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Conditional Control: The Consequences of Expanding Creditors' Right to Initiate Bankruptcy

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Abstract

We study the effects of a court decision granting creditors the power to force into bankruptcy corporate debtors whose liabilities exceed their assets even if they are current on their payments. We find that bond prices responded positively to the court ruling, perhaps because of expectations that early resolutions of future cases of financial distress would benefit creditors. We also find that firms affected by the court ruling did not reduce their risk, but increased their reported net worth through equity injections and aggressive accounting. As a result, the informativeness of these firms' financial statements decreased. Although it may well be the case that the overall effect of the court ruling on social welfare was positive, we argue that empowering creditors to force firms into bankruptcy using a balance sheet test for insolvency may involve adverse effects, increasing borrowers' incentives to present biased financial statements.

Keywords: Creditor Rights, Financial Distress, Bankruptcy, Aggressive Accounting, Informativeness

JEL Classifications: G30, G33, K22, M41

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Conditional Control: The Consequences of Expanding Creditors' Right to Initiate Bankruptcy

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We study the effects of a court decision granting creditors the power to force into bankruptcy corporate debtors whose liabilities exceed their assets even if they are current on their payments. We find that bond prices responded positively to the court ruling, perhaps because of expectations that early resolutions of future cases of financial distress would benefit creditors. We also find that firms affected by the court ruling did not reduce their risk, but increased their reported net worth through equity injections and aggressive accounting. As a result, the informativeness of these firms' financial statements decreased. Although it may well be the case that the overall effect of the court ruling on social welfare was positive, we argue that empowering creditors to force firms into bankruptcy using a balance sheet test for insolvency may involve adverse effects, increasing borrowers' incentives to present biased financial statements.

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Introduction

Creditor rights are essential for the development of private credit markets (e.g., Djankov, McLiesh and Shleifer, 2007), but may produce adverse effects as well. Much of the literature evaluating the effects of creditor rights focuses on states of the world in which creditors have control rights, typically in bankruptcy (e.g., Vig, 2013; Schoenherr and Starmass, 2022), as a result of covenant violations, or because of modifying fiduciary duties in the vicinity of insolvency to require directors to take creditors' interests into account (Becker and Stromberg, 2012). The present study focuses on another measure of creditor empowerment: allowing creditors to force borrowers into bankruptcy ("involuntary bankruptcy"). Specifically, we examine a 2013 court ruling in Israel that granted creditors the power to force into bankruptcy (liquidation or reorganization) firms whose liabilities exceeded their assets even if these firms were current on their payments. In essence, the court ruling allowed creditors to rely exclusively on a balance sheet test of insolvency to wrest control from debtors' management. This surprising ruling provides us with an opportunity to evaluate in a relatively clean empirical setting the effects of, and the general lessons from, expanding creditors' power over the timing of corporate bankruptcy. The analysis is potentially relevant to legal regimes in which creditors are empowered to initiate bankruptcy, or in which a balance sheet test is used to determine insolvency, including India, the United Kingdom, Germany and South Korea (Gopalan et al., 2022).

As a matter of theory, empowering creditors to force corporate debtors into bankruptcy can produce several effects. First, it may address management's incentives to delay bankruptcy. Unlike the debtor-in-possession regime prevalent in the United States, the bankruptcy regime we study generally requires that the control of companies in bankruptcy be taken from management. This threat of losing control discourages management from initiating bankruptcy (Hynes and Walt, 2020; Schoenherr and Starmass, 2022). Moreover, most companies in our sample have controlling shareholders. Under the absolute priority rule, filing for bankruptcy could lead these controlling shareholders to lose the option value of their equity (Buccola, 2023). Allowing creditors

to force firms into bankruptcy could prevent the costs produced by management's incentives to delay the onset of the process. Empowering creditors, however, might lead creditors with a liquidation bias, or opportunistic creditors, to file too early, thereby undermining the firm's ability to overcome its difficulties without undergoing a costly bankruptcy process.

Relatedly, the threat of creditor control could improve the incentives of management (and controlling shareholders) of distressed borrowers. Management, for example, might refrain from asset-stripping or other forms of opportunistic behavior. Controlling shareholders may provide the firm with fresh capital or take other steps that would raise company value and keep the debtor away from financial distress. At the same time, to the extent that the legal test for insolvency is based on balance sheet figures, the threat of creditor control could induce firms to use aggressive accounting methods in order to appear solvent and avoid losing control to creditors.

Given the uncertainty over the likely effect of this change in creditor power, our first objective is to determine whether the new rule was overall beneficial to creditors (and/or shareholders). We attempt to answer this question by focusing on the market reaction to the decision. Our findings suggest that the legal change was perceived as a surprise and regarded as beneficial to creditors: On the date of the court ruling, bonds issued by firms close to default and affected by the court ruling (as defined below) exhibited positive excess returns (relative to several benchmarks). We conjecture that this positive bond market reaction suggests that the power to initiate bankruptcy at an early stage is beneficial to creditors. Stocks exhibited (marginally significant) negative excess returns, suggesting that the change might have been perceived as detrimental to shareholders. The average net change in total firm value (derived from excess bond returns and excess returns on equity) was marginally above zero.[1]

[1] The positive overall effect of the court ruling on firm value could be related also to the alleviation of the debt overhang problem, an issue we discuss below.

Our next objective is to identify specific channels through which creditors' new power affected borrower behavior. Following the literature, we start by focusing on risk levels: On the one hand, if creditors are given more control, one might expect companies to reduce risk both prior to, and during, bankruptcy (e.g., Acharya, Amihud, and Litov, 2011; Becker and Stromberg, 2012; Schoenherr and Starmass, 2022). On the other hand, we study a rule that provides creditors with the *right* to initiate bankruptcy. As long as creditors do not actually file for bankruptcy, borrowers continue to be controlled by management. Thus, distressed companies facing the threat of creditor control might take on more risks in a last-minute gamble to avoid default. In practice, we do not observe any change in measures of corporate risk (profit volatility and the volatility of stock returns). We believe that this non-result is driven by two factors: First, the court decision was a surprise and took immediate effect. This left borrowers without a meaningful opportunity to change their operations, or adjust their riskiness, in the short run. Second, unlike the setting of Becker and Stromberg (2012), or Vig (2013), firms in our sample became subject to a *threat* of creditor control (if their liabilities exceeded their assets), but creditors could not impose any decisions on them prior to the (uncertain) realization of this threat. In other words, the court did not grant creditors the power to impose low risk policies on borrowing firms.

Providing creditors with more power to initiate bankruptcy should induce managers to take measures that would reduce the threat of creditor control. In the third set of empirical results we show that, in comparison with a control group, there was a pronounced increase in the (reported) net worth of firms affected by the court ruling following the 2013 decision. The firms most likely to be affected by the legal change were especially likely to experience an increase in their net worth around 2013. Similarly, the fraction of affected companies with negative net worth declined by about 50%. Apparently, following the introduction of a balance sheet test for insolvency, firms affected by it have managed to significantly improve crucial measures in their financial reports, reducing the likelihood that creditors might be able to seize control.

What could explain this surge in net worth? We observe an increase in equity issuances among some distressed firms affected by the new rule, primarily in the form of capital injections (private placements and warrants) by existing shareholders. Firms in the lowest decile of the net worth distribution prior to the court decision were especially likely to raise new equity following the ruling. This finding is consistent with the positive expected effect of the new rule on creditors. It is also consistent with the fact that many firms in our sample have controlling shareholders, who might be willing to make equity investments to ensure their continued control.[2]

Yet equity issuances were not the only reason for the dramatic increase in net worth among firms affected by the ruling in subsequent years. Instead, in the next set of empirical tests, we document a consistent relation between the court decision and changes in firms' reporting practices: low net worth borrowers affected by the court ruling responded to the increased risk of creditor control by making changes to the way their net worth was reported, exploiting discretion in accounting practices to increase discretionary long-term accruals and reduce accounting conservatism. By changing their accounting practices, firms affected by the court decision could report above-zero net worth and thus reduce the risk of involuntary bankruptcy and creditor control. In additional empirical tests, we find that aggressive accounting practices served primarily as an alternative, rather than as a supplement, to equity issuance.

To the extent that it induced distressed firms to inflate reported earnings, the legal change underlying our study might have affected the informativeness of financial statements. In line with this conjecture, we find that, in the post court-ruling period, bondholders seem to have attributed less informational content to the treated firms' reported earnings. This might have had an adverse effect on the functioning of public debt markets. Although it may well be the case that the reform was beneficial overall (as the

[2] Incidentally, we do not find clear evidence to suggest that the new equity played a role in alleviating debt overhang problems. We discuss this issue in more detail below.

non-negative average change in total firm value might suggest), our results highlight a possible adverse effect of empowering creditors through the introduction of involuntary bankruptcy based on a balance sheet test, which might detract from the effects of the reform.

The post-court ruling use of aggressive accounting policies and the reduced informativeness of financial statements might have affected bond (and stock) market liquidity, as well as the design of financial covenants (so as to make them less amenable to accounting manipulation). While we do not find effects of the court ruling on liquidity, we do observe some changes in the design of financial covenants after 2013.

The 2013 legal development that took place in Israel is a perfect setup for our empirical analysis: bondholders of one of the largest holding companies asked the court to force the company into bankruptcy even though it was current on its payments and did not breach any bond covenant. Nevertheless, the bondholders argued that the company was insolvent in the sense that its liabilities exceeded its assets and should therefore be forced into bankruptcy.[3] In a precedential decision, the court accepted this argument and held that bondholders could indeed force into bankruptcy companies in such cases of balance sheet insolvency, even in the absence of default or a breach of covenant. An exogenous legal change to the bankruptcy law, this decision did not change the nature of creditors' control within bankruptcy. Rather, it expanded the states of the world under which creditors of distressed borrowers could force them into bankruptcy (or use this threat to obtain concessions from borrowers), and based the additional power granted to creditors on balance sheet figures.

In our empirical analysis, we take advantage of the fact that many corporate bonds that were traded on the Tel Aviv Stock Exchange in 2013 lacked customary financial covenants

[3] The bondholders did not ask for liquidation. Rather, they asked the court to order a court-supervised reorganization and approve a plan under which they will exchange their debt for equity.

providing bondholders with control rights in case of imminent distress ("no-covenant bonds"). Accordingly, prior to 2013, no-covenant bondholders lacked the power to take control of distressed companies unless they actually defaulted, that is, failed to pay some or all of their financial obligations. The ruling, therefore, enhanced the potential control rights of no-covenant bondholders by providing them with the power to force into bankruptcy debtors with below-zero net worth. By contrast, this legal change did not meaningfully affect bondholders who were already protected by financial covenants: in these companies, whose covenants were more stringent than the new court-granted power, bondholders could, regardless of the court ruling, accelerate payments on their bonds and initiate bankruptcy procedures if borrowers failed to satisfy their covenants. We rely on the difference between the two types of corporate bonds, with and without covenants, to measure the effect of the court ruling on affected companies, which we define as companies with no financial covenants and relatively low net worth (i.e., close to distress).[4]

We focus on distressed firms whose bonds included no covenants as of the end of 2012, which we regard as the population of firms most affected by the decision. Our measure of distress is based on (reported) net worth, scaled by total assets. We choose this measure for two reasons. First, net worth is the proxy for balance sheet insolvency, the condition that could trigger creditor control rights under the court ruling. Second, the creditors most affected by the ruling were bondholders, who often rely on issuers' reporting and other publicly available information. Thus, we consider firms with no-covenant bonds and whose net worth is below the sample median (alternatively, no-covenant firms whose net worth is below the 33rd percentile) as "treated" by the court decision. Our main control group consists of firms with covenants and low net worth. To corroborate our findings, we also present comparisons between high (above the median, or above the 33rd percentile) net worth companies with and without covenants. Our

[4] The new rule did not materially affect banks and other private lenders. These lenders were likely to include covenants in their loan documents in any case. We return to this point below.

empirical analysis is based on a "diff-in-diff" framework with firm and year fixed effects, comparing treated and control firms before and after the 2013 court decision. As expected, we find consistent differences between no-covenant, low net worth firms (affected by the court ruling) and low net worth firms with covenants, but do not detect similar differences between high net worth firms with and without covenants.

The rest of the paper is organized as follows. The next section describes some of the related literature and presents more details about the legal and institutional background for the reform we study. The data set and the empirical approach are described in Section 3. Section 4 presents our main empirical findings, as well as a few extensions and robustness tests. Section 5 concludes. A toy model illustrating the logic of firm decisions in this context, as well as many additional empirical analyses are presented in several appendices.

2. Related Literature and Institutional background

2.1 Related Literature

For brevity, we summarize the related literature in Table 1 and describe here the main differences between our study and the extant literature. By and large, the related corporate finance literature (Panel A of Table 1), emanating from the Law and Finance paradigm on the importance of investor protection, focuses on the effects of creditor control *within bankruptcy*, or on cases in which creditors have some control over distressed borrowers outside bankruptcy. The present paper, in contrast, provides novel evidence on the consequences of a legal change expanding creditors' power to initiate bankruptcy: the legal change we study does not affect the control of firms already in bankruptcy, nor does it allow creditors to exercise direct control over distressed borrowers. We also do not study the consequences of creditors' exercise of contractual rights for which they bargained when they agreed to lend to the company. Rather, we study an exogenous legal change that empowers creditors to wrest control from management by forcing the firm into bankruptcy at an early stage of distress (in a legal

system that does not allow management to control the firm during bankruptcy). Our focus on balance sheet (accounting, or technical) insolvency as a trigger for involuntary bankruptcy is of relevance to many jurisdictions.[5]

An important theme in the corporate finance literature is that creditors that acquire control over borrowers use this power to push for changes in corporate behavior (e.g., capital structure, risk taking etc.). This paper poses a different question: What is the effect of expanding creditors' power to initiate bankruptcy on corporate behavior? On the one hand, especially in a regime that forces managers to lose control in bankruptcy, managers have incentives to file for bankruptcy as late as possible, when they have no other choice. Our study is consistent with the view that expanding creditors' power to initiate involuntary bankruptcy can benefit creditors, especially in distressed firms, by motivating such firms to raise new equity or by enabling an early onset of bankruptcy procedures. On the other hand, this study sheds light on a relatively unexplored adverse effect of expanding creditor control rights by adopting a balance sheet test for insolvency independently of other criteria: providing distressed firms with incentives to inflate reported earnings, thereby undermining the quality of information that bond issuers provide to the market.

The related literature in accounting (Panel B of Table 1) has long recognized that firms adjust their reporting practices so as to meet various regulatory and legal thresholds. While the court ruling we examine can be viewed as introducing an implicit covenant, our analysis differs from the accounting literature on covenants in two fundamental ways:

[5] The balance-sheet based bankruptcy law in India is studied in detail in Gopalan et al. (2022). They also discuss the United Kingdom and list Korea, Germany and other countries where the balance sheet test of insolvency is relevant citing the World Bank's *Doing Business* as their source. A specific example of the use of a balance sheet to determine bankruptcy is the 2002 Colt Telecom case in the UK, where a hedge fund holding bonds in the company argued that its liabilities exceeded its assets and that it was therefore insolvent. However, the UK judge ruled that it was not the case. In the US, Hynes and Watt (2020) lament the near disappearance of involuntary bankruptcy petitions in the twentieth century and propose ways to encourage more such petitions so as to prevent incumbent management from delaying the onset of bankruptcy.

first, instead of an endogenous choice of covenants by the contracting parties, we study an exogenously-imposed change to the contract between lenders and borrowers; and second, unlike well-known contractual features of which lenders and borrowers are aware in advance, the court decision we study was surprising and took effect immediately.

Another theme in the accounting literature is that creditor control restrains the use of aggressive accounting practices to make sure financial statements reflect a conservative depiction of the company's state of affairs. As in Aier et al. (2014) and Bens et al. (2020), we also find that changes to creditor rights can affect financial reporting. However, our study, as well as Gopalan et al. (2022), depart from the existing literature in focusing on changes in accounting practices in firms that are not under creditor control.[6] In the same spirit, Hasan et al. (2023), relying on a large, international, panel of firms, find that stronger creditor rights are associated with reduced accounting transparency, as firms adjust their accounting policies strategically to fend off creditors. Our paper, together with Gopalan et al. (2022) and Hasan et al. (2023), illustrate how some changes in creditor rights, which may well be desirable in terms of creditor or even total welfare (we do not take a stand on that), may push (non-distressed) firms fearing creditor control toward accounting aggressiveness. This is nothing other than the "Lucas Critique" in the context of financial regulation: firm behavior should not be taken as given when designing regulatory rules, including creditor rights.

[6] Gopalan et al. (2022) examine the impact of pro-debt bankruptcy reform in India weakening creditor rights in bankruptcy on earnings management, showing that the reform induced borrowers to manipulate downwards their accounting figures in order to qualify for protection from creditors. Under the legal regime that they study, the test for insolvency is balance sheet based, hence the incentive to manipulate accounting measures to satisfy this insolvency test. Unlike the pro-debtor bankruptcy reform in India, the legal change we study is a pro-creditor expansion of creditors' right to initiate bankruptcy procedures. This right is also balance sheet-based – and we document how borrowing firms adjust their reporting figures upwards, to avoid forced bankruptcy. In addition, the legal change we study differs from the Indian bankruptcy reform in affecting only some firms (with no covenants) and not others, and in taking effect immediately and unexpectedly, features which are conducive to our empirical analysis.

2.2 Institutional and Legal Background

In 2013, a group of *IDB Pituach Ltd*. (IDB) bondholders believed that the company's financial condition was hopeless unless it negotiated with bondholders and other creditors to restructure its financial obligations. IDB, however, refused to commence negotiations on restructuring its debt, and continued to pay its short-term creditors. The bondholders had no contractual remedies against IDB: the company was current on all its payments (the first payment on some of the bonds was due only in five years, in 2018); IDB did not breach any covenant it owed to these bondholders (as the bonds in question had no meaningful covenants).[7] The bondholders, therefore, turned to bankruptcy procedures: they filed an involuntary bankruptcy petition in which they asked the court to appoint a trustee to pursue a debt-for-equity reorganization plan. Their claim was that IDB, although current on its payments, was insolvent (its liabilities outweighed its assets). IDB, in contrast, argued that it was current on all its payments, that its assets exceeded its liabilities, and that the bondholders were opportunistically trying to take control of the company. Moreover, IDB argued that, from a purely legal standpoint, creditors of companies that are current on their payments and do not violate any covenant or other contractual provision cannot force companies into bankruptcy simply by showing that the value of their assets is smaller than their liabilities.

