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Is it Worthwhile to Augment the Legal Protection of Public Debt Placed by Privately Held Companies?

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ABSTRACT

We examine the effects of a law amendment in Israel in 2011 that imposes a set of minimum corporate governance standards on privately held firms that issue publicly traded bonds. Two main results emerge. First, consistent with US evidence, the improved bondholder protection boosts the immediate market valuation of private firms' bonds. Second, the amendment suppresses the private bonds market. After the amendment enactment, the number of private bond IPOs decreases sharply, and an extraordinary proportion of private firms redeem their existing public bonds early. However, given that the exiting firms had more related party transactions, it can be argued that the amendment increases market quality.

Keywords: Public bonds of privately held companies, corporate governance improvements, Regulatory reforms in bond markets

JEL Codes: G32, G34, G38

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1 Introduction

A considerable proportion of publicly traded corporate bonds comprise bonds of privately held firms (private firms henceforth, i.e., firms whose equity is non-listed and does not even trade over the counter). Kovner and Wei (2014), in a comprehensive study of US corporate bonds issued by industrial firms during 1993–2009, report that about 20% of their sample bonds are issued by private firms. These private firms' bonds (private bonds henceforth) serve as a non-bank debt-financing instrument for private companies, and are particularly popular in financing leveraged buyouts and large acquisitions (see, for example, Dell's 20 billion $ notes and bonds issue in 2016).

A general problem of private bonds is that in private firms corporate governance standards are typically weaker than in companies whose common stocks are publicly traded (public firms). Private firms have more concentrated ownership and a less transparent information environment (given their stocks do not trade, the information about them is more opaque). Such an environment and setting facilitate wealth transfers from bondholders to firm owners (equity holders), and raise the issue of bondholders' protection.

Standard bond covenants can be tightened to protect investors in private bonds more adequately. However, this does not resolve the corporate governance and information problems. Consequently, in reality, private bonds' yields are significantly higher than public firms' bond yields. Kovner and Wei (2014) estimate the average yield premium of private debt in the US at about 30–56 basis points, and Saunders and Steffen (2011) document that UK syndicated-bank loans to private firms charge higher interest than comparable loans to public firms.

Private firms may seek to improve their corporate governance and information transparency in order to decrease their cost of debt. Indeed, there is evidence that improved corporate governance lowers the cost of debt financing (see, for example, Ashbaugh-Skaife *et al.*, 2006). The question is whether some regulation is necessary and socially optimal in this context.

The answer to the regulation question is as usual complex. On one hand, a regulation lowering the cost of debt might spur real investment and economic activity and should be welcome. On the other hand, if private firms do not further improve corporate governance on their own, it is probably suboptimal for them. Proponents of regulation would then argue that private firms are reluctant to improve corporate governance because of personal and perhaps egocentric reasons of firm controlling shareholders, causing a market failure. In response, opponents would state that regulation would achieve the opposite result, i.e., suppress business activity, as some studies (e.g., Acharya *et al.*, 2011) find that excess creditor rights decrease debt financing.

We examine an amendment to Israeli corporate law, Amendment 17, enacted in 2011 following the Great Recession of 2007–2009. Many corporate

bonds defaulted or needed some restructuring during the crisis years, inflicting "haircuts" and heavy losses on their investors, and raising questions about necessary regulatory reforms. The amendment imposes a set of minimum corporate governance standards that private firms that issue publicly traded debt should abide to. According to Amendment 17, a private firm issuing public debt must appoint two independent directors on the board, must establish an audit committee that will, along with its regular duties,[1] consider and approve (or disapprove) related-party transactions.

Most of the members of the audit committee must be independent directors, and an independent director must chair it. Essentially, the corporate governance requirements from private firms issuing public bonds were elevated to the level of the corporate governance requirements from public firms.

The purpose of the study is twofold. First, to study the valuation effects of the amendment. If a more public-friendly corporate governance is important for protecting bondholders, than existing private bonds should appreciate in value upon the first announcement (=proposal) of Amendment 17, and perhaps along its approval process. Previous studies such as Anderson *et al.* (2004) support the hypothesis that improved corporate governance decreases bond yields and increases their valuations.[2] We seek to examine further this hypothesis in a different economy and by a sharper regulatory event-study test.

Our second purpose is to examine whether the regulation spurred or suppressed the private bonds issuing activity. We examine the number and volume of private bonds issues, prior to and following the regulatory reform, paying special attention to private firms issuing bonds for the first time. We also examine exit from the private bonds market (private bonds that were redeemed early), before and after Amendment 17 enactment.

We find that existing private bonds appreciated considerably on two stages of the amendment proposal, manifesting a cumulative abnormal return of more than 5% on average. Evidently, improving private firms' corporate governance, essentially making it more stakeholder-friendly, reduces private firms' cost of debt. This event-type finding is consistent with and reinforces previous cross-sectional tests' evidence from US markets.

However, the overall economic impact of the legislation's appears less positive, as we find that new private bonds' IPO activity has decreased sharply in the years following Amendment 17 proposal. In addition, a considerable

[1]Regular duties include discussing firm's financial reports with the external auditors and preparing them for board approval; appointing an internal auditor and supervising her work, and more.

[2]Note, however, the findings of Klock *et al.* (2005) that strong anti-takeover defense, typically associated with worse governance, is beneficial to bondholders (lowers debt yields). Our sample comprises an economy with concentrated ownership firms where anti-takeover amendments are rare. Thus, the evidence and conclusions of Anderson *et al.* (2004) appear more relevant in our setting.

proportion of existing private firm bonds were redeemed early, and the trading volume of the private bond market appears to decrease. Consistent with Acharya *et al.* (2011), fortifying the legal defense of private bonds appears to stifle private bonds' financing. However, there is also evidence that the early redemptions occurred in private firms with more related party transactions and that the amendment blocks some related party transactions. Thus, it can also be argued that the amendment increased market quality.

Section 2 portrays Amendment 17, reviews existing literature, and develops our hypotheses. Section 3 describes the sample and data. Sections 4 and 5 report our results. Section 6 presents complementary findings and evaluates the amendment efficacy, and Section 7 concludes.

2 Background and Hypotheses

2.1 Amendment 17 to the Israeli Corporate Law

The purpose of Amendment 17, as stated in the explanation of the Law,[3] is to grant adequate protection to public bondholders against possible expropriation by the controlling shareholders of private firms. Essentially, Amendment 17 imposes on private companies that issue public debt the corporate governance standards of publicly traded firms in Israel with some small necessary adjustments. Amendment 17 was originally proposed by the Israeli Securities Authority (Israeli SEC) on April 5, 2009, was ratified by the Israeli Knesset (Israeli Parliament) on August 3, 2011, and was implemented starting February 3, 2012.

According to Amendment 17, controlling shareholders are obliged to disclose personal interests to the board of directors before any related-party transaction. The controlling shareholder has a duty of fairness, and the transaction needs to be approved financially and materially by the audit committee and then by the Board of Directors. The audit committee and Board must examine whether executing the related-party transaction will impair company's ability to settle its debt. Should they decide that it raises reasonable doubts about company's solvency, the board of directors is prohibited from approving the transaction.[4] Even after the Board approves a related-party transaction, bondholders have the right to "appeal" by filing a derivative lawsuit to the court.

Amendment 17 also imposes the following structural changes upon the private firms' structure and organs: (1) Firm directors must have some minimal qualifications; (2) The firm must appoint at least two outside independent

[3]Explanation of the Companies Law Bill (Amendment No. 15, Corporate Governance in Bond Companies), 2011 (later Amendment 17).

[4]This specific provision is unprecedented and unique to private bonds. It does not apply to public firm bonds.

directors; (3) An audit committee must be established, and most of its members and its Chairman must be independent directors; (4) Every firm should employ an internal comptroller reporting to the Audit committee; and (5) Firm's CEO or her relative cannot serve also as Board of Directors' Chairman.

We are unaware of any legislation similar to Amendment 17 in other countries. Hence, we have a unique opportunity to examine the effects and efficacy of such legislation.

2.2 Corporate Governance Improvement and Corporate Bond Yields

It is well established that weak (strong) corporate governance increases (decreases) corporate bond yields. Bhojraj and Sengupta (2003) find lower bond yields for firms with higher institutional holdings and a larger proportion of outside directors. Anderson *et al.* (2004) suggest that an effective independent board and an excellent audit committee reduce firm's cost of debt. Ashbaugh-Skaife *et al.* (2006) show that low scores on several corporate governance indicators that are particularly important to bondholders decrease bond's credit rating. Lin *et al.* (2011) present evidence that in firms with a higher wedge between controlling shareholders' equity and vote percentage, a signal of worse corporate governance, bond yields are higher. Last, Boubakri and Ghouma (2010) report that family firms, an ownership structure that is generally associated with weaker corporate governance, incur a higher cost of debt.

