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## Debt composition and lax screening in the corporate bond market

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## ABSTRACT

Corporate bond markets may suffer from investors' lack of competence in screening out low-quality issuers. We use data from the Israeli capital market in 1999–2009 to investigate the quality of corporate bond issuers and the role of the institutional investors in the screening process in the corporate bond market. The findings suggest that higher quality firms were more likely to issue bonds, but firms of lower quality tended to raise a higher fraction of their debt through bond issuance. Firms with higher proportion of their debt in bonds out had also a higher tendency to default. Institutional investors intensively funded firms with higher share of bonds in their long-term debt despite their lower quality, and therefore were partially responsible for the lax screening in the corporate bond market.

## 1. Introduction

Previous studies proposed theories to explain a firm's choice between public debt financing and private debt financing. Fama (1985) argued that public debt financing requires producing public information, which is costlier than the information required by private creditors. Therefore, only large firms tend to issue public debt. Diamond (1989, 1991), Besanko and Kantas (1993), and Holmstrom and Tirole (1997) described the role of financial intermediaries in reducing ex-ante incentive problems. Firms with major incentive problems may use intermediaries for their screening and monitoring services. This service is costly, so firms with minor incentive problems avoid it by raising debt directly from the public.

An additional advantage of private debt financing is the efficiency of liquidation and reorganization in the event of financial distress (Bolton & Freixas, 2000; Chemmanur & Fulghieri, 1994; Gertner & Scharfstein, 1991). Renegotiation with public debt-holders is much more complicated due to major conflicts of interest between debt-holders that may ultimately lead to a value-destructing liquidation process. Firms with a higher probability of financial distress (higher credit risk) may burden intermediaries with the higher cost of raising debt in order to avoid inefficient liquidation. Firms facing lower financial distress probabilities, on the other hand, find the benefits of renegotiating private debts less attractive and therefore tend to rely more on public debt.

Overall, the aforementioned theories predict a higher tendency toward long-term debt-raising by larger and less risky firms. Databases classifying debt as publicly traded or privately held are almost nonexistent, and therefore only a limited number of papers have

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examined these theories empirically. Empirical research on public firms in the US confirmed the relationship between debt composition and credit quality. [Cantillo and Wright \(2000\)](#) showed that large, profitable companies with collateral do indeed raise debt directly from the public. Their results supported the hypothesis that intermediaries have better reorganization skills but also higher opportunity cost for capital than bondholders have. [Denis and Mihov \(2003\)](#) examined the choice between bank debt, non-bank private debt and public debt, and discovered that firms with the highest credit quality borrow from public sources, firms with medium credit quality borrow from banks, and firms with the lowest credit quality borrow from non-bank private lenders. [Johnson \(1997\)](#) discovered systematic use of bank debt among firms with access to the public debt market, suggesting that the benefits attributed to bank debt remain important even after firms cross the quality threshold that allows them access to the public debt market. Nevertheless, the greater the credit quality of a firm, the more it relies on public debt rather than on private debt.

Theoretical papers predicting the absence of low-quality firms in the corporate bond market assumed that market players are able to assess credit quality and incentive problems of potential debtors ([Fama, 1985](#); [Rajan, 1992](#)). We conjecture that this is not the case in underdeveloped capital markets. We use data from the Israeli capital market to investigate the quality of corporate bond issuers and the role of the financial institutions in the screening process on the corporate bond market.

The Israeli capital market underwent several major changes during the period 2003–2009. Rising taxes and privatization revenues together with the government's policy of public debt reduction led to a decrease in the issuance of government bonds. While the annual net governmental bond issuance in 2001–2004 averaged 1.1 percent of the GDP, it dropped to –1.6 percent in 2005–2007. As a consequence, the demand for fixed-income securities translated into tremendous growth in corporate bond issuance. The corporate bond market, which was almost nonexistent prior to 2004, grew more than tenfold within a few years.<sup>1</sup> This new corporate bond market offered competition to the centralized banking system and hence was mostly perceived as a positive evolution. Critics, however, claim that many low-quality firms exploited Israeli institutional investors' lack of experience with this type of instrument to raise funds in the corporate bond market.