In a precedential decision, the court held that creditors had the power to force a company into bankruptcy by demonstrating that it was insolvent (i.e., that its liabilities exceeded its assets). The court found that IDB was probably insolvent and issued an order appointing trustees to inspect the company's records and issue an independent opinion

[7] The company, however, did get its bank creditors to waive some of their covenants.

concerning IDB's solvency.[8] This decision offers a unique opportunity to study the effect of an exogenously-imposed change in the scope of creditor rights.[9]

At a practical level, the new legal rule made reported measures of net worth (balance sheet) crucial for companies in our sample for two related reasons. First, holders of publicly traded corporate bonds normally rely on the issuers' reported financial statements (and market prices) to assess the bonds' risk of default. Similarly, the courts, in evaluating whether a company is solvent or not, are also likely to rely on the reported net worth. Second, the companies in our sample report under the IFRS regime. This means that reported measures of net worth are supposed to reflect (to a large extent) economic reality rather than historical book values. Recall that the new rule empowered creditors to force companies into bankruptcy when their liabilities exceeded their assets (balance sheet insolvency). From a purely legal standpoint, accounting measures of asset values are not determinative. Yet, a company that, under the IFRS regime, reports that its liabilities exceed the *fair value* of its assets, would most likely be unable to convince a bankruptcy court that it meets the test for balance sheet solvency.

[8] The decision was surprising and controversial: First, many bankruptcy judges held the view that creditors' only remedy was liquidation, that is, creditors lacked the standing to initiate involuntary bankruptcy aimed at reorganization. In fact, even after the ruling, the senior bankruptcy judge in the Tel Aviv court held that the IDB decision lacked legal basis. Second, many believed that it provided creditors with excessive power against firms that did not breach any financial or other contractual obligation. Accordingly, two attempts were made in 2014 to challenge the court decision in the Supreme Court, but both failed.

[9] Three additional pieces of background information are worth noting. First, as noted above, in 2013 Israel did not have a debtor-in-possession (DIP) regime for corporate bankruptcy. When companies enter bankruptcy (whether liquidation or reorganization), courts appoint trustees to take over the company. Second, during our sample period, nearly all companies that issued bonds had controlling shareholders. Controllers, in turn, knew that entering bankruptcy could make them lose control over the company. Third, the Israeli market for corporate bonds grew at a rapid pace in the early 2000s. Until 2011, many companies (including IDB) issued bonds without meaningful covenants to protect creditors. The 2008-2009 financial crisis forced many companies that had issued bonds to restructure their debt. This, in turn, led to regulatory reforms aimed at improving the protection of bondholders, including a reform implemented in 2011 that pressured companies into issuing bonds with more covenants. In 2013, however, many companies still had outstanding bonds with no meaningful covenants. This implies that the companies affected by the court decision in our sample, those without financial covenants and with low net worth, typically had their debt issued earlier than companies with covenants included in the control group. We discuss this in the Data Section below.

3. Data and Empirical Approach

Our sample includes all Israeli firms listed on the Tel Aviv Stock Exchange (TASE) with traded corporate debt between 2012 and 2015. We exclude financial companies as well as companies cross-listed on other exchanges, typically high-tech companies listed on NASDAQ. To be included in the sample, firms must have had corporate bonds traded on the TASE in 2012 (before the court ruling, which took place in April 2013), and in at least one year between 2013 and 2015 (the post-court ruling period). We also exclude firms if they enter or complete bankruptcy or court-supervised debt restructurings during the sample period to ensure that our results are driven by the effect of the court ruling on companies not involved in formal bankruptcy procedures.

To identify firms affected by the court ruling we use information on bond covenants and net worth. Firms with financial covenants attached to their bonds were not affected by the court ruling if their existing covenants could be invoked before the court-induced possibility of creditor control at zero net worth (i.e., if the covenants had trigger thresholds at an above-zero level of net worth). Firms with low net worth might have been affected by the court ruling (because they were close to default), while firms with high net worth, were presumably not affected by the court decision because the probability that they might become insolvent was low.

We determine whether a bond includes covenants through a manual inspection of the annual financial statements of firms. We consider only covenants stipulating that the issuer must maintain financial ratios above certain thresholds, or that the issuer must not be subject to a credit downgrade.[10] These covenants, described in more detail in Appendix A, resemble in nature many of the covenants commonly used in (private) debt contracts of US firms (Chava and Roberts, 2008, Table 1, p. 2091). For all firms with covenants, we verify that the conditions triggering immediate payment are set at a level where the net

[10] We treat rating-based covenants similarly to financial covenants, as the bond rating itself is very sensitive to a deterioration in financial conditions. Our main results are robust to the exclusion of two firms with covenants based on rating information only.

worth (or related measures) are positive, i.e., that they are always more binding than the insolvency test used by the court (zero or negative net worth).[11]

To determine if a firm has low net worth (i.e., is close to default), we split the sample by median net worth as of the end of 2012 (the last financial statement published prior to the court decision). Alternatively, we define as having low net worth firms below the 33rd percentile of the 2012 distribution of net worth. We measure *Net Worth* as the (IFRS, fair value-based) reported total assets net of total liabilities, scaled by total assets (alternative measures are examined below).[12]

The absence of financial covenants combined with low net worth identify companies affected by the court ruling, which we refer to as "treated" companies. Specifically, companies with no financial covenants and whose net wort is below the sample median (alternatively, below the 33rd percentile), are defined as treated. Companies with covenants and low net worth are our natural control group. We also analyze data on companies with high (above the median) net worth, with and without covenants, to lend further support to our findings: we expect the court ruling not to affect companies with relatively high net worth, regardless of whether they have financial covenants attached to their debt or not.

This sample includes 190 firm-year observations (52 distinct firms) with no financial covenants and below-median net worth (treated firms), and 461 firm-year observations (122 distinct firms) either with financial covenants and below-median net worth (34 firms,

[11] Throughout our analysis, we focus on financial covenants that pertain to outstanding corporate bonds, ignoring covenants associated with bank loans. Bank loan covenants are different than bond covenants; they allow for more flexibility, renegotiation, and confidentiality than covenants provided to dispersed bondholders. Additionally, the court ruling was supposed to promote the rights of "public" creditors who, prior to the ruling, had limited means to protect their claims.

[12] We do not measure proximity to default using Merton's (1974) "distance-to-default". The reasons are that some of the companies in our data set do not have traded equity (only bonds) and share prices are needed for this calculation. In addition, there are companies in the sample whose shares are not very liquid, a feature which may affect the calculation of the standard deviation of equity prices which is used in the distance-to-default formula.

the main control group), or without covenants but with above-median net worth (88 firms, of which 23 have covenants attached to their bonds and 65 do not). The number of firms in our data set, especially below-median net worth firms (86 unique firms), is admittedly small, precluding many empirical exercises requiring the breakup of the sample into different sub-groups (more on this below). Nevertheless, the comparison between low/high net worth firms, with and without covenants (a pre-determined firm attribute), is relatively clean, making it possible to identify the effects of empowering creditors through the introduction of a balance sheet test as an alternative test for insolvency.[13]

The majority of firm-year observations in our data are concentrated in the following four industries: real-estate (47%); commerce and services (18%); manufacturing (13%) and holding and investment companies (12%); this distribution is not representative of the Israeli economy, but is consistent with evidence that Israel's corporate bond market tends to over-represent companies in the real estate and service sectors (Brodeski, 2021; Kliger, Mugerman and Rooz, 2022). Financial statements and trading data are drawn from the TASE website. We also collect financial statements' filing dates from the Israel Securities Authority's (ISA) website (www.magna.isa.gov.il), using a web scraping tool. These filing dates are used for calculating informativeness measures described below.

Panel A and Panel B of Table 2 present the treated and control sub-samples in the pre- (2012) and the post- (2013-2015) court ruling periods (Appendix B provides detailed

[13] If a firm has issued multiple bond series, we classify the firm as having a covenant if at least one of the issued bonds has a financial covenant attached to it. As noted, we utilize December 31, 2012, which is the year-end immediately preceding the April 2013 IDB court ruling, as our cutoff point to distinguish between companies with and without financial covenants associated with their outstanding bonds. Yet, as of August 11, 2012, two regulatory reforms were promulgated that independently enhanced creditor rights in newly issued bonds. Pursuant to the new reforms, bondholders of every newly-issued bond became entitled to require an immediate repayment of their bond if (1) there has been a deterioration of the issuer's business in relation to its financial situation at the time of the issuance of the bond, and (2) there is a substantive concern that either (i) the issuer will not be able to repay the bonds on time or (ii) the issuer will not meet its material obligations to the bondholders. These triggering events of repayment are applicable even if the contractual terms of the bond do not implicitly include these terms. Therefore, two firms that issued new bonds between August 11, 2012 and the end of 2012 were classified as part of the control group.

variable definitions). The statistics refer to low net worth firms (with below-median net worth) with and without covenants. The average reported net worth scaled by assets – our proxy for firm proximity to creditor control – while roughly constant for non-treated firms before and after the court ruling at about 15%, doubles for treated firms from about 7% prior to the 2013 court decision to about 14% in the post-court ruling period. This dramatic increase is reflected also in the frequency of firms with negative net worth, which goes down by 50%, from 15% of the treated firms in 2012 to 7% in 2013-2015, while remaining constant at about 6% among the control group. These stylized facts will be examined in more detail below.

Treated companies tend to be somewhat smaller than firms in the control group, although there is considerable heterogeneity in size within the sub-samples of treated and control firms. Naturally, treated companies tend to be less profitable in the pre-court ruling period (2012), although this difference disappears in the post-court ruling years. As bond covenants became more common in Israel after 2010 (following a government-appointed committee which recommended that covenants be used), the sub-sample of treated firms includes mostly (about 73%) "old vintage" bonds issued before 2010, relative to about 61% pre-2010 bonds among low net worth companies with covenants. However, even after 2010, some treated firms had "new issues" of their outstanding bonds that included no covenants. As for the distribution of firms across industries, although the samples are small, the most common industries among low net worth firms, both with and without covenants, are real estate followed by commerce and services. Finally, net worth exhibits similar downward-sloping (and nearly parallel) trends prior to 2013 among both treated and control firms, before the increase in net worth among treated firms following the court ruling (Figure 1). We argue below that the divergent post-2013 evolution of net worth among treated and control firms is not merely an artifact of the phenomenon of mean reversion in accounting variables.

Our empirical approach is based on a standard difference-in-differences methodology, comparing changes in the various outcome variables in the treated group in 2013-2015 relative to 2012 with changes in the same variables in the control group over the same period. The first outcome variable we focus on is changes in net worth. After documenting an increase in net worth among treated firms (reflecting a reduction in the likelihood that creditors could impose bankruptcy procedures following the court ruling on the basis of the firm's balance sheet), we turn to possible factors explaining this change: equity issuances and changes in proxies for accounting aggressiveness (discretionary long-term accruals and measures of accounting conservatism). Finally, we study the impact of increased accounting aggressiveness among treated firms on the informativeness of their financial statements.[14] For all outcome variables, we present regression results where the main variable of interest is an interaction term representing treated firms in the post-court ruling period (*post*No Covenant* and low net worth). All our regression specifications include firm-level control variables, as well as year and firm fixed effects, so that time-invariant differences between treated and control firms cannot account for the results. We cluster the standard errors at the firm level.[15]

4. Main Results

4.1 The Market Reaction to the Court Ruling

We begin by examining the perception of the court ruling by bondholders and shareholders. The objective of this test is to establish that the court ruling was surprising and to evaluate whether it was perceived as beneficial (undesirable) for creditors

[14] The precise definitions and derivations of these variables appear below.

[15] We use standard errors clustered by firm, combined with time (year) fixed effects, as is common in the literature. According to Petersen (2008), when the time dimension is short, two-way clustering (by firm and year) is not recommended: "When there are only a few clusters in one dimension, clustering by the more frequent cluster yields results that are almost identical to clustering by both firm and time" (p. 460). In our data set, the time dimension includes only four years. Notwithstanding this reservation, the results reported below continue to hold (i.e., the coefficients of interest remain statistically significant) when the standard errors are clustered at both the firm and the time (year) levels. In the same spirit, the results continue to hold also when we follow the advice of Bertrand et al. (2004) and collapse the time series information for each firm in the post-2013 period into a single (average) observation (the pre-court ruling period consists of one year only, 2012, so there is no need to collapse the pre-court ruling observations).

(shareholders). It is important to note that corporate bonds in Israel are traded on a centralized exchange (not over the counter, as in most countries), offering high liquidity, low spreads and low trading costs relative to the corporate bond markets in other parts of the world (Abudy and Wohl, 2018), thus rendering credibility to a bond price-based event study approach (as well as to a few other empirical tests based on bond prices, see below).

Table 3 presents changes in bond prices on the date of the court ruling, April 30, 2013: We find that bonds issued by treated companies (with no covenants and low net worth) experienced, on average, positive (and statistically significant) excess returns of about 0.2% relative to portfolios of bonds of similar rating, indexation and maturity issued by firms with covenants (in the control group).[16] The excess returns are slightly larger (0.27%) when treated firms are defined as having no covenants and net worth below the 33rd percentile (i.e., closer to default). A plausible interpretation of the positive bond price response to the court ruling could be the expectation that creditors might be able to initiate bankruptcy procedures earlier than in the pre-2013 years. This is likely to lead to higher recovery rates, either because otherwise companies would file for bankruptcy very late (leaving less for creditors to recover), or because the threat of involuntary bankruptcy improves bondholders' bargaining power vis-à-vis shareholders.[17]

[16] We include indexation because, at the time, the vast majority of corporate bonds in Israel were inflation-indexed. About half of the treated companies have positive bond excess returns on the event date. The returns are winsorized at the 1% and 99% percent; the results are qualitatively similar without winsorizing. Since the court decision was made public on 4/30/2013 in the afternoon, we also examine abnormal bond and stock returns on the court decision date and the following day (4/30/2013-5/1/2013), finding qualitatively similar results. The reported *t*-statistic is based on clustering at the firm level, as some firms have multiple bond series (88 bond-level observations for 45 treated firms; seven treated firms have missing data on bond rating or duration, or no bond price data on the relevant dates).

[17] In an appendix to a 2014 report issued by a government-appointed committee to examine the deficiencies of bankruptcy procedures in Israel (the "Andorn Committee"), written by one of the authors of the present paper (Steinberg), it is reported that many companies on the verge of financial distress in the period 2008-2013 entered formal bankruptcy procedures only after their financial conditions had deteriorated considerably, resulting in substantial "haircuts" to creditors. The small number of bankruptcies in our sample in the post-2013 period precludes a formal analysis of this question. We also attempt to document cases of informal negotiations between borrowing firms and creditors (bond holders) but cannot find enough well-established cases to perform a statistical analysis. Relatedly, Appendix C presents additional information on bond yield-spreads: Prior to the court decision, the spreads (yield differences)

Because excess bond returns for treated firms are calculated relative to similar (in terms of rating, duration and indexation) bonds of firms in the control group (following Bessembinder et al., 2009), Table 3 does not present excess bond returns for these (control group) firms separately; their excess returns are "mirror images" of the returns of treated firms (see Appendix D, discussed below, for alternative calculations for both treated and control firms).

Moving from bond to stock prices, we use the "market model" and find negative (statistically significant at the 10 percent level) excess returns in the treated group of about minus 0.8% in response to the court ruling. By contrast, the excess returns of low net worth firms with covenants (the control group) on that day are, on average, +0.35%, and the difference between the two groups is close to being statistically significant. The stock excess returns are even more negative (minus 1.2%) when treated firms are defined as having no covenants and net worth below the 33rd percentile. Among high net worth companies, the differences in returns between companies with and without financial covenants are economically negligible.[18]

Changes in total firm value (calculated as the sum of excess bond returns multiplied by the previous day's outstanding bond value and excess stock returns multiplied by the previous day's value of equity, scaled by the previous day's combined market value of the firm's stocks and bonds, in line with the methodology by Maxwell and Stephens, 2003) are marginally positive (0.15%) for treated firms. This could indicate that the court ruling was beneficial overall and not merely a zero-sum game between bondholders and

between bonds issued by treated firms and government bonds of similar maturity and indexation were higher than the spreads on bonds issued by firms in the control group. These differences narrowed in the post-court ruling period, consistent with beneficial effects of the court ruling for bond holders.

[18] The reported stock excess returns are based on the calculation of Scholes-Williams *beta* using daily data for eleven months (month -12 to month -1) prior to the court ruling. There are 38 firms for which data are available (out of the 52 treated firms); six firms have no traded equity (only traded bonds) and for another eight no price information is available on the date of the event (presumably, because of no trading). 23 of these firms exhibit negative excess returns. The correlation between bond and stock excess returns is low; the small number of observations precludes a more detailed analysis of this issue.

shareholders, perhaps because of an alleviation of the debt overhang problem plaguing distressed firms, although the negative excess returns on equity prices are not indicative of that. We discuss this issue further in the context of new equity issuances.

Appendix D presents alternative approaches to the calculation of changes in the value of firm debt and total firm value yielding qualitatively similar results (a positive price effect on the bonds of treated firms, a marginally positive effect on total firm value). As in Table 3, Panel A of Appendix D indicates the existence of positive excess bond returns for treated firms (with low net worth and no covenants) relative to a general corporate bond index. These excess returns are economically and statistically significantly higher than the bond excess returns of firms in the control group (low net worth firms with covenants) relative to the same index. In comparison with the results for low net worth firms, among high net worth firms, bond excess returns are smaller in magnitude and the differences between high net worth firms with and without covenants are small and not statistically significant.