Some evidence in the opposite direction is also available. However, it only appears as a caution to the general finding that poor corporate governance decrease bond values and increases bond yields. Cremers *et al.* (2007) document that takeover deterrent, commonly perceived as weakening corporate governance, increase existing bond value. This is probably because takeovers typically require raising debt, and the new debt tends to destabilize the current debt ranking. Another reservation is offered in Ellul *et al.* (2007). They show that in good corporate governance economies, family firms have a lower cost of debt than non-family firms, a result that contradicts Boubakri and Ghouma (2010). According to Ellul *et al.* (2007), this can be explained by the fact that families care for the reputation and survival of their firms, which contributes to their firms' bond values.

Amendment 17 definitely made private bond firms' corporate governance more public-friendly. Thus, we suggest

Hypothesis 1. *The market value of existing private bonds increases upon the amendment proposal, and possibly also along its legislation process.*

Further, two cross-sectional sub-hypotheses are in order. First, when the bond's yield spread is relatively high, agency-type behavior by private firm owners is probably more perilous because it may topple the relatively weak

firm. Thus, bondholders of higher yield bonds would feel greater relief upon the adoption of Amendment 17. This suggests

Hypothesis 1a. *Private bond's price response to the amendment is more positive the higher is the private bond's yield spread.*

A bolder and perhaps more direct sub-hypothesis is that bondholders of firms that are more suspect of agency misconduct such as firms with more related party transactions with controlling shareholders would benefit more from Amendment 17. Amendment 17 targets directly related party transactions. Thus, we propose

Hypothesis 1b. *Private bond's price response to the amendment is more positive the larger is the number of firms' related party transactions with controlling shareholders.*

2.3 The Effect of Creditor Protection on Bond Issuance

Amendment 17 can also be perceived as increasing creditors' rights for a specific type of debt (public debt of private firms). Djankov *et al.* (2007) define creditor rights as a combination of: (1)Lenders' ability to force repayment (for example, grab collateral, seize control of the firm, etc.) and (2) Credit-worthiness transparency (the existence of personal credit registrars and information-sharing institutions). In a study of creditor rights in 129 countries during a 25 years period (1978–2003), they (Djankov *et al.*, 2007) find that increased creditors' rights is associated with increased private debt to GDP ratio.

Haselmann *et al.* (2010) reinforce Djankov *et al.* (2007) evidence. Using legal reforms in twelve eastern European economies, they show that strengthening creditors' rights and especially toughening the collateral rights promotes banks' lending to the private sector.

However, Acharya *et al.* (2011), in an international cross-country analysis, find that increased creditor rights upon bankruptcy have negative economic repercussions for corporations. It encourages companies to engage in risk-reducing investments such as diversifying acquisitions that are value reducing, and it suppresses firm's leverage. The seemingly contradictory results of Djankov *et al.* (2007) and Acharya *et al.* (2011) may emanate from the different responses of debtors (borrowers) and creditors (lenders). Increased creditor rights have dual effects. On one hand, it encourages lending activity (credit supply side), yet on the other it discourages borrowing (credit demand side). If the effect on lending is larger, we will observe increased debt ratios, and if borrowing is most affected by increased creditors' rights, we will observe a decrease in debt ratios.

In our case, the new regulation (Amendment 17) treats only private firm bonds. To circumvent the "difficulties" that it creates, private firms might

increase bank debt financing or other forms of private credit. We expect that since Amendment 17 strengthens bondholders' rights, private firms would be more reluctant to issue corporate bonds, and propose

Hypothesis 2. *Amendment 17 depresses the private bonds' market.*

More explicitly, we suggest

Hypothesis 2a. *New private bonds' issues decrease in number and volume after the Amendment proposal,*

and,

Hypothesis 2b. *Dropping out of the private bonds market via early redemption intensified following the Amendment proposal.*

Amendment 17 should be particularly deterrent for private firms that did not issue bonds to the public prior to the amendment. This implies:

Hypothesis 2c. *IPOs of private bonds decrease in number and volume after the amendment proposal.*

2.4 Potential Contributions

Before proceeding to the empirical analysis, it is important to highlight the several contributions of the study. First, we provide new evidence on the relation between creditor rights and debt financing. If creditors' rights are enhanced in a particular segment of the debt market, will it diminish or encourage the borrowing activity in that channel? Previous work such as Djankov *et al.* (2007) and Acharya *et al.* (2011) look at creditors' rights and relate them to the cross-country variation in private and corporate debt ratios. We examine a different type of creditor rights (corporate governance related rights), and we offer a different kind of test by examining a change in creditor rights in a specific segment of the debt market and its effect on this segment share in corporate debt.

Second, previous literature offers cross-sectional tests of the hypothesis that improving corporate governance reduces firm's cost of debt (see our Hypothesis 1). By studying the legislation of Amendment 17, we provide an independent event-study test of the same hypothesis. It is also noteworthy that we employ relatively accurate bond price data. This is because in Israel corporate bonds are not traded by dealers or Over The Counter (OTC). Rather, bonds are traded on the Tel Aviv Stock Exchange (TASE) using a continuous electronic limit order book system and the same platform as stocks. Abudy

and Wohl (2018) find similar liquidity and transaction costs attributes for corporate bonds and stocks traded on the limit order book of TASE.[5]

Third and last, we offer evidence on a potential legislation. The documented effects of Amendment 17 may be instructive for lawmakers and regulators contemplating whether to protect private bond investors in this manner. In this context, it is noteworthy that the accounting reporting and transparency requirements of private bond firms in Israel are similar to those in the U.S. Hence, we offer a relatively clean experiment of the efficacy of a possible legislation.

3 Sample and Data

Unless otherwise stated, data are collected from the Tel-Aviv Stock Exchange website (TASE, hereafter). First, we compile a list of all private bonds traded on TASE during the years 2005–2015. Our window starts four calendar years before the initial proposal of the amendment, and ends four calendar years after its legislation. (The Amendment was proposed on April 2009, and was finally legislated on August 2011.) After excluding banks, other financial institutions, and government-controlled firms, we are left with 71 private bond firms. Table A.1 in the Appendix lists these firms and reports: (1) Their first calendar year as private bond companies; (2) The way they became a private bond company (IPO or stock delisting); (3) The number of bond offerings by the firm during the sample period; (4) The total notional value of the bond issues; and (5) The reason it ceased to be a private bond company (if the firm is no longer a private bond company on 2015 end).

For tests of Hypothesis 1, referring to private bonds' price response to the amendment proposal, we restrict ourselves to the subsample of 45 private bond firms whose bonds traded on the market on the eve of the Amendment proposal (2008 end). We further omit two firms that did not meet our minimum tradability requirements,[6] and seven firms that had confounding events, i.e., major other news, in the "event window"–the period from ten trading days before the announcement to ten trading days after it. We select such a wide event window because of two reasons. First, we want to be able to observe when the response started and when it ended. Second, the amendment proposal by ISA states that in the past few weeks the ISA had internal discussions on the amendment. Hence, leaks about the impeding amendment might have

[5]Biasis and Green (2007) and Harris *et al.* (2015) criticize the U.S. OTC bond market, arguing that it makes bonds expensive to trade. They recommend shifting bond trading to an electronic limit order book system, which is essentially the trading mechanism used for bonds by TASE.

[6]We require that the bond traded in at least 120 of the 200 trading days preceding the event.

started a few weeks before the amendment.[7] After all exclusions, our final Hypothesis 1 test subsample comprises 36 firms. At this point, it is noteworthy that there was a second step in the proposal of Amendment 17. On January 26, 2010, the Ministry of Justice announced that together with the ISA it has formulated a first draft or memorandum of Amendment 17. We will monitor the response to this announcement as well.

For each firm in the Hypothesis 1 sub sample we compute the daily return of its portfolio of private bonds, value weighting each issue return. This procedure is recommended by Bessembinder *et al.* (2009), on page 4230, as having superior statistical properties and as better reflecting the overall effect of any event on firm's public debt. In addition, we collect daily data on the return of the General Corporate Bonds Index, a value-weighted index of all corporate bonds traded on TASE. This index, compiled by TASE, serves as the market index in our empirical analysis.

For the second part of our study, tests of Hypothesis 2, we rely on two statistical tables published yearly by TASE in the period 2005–2015: "Changes in the number of exchange-listed firms", and "Non-government bond issues this year". These tables detail each new bond issue and each bond delisting, and afford distinguishing between public and private bonds. These tables also disclose the size of each issue, whether it is an IPO (first-time issue), and, in the case of delisting, what the reason for the bond delisting is. Finally, one of these yearly tables also lists bonds of firms that became private during the year due to a "freeze out" of firm's stocks. The publicly trades bonds of such firms, if they continues to trade, are added to our private bonds sample.

