	***	0.220	***
	[0.033]		[0.058]		[0.066]	
Issuer Dummy x 2010 Dummy	0.555	***	0.550	***	0.635	***
	[0.126]		[0.178]		[0.223]	
Country FE	Yes		Yes		Yes	
No. of Observations	1,250		920		440	
C. Loans						
Constant	12.637	***	11.544	***	4.810	***
	[0.017]		[0.029]		[0.644]	
Issuer Dummy	2.751	***	1.972	***	1.133	***
	[0.254]		[0.257]		[0.378]	
2010 Dummy	0.593	***	0.554	***	0.220	***
	[0.033]		[0.058]		[0.066]	
Issuer Dummy x 2010 Dummy	0.671	***	0.648	***	0.668	**
	[0.129]		[0.283]		[0.277]	
Country FE	Yes		Yes		Yes	
No. of Observations	1,276		946		444	

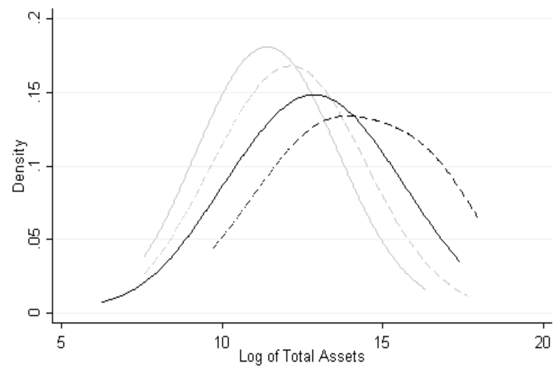
Notes: This table reports OLS regressions of different firm attributes on a constant, a dummy variable for 2010, a dummy variable for issuing firms, and an interaction term of these two dummies. All regressions include country fixed effects. The dependent variable pools the data on firm size at two points in time (2003 and 2010) for all firms with data in both years. Issuing firms are those that raised capital through equity, bonds, or syndicated loans between 2003 and 2010. Total assets and turnover are in logs of thousands of 2011 U.S. dollars; number of employees is in logs. Standard errors, shown in brackets, are clustered at the firm-level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

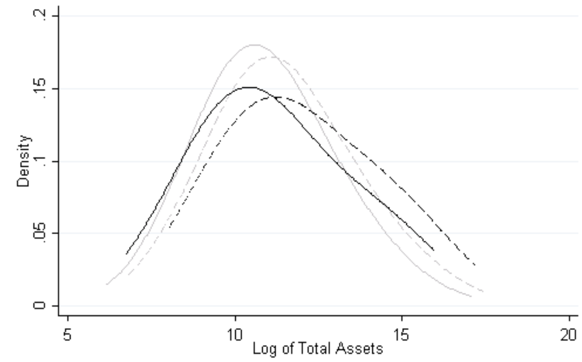
Appendix

Figure 1: Firm Size Distribution: Equity Issuers vs. Non-Issuers

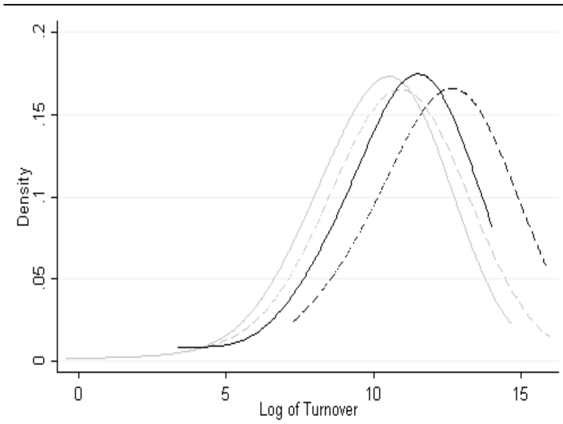
	GCC Countries	Non-GCC Countries

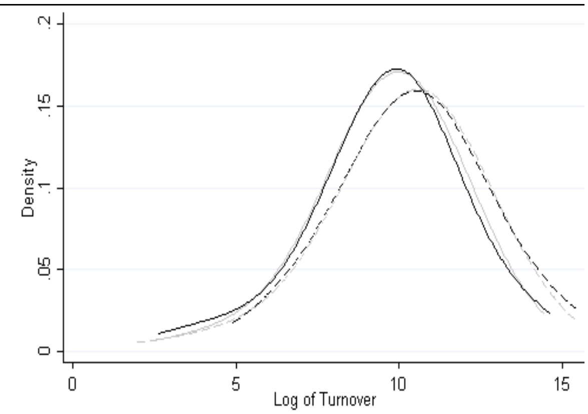
A. Total Assets



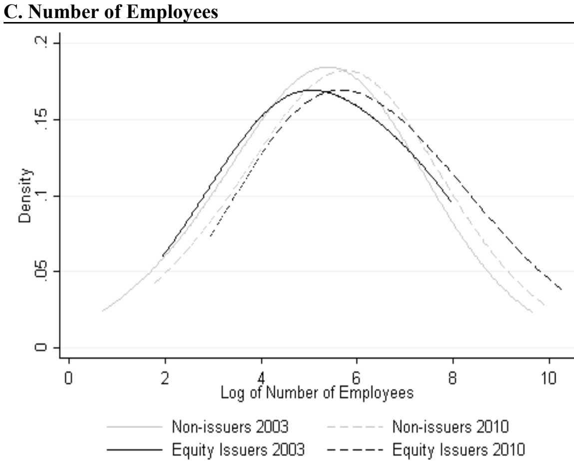


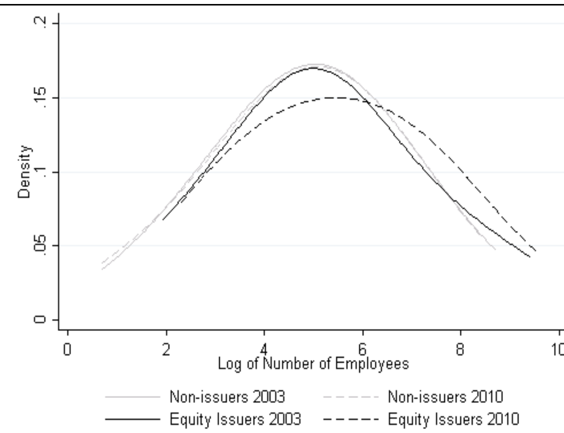
B. Turnover





C. Number of Employees





Notes: This figure shows the estimated kernel distributions for firm size for equity-issuing and non-issuing firms in 2003 and 2010. The figure distinguishes between GCC and the Non-GCC countries. Panel A uses the log of total assets as a proxy for size, whereas panels B and C use the log of turnover and the log of the number of employees, respectively. Issuing firms are those that raised capital through equity between 2003 and 2010. Non-issuers are the firms that did not issue equity, bonds, or syndicated loans in our sample. Only firms with data in both 2003 and 2010 are included in this figure. The kernel type used is a Gaussian with a band-width of 1.5.

Table 1: Country Coverage

	Number of Firms	
Country	**Non-issuing Firms**	**Issuing Firms**
Algeria	3	0
Bahrain	29	13
Egypt	278	96
Jordan	201	58
Kuwait	177	36
Lebanon	5	6
Morocco	60	12
Oman	108	26
Qatar	27	18
Saudi Arabia	73	71
Tunisia	44	11
United Arab Emirates	73	37

Notes: This table reports the number of issuing and non-issuing firms per country. Issuing firms are those with at least one equity, bond, or syndicated loan issuance between 2003 and 2011. Non-issuing firms are all other firms in the sample.