Panels B of Appendix D presents estimates of the total change in firm value, assuming that the change in value of bank debt is equal to the change in value of traded bonds (as in Maxwell and Stephens, 2003). Incidentally, assumptions about the change in value of bank debt (which could be completely unaffected by the court ruling, as we assume in much of the analysis, or affected at the same rate as traded bonds), do not change the conclusion from this analysis: No-covenant, low net worth (treated) firms experienced the most positive changes in firm value, but it is very small in magnitude.[19]

Interestingly, treated (no-covenant, below-median net worth) firms with no bank debt experienced a total change in firm value of 0.8% on the day of the court ruling, whereas

[19] The variance within the subsamples of treated and control firms each sub-sample, as well as the small number of observations (firms with traded equity) make it difficult to detect differences which are statistically significant at conventional levels. In addition, we do not detect any cross-sectional relation among treated firms between the change in total value and firm size or profitability.

treated firms with bank debt experienced, on average, an indistinguishable-from-zero change in value (Panels C1 and C2 of Appendix D). A similar result is obtained when the sample is split at the 33rd percentile, as well as in cross-sectional regressions where the dependent variable is the change in total firm value in response to the court ruling and the variable of interest is an interaction term denoting no-covenant, below-median net worth firms with no bank debt (not shown). One explanation for this finding is creditor-creditor conflicts: the court ruling and the implicit covenant it granted to bondholders might have been less valuable in firms with bank debt because of the typical seniority of banks as creditors. This interpretation is consistent with bond holders' ability to determine the timing of formal bankruptcy procedures as an explanation for the excess returns. Another interpretation is that banks use their control rights in a way that benefits all creditors as a group. According to this view, firms with bank debt gained less from the court-induced implicit covenant not because of conflicts between bond holders and banks, but rather because the benefits of bank monitoring have a positive effect on all creditors.

4.2 Real Changes in Corporate Behavior in response to the Court Ruling

Creditor control, or a fiduciary duty to cater to creditors' interests, could lead borrowers to change their corporate policies so as to reduce risk (e.g., Becker and Stromberg, 2012). We therefore examine if treated firms reduced their risk after 2013. The measures of risk we use are the change in the volatility of ROA and stock return volatility (in the spirit of Merton, 1974, and in line with Rajgopal and Shevlin, 2002), measured over 12 quarters before the court ruling (2010-2012) and 12 quarters after it (2013-2015).[20] Comparing treated firms with control firms, however, we find no evidence of any change in these measures of corporate risk taking. This non-result holds when we repeat the tests using 20 quarters (five years) before and after the court ruling. One interpretation of this non-result is that, in contrast with studies like Becker and Stromberg (2012), that examines

[20] As the vast majority of firms in our sample are in non-manufacturing sectors, we do not use R&D expenditures, which have been used as a proxy for risk in the literature, as a measure of risk taking.

firm behavior after creditors already have some control rights (or influence on corporate decisions through a change in management's fiduciary duties), treated firms in our sample are not directly influenced by their creditors' preferences. Acharya et al. (2011), however, argue that risk taking might be affected even before creditors actually seize control by the prospects of creditor-induced liquidation if firms become distressed. In our setting, by contrast, the court's decision took effect immediately, subjecting low net worth firms to the risk of imminent creditor-induced involuntary bankruptcy. Companies in our sample, often operating in real estate, could not adjust their risk profile (or on-going projects) immediately in response to the court decision, and therefore chose to respond in other ways.

4.3 Changes in Net Worth

We examine differences in (reported) net worth between the treated and control groups. Focusing on the most distressed firms, Figure 2 presents the cumulative distribution of net worth around zero (in the range between -10% to +10%) for the treatment and control groups before and after the court ruling. While the net worth of firms in the control group remains roughly similar before and after the court ruling, the net worth of treated firms, with no financial covenants and low net worth, facing the new risk of involuntary bankruptcy based on the balance sheet test, increases substantially. More formally, a Kolmogorov-Smirnov test for equality of distributions rejects the null hypothesis that the distribution of net worth is identical before and after the court ruling for treated firms (*p-value* of 0.02), but this null hypothesis cannot be rejected for the firms in the control group. The significant shift in the distribution of net worth, especially in low levels, suggests that treated firms might have found ways to increase their net worth in order to prevent their creditors (bondholders) from activating their conditional control rights.

We now proceed to a difference-in-differences regression model with *Net Worth* as the dependent variable. Table 4A shows that the net worth of treated firms (with low net worth and no covenants) goes up significantly after the court ruling: The coefficient on

No Covenant times *Post* in Column 1 suggests that firms with below-median net worth and no covenants experienced a post-court ruling increase in their net worth of about five percentage points relative to the change in net worth experienced by low net worth firms with covenants, the control group. This difference is even more pronounced when the treated group is defined as firms whose net worth is below the 33rd percentile (eight percentage points, Column 3). By contrast, for high net worth firms, there are no statistically or economically significant differences between firms with and without covenants (Columns 2 and 4), in line with our conjecture that the court decision should not have an effect on firms far away from the default threshold (zero net worth). The results remain unchanged when non-controlling interests in subsidiaries are excluded from the calculation of net worth, as well as when non-tangible assets are excluded (or both). Appendix E presents the estimated effects graphically, by year, showing a significant increase in net worth in 2014-2015 (the post court-ruling years) relative to 2012 (the base year).

We obtain qualitatively similar results also when running LPM (or Probit) regressions, where the dependent variable is a dummy variable that takes the value one if the company has negative net worth (Table 4B). In line with the univariate sample statistics presented in Table 2, the proportion of no-covenant, low net worth firms with negative net worth declines dramatically in the post-court ruling years (relative to 2012), even in regressions with controls for other firm characteristics. In contrast with the changes in low net worth, no-covenant firms, there is no change in the post-court ruling frequency of negative net worth among companies with high net worth in 2012, with or without covenants.

Next, we turn to two possible explanations for the significant increase in net worth among treated firms facing the risk of impending creditor control. First, we examine whether the new threat of losing control as a result of involuntary bankruptcy incentivized management (and shareholders) of distressed firms to raise more equity capital, primarily

from existing shareholders. Second, we document the adoption of aggressive accounting practices among firms affected by the court ruling. Appendix F presents a very simple theoretical model illustrating why, in response to the court ruling, firms may respond by choosing one of these two courses of action. In a nutshell, the model shows that, under plausible assumptions and parameter values, the equilibrium level of accounting aggressiveness is "disrupted" by the court ruling: whereas the (regulatory, reputational and other) costs of aggressive accounting practices remain unchanged, the benefits increase following the introduction of a balance sheet test for insolvency as a stand-alone criterion determining whether creditors can seize control of borrowing firms.

4.4 New (Seasoned) Equity Issues

A third of all firms affected by the court decision (17 no-covenant, low net worth firms) raised new equity capital in the years following the court decision, as illustrated in Figure 3 (six of them raised equity multiple times). This was done primarily through private placements of equity in the hands of existing (or specific) shareholders, as well as through warrant issues.[21] The tendency of no-covenant, low net worth firms to issue new equity after the court ruling is evident also in difference-in-differences regressions: Table 5, which is similar in structure to Table 4A, shows that the value of seasoned equity offerings (SEOs) by treated (no-covenant, low net worth) firms increased significantly in the post-court ruling period. In line with our findings for the change in net worth, while there is a difference between firms with and without covenants among low net worth firms, there is no similar difference in the high net worth part of the sample. This is evident also in Figure 3, where the increase in stock issuances following the court decision is especially prevalent among no-covenant firms in the bottom decile of the 2012 net worth distribution.

[21] A total of 24 equity issuances by 17 firms occurred in the three years following the court decision, 19 of them were done through private placements. The five equity issuances offering equity to the public were done by firms that had relatively high net worth, even though they are part of the treated sub-sample of firms because their net worth is below the 2012 sample median.

To the extent that distressed firms can raise new equity capital, this increases their cash reserves and thus offers protection from creditors. This effect is, presumably, in line with what the court ruling was intended to achieve (it is beneficial to creditors and perhaps increases overall firm value). Nevertheless, the evidence on some treated firms raising additional capital does not preclude the possibility that some firms also used other means to increase their net worth. One such possibility is aggressive accounting practices to which we turn next.[22]

4.5 Accounting Changes

We conjecture that the observed changes in the net worth of treated firms may be driven not only by real changes (equity injections), but also by changes in accounting policies and practices affecting how reality is presented to investors. Recall that the court ruling made zero net worth the balance sheet threshold at which bondholders had the right to impose bankruptcy. In this section, we examine if, in response, treated firms have adopted accounting practices to inflate their net worth and forestall creditor control (given their inability to change their operations in the short run). By contrast, for firms in the control group, whose bonds had already included financial covenants in 2012, or for firms whose net worth was high (with or without covenants), the incentives to try and increase their reported net worth should have remained constant before and after the court ruling.

[22] While we cannot preclude it, there is little direct evidence to suggest that, by raising new equity, distressed firms were able to overcome the debt overhang problem and that this is the reason for the positive changes in firm value documented in Table 3 and Appendix D. First, the seven treated (no-covenant, low net worth) firms which raised equity in 2013 did not experience a larger change in total value in comparison with other, no-covenant low net worth firms which did not raise equity, or in comparison with three control group firms which also raised equity in that year. This conclusion holds also when comparing the change in total value for the 14 treated firms which raised equity in the years 2013-2015 with other treated firms (which did not raise new equity) or with firms which raised equity in the control group. Admittedly, the small number of observations precludes a more formal analysis of this issue. Second, , there is a significantly positive correlation (r=0.26, p-value<0.01) between the change in firm value and the post-2013 increase in capital expenditures (investment) over assets, but when performing a formal test using a diff-in-diff specification we do not find consistent and significant results. Given this body of evidence, and the negative excess returns on equity (Table 3 and Appendix D), it is not clear to what extent the debt overhang problem can explain changes in firm bond and total value.

4.5.1 Discretionary Long-term Accruals

What accounting mechanisms can firms use to increase their net worth? Gopalan et al. (2022) suggest that abnormal accruals have been used by Indian companies to adjust the value of their net worth, in their case downwards, when facing a pro-debtor bankruptcy regime. However, Israeli firms follow the IFRS, whose impact on earnings management (and on the empirical proxy used to measure it, discretionary accruals) is unclear.[23] We argue that the enhanced discretion of management with regard to accounting choices under the IFRS (in comparison with US GAAP) is likely to be especially pronounced with respect to long-term, non-current assets (Jeanjean and Stolowy, 2008). For example, under IFRS, companies can designate certain real-estate assets as "investment property" and measure them at fair value; under US GAAP this would be prohibited. Such differences may make it difficult to detect earnings management in current assets or working capital, but it is possible that earnings management practices would manifest in non-current assets/long-term discretionary accruals.[24]

Table 6 presents regression results where the dependent variable is discretionary long-term accruals (the calculation is based on the modified Jones model of Dechow et al., 1995, and the distinction between short and long-term accruals is as in Teoh et al., 1998). In line with our conjecture, we find that low net worth, no-covenant firms use more discretionary long-term accruals in the post-court ruling period than in the pre-court ruling period in comparison with the control group. When defining treated firms as those

[23] In general, IFRS-based accounting systems allow for considerable discretion by reporting firms, as it is based on general principles, as opposed to very precise rules: Ball (2016, Section 6.3.1, p. 553) describes a wide range of choices firms have in implementing IFRS rules. Jeanjean and Stolowy (2008) write that "the application of accounting standards involves considerable judgment and the use of private information, and as a result, IFRS… provide(s) managers with substantial discretion" (p. 481). They also report that the mandatory implementation of IFRS was associated with an increase in earnings management in France, but not in the UK and Australia (see also Barth, 2008, who argues that IFRS reduces earnings management). Ahmed et al. (2013) also argue that the IFRS allows for "aggressive" reporting of accruals. In the context of Israel, Chen et al. (2019) describe the use of optimistic appraisals under IFRS to justify dividend payouts.

[24] Callao and Jarne (2010) find that the transition to IFRS in Europe has opened the way for a variety of earnings management methods, including those involving long-term discretionary accruals, which we use as well. Specifically, it is possible that discretion might affect such accruals under IFRS even though they are not commonly the focus of the discussion in US GAAP-based studies (e.g., Teoh et al., 1998).

with no covenants and very low net worth (below the 33rd percentile), the estimated magnitude of the effect (the difference-in-differences) is even larger. These findings are illustrated graphically in Figure 3: firms with no covenants in low net worth deciles exhibit a pronounced increase in the use of discretionary long-term accruals.[25]

It is possible to model firm decisions to raise new equity and/or to increase the use discretionary accruals as joint decisions and estimate regressions of the type presented in Tables 5 and 6 as Seemingly-Unrelated-Regressions (SUR). The estimated coefficients (allowing the error terms to be correlated across the two regressions), presented in Appendix G, are similar in magnitude and statistical significance to those reported in the separate estimations presented in Table 5 and Table 6. We also estimate the determinants of the decisions to issue equity and to use accruals jointly, using multinomial logit, where the base group (0) denotes "do nothing", 1 denotes raising new equity, 2 denotes increasing accruals, and 3 denotes doing both. The results (also in Appendix G) suggest that treated firms are more likely to raise new equity or to use more discretionary long-term accruals, but not both. This could be interpreted as evidence that the two are substitutes rather than complements. Firms choosing to raise equity appear to be smaller (in terms of total assets); firms doing both seem to be less profitable than other firms.

4.5.2 Decline in Accounting Conservatism in Treated Firms

Another accounting policy change which could explain the increase in net worth of treated firms following the court ruling is their avoidance of timely recognition of losses, i.e., a departure from the accounting principle of conservatism (e.g., Basu, 1997). According to this principle, losses (bad news) should be recognized more quickly and with

[25] (i) In contrast with the results for discretionary long-term accruals, we do not observe similar effects when using short-term accruals (not tabulated). We interpret this as evidence of the increased discretion under IFRS with respect to long-term assets, whereas its effect on shorter-term working capital appears to be ambiguous. (ii) In Figure 3 there are also firms in the upper net worth decile who use discretionary long-term accruals. This result is primarily driven by three firms with idiosyncratic reasons to increase their accruals in 2013 relative to 2012.

a lower degree of certainty than increased profits (good news), that is, reported earnings should reflect bad news more readily than good news.[26]

In our setting, treated firms are affected by a court decision that empowers creditors, on the basis of a balance sheet test, to file for involuntary bankruptcy. We hypothesize that, in such a setting, borrowers are likely to deviate from the principle of conservativism, i.e., postpone loss recognition and perhaps precipitate the recognition of income (in comparison with the control group), so as to avoid reaching the threshold that would trigger creditor control.

To measure the degree of conservatism of treated and control firms, before and after the court ruling, we adopt a specification proposed by Ball and Shivakumar (2005), which is based on Basu's (1997) interpretation of conservatism using the tendency-to-reverse of net income:[27]

$$\Delta Net_Income_t = \alpha_0 + \alpha_1 Neg_\Delta Net_Income_{t-1} + \alpha_2 \Delta Net_Income_{t-1} + \alpha_3 Neg_\Delta Net_Income_{t-1} * \Delta Net_Income_{t-1} + \varepsilon_t \quad (1)$$

Where ΔNet_Income_t is the change in total income from fiscal year *t-1* to fiscal year *t*, scaled by the book value of total assets at *t-1*, and $Neg_\Delta Net_Income_{t-1}$ is a dummy variable that takes the value one if the income change is negative. In accordance with the

[26] Ball and Shivakumar (2005) point out that timely loss recognition is related to debt contracting efficiency, since it enables creditors to react immediately (as economic losses are reported promptly) to a deterioration in a firm's condition that triggers a debt covenant violation.

[27] Our tendency-to-reverse measure uses income statement data, as in Ball and Shivakumar (2005), rather than the earnings-returns measure of Basu (1997). This is primarily because of the shortcomings of the earnings-returns measure discussed in Dechow et al. (2010, starting on p. 363). In addition, this approach allows us to test the extent of timely loss recognition in firms with traded bonds but non-traded equity (14 treated firms and 22 control firms in our dataset did not have traded equity at the time of the court ruling, so we lose more than third of our firm-year observations when estimating equity-based measures). Ball and Shivakumar (2005) propose also an accruals-based test of conservatism which we do not use here, given that the effects we document tend not to be evident in standard (rather than long-term) accruals-based measures. In passing, although Ball and Shivakumar (2005) use data from the UK, their sample period predates the adoption of IFRS there, which may explain why they choose to use a standard accruals-based measure in some of their empirical tests.

principle of conservatism, α_2 is expected to be equal to zero, since the recognition of economic gains (unlike losses) takes place at a later stage – corresponding to the actual realization of the gains by a parallel increase in cash flows – making these gains persistent and unlikely to be reversed. α_3 is expected to be negative, since losses are recognized to their full extent in a timely fashion (i.e., when they are known). This implies that losses are recognized as a transitory income decreases and hence tend to reverse in the next period.[28]

We modify Equation (1) to allow for differences between treated and control firms before and after the court ruling:

$$\Delta Net_Income_t = \alpha_0 + \alpha_1 Neg_\Delta Net_Income_{t-1} + \alpha_2 \Delta Net_Income_{t-1} + \alpha_3 Neg_\Delta Net_Income_{t-1} * \Delta Net_Income_{t-1} + \alpha_4 Post * Treated + \alpha_5 Neg_\Delta Net_Income_{t-1} * Post * Treated + \alpha_6 \Delta Net_Income_{t-1} * Post * Treated + \alpha_7 Neg_\Delta Net_Income_{t-1} * \Delta Net_Income_{t-1} * Post * Treated + Size + Fixed\ Effects + \varepsilon_t \quad (2)$$

As before, treated firms are firms with no financial covenants and 2012 net worth below the sample median (alternatively, below the 33rd percentile); *Post* takes the value one for the years 2013-2015. We control for firm size and, as always, include year and firm fixed effects absorbing time-invariant differences between treated and control firms. If, after the court ruling, treated firms became less conservative, we would observe either the recognition of non-persistent transitory gains, in which case we would expect α_6 to be

[28] To illustrate this, Basu (1997) describes "a firm receiving news that changes its estimate of the productive life of a fixed asset. If the new estimated life is longer, the firm is economically better off, but under historical cost accounting no gain is recorded currently. Instead, the depreciation charges that would have been taken in the current and future periods are spread out over the new remaining life, resulting in lower depreciation charges. If the expected life decreases… the accountant records an asset impairment which results in… reduced current income, but no effect on future income" (pp. 4-5). As a result, "since accountants typically report the capitalized value of bad news as losses, bad news earnings is more timely but less persistent. In contrast, good news is reflected in earnings on a less timely basis, but good news earnings tends to be more persistent. Good news earnings is less timely because accountants require more verifiable information before they recognize good news. But good news earnings is more persistent than bad news earnings because the capitalized value of the good news is only partially reflected in current earnings, and after verification, is also reflected in subsequent earnings" (p. 6).

negative, and/or a delay in loss recognition (if, after the court ruling, treated firms do not report losses in a timely manner), in which case we would expect α_7 to be positive.