4 The Effect of Amendment 17 on Private Bond Prices

4.1 Sample Descriptive Statistics

Table 1 presents some descriptive statistics for the private firms and private bonds that serve us to test Hypothesis 1, the hypothesis on the price effect of Amendment 17. (We could not find financial reports for two firms that delisted from TASE during 2009, hence Table 1 provide descriptive statistics for 34 firms only.)The statistics describe the private bond firms and their traded bonds on the eve of the first amendment proposal by the ISA.

On the eve of the amendment proposal the average total assets of a private bond firm is 1218 million New Israeli Shekel (NIS hereafter) which is about 320 million US Dollars, yet the median is only 420 million NIS (about 110 million US Dollars). The sample firms are, in general, profitable and financially

[7] In practice, we have monitored the period before the amendment proposal and noticed that the response started about ten trading days before the announcement. In any case, we will present evidence for shorter windows as well.

Table 1: Descriptive statistics of Hypothesis 1 test subsample

Characteristics of private firms and their public bonds ($n = 34$)		
Private firms	Mean	Median
Total assets at 2008 end (in million NIS)	1,218	420
Return on assets in 2008 (ROA)	8.70%	5.95%
Financial leverage at 2008 end (total debt/total assets)	59%	57%
Ownership structure at 2008 end (1 = family; 0 = non-family)	0.65	1
Number of bond issues per private firm	1.2	1
Private bonds		
Duration (in years)	2.5	2.2
Yield to Maturity	32%	25%
Yield Spread (over government bonds)	31%	24%
Market value of bonds at 2008 end (in million NIS)	89	56
Monthly volume of trade in 2008 (in million NIS)	5.9	4.0

Amendment 17 to the Israeli Corporate Law was proposed on April 5, 2009. For studying its valuation effects we use the subsample of all private bonds that actively traded on the Tel Aviv Stock Exchange at the end of 2008 and that did not have confounding events in the two weeks before and two weeks after the amendment proposal. The table outlines descriptive statistics for 34 of the 36 relevant private firms and their traded bonds. (We could not find the financial reports of two firms.)

healthy. The mean (median) ROA is 8.70% (5.95% respectively), and the mean (median) financial leverage, defined as firm's short- and long-term debt divided by total assets, is 59% (57%). Finally, 65% of the sample firms are family-controlled, and on average there are 1.2 private bond issues per firm (median is 1).

Table 1 also provides some statistics on the private bonds of these firms. The mean YTM (Yield To Maturity) of these bonds on the eve of the amendment proposal is 32% and their mean yield spread is 31% (medians are 25% and 24%, respectively). These mean YTMs and yield spreads appear relatively high. However, given that they are measured in the midst of the Great Global Recession, they are not exceptional. We sample 308 ordinary public firms bonds, essentially all comparable public corporate bonds, and find a contemporaneous mean (median) YTM of 34% (18%).[8]

The mean duration of the private bonds is 2.5 years (median is 2.2 years). This duration compares well with the mean (median) duration of 3.0 years (2.5 years, respectively) of the 308 public bonds we sampled. Table 1 further reports that the mean market value of our private bonds at 2008's end is 89 million NIS, and their mean monthly volume of trade in 2008 is 5.9 million NIS.

[8]The 308 public bonds we sample comprise all non-bank inflation-protected public corporate bonds that traded contemporaneously on TASE. We restrict ourselves to inflation-protected public corporate bonds because all our private bonds are inflation protected as well (with face value and coupons fully indexed to the Israeli CPI).

4.2 The Response to the Amendment

Hypothesis 1 predicts that Amendment 17, imposing minimum corporate governance standards on private firms issuing public bonds, adds protection to public bondholders of private bonds, and thus decreases their required yields and increases their market prices.

To evaluate the price response we find the announcement day (day A), and for each day of the window A−10 through A+10 we compute the abnormal return of bond i, as:

$$AR_{iT} = R_{i,T} - R_{M,T}, \tag{1}$$

where AR_{iT} is the abnormal return of bond i on day T of the event window, $R_{i,T}$ is the bond return on day T of the event window, and $R_{M,T}$ is Israeli corporate bond market return on day T of the event window. In addition, we compute the Cumulative Abnormal Return (CAR) of each bond as:

$$CAR_i(T_b, T_e) = \sum_{T=Tb}^{T=Te} AR_{iT}, \tag{2}$$

where $CAR_i(T_b, T_e)$ is the cumulative abnormal return of bond i from day T_b through day T_e of the event window, and AR_{iT} is as above. Our abnormal return methodology is essentially a net of market methodology.

Tables 2 and 3 describe the private bonds' price reaction to the two-stage proposal of Amendment 17. Table 2 documents the reaction to the original amendment proposal by the ISA on April 5, 2009, while Table 3 reports the reaction to the formal proposal of the amendment, jointly by the Ministry of Justice (MOJ) and Israeli Securities Authority (ISA) on January 26, 2010.

In Table 2 the reaction event window extends from day A−10 to day A+10 to allow us to observe information leaks before and delayed response after the ISA proposal. For each day T of the event window, we present the mean abnormal return on that day (column AR) of the 36 sample bonds and the mean cumulative abnormal return (column CAR), from day A−10 to day T.

In Table 2 we see that the mean ARs from ten days before to two days after the ISA amendment proposal are predominantly positive, indicating a positive response to the amendment. After day A+2 the mean ARs are about random and the mean CAR appears flat (i.e., fluctuates within a narrow range).

At the bottom of the table we provide some summary and test statistics. The mean $CAR(-10, 10)$, and $CAR(-10, 2)$ are about 4.8% and significantly different from zero–see the *p*-value column. In these windows the proportion of bonds with positive CARs is about two-thirds, and is significantly higher than 50%. Both these parametric and non-parametric tests reject the null hypothesis that private bond prices did not react to Amendment 17 proposal by the ISA on April 5, 2009. Private bonds prices appreciated on average

Table 2: Private bonds' price response to the original proposal of Amendment 17 by ISA

Day	AR	CAR	Day	AR	CAR
A−10	0.38%	0.38%	A+1	0.48%	4.54%
A−9	0.01%	0.39%	A+2	0.29%	4.83%
A−8	0.57%	0.96%	A+3	−0.33%	4.50%
A−7	0.56%	1.53%	A+4	0.44%	4.95%
A−6	−0.28%	1.24%	A+5	−0.42%	4.52%
A−5	0.48%	1.73%	A+6	0.06%	4.59%
A−4	0.31%	2.03%	A+7	−0.38%	4.21%
A−3	0.85%	2.88%	A+8	0.35%	4.56%
A−2	0.36%	3.24%	A+9	−0.01%	4.55%
A−1	0.49%	3.72%	A+10	0.12%	4.67%
A	0.34%	4.07%			

Window	Mean CAR	Z-statistic	p-value of the mean (one-sided test)	Median CAR	Proportion of positive CARs	p-value of proportion positive (one-sided test)
A−10 to A+10	4.67%	2.82	0.002	2.50%	64%	0.03
A−10 to A+2	4.83%	3.23	0.001	2.37%	69%	0.006

The table reports the mean abnormal return (AR) and the mean cumulative abnormal return (CAR) for the public bonds of 36 private firms around the proposal of Amendment 17 by the Israeli Securities Authority (Israeli SEC) on April 5, 2009. Each private firm is represented by one bond return, i.e., when a private firm has several public debt issues, its representative bond return is the value-weighted return of its bonds. The event window extends from day A−10 to day A+10, where A is the announcement day. We employ a net of market methodology, using the General Corporate Bond Index as the market index. The lower part of the table presents the mean and median CARs for selected windows, the Z-statistics of the mean CARs and their p-values, the percentage of bonds with positive CARs, and the p-value of the null hypothesis that negative and positive CARs are equally frequent (one-sided tests).

Table 3: Private bonds' price response to the formal MOJ proposal of Amendment 17

Day	AR	CAR	Day	AR	CAR
A−10	0.22%	0.22%	A+1	1.06%	2.63%
A−9	0.07%	0.29%	A+2	0.25%	2.88%
A−8	−0.03%	0.26%	A+3	−0.33%	2.55%
A−7	0.32%	0.58%	A+4	0.30%	2.85%
A−6	0.17%	0.75%	A+5	0.13%	2.98%
A−5	0.25%	0.99%	A+6	−0.11%	2.87%
A−4	0.11%	1.11%	A+7	−0.07%	2.80%
A−3	−0.09%	1.02%	A+8	0.00%	2.80%
A−2	0.12%	1.14%	A+9	0.15%	2.95%
A−1	0.18%	1.33%	A+10	0.15%	3.10%
A	0.25%	1.58%			

Window	Mean CAR	Z-statistic	p-value of the mean (one-sided test)	Median CAR	Proportion of positive CARs	p-value of proportion positive (one-sided test)
A−10 to A+10	3.11%	2.15	0.016	0.76%	61%	0.07
A−10 to A+2	2.88%	2.63	0.004	0.38%	58%	0.12

The table reports the mean abnormal return (AR) and the mean cumulative abnormal return (CAR) for the public bonds of 36 private firms around the formal proposal of Amendment 17 by the Ministry of Justice (MOJ) and Israeli Securities Authority (ISA) on January 26, 2010. Each private firm is represented by one bond return, i.e., when a private firm has several public debt issues, its representative bond return is the value-weighted return of its bonds. The event window extends from day A−10 to day A+10, where A is the announcement day. We employ a net of market methodology, using the General Corporate Bond Index as the market index. The lower part of the table presents the mean and median CARs for selected windows, the Z-statistics of the mean CARs and their p-values, the percentage of bonds with positive CARs, and the p-value of the null hypothesis that negative and positive CARs are equally frequent (one-sided tests).

by almost 5% in response to ISA's Amendment 17 proposal. This finding supports Hypothesis 1 of the study.