The purpose of this paper is to examine the attributes of bond issuers during this period and investigate whether market conditions were indeed exploited by risky firms. This study is consistent with [Harford, Martos-Vila, and Rhodes-Kropf \(2015\)](#) who showed that firms take advantage of the rating inaccuracies on the US corporate bond market. In a broader perspective, this study also aligns with papers documenting the effect of stock valuation on capital structure: [Welch \(2004\)](#), [Dong, Hirshleifer, and Teoh \(2012\)](#) and [Khan, Kogan, and Serafeim \(2012\)](#) and others.

We have solid ground to believe that the Israeli corporate bond market suffered from lax screening. The Hodak Committee, a think-tank committee established by the Israel Ministry of Finance in 2009 to evaluate the activity of institutional investors in the Israeli credit market, pointed out severe problems in the functioning of institutional investors. The committee concluded that institutional investors, who are supposed to be the gatekeepers of the corporate bond market, lacked the competence or the willingness to fulfill this role. The committee discovered that absent credit risk analysts, institutional investors based their bond purchase decisions on credit ratings or equity analysts' reports. Consequently, while bank loans were mostly secured by collateral and covenants, corporate bond issues were mostly not secured and subordinate to banks' claims, without any covenants.

It appears that institutional investors had major difficulties with screening potential bond issuers. Firms could exploit this incompetence to replace bank debt with public debt. Moreover, the inexperience of the institutional investors exacerbated the moral hazard inherent in the corporate bond market. Unsecured debt financing and lack of covenants encouraged these firms to increase leverage and to impose a larger haircut on debt-holders in the event of default.

The goal of this paper is to examine the institutional investors competence in mitigating market failures related to moral hazard problem in the context of optimal capital structure. We do not aim to test the market efficiency hypothesis in the Israeli corporate bond market. Our paper corresponds with the literature that examines the role of financial intermediaries as certifiers and delegated monitors in the face of information asymmetry and moral hazard. Previous literature in this field include the seminal paper of [Diamond \(1984\)](#) that introduced the role of financial intermediaries as delegated monitors as well as [Diamond \(1989, 1991\)](#) that particularly addressed the choice between different types of debt.

Given these special features of the Israeli corporate bond market, we question whether the behavior of the Israeli bond market was consistent with the aforementioned theoretical and empirical studies. In particular, we study whether the corporate bond market indeed catered to the highest quality firms. For this purpose, we empirically examine the determinants of debt composition for over 500 non-financial firms traded on the Tel-Aviv Stock Exchange (TASE) from 1999 to 2009. We use manually-collected credit rating data from the datasets of local rating agencies and the TASE website, as well as accounting and market data from the Super-Analyst dataset. Data on the share of financial institutions in corporate bond offerings is also manually collected from over 1000 reports on such offerings. We use Probit, OLS and Heckman regressions to examine the determinants of the choice to issue corporate bonds and the share of public debt in the total debt. We show that, in accordance with previous studies, higher quality firms (larger firms and those with higher market-to-book ratio) with credit ratings are more likely to issue bonds. Yet in 2007, unlike previous empirical studies, lower quality firms that do raise public debt tend to exhaust this market, and public debt constitutes a relatively larger fraction of their total debt. We also show that firms with higher fraction of bonds in their long-term debt had a higher tendency to default in 2005–2009. Observing institutional investors share in corporate bond offerings in 2004–2009, we show that institutional investors did indeed intensively fund firms with a higher share of bonds in long-term debt despite their lower quality.

The paper is organized in the following way. Section 2 briefly describes the Israeli corporate bond market. Section 3 explains how the

<sup>1</sup> According to the Bank of Israel's 2010 annual report, the market value of the corporate bond market grew from approximately USD 6 billion in 2003 to USD 73 billion in 2009.

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