Table 7 presents the results. In Column 1, α_6 is negative but not statistically significant, and α_7 is significantly positive, indicating that, after the court ruling, treated firms delayed the recognition of losses, thereby increasing their net worth and avoiding foreclosure by creditors. When low net worth firms are defined using the 33rd percentile, as in Table 4A with respect to changes in net worth, we find that reduced conservatism is even more pronounced (α_7 is larger). By contrast, there are no similar differences between firms with and without covenants among high net worth firms, in line with our conjectures and with the results in previous tables.

Another approach to measuring accounting conservatism is the *C-Score*, used in Khan and Watts (2009) and in Tan (2013). The results of the *C-Score* estimation, presented in Appendix H, are consistent with reduced conservatism among treated firms though not statistically significant. Appendix J provides further illustrations and concrete examples of the use of accounting practices by firms in our sample to inflate their net worth.

4.6 Informativeness

Bondholders are concerned with the ability of accounting information to adequately and promptly convey downside risks and unfavorable information (Givoly, Hayn and Katz, 2017). If, as a technique to fend off creditor control, treated firms' financial statements are subject to aggressive, or overly-optimistic, accounting practices, their informational content to bondholders may be reduced. In a similar vein, Hasan et al. (2023) argue that the informational content of CDS prices is reduced for firms in countries with strong creditor rights because of what they call "strategic disclosure practices." We test this conjecture by examining abnormal bond returns, where the calculation is relative to portfolios of bonds matched by maturity, rating and indexation, within three-days of the

financial statements' filing date before and after the court ruling, for treated and control firms.[29]

Table 8 presents the results. If earnings reported in accounting statements were registered (recognized) using aggressive accounting techniques, the price response to their publications should be limited. In line with this conjecture, the interaction term denoting treated firms after the court ruling (times earnings) is negative. As in previous tables, we observe no differences between high net worth firms with and without covenants. We conclude that the increased incentive of firms to make sure their accounting statements (balance sheets) do not make them vulnerable to creditor control may result in reduced informational content that accounting reports convey to creditors.[30]

[29] In Israel firms do not report an early earnings announcement. Therefore, the filing date of the financial statements is the relevant date for estimating the market response to earnings.

[30] We also examine one-year-in-advance cash flow forecasts issued by firms in our sample and their subsequent realization errors (from Rooz and Segal, 2023). We find, in a diff-in-diff regression framework similar to the ones used above, that, for firms with no covenants and net worth below the 33rd percentile, the forecast error increases following the court ruling. The results for no-covenant firms whose net worth is below the sample median are similar in sign but not statistically significant, suggesting that the results are driven by no-covenant firms with very low net worth (not tabulated). This finding lends further support to the conjecture that the informational content of accounting variables is reduced following the court ruling for no-covenant, low net worth firms. Another, indirect, approach to measuring price informativeness would be to measure the "synchronicity" of bond prices before and after the court ruling (in the spirit of Morck et al., 2000). This approach has usually been applied to stock, not bond prices, in the existing literature and has been criticized in recent years (e.g., Li et al., 2014). In practice, we do not observe an increase in bond price synchronicity for low net worth, no-covenant firms after the court ruling. We also examine changes in the informativeness of share prices and do not find significant results. One possible explanation for this is that, in companies close to default, like the treated companies in our sample, the relevant security prices are bond rather than equity prices. Another, technical reason, could be that the sample of firms with available equity prices is smaller than that for which we have bond price information, partly because of companies with no traded equity (only corporate bonds) and partly because of companies whose equity trading is infrequent and not very liquid. Finally, it would be of potential interest to examine trends in informativeness over long periods of time. We do not perform such tests here as the level of informativeness in the long-run is likely to be influenced by regulatory and other changes taking place after the court ruling. Note, however, that the results presented here are based on differences in informativeness between treated and control firms, and are therefore unlikely to be driven by general trends.

4.7 Liquidity

The finance literature has often attempted to relate price informativeness (not just the informativeness of financial statements) with liquidity. Liquid markets generate informative prices, of course, but there is an opposite, more interesting, direction of causality, where the extent to which prices (of stocks or other assets) contain information affects the volume of trade (liquidity). On one hand, conventional wisdom suggests that more (public) information generally improves market liquidity in an economy where information is exogenous. On the other hand, in models where private information collection is endogenous, less public information may lead to more private information collection by "informed" traders (who trade and benefit from this information collection at the expense of other traders). In turn, this could lead to more liquidity because the information gap between "informed" and "uninformed" traders increases (for a comprehensive review of this vast literature, see, for example, Goldstein and Yang, 2017). We examine empirically if the decline in informativeness in bond prices is associated with changes in bond (and stock) liquidity. Figure 4 presents a commonly used measure of bond market liquidity, bid-ask spreads, for treated firms (in red) and control firms (in black), before and after the court ruling. The figure shows that liquidity increases (bid-ask spreads shrink) for both treated and control firms at about the same rate: the trends appear to be parallel, beginning prior to the court ruling (2013) and continuing at least until 2015. These trends (affecting all firms) are unlikely to be driven by the 2013 change in creditor rights.[31]

Another commonly used measure of liquidity (or, more precisely, illiquidity) is that of Amihud (2002), which measures the extent to which the price of a share changes for a given volume of trade. We use this measure for stocks (as is common in the literature), as the dependent variable in a diff-in-diff specification similar to the one used in the other tables/regressions in the paper. We do not detect any meaningful differences between

[31] In line with Figure 4, regressions where the bid-ask spread is the dependent variable do not reveal any differences between treated and control firms and are not presented.

treated and control firms in this measure of illiquidity (in line with the absence of change in the informativeness of share prices, see footnote 30).[32] We conclude that, given the trend of improved liquidity in Israel's corporate bond market as a whole, it is difficult to detect the specific effects of the 2013 court ruling in this respect.

4.8 The Evolution of Covenants following the Court Ruling

Concern about the possibility of earnings management and insufficient accounting conservatism (Section 4.5), as well as the decline in the informativeness of financial statements, at least as far as their effect on bond prices is concerned (Section 4.6), might have induced creditors to introduce covenants which are based on financial variables that are less amenable to manipulation through aggressive accounting practices. Alternatives might include, for example, rating-based covenants or covenants based on cash flows that are more robustly measured than net worth. We examine this hypothesis by documenting whether new bond series, issued after 2013, include different covenants (or covenants based on other measures) than those included in our control group of firms prior to the court ruling. To examine this issue, we collect data on the nature of covenants in existence at the end of 2015 (two and a half years after the court ruling). By the end of 2015 there are three types of firms whose bonds have covenants associated with them: (i) Firms in the original control group whose bonds (with covenants), were in place in 2012 and had not yet been redeemed by 2015; (ii) New bonds with covenants issued by the same firms (in the control group) after the court ruling, between 2013 and 2015; (iii) Bonds with covenants issued by treated firms (which had no covenants in 2012), following a 2011 regulatory requirement stipulating that all newly-issued bonds should include covenants (see Footnote 9).

We find that the types of covenants used in 2015 (Appendix A, Panels B and C) are very similar to the type of covenants used by firms in the control group in 2012 (i.e., net worth-

[32] Although this is not common in the literature, it is also possible to calculate the Amihud measure of illiquidity for bonds, which are traded like stocks on the Tel Aviv stock exchange, and then use a similar diff-in-diff specification. This exercise does not produce any clear results and is not presented.

based covenants, Appendix A, Panel A). However, the average threshold (nominal net worth, which we deflate by 2015 assets) at which the covenants are triggered is higher in 2015 in bonds issued by treated firms, which lacked covenants in 2012 (12%) than in bonds issued by control group firms (9%). Perhaps more interestingly, in 56% of all covenants stipulating a minimum ratio of net worth to assets issued by treated firms after 2012 there are exclusion clauses limiting the ability of firms to manage earnings (Appendix A, Panel D): For example, the ratio of equity to assets should exclude customer advances or investment property valuation profits. Such additional clauses are extremely rare in covenants issued by companies in the control group (appearing in only 8% of them). Thus, even when the stipulated minimal ratio of net worth to assets is similar in bonds issued by treated and control group firms, there are additional constraints and exclusions limiting the scope of accounting manipulations added to treated firms' newly-issued bonds. Apparently, lenders understood that net worth and accounting figures may be manipulated upwards and responded by making covenants tighter for suspect borrowers with a history of aggressive accounting practices.

4.9 Further Robustness

4.9.1 Calculations using Propensity-Score-Matching (PSM)

As an alternative to the linear regression models used in our empirical analyses so far, we use PSM to match treated companies with similar firms in the control group on the basis of their 2012 size, profitability and industry (using the nearest-neighbor, one-to-one matching without replacement). Appendix K presents the results, corresponding to the results presented in Tables 4A, 4B and 6. The coefficients are very similar (in signs, magnitudes and statistical significance) to those reported in the original tables.[33]

[33] We also re-estimate the regressions presented in Tables 7 and 8 using PSM, with similar results to the main results presented in these tables. The full results are available upon request.

4.9.2 Are the Results Driven by Mean Reversion of Accounting Variables?

Are the results driven by the documented mean reversion property of accounting variables (e.g., Barber and Lyon, 1996)? These variables tend to fluctuate over time, but they also tend to revert back to their historical averages or trends. We argue that, while mean reversion appears to be present in the data, this phenomenon is not driving our results. Figure 1 (alluded to before) shows that the downward trend in the net worth of treated firms (low net worth firms without covenants) is reversed between 2012 and 2013. Although this could be a coincidence, it is precisely the year of the court ruling. Moreover, no similar reversal is apparent in the control group (whose downward sloping trend is more moderate, and is reversed later, between 2013 and 2014).

We further examine the potential importance of mean reversion using Monte Carlo simulations. We choose randomly 10,000 times a subset of firms with low (below-median) net worth, regardless of whether they had covenants attached to their bonds. This subset is equal in size to the treated sample of firms in our main specifications (52 unique firms). We then estimate the changes in these "placebo treated" firms' net worth in a regression model similar to that used in Table 4A, with *Net Worth* as the dependent variable. From each regression, we retain the resulting *t*-statistic of the interaction term between the "placebo treated" dummy variable and the *post* indicator. The resulting distribution is presented in Appendix L. The solid (black) vertical line indicates the true *t*-statistic, from Table 4A, Column 1. The dashed (red) vertical line shows the mean *t*-statistic estimated for the "placebo treated." If the effect of the court ruling is driven purely by mean reversion, one would expect the true *t*-statistic to be in the center of the distribution and not far from the average of the placebo *t*-statistics. In fact, the *t*-statistic estimated using data on real treated firms is in the extreme right tail of the simulated distribution of *t*-statistics, with only about three percent of the observations to its right. We interpret these results as evidence that our findings are not purely coincidental or driven by the tendency of accounting variables to revert to their mean.

5. Concluding Remarks

We study the effects of an exogenous shock to creditor rights, emanating from a high-profile 2013 court case in Israel, where unsecured creditors were granted the ability to force borrowing companies into bankruptcy on the basis of a balance sheet insolvency test (the value of liabilities relative to the value of assets). We find that investors interpreted the court ruling as beneficial to bondholders (and detrimental to shareholders), perhaps because of the expectation that an early onset of future bankruptcy procedures would increase recovery rates for creditors, or because the threat of creditor control would induce firms to take actions, such as raising new equity capital. At the same time, the use of the balance sheet insolvency test to empower creditors using a balance sheet test had other, unintended, consequences, primarily in the form of inducing borrowing companies to use (legal) accounting "tricks" to inflate their net worth. As a result, we observe a significant decrease in a commonly-used measure of informativeness to bondholders of financial statements issued by treated firms.

The negative side-effects we document do not imply that the reform was undesirable or detrimental to social welfare. In fact, we do find evidence that the new rule induced at least some firms to raise more equity capital. Our findings do shed light, however, on a specific downside associated with policies that expand the set of contingencies in which creditors can impose involuntary bankruptcy on borrowers without giving them control of, or influence on, firm decisions. Our results suggest caution in using a balance sheet test for insolvency as a substitute for other tests, as firms are likely to try and make sure that the states of the world in which creditors can seize control will not materialize. To the extent that they do so through aggressive accounting practices, this may lead to reduced transparency and limited value of mandatory disclosure policies to investors, adversely affecting the functioning of financial markets. Previous studies have shown how firms adjust their capital structure and risk-taking to accommodate a change in creditor rights (e.g., Becker and Stromberg, 2012; Vig, 2013; Agarwal et al., 2021). Other studies have shown that firms may change their accounting reports when creditors can influence

corporate decisions (Aier et al., 2014; Bens et al., 2020). Our study, as well as that of Gopalan et al. (2022), complement this literature and demonstrate how firms not controlled by creditors, whose ability to make real changes is limited, respond to a balance sheet test and, in our case, creditor empowerment, by adjusting the way in which reality is reflected in their accounting reports. The findings of Hasan et al. (2023), while not focused on a specific type of insolvency test, are in the same spirit. Taken together, this new body of research suggests that firms react to changes in creditor rights and that this reaction must be taken into consideration by judges, regulators and policy makers.

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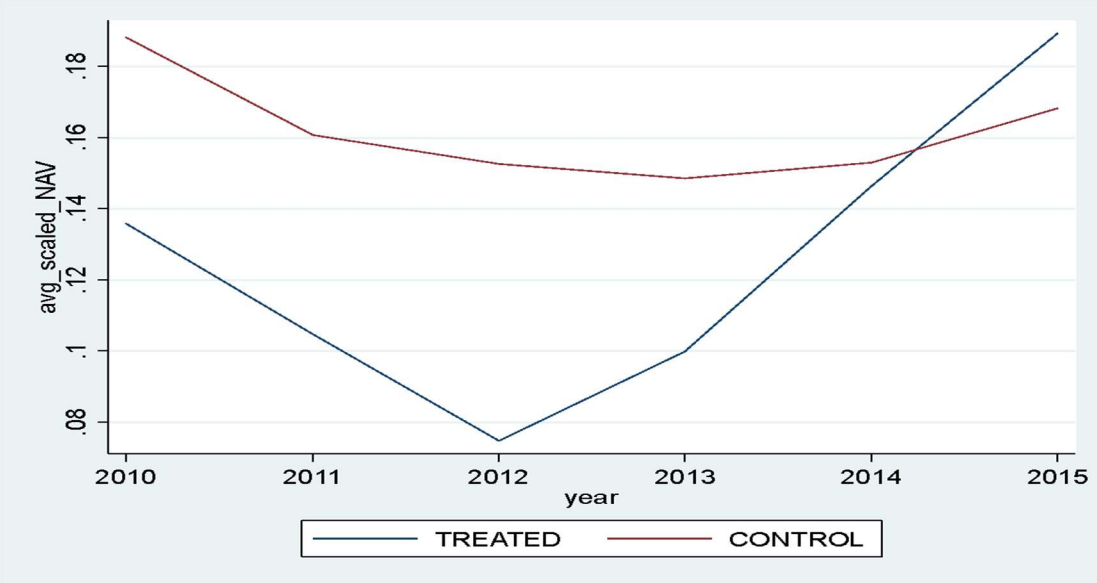
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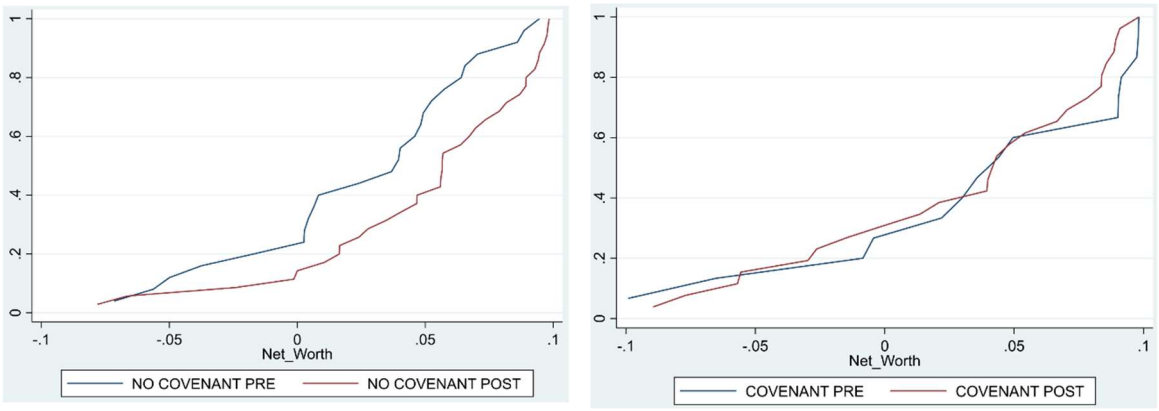
Figure 1: Net Worth in Treated and Control Firms before and after 2013



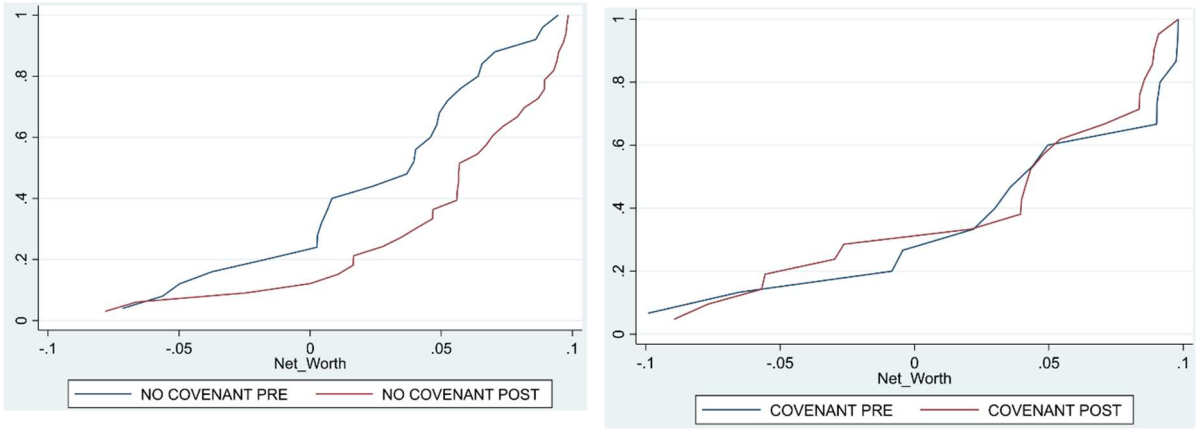
The figure describes the average net worth for low net worth (below the 2012 sample median) firms with no financial covenants (treated firms) and for control (low net worth with covenants) firms. Net worth is calculated as total assets net of total liabilities, scaled by total assets (values below -1 or above +1 are omitted).