ISA's proposal, essentially a table outlining the principles of the amendment, was transferred to the Ministry of Justice, and it (MOJ) formulated it into a specific legal amendment to the Corporate Law. On January 26, 2010, it was announced that ISA and MOJ propose Amendment 17 to the Corporate Law. Table 3 examines the response to this formal MOJ proposal.

In Table 3 we observe predominantly positive mean ARs from day A−10 up to day A+2. The mean cumulative response, CAR$(-10, 2)$ is 2.88% and statistically significant–see the bottom of the table. Apparently, private bonds appreciated by almost 3% around the formal MOJ proposal of Amendment 17.

If we add the ISA and the MOJ proposals' estimated responses (CARs), 4.83% and 2.88% respectively, we can conclude that private bonds prices appreciated considerably, by about 7.7% on average, following the amendment. This appreciation may appear a bit high. However, given the timing of the legislation, the midst of the great global recession, when bondholders were deeply worried about the solvency of corporate bonds (hence bonds' mean YTM of about 30%), such a response appears less vexing. In normal circumstances the response to the amendment would probably be much more modest. In short, our evidence indicates the direction of the response, not its typical magnitude.

We conduct various robustness tests. First, since in both Tables 2 and 3, the mean abnormal returns are predominantly positive from the beginning of the event window (day A−10), it can be argued that the response started before day A−10. To address this criticism, we calculate CAR$(-20, -11)$ and CAR$(-30, -11)$ using our net of market methodology. For the ISA proposal announcement (Table 2), we estimate a mean CAR$(-20, -11)$ of 0.13%, and a mean CAR$(-30, -11)$ of −0.05%, indicating no response prior to day A−10. For the MOJ proposal announcement (Table 3), we assess a mean CAR$(-20, -11)$ of 1.31% and a mean CAR$(-30, -11)$ of −0.55%, both statistically insignificant.

Second, some may complain that the CAR event window (day −10 to +10 relative to the announcement) is too wide. In choosing the event windows of Tables 2 and 3 we let the mean abnormal return (AR) evidence guide us as to when the response started and ended. (In both ISA and MOJ announcements we observe a streak of positive ARs starting on day −10– see Tables 2 and 3.) However, immediate response windows such as from day −1 through day 1 relative to the announcement may be more closely related to the announcement genuine economic impact. Thus, we compute them as well. The mean CAR$(-1, 1)$ is 1.30% for ISA's proposal announcement (p-value = 0.01), and 1.49% for the MOJ proposal announcement (p-value = 0.04). Evidently, private bonds' prices react positively to the amendment proposal. In fact, when we replicate all our study's tests with CAR$(-1, 1)$, our conclusions remain intact.

Third, we examine market's reaction to Amendment 17's presentation and first approval by the Knesset (Israeli parliament). The mean CAR$(-10, 10)$ around the presentation date (February 14, 2011) is 0.52%, and the mean CAR$(-1, 1)$ is 0.38%. This suggests that the main reaction to the amendment occurred at its two proposal events (by ISA and by MOJ). The ISA and MOJ then convinced legislators about the need and usefulness of the proposed amendment.

4.3 Refined Estimates of the Response

The previous-section estimates of the response to the amendment proposal may also suffer from some methodological and statistical weaknesses. First, since we focus on just two event dates (the dates of the amendment proposal), individual bonds' abnormal returns may not be independent. This would bias our Z-scores and statistical significance inference. Second, the net of market methodology employed in Tables 2 and 3 assumes that our 36 bonds have on average the same risk as the Corporate Bonds Market Index, an assumption that may be flawed.

To evade this legitimate criticism we construct an equally weighted portfolio of our 36 bonds, and consider the period from 10 days before the original ISA amendment proposal to 10 days after the MOJ formal amendment proposal. In this period, extending over 214 trading days, we run the following regression:

$$\begin{aligned} R_{P,t} = a_p + b_{1p}R_{M,t} + b_{2p}R_{M,t-1} + b_{3p}DUM_ISA_t \\ + b_{4p}DUM_MOJ_t + e_{p,t}, \end{aligned} \tag{3}$$

where $R_{P,t}$ is the 36 bonds' portfolio return on day t, $R_{M,t}$ ($R_{M,t-1}$) is the Corporate Bonds Market Index return on day t (day $t-1$, respectively), DUM_ISA_t is a dummy variable that equals 1 on days A−10 through A+2 (and equals 0 otherwise) relative to the ISA proposal, DUM_MOJ_t is a dummy variable that equals 1 on days A−10 through A+2 (and equals 0 otherwise) relative to the MOJ proposal, $e_{p,t}$ is an idiosyncratic residual term, and a_p, b_{1p}, b_{2p}, b_{3p}, and b_{4p} are parameters. This methodology forms a portfolio in order to solve the problem of dependent individual bonds' abnormal returns, and adjusts the risk of our portfolio relative to General Corporate Bonds Index by allowing a relative risk measure ("beta") different from one.[9] Most importantly, in regression (3) the coefficients of DUM_ISA (and DUM_MOJ) estimate the daily abnormal return of the portfolio in the period from day A−10 to day A+2 relative to the ISA (MOJ) amendment proposal.

[9]We add the market lagged return as an explanatory variable to the regression, in order to capture more accurately the market dependence (true "beta") of less actively traded securities. This methodology appears appropriate because a few of our sample bonds are not actively traded on each day.

The fitted portfolio return regression is

$$\underset{(2.5)}{R_{P,t} = 0.0009} + \underset{(5.1)}{0.80\ R_{M,t}} + \underset{(0.5)}{0.05\ R_{M,t-1}} + \underset{(4.4)}{0.0033\ DUM_ISA} + \underset{(1.9)}{0.0016\ DUM_MOJ} \quad (4)$$

where, robust t-statistics (adjusted for heteroscedasticity) are presented in parentheses below the coefficients. Two findings are noteworthy. First, the aggregate "beta" of our 36 bonds portfolio, which can be approximated by the sum of the coefficients of $R_{M,t}$ and $R_{M,t-1}$, is 0.85, less than 1. This finding is not surprising because as we reported previously the mean duration (2.5 years) of our private bonds is lower than the mean duration of a large sample of comparable public bonds (3.0 years). Anyway, this result illustrates the importance of the risk adjustment procedure suggested in equation (3).

Second, the coefficient of DUM_ISA, 0.0033, implies that the average cumulative response of private bonds to Amendment 17's original proposal by the ISA is 4.29%, 0.0033 times 13. (We multiply by 13 because DUM_ISA extends over 13 days.)Similarly, our revised estimate of the response to the amendment proposal by the MOJ is 2.08% (0.0016 times 13). The sum of the ISA and MOJ responses, 6.37%, is economically and statistically significant. It is also probably a more reliable estimate of private bonds' reaction to Amendment 17 than our previous-section estimate of 7.71%.

Another possible methodology-based criticism contends that the returns of private firm bonds should be compared to the returns of matched public firm bonds. Amendment 17 treats only private bonds, hence similar public bonds might be an ideal control.

For each of the 36 private bonds in our abnormal returns analysis (Tables 2 and 3) we seek a matching public bond. The matched public bonds is required to fill 3 cumulative criteria: (1) Same industry classification as the private bond (based on Tel Aviv Stock Exchange industry classifications); (2) The total assets of the public firm on 2008 year end is between 50% and 150% of that of the private bond; and (3) Public firm's leverage (debt divided by total assets) is between 75% and 125% of that of the private bond. Using this procedure, we find proper matches for only 26 private bonds.

Next, we construct a portfolio of 26 private-firm bonds, and a portfolio of 26 matching public-firm bonds. Portfolio returns are equally-weighted, and in general we follow the portfolio-based methodology described earlier in this section.