Figure 2: The Distribution of Net Worth (scaled by total assets) around Zero

Panel A: Treated firms (with no covenants and net worth below the 2012 sample median) vs. control firms (with covenants and net worth below the sample median) before and after the court ruling (2012 vs. 2013-2015)

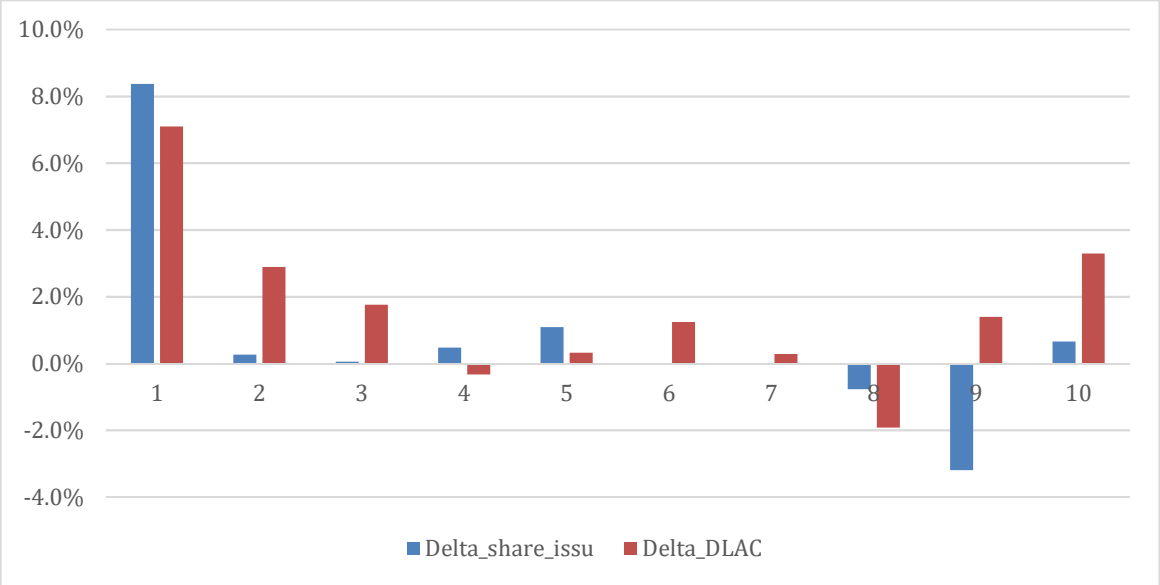


Panel B: Treated firms (with no covenants and net worth below the 2012 33rd percentile) vs. control firms (with covenants and net worth below the 33rd percentile) before and after the court ruling (2012 vs. 2013-2015)



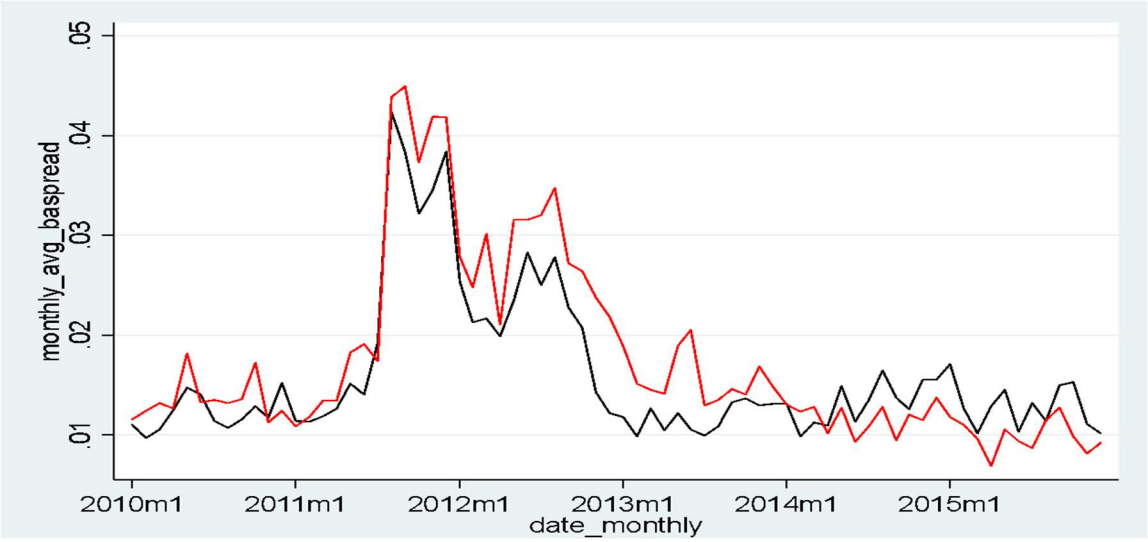
The figure is based on the cumulative distribution functions for treated and control firms before and after the court ruling. We separately compute, and show in the figure, eight cumulative net worth distribution functions in the scaled net worth range (-0.1, 0.1) for the treatment and control groups before (PRE, in blue) and after (POST, in red) the court ruling (2012 vs. 2013-2015). Panel A presents the distributions for firms with net worth below the sample median and Panel B for firms with net worth below the 33rd percentile.

Figure 3: Share Issuances and Changes in Discretionary Long-term Accruals by Net Worth Deciles



The figure presents, for all firms without covenants, new share issuances (in blue) and changes in discretionary long-term accruals (in red) by net worth deciles in 2012. Net worth deciles are calculated using the entire sample of firms, with and without covenants. New share issuances are defined as equity capital raised (in seasoned public offerings on the Tel Aviv Stock Exchange), scaled by total assets. The change in discretionary long-term accruals is the percent change in the firm's mean value in the post-court ruling period (2013-2015) relative to its 2012 value. Discretionary long-term accruals are calculated using the modified Jones model as in Dechow et al. (1995) and the distinction between short and long-term accruals is based on Teoh et al. (1998), see also Tables 5 and 6 below. The bars represent the average change within each 2012 net worth deciles (omitting observations where net worth scaled by total assets is larger than +1 or smaller than -1). Treated firms are firms that do not have covenants and whose scaled net worth in 2012 is below the sample median, hence they are included in deciles 1 through 5.

Figure 4: Bid-Ask Spreads for Treated and Control Firms



The figure presents average monthly bid-ask spreads. The red line denotes treated firms, defined as no-covenant, low net worth (below the 2012 sample median) firms. The black line denotes firms with covenants whose net worth is below the 2012 sample median (control firms).

Table 1: Empowering Creditors – An Overview of the Literature

Panel A presents empirical studies in corporate finance; Panel B presents related studies in accounting. Articles closely related to the present study appear in boldface.

Panel A: Related Studies in Corporate Finance

Study/Country	Main Argument	Category	Tone towards empowering creditors?
Djankov et al. (2007)/ Djankov et al. (2008)/Global	Strong creditor rights are essential for the functioning of debt markets	Law and Finance/Corporate Finance/Creditor Rights	Positive
Becker and Stromberg (2012)/US	Subjecting managers of distressed firms to fiduciary duties toward creditors can affect corporate risk-taking	Corporate Finance	Nuanced
Vig (2013)/India	Enhancing creditor rights in certain states of the world can lead to a "liquidation bias" and reduced leverage	Corporate Finance	Nuanced
Alok et al. (2022)/India	Strengthening creditors' ability to seize non-paying borrowers' assets increases firm employment and reduces capital investments	Corporate Finance	Nuanced
Acharya et al. (2011)/Global	The relation between creditor power in bankruptcy and corporate risk-taking is negative; borrowing companies adjust their behavior so as to lower the probability of becoming subject to creditor control	Corporate Finance/ the effect of strong creditor rights in bankruptcy on the behavior of non-distressed firms (outside bankruptcy)	Negative ("too much of a good thing")
Agrawal et al. (2022)/Denmark	Empowering creditors of distressed companies in Denmark (to choose between liquidation and reorganization) affects both the financial management and the real behavior of non-distressed firms	Corporate Finance/ the effect of strong creditor rights in bankruptcy on the behavior of non-distressed firms (outside bankruptcy)	Positive
Schoenherr and Starmans (2022)/Korea	Creditor protection has differential effects on firm leverage and investment depending on their owners' and managers' personal costs of bankruptcy	Corporate Finance/personal costs of bankruptcy	Nuanced

Panel B: Related Studies in Accounting

Study	Main Argument	Category
DeFond and Jiamboalvo (1994)	Firms use abnormal accruals to manipulate earnings and avoid debt covenant violations	Accounting/Firms adjust their reporting practices so as to meet various regulatory and legal thresholds
Sweeny (1994)/ Dichev and Skinner (2001)[34]	Evidence in support of the "Debt Covenant Hypothesis"	Accounting/Firms adjust their reporting practices so as to meet various regulatory and legal thresholds
Franz et al. (2014)	Firms close to covenant violations use earnings management techniques more than other firms	Accounting/Firms adjust their reporting practices so as to meet various regulatory and legal thresholds
Dyreng et al. (2022)	Covenant violations are costly and "justify" the use of some forms of earnings management to avoid them	Accounting/Firms adjust their reporting practices so as to meet various regulatory and legal thresholds
Aier et al. (2014)/ Bens et al. (2020)[35]	Creditor influence can have a restraining effect on borrowing firms' inclination to manipulate their financial reports by inducing accounting conservatism (similar legal change as in Becker and Stromberg, 2012)	Accounting/ The impact of changes in creditor rights on borrowing firms' accounting practices (when creditors have control rights and can influence firm behavior).
Gopalan et al. (2022)	A pro-debtor bankruptcy reform in India (weakening creditor rights in bankruptcy) induced borrowers to use earnings management to manipulate downwards their accounting figures in order to qualify for protection from creditors.	Accounting/ The impact of changes in creditor rights on borrowing firms' accounting practices (outside bankruptcy)
Hasan et al. (2023)	In a large, international, panel of firms, stronger creditor rights are associated with reduced accounting transparency (increased synchronicity of CDS spreads), as borrowers strategically adjust their accounting reports to fend off creditor control	Accounting/ The impact of changes in creditor rights on borrowing firms' accounting practices (outside bankruptcy)

[34] See also Burgstahler and Dichev (1997) on earnings management in the context of firms trying to avoid reporting losses, Matsumoto (2002), earnings management to meet analysts' expectations, and Bergstresser and Philippon (2006) on accounting manipulations in the context of executive compensation targets. Healy and Wahlen (1999) survey this literature.

[35] Aghamolla and Li (2018), using Indian data, argue that stronger debt contract enforcement induces more accounting conservatism. Tan (2013) makes a similar point with respect to debt covenant violations.

Table 2: Descriptive Statistics, Firms with Below-Median Net Worth

Panel A: Pre-court Ruling Period (2012):

	Treated (Below-median Net Worth and No Covenants)		Control (Below-median Net Worth with Covenants)		Difference
Variable	N	Mean	N	Mean	Diff
Net_Worth	52	0.075	34	0.153	-0.078**
Negative_Net_Worth	52	0.154	34	0.059	0.095
SIZE	52	13.718	34	14.500	-0.782**
ROA	52	0.015	34	0.029	-0.013

Panel B: Post-court Ruling Period (2013-2015)

	Treated (Below-median Net Worth and No Covenants)		Control (Below-median Net Worth with Covenants)		Difference
Variable	N	Mean	N	Mean	Diff
Net_Worth	138	0.142	94	0.156	-0.014
Negative_Net_Worth	138	0.073	94	0.064	0.009
SIZE	138	13.893	94	14.589	-0.696***
ROA	138	0.031	94	0.030	0.001

Note: The table presents descriptive statistics for firms whose net worth in 2012 is below the sample median, i.e., relatively close to default, with and without covenants (statistics for firms with above-median net worth, regardless of whether they have financial covenants attached to their debt, are not presented). Treated firms have below-median net worth and do not have financial covenants attached to their bonds. Control firms have below-median net worth and covenants. Panel A presents the pre-court ruling year (2012) and Panel B the post-court ruling period (2013-2015). Net Worth is measured as the total assets net of total liabilities, scaled by total assets (observations above one in absolute value are omitted); Negative Net Worth is an indicator variable that takes the value one if net worth is negative, and zero otherwise; SIZE is natural log of total assets; ROA is operating profit over total assets. Appendix B provides a detailed description of the variable construction. SIZE and ROA are winsorized at the 1st and 99th percentiles of their distribution. The last column shows the statistical difference between the means of the treated and control firms. Standard errors are reported in parentheses. ***, **, and *, indicate that a t-test for the difference between the means is significant at the 0.01, 0.05, and 0.10 levels, respectively.

Table 3: Excess Returns, in percent, in response to the Court Decision (April 30, 2013)

			Median Net Worth				p33 Net Worth		
		N	Low Net Worth (1)	N	High Net Worth (2)	N	Low Net Worth (3)	N	High Net Worth (4)
Bonds Excess Returns	No-covenant Firms	88	0.22***	74	0.05*	61	0.27**	101	0.06**
	SE		(0.085)		(0.03)		(0.11)		(0.03)
Stocks Excess Returns	No-covenant Firms	38	-0.81*	47	0.02	25	-1.22*	60	0.01
	Firms w. covenants	24	0.35	28	0.2	15	0.54	37	0.16
	Difference		-1.16		-0.18		-1.76		-0.16
	SE		(0.74)		(0.62)		(1.05)		(0.51)
Change in Firm Value	No-covenant Firms	30	0.15**	34	0.02	22	0.16*	42	0.04**
	SE		(0.06)		(0.01)		(0.08)		(0.02)

Note: The table reports the results of an event study examining the market reaction to the court ruling on April 30, 2013. . Column 1 (column 3) include firms whose net worth over assets in 2012 is below the sample median (the 33rd percentile). Column 2 (column 4) serve as a placebo test and include firms whose net worth over assets is above the sample median (alternatively, 33rd percentile). Column 2 (column 4) serve as a placebo test and include firms with (without) financial covenants whose net worth over assets above the sample median (alternatively, 33rd percentile). Excess returns (ER) refer to bonds issued by firms without covenants and are estimated relative to a portfolio of similar bonds (in terms of rating, indexation and maturity, as in Bessembinder et al. 2009)[36] issued by firms with covenants (control firms). The standard errors in this calculation are clustered at the firm level, as some firms have multiple bonds. Excess bond returns for control group are "mirror images" of the returns of treated firms and are not presented. ER for stocks are estimated based on the calculation of Scholes-Williams beta relative to the Tel Aviv Stock Exchange's main index (Tel Aviv 100 at the time, currently Tel Aviv 125), using daily data for eleven months (month -12 to month -1) prior to the court ruling. Because ER are calculated relative to a general index, this measure is available for all firms. The change in firm value, available only for firms for which bond ER are available (firms without covenants), is defined as the sum of the bond ER multiplied by the firm's previous day market value of debt (for firms with multiple bonds we sum up the product of excess bond return and bond capitalization of all bonds), plus stock ER multiplied by the firm's previous day market capitalization. The result is scaled by the previous day's combined market value of the firm's stocks and bonds. **, and *, indicate significance levels of 0.05, and 0.10, respectively.

[36] We match by inflation indexation given that most, but not all, of the bonds at the time offered inflation-adjusted returns. Because of the small sample size, we use only two ratings categories, investment grade and below-investment grade.

Table 4: Difference in Differences in Net Worth

Panel A: Scaled Net Worth

	Dependent Variable: Net Worth			
	Median Net Worth		p33 Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)
Post*(No Covenant)	0.050*	-0.000	0.079**	-0.006
	(0.027)	(0.018)	(0.039)	(0.014)
SIZE	0.134	-0.072*	0.206*	-0.071**
	(0.084)	(0.042)	(0.104)	(0.030)
ROA	0.435***	0.204	0.377**	0.227
	(0.164)	(0.140)	(0.186)	(0.140)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	318	333	203	448
adj. R^2	0.18	0.08	0.27	0.101

Panel B: Negative Net Worth

	Dependent Variable: Negative Net Worth			
	Median Net Worth		p33 Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)
Post*(No Covenant)	-0.093**	0.012	-0.145**	0.009
	(0.044)	(0.012)	(0.071)	(0.009)
SIZE	-0.038	-0.010	-0.045	-0.007
	(0.115)	(0.011)	(0.157)	(0.008)
ROA	-0.166	0.016	-0.166	0.011
	(0.107)	(0.018)	(0.138)	(0.013)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	318	333	203	448
adj. R^2	0.03	0.000	0.04	0.000

Note: The table reports the results of difference-in-differences regressions explaining the changes in firms' net worth around the court ruling. In Panel A, the dependent variable is Net Worth calculated as total assets net of total liabilities, scaled by total assets (values below -1 or above +1 are omitted). In Panel B, the dependent variable is Negative Net Worth, a dummy variable that takes the value one if net worth is negative, and zero otherwise. Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (or the 33rd percentile). *Post* is an Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). *Size* (log of assets) and *ROA* (operating profits over assets) are both winsorized at the 1st and 99th percentiles. Column 1 (column 3) include firms that are below the sample median (33rd percentile) of net worth over assets in 2012 with and without covenants. Column 2 (column 4) serve as a placebo test and include firms with and without financial covenants whose net worth over assets is above the sample median (33rd percentile). Firm and year fixed effects are included throughout. Robust standard errors clustered by firm are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Table 5: Shares Issuances

	Dependent Variable: New Shares Issued Scaled by Total Assets			
	Median Net Worth		p33 Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)
Post*(No Covenant)	0.016***	-0.0032	0.018**	-0.0005
	(0.006)	(0.006)	(0.008)	(0.005)
SIZE	0.0035	-0.025	0.009	-0.021*
	(0.015)	(0.015)	(0.019)	(0.012)
ROA	-0.051	-0.036*	-0.041	-0.041*
	(0.076)	(0.020)	(0.091)	(0.021)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	318	333	203	448
adj. R^2	0.04	0.08	0.05	0.06

Note: The table reports the results of a difference-in-differences regressions where the dependent variable is the equity capital raised (in seasoned public offerings), scaled by total assets. Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (33rd percentile). Post is an indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012); Size (log of assets) and ROA (operating profits over assets) are both winsorized at the 1st and 99th percentiles. Column 1 (column 3) include firms that are below the sample median (33rd percentile) of net worth over assets in 2012 with and without covenants. Column 2 (column 4) serve as a placebo test and include firms with and without financial covenants whose net worth over assets is above the sample median (33rd percentile). Firm and year fixed effects are included throughout. Robust standard errors clustered by firms are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Table 6: Discretionary Long-Term Accruals

	Dependent Variable: Discretionary Long-Term Accruals (DLAC)			
	Median Net Worth		P33 Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)
Post*(No Covenant)	0.028**	0.016	0.044**	0.012
	(0.011)	(0.012)	(0.017)	(0.0085)
SIZE	0.013	-0.003	0.039**	-0.008
	(0.014)	(0.015)	(0.017)	(0.009)
ROA	0.054	0.059	0.022	0.056
	(0.142)	(0.047)	(0.23)	(0.040)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	263	258	148	373
adj. R-sq	0.14	0.14	0.18	0.15

Note: The table reports the results of difference-in-differences regressions explaining changes in firms' Discretionary Long-Term Accruals (DLAC) due to the court ruling. The dependent variable, DLAC, is the discretionary accruals in long term assets, where discretionary and non-discretionary total accruals and short-term accruals are calculated using the cross-sectional modified Jones model of Dechow et al. (1995) and are used to extrapolate the long-term discretionary accruals following Teoh et al. (1998); Appendix B provides further details. Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (33rd percentile). Post is an Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). Size (log of assets) and ROA (operating profits over assets) are both winsorized at the 1st and 99th percentiles. Column 1 (column 3) include firms that are below the sample median (33rd percentile) of net worth over assets in 2012. Column 2 (column 4) serve as a placebo test and include firms with and without financial covenants whose net worth over assets is above the sample median (33rd percentile). Firm and year fixed effects are included throughout. Robust standard errors clustered by firms are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Table 7: Timely Loss Recognition: Conservatism Test Following Ball and Shivakumar (2005)

	Dependent Variable: ΔNet_Income_t			
	Median Net Worth		p33 Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)
$Neg_\Delta Net_Income_{t-1}$	-0.015	0.0055	-0.009	0.006
	(0.019)	(0.012)	(0.0263)	(0.010)
ΔNet_Income_{t-1}	0.486	0.167	0.634	0.128
	(0.530)	(0.248)	(0.634)	(0.216)
$Neg_\Delta Net_Income_{t-1} * \Delta Net_Income_{t-1}$	-2.646***	-0.237	-3.025***	-0.538
	(0.940)	(0.603)	(1.109)	(0.499)
Post*Treated	0.001	-0.029	0.001	-0.017
	(0.033)	(0.027)	(0.048)	(0.022)
$Neg_\Delta Net_Income_{t-1}$*Post*(No Covenant)	0.019	-0.009	0.025	-0.015
	(0.035)	(0.033)	(0.051)	(0.029)
ΔNet_Income_{t-1}*Post*(No Covenant)	-0.448	-0.809	-0.539	-0.847
	(0.559)	(0.793)	(0.656)	(0.752)
$\Delta Net_Income_{t-1} * Neg_\Delta Net_Income_{t-1}$	1.776**	0.475	2.065**	0.757
Post(No Covenant)	(0.715)	(0.955)	(0.843)	(0.854)
SIZE	0.132**	0.073	0.188***	0.033
	(0.0523)	(0.046)	(0.070)	(0.032)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	314	303	199	418
adj. R^2	0.37	0.11	0.392	0.12

Note: The table reports the results of a regression model that estimates changes in timely loss recognition after the court ruling, following Ball and Shivakumar (2005). The dependent variable ΔNet_Income_t is the change in total income from fiscal year *t-1* to *t*, scaled by year *t-1* book value of total assets. Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (33rd percentile). *Post* is an Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). $Neg_\Delta Net_Income_{t-1}$ is a dummy variable that takes the value one if ΔNet_Income_{t-1} is negative, and zero otherwise; ΔNet_Income_{t-1} is the lag of ΔNet_Income_t; *Size* is the natural log of assets. Column 1 (column 3) include firms that are below the sample median (33rd percentile) of net worth over assets in 2012. Column 2 (column 4) serve as a placebo test and include firms with and without financial covenants whose net worth over assets is above the sample median (33rd percentile). Firm and year fixed effects are included throughout. Continuous variables are winsorized at the 1st and 99th percentiles. Robust standard errors clustered by firms are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Table 8: Informativeness using Bond Abnormal Returns

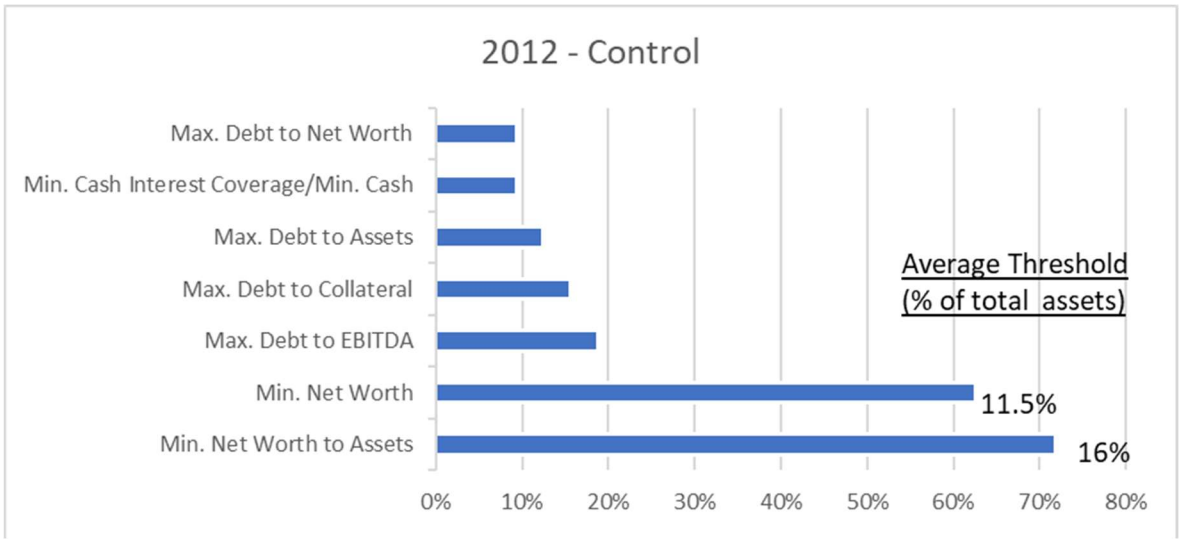
	Dependent Variable: Abnormal Bond Returns (-1,+1)			
	Median Net Worth		p33 Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)
ΔNet_Income_t	-0.022*	0.0037	-0.035***	0.0018
	(0.0115)	(0.0135)	(0.009)	(0.010)
ΔNet_Income_t*(No Covenant)	0.026*	-0.0040	0.037***	-0.0018
	(0.014)	(0.0135)	(0.013)	(0.010)
Post*(No Covenant)	-0.0004	0.0001	-0.0006	0.0002
	(0.0004)	(0.0004)	(0.0005)	(0.0003)
ΔNet_Income_t* Post	0.021*	-0.004	0.035***	-0.0025
	(0.012)	(0.013)	(0.009)	(0.0097)
ΔNet_Income_t*Post*(No Covenant)	-0.026*	0.004	-0.038***	0.0024
	(0.014)	(0.013)	(0.013)	(0.010)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	244	212	157	299
adj. R^2	0.02	0.015	0.08	0.006

Note: The table reports the results of a regression model that estimates changes to informativeness by measuring the bond response to earnings announcements. The dependent variable, Abnormal Bond Return, is the value-weighted firm average of cumulative abnormal bond returns in a three-day window around the earnings announcement date (to account for the possibility of multiple bond series issued by a single firm). Abnormal Bond Return is calculated using the matching portfolio model of Bessembinder et al. (2009); Appendix B provides further details. ΔNet_Income_t is the change in total income from fiscal year *t-1* to *t*, scaled by year *t-1* book value of total assets; Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (33rd percentile); *Post* is an Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). Columns (1) and (4) include the full sample. Column 1 (column 3) include firms that are below the sample median (33rd percentile) of net worth over assets in 2012. Column 2 (column 4) serve as a placebo test and include firms with and without financial covenants whose net worth over assets is above the sample median (33rd percentile). Firm and year fixed effects are included throughout. Continuous variables are winsorized at the 1st and 99th percentiles. Robust standard errors clustered by firms are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

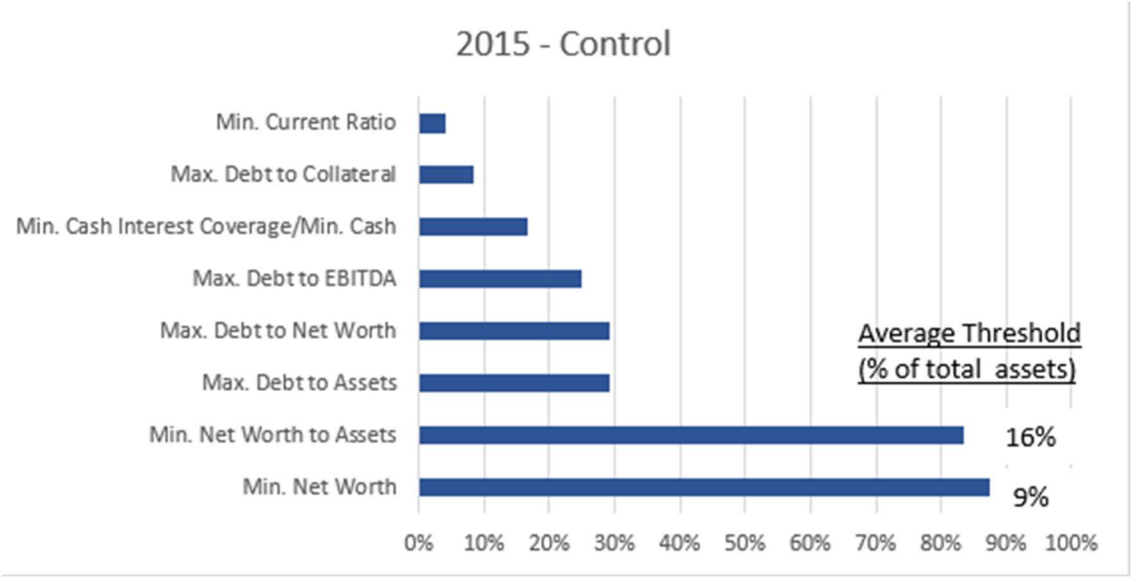
Appendix A: Financial Covenants in Debt Contracts, 2012 and 2015

The charts below describe the types of financial covenants in debt contracts of the control group in 2012, prior to the court ruling (Panel A), and the types of covenants for new bond issuances after the court ruling (2013-2015), separately for the control group firms (Panel B) and treated firms (Panel C). Treated (Control) firms are firms that do not (do) have covenants and whose net worth over assets in 2012 is below the sample median. Covenant types appear in the order of their prevalence. For the two most common covenants (minimum net worth and minimum net worth to assets) we include the average threshold required relative to assets and provide in Panel D information about financial statement items that are excluded from these covenants' calculation. Minimum net worth covenants are defined in nominal terms (we deflate the figure by total assets in the corresponding year). Covenants stipulating minimum net worth to assets are originally defined as a ratio. Credit downgrade covenants (not included in the chart) account for 26% of covenants in the control group (our results are robust to the exclusion of two control firms that had only credit downgrade covenants).

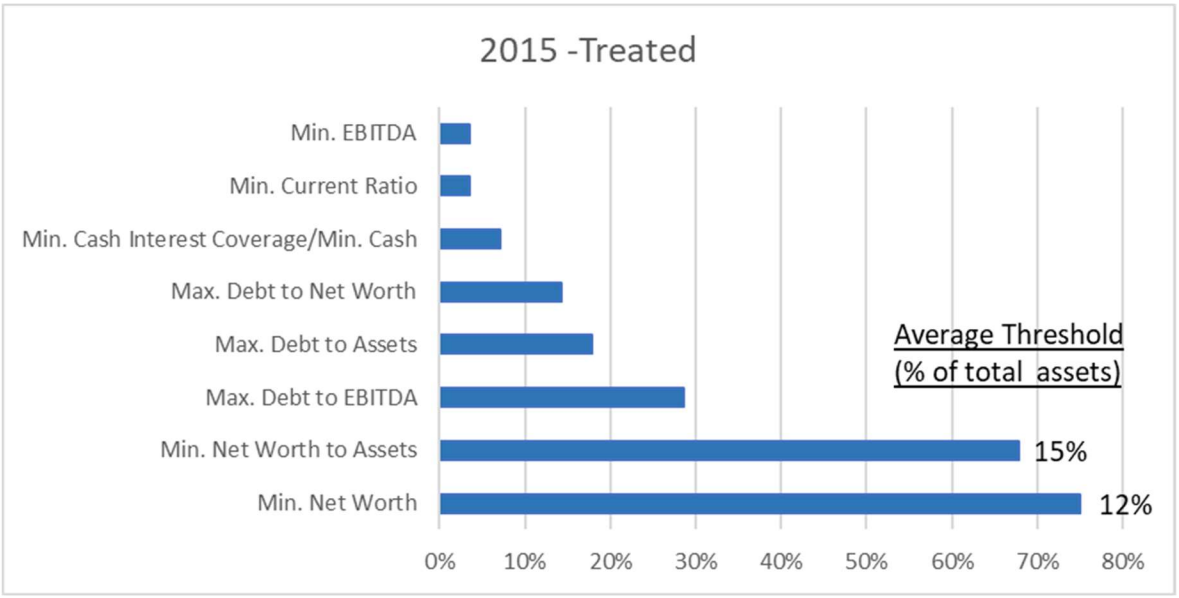
Panel A: Covenants in Control Firms Prior to Court Ruling



Panel B: Covenants in Control Firms for Bonds Issued After the Court Ruling



Panel C: Covenants in Treated Firms for Bonds Issued After the Court Ruling



Panel D: Examples of Equity Covenants that Exclude Different Financial Statement Items:

- Minimum equity to assets excluding customers advances.
- Minimum equity to assets excluding working capital items.
- Minimum equity or equity to assets excluding investment property revaluation profits.
- Minimum equity or equity to assets excluding accrued expenses and intangible assets such as: goodwill, patents, trademarks, IP.

Treated companies: 56% (26%) of minimum equity to assets covenants (minimum equity covenants) had a requirement to exclude one or more of the above financial statement items.

Control companies: Only 8% (0%) of minimum equity to assets covenants (minimum equity covenants) had a requirement to exclude one or more of the above financial statement items.