The fitted regression for the 26 private bond portfolio is:

$$\underset{(2.0)}{R_{P,t} = 0.0008} + \underset{(4.9)}{0.81\ R_{M,t}} + \underset{(0.1)}{0.03\ R_{M,t-1}} + \underset{(5.5)}{0.0037\ DUM_ISA} + \underset{(1.8)}{0.0019\ DUM_MOJ} \quad (5)$$

These regression coefficients resemble closely the coefficients in equation (4), where we used all our 36 private bonds. For example, in equation (4) the aggregate beta is 0.85 and in equation (5) above it is 0.84. Thus, the 26 private bonds of our matched sample analysis appear to represent well our full private bonds sample. Interestingly, based on DUM_ISA and DUM_MOJ coefficients in equation (5), the cumulative abnormal return associated with the amendment is 7.28%.

The fitted regression for the 26 public bond portfolio is:

$$\underset{(3.6)}{R_{P,t} = 0.0015} + \underset{(5.0)}{0.75\ R_{M,t}} + \underset{(0.2)}{0.02\ R_{M,t-1}} + \underset{(1.5)}{0.0021\ DUM_ISA} - \underset{(-0.6)}{0.0005\ DUM_MOJ} \quad (6)$$

The regression coefficients of DUM_ISA and DUM_MOJ are statistically insignificant. Thus, it is arguable that these public bonds do not react to the amendment. This result is plausible since Amendment 17 changes regulation only for private bond firms.[10]

Nevertheless, if we sum the coefficients of DUM_ISA and DUM_MOJ in equation (6), it can be argued that public bonds achieved an abnormal return of 2.08% (13 times 0.0016) in the period surrounding Amendment 17 announcements dates. Thus, a conservative measure of Amendment 17's impact is 5.2%, computed as 7.28% (the estimated private bonds abnormal return) minus 2.08% (the matched public bonds abnormal return).[11]

4.4 Cross-sectional Evidence

Hypotheses 1a and 1b propose that the bond's price increase would depend on the bond's yield spread and on the firm's number of related party transactions with controlling shareholders. Bonds with higher yield spreads belong to firms that are more risky and closer to insolvency. For such private firms agency behavior of the firm owners can rapidly deteriorate the firm into financial distress and bankruptcy. Thus, the restraints imposed by Amendment 17 should increase the market value of bonds with higher yield spreads the most. Similarly, bondholders of firms with more related party transactions before the amendment should benefit more from the amendment, as the amendment is very explicit and meticulous in defending bondholders against potentially exploitive related party transactions.

[10] Public firms are subject to the regular corporate governance laws of Israel that require very similar board structure and governance as Amendment 17. Amendment 17 basically imposes the Israeli corporate governance regulation (with small necessary adaptations) on private firms that issue bonds to the public.

[11] We have replicated the regressions of equations (5) and (6) with DUM_ISA and DUM_MOJ defined as 1 only in days −1, 0 and 1 relative to ISA and MOJ announcements. The results are analogous to those reported above, with a mean private (public) bond response of 2.78% (0.53%, respectively), and a net (private minus public bond) reaction of 2.25%.

For each firm in our 36 firms sample we run an analogous regression to equation (3), where the dependent variable is the firm's private bond return. This regression assesses bond i's cumulative abnormal return (CAR_i) around the ISA amendment proposal and around the MOJ proposal. Then, we sum the cumulative abnormal return around the ISA proposal and the cumulative abnormal return around the MOJ proposal, and run a cross-sectional regression of this sum on the bond's yield spread on the eve of the amendment proposal and on the number of firm's related party transactions with controlling shareholders in the pre-proposal years (years 2005–2009).

The fitted regression model is:

$$\underset{}{\text{CAR_(ISA + MOJ)}_i} = \underset{(-0.3)}{-0.005} + \underset{(3.0)}{0.171}\ \underset{}{\text{YIELD_SPREAD}_i} + \underset{(1.8)}{0.041}\ \underset{}{\text{RPT_C}_i} + e_i, \tag{7}$$

where CAR_(ISA + MOJ)_i is the sum of the two amendment proposal CARs, CAR of bond i in days −10 to 2 relative to the amendment proposal by ISA and the respective CAR around the amendment proposal by MOJ; YIELD_SPREAD_i is the yield spread of bond i on March 19, 2009, 11 trading days before the first amendment proposal; RPT_C_i is the number of related party transactions with the controlling shareholders of firm i in 2005–2009; and *t*-statistics adjusted for heteroscedasticity are shown in parentheses below the coefficients.

In the above regression, the coefficient of yield spread is positive and highly statistically significant, and the coefficient of the pre-proposal number of related party transactions is positive and significant at the 10% level. This evidence supports our Hypotheses 1a and 1b. Bonds with higher yields are more sensitive and vulnerable to possible agency behavior of firm's owners; hence the protection offered by Amendment 17 is more valuable to them. Similarly, bondholders of firms with more related party transactions benefit more from the protection against occasional opportunistic self-interested behavior of controlling shareholders offered by Amendment 17.

In sum, the various tests of Hypothesis 1 summarized in this section appear to support it. Legislation that improves corporate governance increases the market value of bonds, probably via restricting possible improper agency behavior by private firms' owners. The evidence portrays Amendment 17 as benefactor to the public. However, other, perhaps unintended, effects of legislation need also be examined.

5 The Effect of Amendment 17 on Private Bonds' Issuance and Delisting

The second major hypothesis that we test is that Amendment 17 depresses the private bonds' market. Imposing strict corporate governance requirements

on private firms that issue public debt dissuades private firms contemplating to issue bonds and discourages private firms that have already issued public debt. According to Hypothesis 2, following the amendment, less private firms join the market (=less debt IPOs by private firms), some private firms redeem their bonds and exit the market before bond maturity, and the remaining private bond firms issue less.

5.1 The Change in Bond Issuance Activity

Table 4 examines bonds' issuing activity on TASE during 2005–2015. Panel A reports yearly statistics as to total bonds' issuing volume, private bonds' issuing volume, number on firms issuing bonds and number of private firms issuing bonds. We also compute and show the share of private firms in bond issuance activity. On average, during 2005–2015, non-financial and non-government Israeli firms issued on TASE 16.3 billion NIS of bonds yearly. Of this total, 1.5 billion NIS yearly were bond issues by private firms. Thus, private bonds accounted on average for 9.3% of bond issuance volume on TASE.

Panel B of Table 4 provides subperiod comparisons that serve to test Hypothesis 2a. We examine three 3-year subperiods: the pre-amendment period (2006–2008), the amendment legislation period (2009–2011), and the post-amendment period (2012–2014). In each period we compute and document the share of private bonds in total bond issuing volume and the proportion of private firms among all bond-issuing firms.

The share of private bonds in total bond issuing decreases from 9.43% in the pre-amendment period to 7.80% in the amendment legislation period, and then rebounds to 11.47% in the post-amendment period. Evidently, as far as issuing volumes are concerned, the evidence rejects Hypothesis 2a. Bond issuing activity of private firms has not decreased in volume following Amendment 17 enactment.

The second test of Hypothesis 2a focuses on the ratio of private firms that issued bonds to all (public and private) firms that issued bonds, within each period. The proportion of private firms among bond issuing firms decreases from 21.4% in the pre-amendment period to 13.8% in the amendment legislation period – see Panel B. In the post-amendment period, the proportion of private firms among bond issuing firms is 13.8% as well (same as in the amendment legislation period). The drop in the proportion of private firms among bond issuers is statistically significant at the 5% level (see Panel B).[12] Interestingly also, it (the drop) starts immediately after the amendment proposal. Apparently, the amendment deters some private firms from issuing

[12] We test the difference in proportions using a null hypothesis of equal proportions against the alternative of a lower proportion after the amendment proposal, using the standard Z test-statistic.

Table 4: Public and private bonds issuance activity on the Tel-Aviv Stock Exchange

Panel A: Yearly statistics

Year	Total yearly bond issues on TASE (in million NIS)	Private bond issues (in million NIS)	Share of private bonds in total bond issuance	Number of firms issuing debt	Number of private firms issuing debt	Share of private firms
2005	7,009	392	5.59%	56	6	10.71%
2006	9,859	1,197	12.14%	65	17	26.15%
2007	26,445	2,026	7.66%	111	22	19.82%
2008	4,536	628	13.84%	20	3	15.00%
2009	17,856	730	4.09%	55	8	14.55%
2010	19,211	1.549	8.06%	103	15	14.56%
2011	18,168	2,029	11.17%	74	9	12.16%
2012	12,140	675	5.56%	42	4	9.52%
2013	21,473	3,199	14.90%	93	14	15.05%
2014	18,484	2,104	11.38%	89	13	14.61%
2015	24,102	2,182	9.05%	70	10	14.29%

Panel B: Subperiod comparisons

Subperiod	Share of private bonds in total proceeds from bond issuance	Difference relative to the pre-amendment subperiod (one-sided p-value)	Proportion of Private firms in bond issuing firms	Difference relative to the pre-amendment subperiod (one-sided p-value)
Pre-amendment 2006–2008	9.43%	NR	21.4%	NR
Amendment legislation 2009–2011	7.80%	−1.63% (0.27)	13.8%	−7.6% (0.02)
Post-amendment 2012–2014	11.47%	2.04% (0.75)	13.8%	−7.6% (0.02)

public debt, thus reducing the proportion of private firms among issuers. This evidence is consistent with Hypothesis 2a.