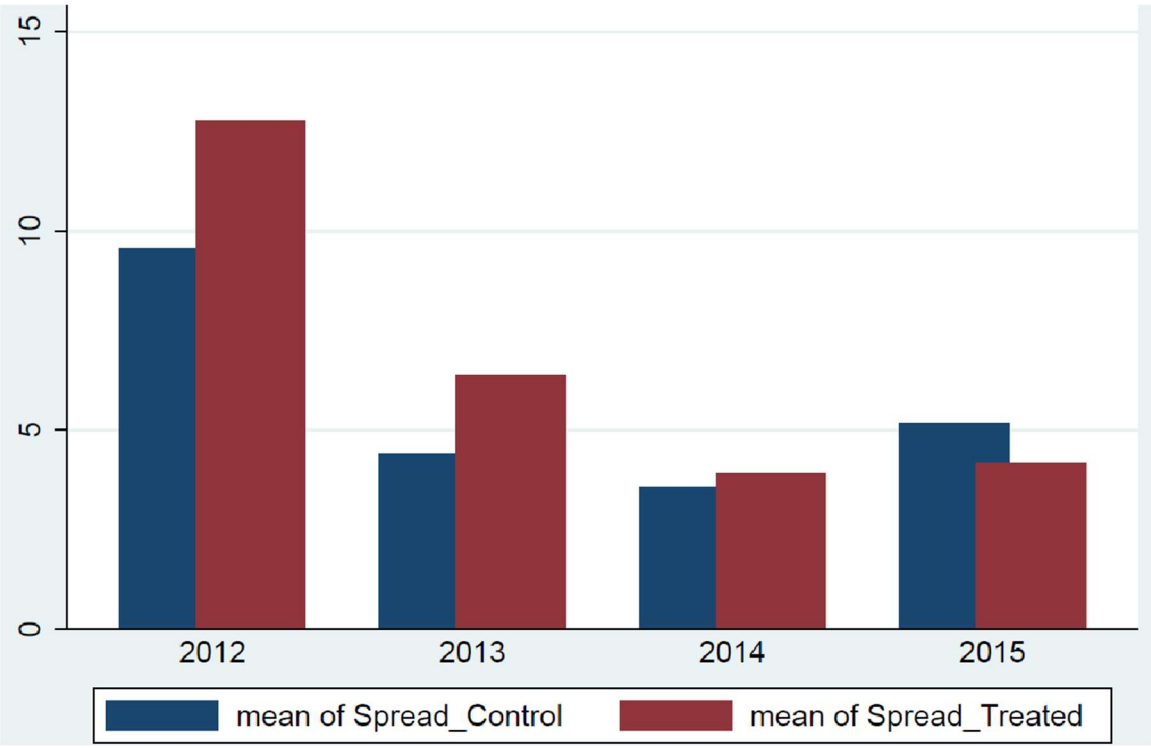
Appendix B: Variable Definitions

Variable	Definition
$Treated_i$	Indicator variable that takes the value one for companies whose bonds did not include financial covenants at the time of the court decision and their net worth was below the sample median (or 33rd percentile) as of 2012.
$Post_t$	Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012).
Net_Worth_{it}	Total assets net of total liabilities, of firm *i* in year *t,* scaled by total assets.
$Negative_Net_Worth_{it}$	Indicator variable that takes the value one if Net_Worth_{it} is negative, and zero otherwise
$SIZE_{it}$	Natural logarithm of total assets (measured in thousands of NIS, about 4 NIS equal 1 USD).
ROA_{it}	Operating profit deflated by total assets
ΔNet_Income_t	The change in the total income from fiscal year t-1 to t, scaled by year t-1 book value of total assets.
$Neg_\Delta Net_Income_{t-1}$	A dummy variable that takes the value one if ΔNet_Income_t is negative, and zero otherwise.
$Pos__\Delta Net_Income_t$	A dummy variable that takes the value one if ΔNet_Income_t is positive and zero otherwise.
DLA	Discretionary Long-term Accruals (DLA) are calculated in a similar manner to Teoh et al. (1998), where discretionary and non-discretionary total accruals are calculated using the cross sectional modified Jones model (Dechow et al., 1995) and are decomposed into short-term and long-term discretionary and non-discretionary components. Total accrual is the difference between net income and cash flow from operation: $$AC = Net\ Income - Cash\ Flows\ from\ Operation$$ Current accruals are defined as the change in noncash current assets minus the change in operating current liabilities: $$CA = \Delta Current\ Assets - \Delta Cash\ and\ Cash\ Equivalent - (\Delta Current\ Liabilities - \Delta Short\ Term\ Debt)$$ Non-discretionary accruals are expected accruals from a cross-sectional modified Jones model and the discretionary variables are the residuals. Expected current accruals for a firm in a given year are estimated from a cross-sectional regression in that year of current accruals on the change in sales using an estimation sample of all companies within the same industry. Thus, for the expected current accruals of firm *i* in year *t*, we run the following cross-sectional OLS regression: $$\frac{CA_{j,t}}{TA_{j,t-1}} = \alpha_0\left(\frac{1}{TA_{j,t-1}}\right) + \alpha_1\left(\frac{\Delta Sales_{j,t} - \Delta AR_{j,t}}{TA_{j,t-1}}\right) + E_{j,t}$$

	where ΔSales is the change in sales, ΔAR is the change in accounts receivables and TA is total assets. Non-discretionary current accruals are calculated as: $$NDCA_{i,t} = \hat{\alpha}_0\left(\frac{1}{TA_{i,t-1}}\right) + \hat{\alpha}_1\left(\frac{\Delta Sales_{j,t} - \Delta AR_{j,t}}{TA_{j,t-1}}\right)$$ where $\widehat{\alpha_0}$ is the estimated intercept and $\widehat{\alpha_1}$ is the slope coefficient for firm *i* in year *t.* Discretionary current accruals, DCA for firm *i* in year *t* are represented by the residual: $$DCA_{i,t} = \frac{CA_{j,t}}{TA_{j,t-1}} - NDCA_{i,t}$$ To obtain discretionary and non-discretionary long-term accruals, discretionary and non-discretionary total accruals are first estimated. The discretionary total accrual, DAC for firm *i* for year *t* is calculated in a similar manner as for current accruals except that now total accruals *AC* is used as the dependent variable and the regression includes gross property, plant, and equipment (PPE) as an additional explanatory variable: $$\frac{AC_{j,t}}{TA_{j,t-1}} = b_0\left(\frac{1}{TA_{j,t-1}}\right) + b_1\left(\frac{\Delta Sales_{j,t} - \Delta AR_{j,t}}{TA_{j,t-1}}\right) + b_2\left(\frac{\Delta PPE_{j,t}}{TA_{j,t-1}}\right) + E_{j,t}$$ Non-discretionary total accruals or NDTAC are calculated as: $$NDTAC_{i,t} = \hat{b}_0\left(\frac{1}{TA_{i,t-1}}\right) + \hat{b}_1\left(\frac{\Delta Sales_{j,t} - \Delta AR_{j,t}}{TA_{j,t-1}}\right) + \hat{b}_2\left(\frac{\Delta PPE_{i,t}}{TA_{i,t-1}}\right)$$ $\hat{b}_0$ is the estimated intercept, and $\hat{b}_1$ and $\hat{b}_2$ are the estimated slope coefficients from previews regression. Thus, non-discretionary long-term accrual is the difference between nondiscretionary total accrual and non-discretionary current accrual. $$NDLA = NDTAC - NDCA$$ Finally, discretionary long-term accrual is the difference between assets-scaled long-term accruals and non-discretionary long-term accruals. $$DLA = \frac{AC_{i,t}}{TA_{i,t-1}} - NDLA$$
$Abnormal\ Bond\ Return\ (-1+1)_{it}$	Value-weighted average of cumulative abnormal bond returns in a three-day window around the earnings announcement date (day zero). Abnormal bond returns are calculated separately for each bond series using the matching portfolio model of Bessembinder et al. (2009). As in Bessembinder et al. (2009), twelve matching portfolios are created by classifying bonds into six major rating categories (AA- or above, A+, A, A-, between BBB+ to BB, below BB), and then segmenting each of these categories into intermediate and long-term indices based on time to maturity (below three years, or

	equal and above three years). In addition to matching by rating and maturity we also match on indexation since some of the bonds in Israel are linked to the CPI index. Thus, we split each of the 12 portfolios into index linked and non-index linked, resulting in 24 portfolios. The 24 indices' daily returns are value-weighted and used as the expected bond return (EBR) for a matched bond in our sample. The abnormal bond return (ABR) for bond *b* of firm *i* at day *d* is calculated as the difference between the bond return (BR) and the expected return of the matched portfolio, excluding bond b: $$ABR_{bid} = BR_{bid} - EBR_{pd}$$ We than add up the three-day abnormal return of bond *b* of firm *i*, around the earnings announcement day *t*: $$CABR(-1+1)_{bit} = \sum_{d=-1}^{1} ABR_{bid}$$ We calculate the firm-level Abnormal Bond Return as the weighted average of all bonds issued by firm *i* that were traded around the earnings announcement date *t*: $$Abnormal\ Bond\ Return\ (-1+1)_{it} = \sum_{b=1}^{n} W_b * CABR(-1+1)_{bit}$$

Appendix C: Average Bond Yield Spreads for Treated and Control Firms (above government bonds of similar maturity and indexation)



Note: The figure describes the annual (simple) average bond yield spread in treated firms (red bars) vs. control firms (blue bars). For firms with multiple bond series, we use the value-weighted average of the daily bond spreads of all the bond series. Spreads are measured relative to government bonds with similar maturity and indexation (drawn from the Bank of Israel). The daily spreads are winsorized at the 1st and 99th percentiles. Treated (control) firms are firms that do not (do) have covenants and whose net worth over assets in 2012 is below the sample median.

Appendix D: Alternative Calculations of Bond Excess Returns and Changes in Firm Value

Panel A: Excess Bond Returns in response to the Court Decision (April 30, 2013), relative to a General Index of Corporate Bonds

	Median Net Worth				p33 Net Worth			
	N	Low Net Worth (1)	N	High Net Worth (2)	N	Low Net Worth (3)	N	High Net Worth (4)
No-covenant Firms	88	0.18***	74	0.00	61	0.25**	101	0.01
Firms with Covenants	105	-0.02	67	-0.07	68	0.00	104	-0.07
Difference		0.2***		0.07		0.25**		0.08
Std Error		(0.075)		(0.07)		(0.10)		(0.06)

Panel B: Change in Total Firm Value assuming the Value of Bank Debt Changes at the Same Rate as the Value of Corporate Bonds

	Median Net Worth				p33 Net Worth			
	N	Low Net Worth (1)	N	High Net Worth (2)	N	Low Net Worth (3)	N	High Net Worth (4)
No-covenant Firms	31	0.22	34	0.02	22	0.28	43	0.03
Firms with Covenants	23	0.07	28	0.06	14	0.13	38	0.04
Difference		0.15		-0.04		0.15		-0.01
Std Error		(0.25)		(0.20)		(0.30)		(0.19)

Panel C: Average Change in Firm Value: Firms with and without Bank Loans

Panel C1: Firms with Bank Loans

	Median Net Worth				p33 Net Worth			
	N	Low Net Worth (1)	N	High Net Worth (2)	N	Low Net Worth (3)	N	High Net Worth (4)
No covenant firms	23	0.02%	24	0.05%	15	0.11%	31	0.00%
Firms with covenants	21	0.13%	26	0.09%	11	0.25%	35	0.06%

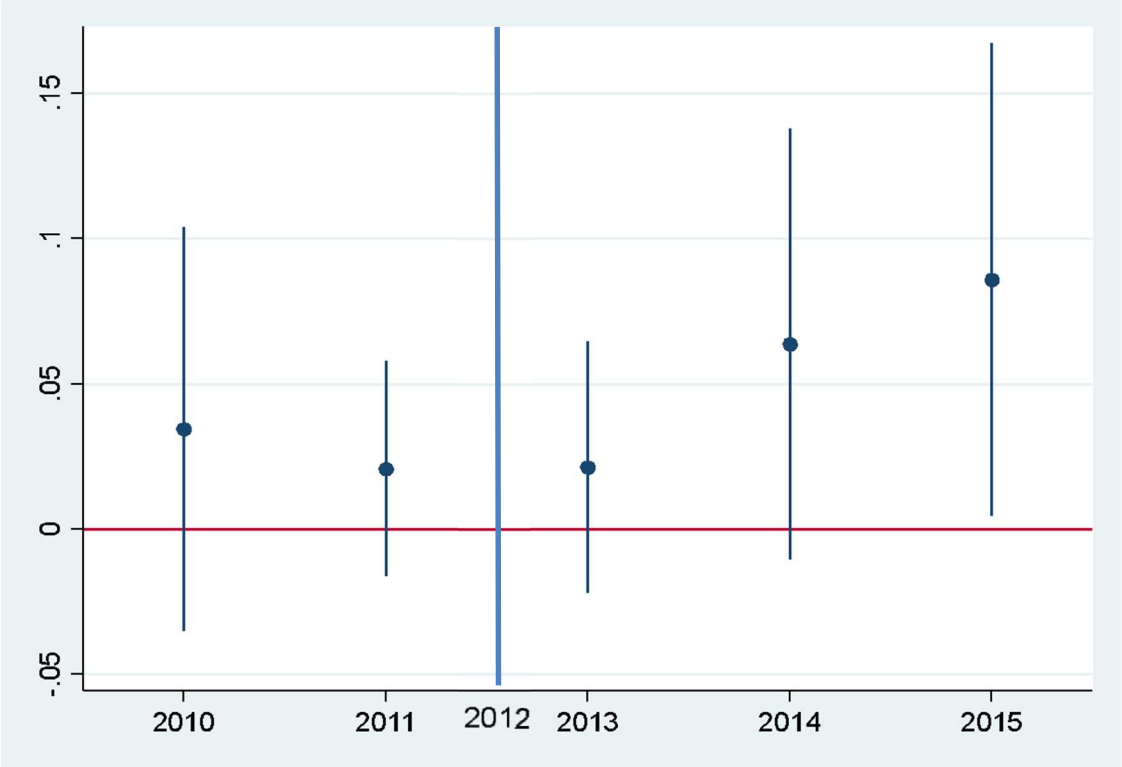
Panel C2: Firms without Bank Loans

	Median Net Worth				p33 Net Worth			
	N	Low Net Worth (1)	N	High Net Worth (2)	N	Low Net Worth (3)	N	High Net Worth (4)
No covenant firms	8	0.79%	10	-0.05%	7	0.64%	11	0.12%
Firms with covenants	3	-0.31%	2	-0.30%	3	-0.31%	2	-0.30%

Note: Panel A presents excess bond returns, in percent, on April 30, 2013, the date of the court ruling, relative to a general index of corporate bonds ("*klali konzerni*"). Column 1 (column 3) include firms whose net worth over assets in 2012 is below the sample median (the 33rd percentile). Column 2 (column 4) serve as a placebo test and include firms whose net worth over assets is above the sample median (alternatively, 33rd percentile). The change in total firm value, presented in Panel B, is calculated as the sum of excess bond return from Panel A multiplied by the firm's value of outstanding debt (i.e., of both previous day market value of bond and prior year-end value of bank loan. for firms with multiple bonds we sum up the product of excess bond return and bond capitalization *of all bonds*, and the product of the *average* excess bonds return and the value of bank loan), plus stock ER (from Table 3) times the firm's previous day market capitalization. The result is scaled by the previous day's combined market value of the firm's stocks and bonds and prior year-end value of bank loan. The calculation assumes that the value of outstanding bank debt changes at the same rate as the firm's outstanding bonds (as in Maxwell and Stephens, 2003). The results are very similar when we assume that the value of bank debt remains constant. The number of observations in Panel A is larger than the number of firms in the sample because some firms have issued multiple bond series. The number of observations in Panel B is smaller than then number of firms in the sample because some firms do not have their equity traded. In Panel C we present the average change in firm value, from Panel B, separately for firms with bank loans (in Panel C1) and without bank loans (in Panel C2).

Appendix E: Graphical Presentation of Regression Coefficients

Net Worth Regression Coefficients



Note: this figure presents a different version of the regression in Table 4A, Col. 1. Treated firms do not have covenants and their net worth over assets in 2012 is below the sample median. As in Table 4A, the dependent variable is Net Worth (scaled by total assets), but, instead of the No Covenant*Post interaction term, we use year-specific treatment indicators (e.g., No Covenant*2014). As in Table 4A, the regression includes controls for Size (log of assets) and ROA (operating profits over assets), as well as firm and year fixed effects. 2012 constitutes the base year (omitted). The figure displays the coefficients and 95% confidence intervals for the interaction terms between a dummy denoting treated firms and each year. Standard errors are clustered by firm.

Appendix F: The Decision to Adopt Aggressive Accounting Practices – A Model

Assume there is a single firm whose assets are initially (in period 0) worth V_0. The value of the firm equals the face value of its debt (outstanding bonds, bearing no interest; the firm has no other liabilities), B, plus the value of equity, S: $V_0=B+S$. At time zero, the firm is solvent, i.e., $B<V_0$.

There are three periods. A firm may choose to invest in a risky project in the initial period, period 0, whose outcome is realized in period 1. If it is not liquidated, the firm can choose to invest in a similar project in period 1, which will be realized in period 2. In period 2 the firm is liquidated, bondholders receive $\min\{B,V_2\}$ and shareholders receive $\max\{V_2-B,0\}$.

The initial investment project requires the firm's entire capital (V_0) and is risky. In period 1, the project will yield $V_1=V_0*(1+k)$ with probability p and $V_1=V_0*(1-k)$ with probability $(1-p)$. The project is assumed to have a positive NPV, such that $p*V_0*(1+k) + (1-p)*V_0(1-k) > V_0$. If the firm is solvent in period 1 (see below), it can invest whatever assets it has, V_1, in another risky project with the same characteristics. Investment decisions are made by management, acting in the interest of shareholders. We also assume that, if the realization of the first investment project is good, bondholders will be paid their money in full, even if the second period's project fails.

Under the pre-court ruling regime:

- Bondholders in firms with financial covenants can impose bankruptcy if the firm's assets drop below the face value of their bonds plus a margin specified by the covenants, M. This will happen if the realization of the investment project is bad so that $V_0*(1-k) < B+M$. The probability of such involuntary bankruptcy increases with k (the project riskiness), with M (the covenants' safety margin), as well as with $1-p$ (the probability of a bad realization of the project). Bondholders are paid in full if $B < V_0*(1-k) < B+M$.
- In firms without covenants, bondholders cannot impose involuntary bankruptcy in period 1 regardless of the investment project's outcome. This is because there is no

balance sheet test for insolvency (prior to the court ruling) and the firm, by definition, is current on its payments (which are assumed to be zero). Only management (acting on behalf of shareholders) has the power to decide whether to continue operating the firm by investing in a second project. Given that the project has a positive NPV, shareholders would prefer to invest in a second project even in cases where bond holders would prefer to be paid and liquidate the firm at the end of period 1.

Following the court ruling:

- Nothing changes for firms with financial covenants.
- Bondholders in firms without financial covenants now have a new, implicit, covenant according to which they can impose involuntary bankruptcy on the basis of a balance sheet test (if the value of firm's assets drops below the face value of the bonds, that is, a covenant with M=0). Bondholders in these firms are now at least as well off as before and strictly better off (at the expense of shareholders) in states of the world where the value of the assets in period 1 falls below the value of the bonds' face value but is larger than the expected value for the bondholders if the firm takes on the second period's project:

$$B_2|\text{invest} = \min\{p*V_0*(1-k)*(1+k),B\}+ (1-p)*\min\{V_0*(1-k)*(1-k),B\} < V_0*(1-k) < B$$

These conditions hold if the probability of success is low enough, or the risk is high enough, consistent with the positive price reaction of bonds and the negative price reaction of stocks reported in the event study.