On reflection, Table 4 results offer a more intricate than expected picture of the response to the amendment. On one hand, Amendment 17 hurts the private firms, thus the proportion of private firms among bond issuers declined considerably (by more than a third) following the amendment. However, on the other hand, the private firms that continued to issue bonds must have offered relatively large bond issues, leading to our finding that the proportion of private bonds in total bond issuing volume did not decline.

We examine this increasing issue size proposition and find it to be consistent with the data. The mean seasoned private bond issues increased from 120 million NIS in 2005–2008, to 151 million NIS in 2012–2015. Hence, the post-amendment increase in average issue size offsets the decline in the number of private firms issuing bonds. There emerges a group of private firms that choose to stay in (or are captives of) the private bond market. Interestingly, the increase in issue size may itself be a natural consequence of the amendment. This is because given the fixed costs of the amendment firms that elect to stay utilize it to a greater extent. Alternatively, private firms that are reluctant to issue bonds, succumb and issue (large amounts) only when their financing needs become relatively large. In sum, the evidence in Table 4 appears to offer some (moderate) support to Hypothesis 2a.

5.2 Early Private Bond Redemptions

Hypothesis 2b predicts a voluntary exodus of private firms from the public bonds market, i.e., an increased frequency of early redemptions of private bonds following Amendment 17 enactment. We find that in the post-amendment period (2012–2015) 12 private bonds were redeemed early, whereas in the four previous years (2008–2011) only 2 private bonds were redeemed early. This evidence appears to support Hypothesis 2b.

However, we cannot ignore the fact that interest rates in the post-amendment period (2012–2015) were lower than in the previous four years (2008–2011), encouraging early redemption of all kinds of bonds in the post-amendment period. Thus, a more controlled analysis is in order. We calculate the proportion of private bonds amongst all early-redeemed corporate bonds. The proportion of private bonds amongst all early-redeemed bonds leaps from 11.8% in 2008–2011 to 40% in the post-amendment (2012–2015) period. This increase in the proportion of private bonds is statistically significant at the 5% level using a Z-test for the difference in proportions. Evidently, consistent with Hypothesis 2b, after the amendment there is an increased tendency of private bond firms to redeem early and exit public markets.

It is also noteworthy that in 2012, the first post-amendment year, the proportion of private bonds amongst all early-redeemed bonds is 33.3% (3

out of 9 early redemptions), slightly lower that the post amendment period (2012–2015) rate of 40% reported above. This illustrates that private firm bonds did not rush to exit the market immediately. Perhaps they waited to see the actual limitations and costs of the amendment before taking the drastic early redemption move. As a further check we also look for new IPOs of private bonds by the early redeeming firms and find none. Their exit from the market was not a tactic to perhaps reduce their debt costs (YTM). Finally, it is also noteworthy that all our early redemptions entail a complete exit from the market. Five of the private bond firms had multi-issues of bonds and redeemed all of them. Interestingly, all of these 5 multi-issue redemptions occurred in the post-amendment period.

5.3 The Change in Private Bond IPOs

Table 5 presents evidence that inquires Hypothesis 2c. We examine bond IPOs on TASE by private and public firms during the 2005–2015 period. Panel A reports yearly statistics on all bonds' IPO volume, private bonds' IPO volume, number of firms with a bonds' IPO, and number of private firms with a bonds' IPO. We also compute and show the share of private firms in the bonds' IPO activity. On average, during 2005–2015, non-financial and non-government Israeli firms had bond IPOs on TASE amounting 1598 million NIS yearly. Of this total, 453 million NIS yearly was bond IPOs by private firms. Thus, private bond IPOs accounted on average for 28.3% of bond IPO volume on TASE. Panel A also reveals that the bond IPO market in Israel was especially strong in 2005–2007, just before the Great Global Recession of 2008.

Panel B of Table 5 provides subperiod comparisons that serve to test Hypothesis 2c. The methodology resembles the one used in the analysis of total bond issuing activity in Table 4. We examine two subperiods: the pre-amendment period (2005–2008), and the amendment legislation and post-amendment period (2009–2015). In each period we compute and document the share of private bonds in total bond IPO volume and the proportion of private firms among all bond-IPO firms. Relative to Table 4, the main difference is the unification of the amendment legislation and post-amendment periods. This is done because the number of bond IPOs in each of these periods is small (22 and 23 IPOs, respectively), and because in Panel A both periods appear similar. The unification of these periods should increase the statistical power of our tests.

The share of private bonds in the total bonds' IPO market volume decreases from 25.9% in the pre-amendment period to 14.1% in the combined amendment legislation and post-amendment period. We test the statistical significance of this difference using the standard difference in proportions test, where the null hypothesis is equal shares in both periods and the alternative hypothesis is a lower private firms' share after the amendment proposal. Using a one-sided test, we are able to reject the null hypothesis (p-value of 0.06). The share

Table 5: Debt IPOs by private and public firms on the Tel-Aviv Stock Exchange

Panel A: Yearly statistics

Year	Total bond IPOs, in million NIS	Private bond IPOs, in million NIS	Share of private bonds in total bond IPOs	Number of firms with bond IPOs	Number of private firms with bond IPOs	Share of private firms
2005	4,270	329	7.71%	24	4	16.67%
2006	3,327	1,197	35.96%	41	17	41.46%
2007	6,962	1,819	26.13%	59	19	32.20%
2008	802	628	78.29%	5	3	60.00%
2009	1,028	0	0.00%	4	0	0.00%
2010	1,059	362	34.14%	12	3	25.00%
2011	888	0	0.00%	3	0	0.00%
2012	401	0	0.00%	2	0	0.00%
2013	814	0	0.00%	5	0	0.00%
2014	1,510	200	13.23%	6	1	16.67%
2015	1,500	450	30.00%	8	1	12.50%

Panel B: Subperiod comparisons

Subperiod	Share of private bonds in total proceeds from bond IPOs	Difference relative to the pre-amendment subperiod (one-sided p-value)	Proportion of private firms in all firms with a bond IPOs	Difference relative to the pre-amendment subperiod (one-sided p-value)
Pre-amendment 2005–2008	25.9%	NR	33.3%	NR
Amendment legislation and post-amendment 2009–2015	14.1%	−11.8%(0.06)	12.5%	−20.8%(0.005)

of private bond IPOs in total bonds IPO volume manifests an economically and statistically significant drop following Amendment 17's proposal. This evidence is consistent with Hypothesis 2c.

Even stronger support of Hypothesis 2c is offered by the second test of Table 5, focusing on the proportion of bond IPO firms that are private. The share of private firms in firms offering bonds for the first time decreases from 33.3% before the amendment proposal to 12.5% after it. This drop in the share of private firms is statistically significant at the 1% level – see Panel B. Apparently, the amendment deters some private firms from entering the public debt market, sharply reducing the proportion of private firms among first-time bond issuers.

Interestingly, when we examine private bond IPOs we also find an increase in issue size. The mean (median) private bond IPO size increases from about 88 (67) million NIS in 2005–2008 to 202 (200) million NIS in 2009–2015. This increase in issue size can be explained in the same manner as the parallel increase in seasoned private bonds issue size reported earlier in section 5.1. Following Amendment 17 enactment, only private firms with great needs for non-bank credit enter the private bonds market.

The fact that we find stronger support for Hypothesis 2c than for hypothesis 2a is plausible. For if Amendment 17 discourages private firms from issuing public debt, the effect should be stronger and more distinct for private firms that have not yet entered the market. Those firms can substitute bank or other privately negotiated debt or equity in place of the public debt they might have contemplated. In comparison, private firms that have already issued public bonds (veteran private bond firms) may be captives of the public bond market, i.e., cannot exit it immediately. This is because these veteran private bond firms may lack readily available funds to redeem their bonds before maturity and have exhausted their other sources of debt and equity financing.

Finally, we examine the 2009–2015 period for further specific amendments or regulation referring to private bonds, and found none. This increases the likelihood that the decline in private bonds' issuance activity that we document is due to Amendment 17.

6 Complementary Evidence and Law Assessment

6.1 Actual Corporate Governance Improvements

Amendment 17 improves the formal corporate governance of private bond firms. It is interesting to inquire whether there is evidence of actual improvements in the realized ethical (corporate-governance-related) behavior of these firms. For example, do related party transactions become less prevalent in these firms in the years following the amendment?

We search MAYA (TASE database of public firm announcements) for related party transactions involving firm controlling shareholders (RPT_C, in short). Those transactions, which require approval at Shareholders Meetings by a majority of non-interested shareholders, are the deals most suspect of tunneling (private benefits consumption by controlling shareholders via self-dealing with the company at the expense of public investors – see Atanasov *et al.*, 2011). Our methodology in this study is to use general market data as a control for private bonds. (This assures that we account properly for general temporal changes in local corporate governance quality.) Thus, we collect data on RPT_Cs for both private bond firms and for regular public firms (firms that issued common stocks).

In 2012–2014 (the post-amendment period) private bond firms announced 244 RPT_Cs, while in 2009–2011 they announced a total of 227 RPT_Cs. However, this post-amendment increase of about 7.5% in RPT_C deals is modest relative to the general market trend. In other TASE-traded public companies, RPT_Cs increase by about 25.5%, from 6178 in 2009–2011 to 7753 in 2012–2014.[13] We test the null hypothesis that the percentage RPT_Cs' increase in private bond firms (7.5%) equals the percentage RPT_Cs' increase in regular stock companies (25.5%), and find that this null hypothesis can be rejected at the 1% significance level. Thus, our conclusion is that Amendment 17 helps blocking some related party transactions among private bond firms. This conclusion is not surprising given that Amendment 17 targets directly and explicitly related partly transactions, subjecting them to the approval of an audit committee with a majority of external directors.

We examine another characteristic that may also reflect firm's actual corporate governance quality – accounting restatements. We find 10 private bond firms with accounting restatements in 2009–2011 and 5 private bond firms with accounting restatements in 2012–2014 (post-amendment period). However, given that in the general market (all TASE firms) the frequency of restatements decreased by about 50% in the same period (i.e., between 2009–2011 and 2012–2014), the observed decrease in accounting restatements of private bond firms does not indicate any special post-amendment improvement.[14]

[13]The increase in the number of reported RPT deals in TASE between 2009–2011 and 2012–2014 is a result of Amendment 16 to the Israeli Corporate Law. In 2012 Amendment 16 became effective. It considers any compensation contract between the firm and its controlling shareholders as a related party transaction, and requires re-approvals of such contracts every three years.

[14]We have also searched for derivative suits against private bond firms and for fines by ISA (Israeli SEC), and found none in the three years before and after the amendment enactment. This is probably because these more advanced shareholder protection tools became popular in Israel only in recent years.

6.2 Which Firms Redeem Their Private Bonds Early?

Another complementary evidence we explore, relates to the type of private-bond firms that leave the market following the amendment. We focus on early bond redemptions which might be the most acute signal of private firm dissatisfaction with the amendment. Our analysis is cross-sectional. We hypothesize which firms might be most affected by the amendment and examine whether these firms show an increased early redemption rate.

Several factors may affect the early redemption propensity. First, firm size. Previous evidence, relating to the Sarbans-Oxley (SOX) Act in the U.S. (e.g., Kamar *et al.*, 2009), document that SOX induced small firms to exit the market, probably because of its non-trivial compliance costs. Given that Amendment 17 implementation is costly, small private firms may manifest a stronger tendency to leave the market.

Two other factors probably affect the relative "cost" the amendment inflicts upon private firms. First, there is the direct cost element - the funds needed for redemption. If issue size is large relative to company size, it is expected that the firm would have difficulties in raising sufficient funds to early redeem its private bonds. Thus, the higher is the ratio of bond issue size to firm's total assets, the less likely are early redemptions. Second, private bond firms that used to have relatively many related party transactions with their controlling shareholders are more offended by Amendment 17. Such firms may manifest a greater tendency to leave.

Other possibly relevant factors are the bond CAR upon the amendment proposals and the bond YTM before the first amendment proposal. Firms whose bonds appreciated the most around our two amendment proposal dates (ISA and MOJ announcement dates) might represent firms whose controlling shareholders lost the most from the amendment. Thus, private bond firms with a relatively high amendment CAR might manifest a higher propensity of early redemptions. Likewise, firms with relatively high YTMs on the eve of the amendment proposal are firms whose bondholders might have gained the most from the amendment and whose "frustrated" controlling shareholders might seek exit the most.

We run a Probit analysis of bonds' early redemptions among the 45 private bond firms that traded in the market at 2008 end (the sample used for our CAR analysis in Section 4). The dependent variable equals 1 in the twelve firms with early bond redemptions and equals 0 for the rest of the firms. The explanatory variables include firm size, number of related party transactions, CAR on amendment announcements, bond YTM before the amendment proposal, and bond's relative issue size.

Table 6 documents the results of the Probit analysis. The finding that the coefficient of Ln(TA) is small and statistically insignificant indicates that small firms are not more likely to exit the market. It is possible that the compliance

Table 6: Factors affecting private bonds' early redemption likelihood

	(1)	(2)	(3)
RPT_C	0.63*	0.49**	0.49**
	(1.69)	(2.11)	(2.15)
CAR	−0.020		
	(−1.13)		
Ln(TA)	−0.15		
	(−0.59)		
REL_ISSUE	−0.45		
	(−1.49)		
YTM	−0.0049	−0.0046	
	(−1.53)	(−1.14)	
Constant	−2.45	−0.59*	−0.85***
	(−1.17)	(−1.80)	(−3.43)
Pseudo R-squared	0.18	0.11	0.09

The table reports the results of a Probit analysis of early redemptions likelihood. The sample comprises 45 private bond firms that traded in the market at 2008 end. The dependent variable equals 1 in the twelve private firms with early bond redemptions, and equals 0 for the rest of the firms. The explanatory variables include: (1) CAR_i - the sum of firm bonds' $CAR(-10, 2)$ at ISA announcement and $CAR(-10, 2)$ at MOJ announcement (in %); (2) $Ln(TA_i)$ – the natural logarithm of firm's total assets (in thousands NIS); (3) RPT_C_i – the number of related party transactions involving controlling shareholders (and requiring shareholder meeting approval) in firm i during 2005–2009; (4) REL_ISSUE_i – the natural logarithm of private bond issue size as a proportion of firm's total assets; and (5) YTM_i – The yield to maturity of private bond i before the amendment proposal (at 2008 end, and in %). Z-statistics, based on robust standard errors, are reported in parentheses. ***, **, and * refers to statistical significance at the 1%, 5%, and 10% level, respectively.

costs of the amendment are not significant. Alternatively, small private firms may lack the funds necessary to redeem their bonds early. Similarly, the negative and statistically insignificant coefficients of CAR and YTM do not support the contention that in cases where the amendment benefits bondholders the most there is a higher likelihood of early redemption. Perhaps controlling shareholders cannot recoup their loses upon exiting the market, or their gains from staying private bond firms are still positive despite the relatively large wealth transfer to bondholders. Last, the coefficient of the relative issue size is negative as expected (firms with relatively large bond issues find it more difficult and are less likely to early redeem their private bonds), yet the impact of this factor is statistically insignificant.

The only statistically significant explanatory variable in the Probit analysis is RPT_C. The positive coefficient of RPT_C in Table 6 indicates that private bond firms with relatively many related party transactions prior to the amendment manifest a higher tendency to exit the market via bond early redemption following the amendment. This increased tendency may imply

that for private bond firms with relatively many related party transactions the compliance cost imposed by Amendment 17 (the structured related party transaction approval procedure) is excessive.

On reflection, the exit of private firms with relatively many related party transactions from the market may be viewed as a nice achievement of the Amendment. This is because it can be argued that the amendment pushed "rotten apples" out of the market. The private bond firms that do a lot of related private transactions are perhaps the firms that exploit public investors the most. Thus, their exit from the market fulfills the amendment intention of protecting public investors and increasing market quality.

6.3 Trading Volume Analysis

Amendment 17, protecting public investors, should attract more public investors to the private bond market and increase its trading volume. We use our matched sample of 26 private bond and 26 public bonds to examine this hypothesis. Unfortunately, only 14 pairs of private and public bonds have complete trading volume data in 2008–2012.

Contrary to our expectations we find that the trading volume of private bonds appears to decay. In 2008 the mean trading volume of private bonds exceeds that of the matched public bonds by 2.5%. However, in each year afterward, the ratio of private to public bond trading decreases, until in 2012, the year after Amendment 17 enactment, private bond mean volume becomes 20% lower than that of its matched public bond.

The slow and steady slide in the relative volume of private bonds suggests that Amendment 17 did not encourage the trading of private bonds. It is possible that our test sample of 14 pairs of private and public firms is not representative. Alternatively, the amendment legislation, specifically targeting private bonds, and the fact that some private firms fled the market, served as a caution against trading in this "dying" sector of the bond market.

6.4 An Assessment of the Amendment

Amendment 17 is first of its kind and unique in the world. Thus, it is interesting to discuss its efficacy. Obviously, the test results in Israel cannot directly predict the impact of a similar amendment in other economies. However, our analysis probably highlights the pros and cons of such possible legislation.

The positive aspect of such an amendment is clearly the protection of public investors from potential expropriation by controlling shareholders. Establishing audit committees, adding external directors, and monitoring related party transactions improves small public investor's confidence when investing in these securities. Further, practically, we have shown that the most dangerous private bond firms, those with the highest rate of related party transactions,

leave the market following the amendment. Thus, it can be argued that the amendment purged the market, and blocks entrance to the market of firms with "improper incentives."

The costs of the regulation are, however, nontrivial. First, it is not clear that compliance costs justify the benefit. We do not know if the mean total private firm value increased or decreased following the amendment.[15] Further, our evidence documents some destructive effects of the amendment – it impaired the private bonds' market. Many private bond firms exited the market following the amendment and trading volume probably decayed. Most important, private bonds' IPO activity was almost deserted following the amendment. Cutting off private firms from a potential financing source probably hurts economic efficiency.

Amendment 17 was proposed at a time of great regulatory pressure, in the midst of the Great Recession. Such times are susceptible to popular legislation, the effects of which might be unintended – see Murphy and Jensen (2018). Perhaps a less bold amendment can produce better overall results.

7 Summary and Conclusions

We examine the effects of a law-reform in Israel in 2011 that imposes a set of minimum corporate governance standards on privately held firms that issue publicly traded bonds. This legislation intends to protect public bondholders against possible agency behavior (i.e., expropriation) by private firms' owners. The law-reform, Amendment 17 to the Corporate Law, demanded private firms that issue public debt to appoint two independent external directors to their Board of Directors, to establish an Audit Committee where these external directors will have a majority vote, and to bring related party transactions to the approval or dis-approval of the Audit Committee. The Audit Committee is obliged to reject related-party transactions that risk firm's solvency.

We find that already-trading bonds of privately held firms, private bonds in our terminology, appreciated on average by more than 5% around Amendment 17's two proposal dates. This response is consistent with the cross-sectional type evidence of existing studies in the US (e.g., Anderson *et al.*, 2004, and Ashbaugh-Skaife *et al.*, 2006) demonstrating that better corporate governance reduces firm's cost of debt. In this respect, our contributions are extending research outside the US economy and verifying existing findings via the alternative (and perhaps more reliable) methodology of event studies.

Our findings regarding the effect of Amendment 17 on private bonds' issuing activity are more novel and perhaps more important. Following Amendment 17

[15]There is evidence in the literature (see Litvak, 2007, for example) that another regulation (SOX) has decreased some firms' Tobin's Q.

proposal, private firms become more reluctant to issue public debt, and public bonds' IPOs by private firms decrease sharply. In addition, many private firms redeem early their bonds, and trading volumes in the remaining bonds appears to decrease. This gloomy result of crippling the private bond market is somewhat balanced by evidence that the amendment curtails related party transactions and evidence that the private firms that exited the market had a higher intensity of related party transactions. Thus, the amendment appears also to increase market quality.

Future studies should further explore the complex question of how to protect investors in private bonds. We show that legislation such as Amendment 17 has some definite pros and cons. Alternative, perhaps more modest, investor protection solutions may be considered as well.

Appendix

Table A.1: A List of the Private Bond Firms in Our Sample

Firm name	First calendar year as a a private bond firm	The way it became a private bond firm	The number of bond offerings by the firm in the years 2005–2015	The total notional value of the bond issues, in million NIS	Trading status on 2015 end or exit reason
Adama Agricultural Solutions	2011	Stock delisting	0	0	Still trading
Adama Holding	2006	IPO	1	200	Exited before bond maturity
Afik Hayarden Holdings	2006	IPO	2	166	Exited before bond maturity
Albar Mimunit Services	2008	IPO	8	1,986	Still trading
Alliance Tire Company	2007	Stock delisting	0	0	Exited before bond maturity
Almog YamSuf Holdings	2006	IPO	3	126	Bonds matured
Ameris Holdings	2007	IPO	1	143	Exited before bond maturity
Amos Hadar Properties and Investments	2007	IPO	1	48	Bonds matured
Ampa Capital	2005	IPO	1	50	Bonds matured
Ampa Capital Car Lease	2006	IPO	1	33	Exited before bond maturity
Aspen Real Estate	2009	Stock delisting	1	50	Exited before bond maturity
B.S.R. Projects	2011	Stock delisting	0	0	Exited before bond maturity
Binyan Mortgage Bank	2014	Stock delisting	0	0	Exited before bond maturity
British –Israel Investments	2011	IPO	1	587	Exited before bond maturity
Clal Finance	2011	Stock delisting	0	0	Exited before bond maturity
Clal Industries	2014	Stock delisting	0	0	Exited before bond maturity
Club 365	2006	IPO	2	146	Exited before bond maturity
Deadland Towers	2007	IPO	1	107	Exited before bond maturity
Danirco	2006	IPO	1	48	Exited before bond maturity
Darban Investments	2010	Stock delisting	3	338	Still trading
Delek – Belron International	2000	IPO	0	0	Exit reason unknown
Delek Petroleum	2008	IPO	1	266	Exited before bond maturity
Direct I.D.I. Holdings	2010	Stock delisting	0	0	Bonds matured

Firm name	First calendar year as a a private bond firm	The way it became a private bond firm	The number of bond offerings by the firm in the years 2005–2015	The total notional value of the bond issues, in million NIS	Trading status on 2015 end or exit reason
Duisburg Holding	2004	Stock delisting	0	0	Exited before bond maturity
Eldan Transportation	2015	IPO	1	658	Still trading
El'ezra Holdings	2007	IPO	3	591	Still trading
Elran (D.D.) Real Estate	2013	Stock delisting	0	0	Still trading
Euro– Globe	2006	IPO	1	40	Bonds matured
Euro – Trade Real Estate International	2007	IPO	1	65	Exited before bond maturity
Europort	2007	IPO	1	57	Exited before bond maturity
Exom	2007	IPO	1	42	Exited before bond maturity
Findon Urban Lofts	2006	IPO	1	26	Exited before bond maturity
Gadot Biochemical Industries	2010	Stock delisting	0	0	Exited before bond maturity
Gindi Investments 1	2006	IPO	4	304	Still trading
Giron Development and Building	2010	Stock delisting	3	399	Still trading
Global Knafaim Leasing	2010	IPO	3	388	Still trading
Globus Max	2007	IPO	1	55	Bonds matured
Gmul Real Estate for Tenants	2007	IPO	1	96	Bonds matured
Goal Partners	2013	Stock delisting	0	0	Bonds matured
Hanan Mor Group Holdings	2006	IPO	1	40	Stock listing
Heftziba Hofim	2006	IPO	1	138	Exited before bond maturity
Hot –Telecommunication Systems	2013	Stock delisting	0	0	Still trading
IDB Development	2009	Stock delisting	0	0	Stock listing
Is pro the Israel Properties Rental Corp.	2006	Stock delisting	1	253	Still trading
Isralom Properties	2010	Stock delisting	0	0	Exited before bond maturity
Japanauto Holdings	2006	IPO	1	148	Exited before bond maturity

Firm name	First calendar year as a a private bond firm	The way it became a private bond firm	The number of bond offerings by the firm in the years 2005–2015	The total notional value of the bond issues, in million NIS	Trading status on 2015 end or exit reason
Katzir Fund Debenture for Investments	2006	IPO	1	40	Exited before bond maturity
Klir Chemicals – Manufacturing &Marketing	2005	IPO	1	39	Stock listing
Lenox Investments	2007	IPO	1	38	Bonds matured
Lito Group	2013	Stock delisting	0	0	Still trading
Lito Real Estate	2006	IPO	1	24	Bonds matured
Mendelson Infrastructures & Industries	2005	IPO	3	236	Stock listing
Mirland Development Corporation	2007	IPO	1	244	Still trading
Mizrachi & Sons Investments Group	2005	Stock delisting	0	0	Bonds matured
Neocity Group for Investments and Holdings	2007	IPO	1	189	Stock listing
Neot Hapisga Modi"inIlit	2006	IPO	1	47	Exited before bond maturity
Ocif Eastern Europe	2004	IPO	0	0	Exited before bond maturity
Overland Direct	2007	IPO	1	97	Bonds matured
Polar Investments	2011	Stock delisting	0	0	Still trading
Regency Jerusalem Hotel	2013	IPO	1	84	Still trading
S. Shlomo Holdings	2009	Stock delisting	6	2,615	Still trading
SH.I.R. Shlomo Real Estate	2007	IPO	3	390	Still trading
Shapir Europe Projects	2007	IPO	1	95	Exited before bond maturity
Space-Communication	2000	IPO	0	0	Stock listing
Stern Group	2007	IPO	1	24	Bonds matured
Tadbik	2010	Stock delisting	0	0	Bonds matured
Tempo Beverages	2010	IPO	2	232	Still trading
Ten– Petroleum Company	2007	IPO	3	216	Still trading
Terrace Investments	2006	IPO	1	38	Exited before bond maturity
Vitania	2008	IPO	3	302	Stock listing
Y. RSY	2007	IPO	1	67	Still trading

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