Firm management, however, acting in the interest of shareholders, can respond to the regime change in two ways:

- A firm with a bad realization of its first period project that would have gone bankrupt if $V_0*(1-k)<B$ can raise new equity, $V_1'=V_1+ F = V_0*(1-k)+F$, so as to increase its

value above *B*, avoid bankruptcy, and invest in the second project. In this case, shareholders will receive $S_2|\text{invest} = p*\max\{V_0*(1-k)*(1+k)+F-B,0\}+(1-p)*\max\{V_0*(1-k)*(1-k)+F-B,0\}$, which may be preferable to not investing in the second period, even if $V_0*(1-k)*(1-k)+F-B<0$ for large enough values of *p* and *k*. The reason why shareholders are willing to inject new capital (equity) into the firm is because of their ability to maintain control and decide to invest in the second project (there may also be private benefits of control, which are not modelled here). The cost (or risk) is, of course, the possibility of losing *F*. An injection of capital is also beneficial to bondholders who now have an additional capital buffer, *F*, so that if the second period's project fails, they will receive $\min\{V_0*(1-k)*(1-k)+F,B\}$, leaving shareholders with $\max\{V_0*(1-k)*(1-k)-B-F,-F\} < \max\{V_0*(1-k)*(1-k)-B,0\}$

- Alternatively, a firm whose first period's project has failed and whose value is below *B* may choose not to issue new equity and, instead, to adopt aggressive accounting practices so as to inflate the reported value of its assets:

$V_1'=V_1+F' = V_0*(1-k)+F'$, where *F*' equals to zero in reality but is reported to be worth F.

Now a firm with $V_0*(1-k)<B< V_0*(1-K)+F'$ will not be forced into bankruptcy and will be able to invest its remaining capital stock in the second period's project (which has a positive NPV) without actually raising any new capital. Unlike the case of raising new equity, this is equivalent to restoring the pre-court ruling equilibrium so that, if the second period's project fails, bondholders will only receive $\min\{V_0*(1-k)*(1-k),B\}$ and shareholders will receive $\max\{V_0*(1-k)*(1-k)-B,0\}$, leaving bondholders worse off than in both the post-ruling regime without firm reaction and the post-court ruling regime with new equity.

We do not model explicitly the costs of using accounting aggressiveness; these may involve reputational costs, regulatory sanctions and so forth. Presumably, the pre-court

ruling level of accounting aggressiveness reflected an equilibrium of (marginal) costs and benefits. The new regime, however, raised the benefits (avoiding involuntary bankruptcy and creditor control), while leaving the costs unaffected. If the costs associated with aggressive accounting practices are low enough then, when management is allowed considerable discretion in its reporting (as in IFRS), and when faced with the unexpected introduction of a balance sheet test for insolvency, firms may choose to use aggressive accounting to improve the appearance of their balance sheet rather than raise capital and improve their financial conditions in reality.

Appendix G - Equity Issuances and Discretionary Long-Term Accruals

Panel A: Seemingly Unrelated Regression (SUR) instead of Separate Estimates (Tables 5 and 6)

	Below Median Net Worth		Below P33 Net Worth	
	Issuances	DLAC	Issuances	DLAC
	(1)	(2)	(3)	(4)
Post*(No Covenant)	0.024*	0.022***	0.034**	0.033**
	(0.0125)	(0.008)	(0.017)	(0.0155)
SIZE	0.029	0.0055	0.029	0.007
	(0.030)	(0.009)	(0.030)	(0.009)
ROA	-0.009	0.072	-0.022	0.058
	(0.044)	(0.053)	(0.042)	(0.049)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	263		148	

Note: The table presents the results of two seemingly unrelated regression models, in columns 1 and 2, and in columns 3 and 4, corresponding to the separately-run regressions in columns 1 and 3 of Tables 5 and 6 for firms whose net worth is below the 2012 sample median (33rd percentile). In columns 1 and 3, the dependent variable is the equity capital raised (in seasoned public offerings), scaled by total assets. In columns 2 and 4, the dependent variable is DLAC (Discretionary Long-Term Accruals), also scaled by total assets. New share issuances are as in Table 5. The calculation of discretionary and non-discretionary total accruals and short-term accruals follows the cross-sectional modified Jones model of Dechow et al. (1995), and these are used to extrapolate the long-term discretionary accruals as in Teoh et al. (1998). Further details can be found in Table 6 and Appendix B. Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (or the 33rd percentile). *Post* is an Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). *Size* (log of assets) and *ROA* (operating profits over assets) are both winsorized at the 1st and 99th percentiles. Firm and year fixed effects are included. Robust standard errors clustered by firm are reported in parentheses. We utilize the STATA package "suregr.ado" obtained from http://fmwww.bc.edu/repec/bocode/s. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Panel B: Multinomial Logit Instead of Separate Estimates (Tables 5 and 6)

	Below Median Net Worth			Below P33 Net Worth		
	Increasing accruals	Raising new equity	Increasing accruals & Raising new equity	Increasing accruals	Raising new equity	Increasing accruals & Raising new equity
	(1)	(2)	(3)	(4)	(5)	(6)
Post*(No Covenant)	1.42**	2.66*	17.50	2.27***	2.81*	16.70
	(0.62)	(1.61)	(1040.11)	(0.87)	(1.71)	(747.08)
SIZE	-0.18**	-0.06	-0.61***	-0.25**	-0.18	-0.89**
	(0.09)	(0.15)	(0.22)	(0.11)	(0.16)	(0.35)
ROA	-0.95	-3.96	-6.83*	0.56	-4.01	-5.42
	(2.40)	(3.52)	(4.15)	(2.91)	(3.71)	(5.39)
Year FE		YES			YES	
Firm FE		YES			YES	
Observations		263			148	
Pseudo R^2		0.13			0.17	

Note: The table presents the results of a multinomial logistic regression analysis using the sample of firms with and without covenants whose net worth over assets in 2012 is below the sample median (33rd percentile), in columns 1, 2 and 3 (columns 4, 5 and 6). The categorical dependent variable corresponds to the categories in the column headings, with the reference category (0) being "do nothing." The variables are the same as in Panel A. Firm and year fixed effects are included. Robust standard errors clustered by firm are reported in parentheses. Significance levels are denoted by ***, **, and *, indicating p-values of 0.01, 0.05, and 0.10, respectively.

Appendix H: The C-Score Measure of Conservatism (Khan and Watts, 2009; Tan, 2013)

	Dependent Variable: C_SCORE			
	Median Net Worth		p33 Net Worth	
	Low Net Worth (1)	High Net Worth (2)	Low Net Worth (3)	High Net Worth (4)
Post*(No Covenant)	-0.0002	0.0001	-0.0004	0.0001
	(0.0004)	(0.0002)	(0.0008)	(0.0002)
SIZE	0.001	0.0007	0.0010	0.0007*
	(0.001)	(0.0005)	(0.0014)	(0.000)
ROA	-0.007	-0.002*	-0.0069	-0.002**
	(0.005)	(0.001)	(0.0077)	(0.001)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Constant	-0.0129	-0.009	-0.0133	-0.0093*
	(0.0124)	(0.006)	(0.0188)	(0.0053)
N	242	287	151	378
R^2	0.27	0.37	0.28	0.40

Note: The table reports the results of difference-in-differences regression estimates of conservatism after the court ruling. The dependent variable, *C_SCORE*, is a firm-year conservatism measure, based on Khan and Watts (2009) and Tan (2013). It is estimated by first running the following cross-sectional model:

$$ScaledEarnings_i = \beta_0 + \beta_1 NegReturn_i + Return_i(\mu_1 + \mu_2 SIZEMV_i + \mu_3 MB_i + \mu_4 Leverage_i) + NegReturn_i * Return_i(\lambda_1 + \lambda_2 SIZEMV_i + \lambda_3 MB_i + \lambda_4 Leverage) + (\delta_1 SIZEMV_i + \delta_2 MB_i + \delta_3 Leverage_i + \delta_4 NegReturn_i SIZEMV_i + \delta_5 NegReturn_i MB_i + \delta_6 NegReturn_i Leverage_i)$$

$ScaledEarnings_i$ is earnings scaled by the lagged market value of equity; $Return_i$ is the annual buy and hold stock return of firm i; $NegReturn_i$ is a dummy variable that takes the value one if $Return_i$ is negative, and zero otherwise; $SIZEMV_i$ is the natural log of market value of equity of firm i; MB_i is market value of equity divided by book value of equity; and $Leverage_i$ is the leverage ratio of firm i (short term and long term debt/market value of equity). The estimated coefficients are then used to construct a firm-year specific *C_SCORE*, which is calculated as: $C_SCORE_i = \hat{\lambda}_1 + \hat{\lambda}_2 SIZEMV_i + \hat{\lambda}_3 MB_i + \hat{\lambda}_4 Leverage_i$ Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median (33rd percentile). *Post* is an Indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). *Size* is the natural log of assets. Column 1 (column 3) include firms that are below the sample median (33rd percentile) of net worth over assets in 2012. Column 2 (column 4) serve as a placebo test and include firms with and without financial covenants whose net worth over assets is above the sample median (33rd percentile). Firm and year fixed effects are included throughout. All Continuous variables that are used to construct the C_SCORE, and the control variables in the final regressions are winsorized at the 1st and 99th percentiles. Robust standard errors clustered by firms are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Appendix J: Illustrations of Practices Increasing Net Worth

Increased long-term discretionary accruals and reduced conservatism may manifest in various ways. In our sample, over 70% of the treated firms have registered revenues from at least one of the following four accounting practices in the post-court ruling period, possibly to inflate their net worth: Registering revenues from fair value asset appraisals/revaluations (27 treated firms, over half of all treated firms); registering revenues from business combinations by revaluating the assets and liabilities of a subsidiary/associate company (13 treated firms, a quarter of all treated firms); registering revenues from the early adoption of new accounting standards (six treated firms); and registering revenues from the cancelation of impairment provisions (four treated firms). A detailed illustration of the use of these methods appears below. This is not designed to prove that treated firms have used these methods more frequently or more aggressively than firms in the control group, but rather to show some real-world examples of practices which might affect discretionary long-term accruals or accounting conservatism.

G.1 Fair Value Appraisals of Investment Property under IFRS (used by 27 treated firms)

As noted above, IFRS enables the use of managerial discretion in accounting reports. For example, the use of fair value accounting, whereby companies regularly (in each reporting period) adjust the value of certain items in their financial statements (e.g., investment property; financial assets and liabilities), opens the door to aggressive revaluations that increase the company's net income and net worth, as changes in the fair value estimates are recognized as a profit/loss when they occur. Dietrich, Harris and Muller (2000) find that UK firms exploit the fair value of investment property to report higher earnings and smooth (reported) net asset changes. Chen, Gavious and Steinberg (2019) find that Israeli firms exploit fair value accounting to increase dividends to the detriment of bondholders. Moreover, an audit report published by ISA with regard to the practice of revaluation of investment property by public companies sheds light on the ways in which firms manipulate their fair value appraisals: Most investment properties are evaluated using the Discounted Cash Flow (DCF) method; ISA points out the possibility of manipulations

both in estimating higher projected income (e.g., rent) from the asset (the numerator in the DCF model), as well as in using a lower discount rate (the denominator in the DCF model). To illustrate, a real estate company in our sample changed the method used to value its property from the DCF approach, combined with a comparison to similar assets before 2013, to the (easier to manipulate?) DCF method only after the court ruling. We also observe firms inflating the cash flow projections (the numerator) associated with their property in comparison with prior years, as well as firms lowering the discount rates (the denominator) used in estimations prior to the court ruling. Although these changes in the estimation methods and assumptions could conceivably reflect the company's actual expectations regarding the cash flows and risk of the asset, they highlight the relative ease of changing the underlying assumptions and of recording optimistic appraisals of investment assets.

G.2 Revenues from Business Combinations (used by 13 treated firms)

When control of a business is obtained, its value is recorded according to the acquisition method, whereby the assets acquired and the liabilities assumed are measured at fair value. Importantly, the fair value measurement is applied when control is achieved, or when it ceases to exist, regardless of whether non-controlling shares in the acquired company were held by the acquirer prior to the date of achieving control, or whether non-controlling shares in the acquired company remain with the acquirer after the date of formally losing control.[37] Therefore, a firm can potentially buy/sell a relatively small equity stake in an existing associate/subsidiary, leading to a revaluation of the assets and liabilities of the investee so as to record any resultant gain in the profit and loss statement, increasing the acquiring company's net worth. To illustrate the use of this mechanism, one of the treated companies in our sample applied this method to record a transitory profit as follows: at the beginning of 2013, it held 36.7% of the outstanding shares of an

[37] See International Financial Reporting Standard No. 3 (IFRS 3) regarding the accounting for business acquisition, including business combination, achieved in stages, as well as International Accounting Standard No. 28 (IAS 28) regarding the accounting for investment in associates.

affiliated company, giving it "effective control"[38] and therefore the financial statements were consolidated. During the second quarter of 2013 (following the court ruling), the company sold 3.6% of its holdings in the affiliate, remaining with an equity stake of 33.1% and claiming that its effective control had ceased to exist. This change led to the revaluation of the investment in the affiliate at fair value and a profit of 686 million NIS (about $200 million) was recorded as a result.

G.3 Additional Mechanisms

In addition to the practices described above, two treated real estate companies in our sample chose to adopt IFRS 15 before it became mandatory. This enabled them to include future profits from current contracts with customers earlier than these sources of income would have been recorded otherwise, resulting in a significant increase in the profitability and net worth of the two companies. Another company registered an income of NIS 14 million from the cancelation of past impairments of land and inventory. The firm explained the cancelation of impairment by a reduction in the uncertainty surrounding one project and by a revised external appraisal of another real estate project.

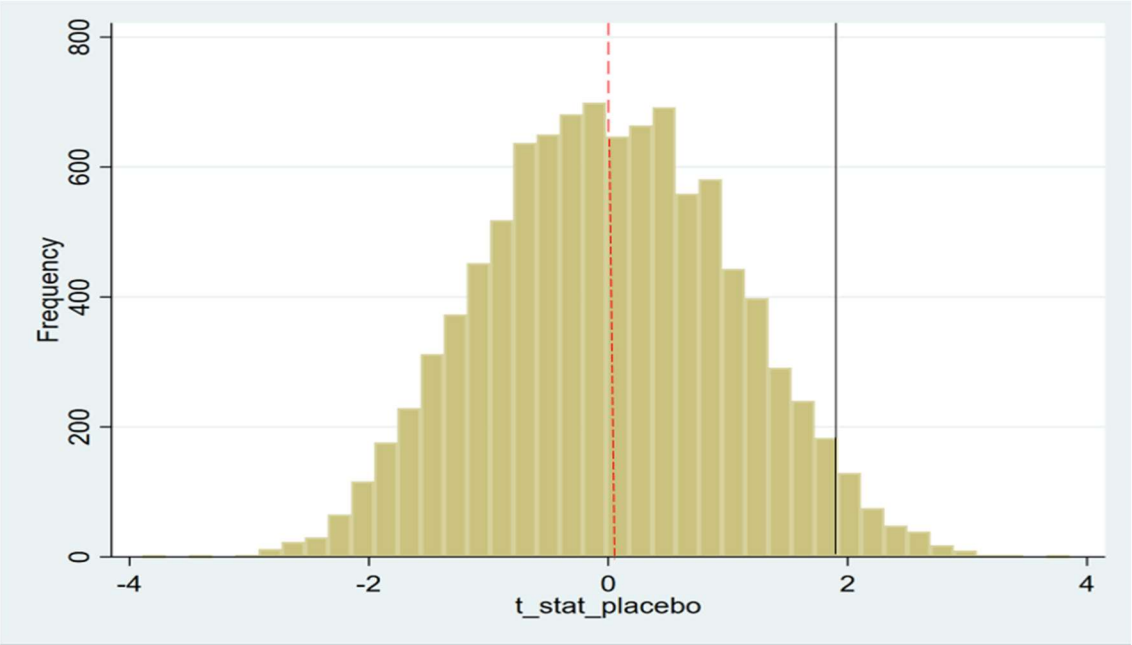
[38] Note, that IFRS and US GAAP define control differently. Under IFRS there is more discretion in the determination of control (which incorporates the concepts of effective control and substantive potential voting rights) that may lead to divergent accounting results relative to US GAAP. See pp. 1-2 in PWC's guide for business combinations https://www.pwc.nl/nl/audit-assurance/assets/documents/pwc-guide-business-combinations-noncontrolling-interests.pdf.

Appendix K: Propensity Score Matching Results corresponding to the Results in Tables 4A, 4B and 6, Columns (1) – (2)

	Dependent Variable: Net Worth		Dependent Variable: Neg. Net Worth		Dependent Variable: DLAC	
	Median Net Worth		Median Net Worth		Median Net Worth	
	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth	Low Net Worth	High Net Worth
	(1)	(2)	(3)	(4)	(5)	(6)
Post*(No Covenant)	0.051*	-0.021	-0.078*	0.022	0.025**	0.018
	(0.027)	(0.023)	(0.045)	(0.022)	(0.010)	(0.012)
Year FE	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
N	254	238	254	238	240	213
Adj R^2	0.01	0.001	0.02	0.01	0.18	0.05

Note: The table reports the results of difference in differences regressions explaining changes in net worth, negative net worth, and discretionary long-term accruals (DLAC) following the court ruling, corresponding to the results of Columns (1)-(2) in Tables 4A, 4B and 6, respectively. Unlike the original tables, the estimation here is based on matching treated firms to control firms on the basis of *Size* (log of assets) and *ROA* (operating profits over assets), both winsorized at the 1st and 99th percentiles, as well as industry. Matching is based on the "nearest neighbor propensity score matching" without replacement, hence the number of observations is smaller than in the original tables. Columns (1) and (2) correspond to the same columns in Table 4A; Columns (3) and (4) correspond to Columns (1) and (2) in Table 4B; and Columns (5) and (6) correspond to Columns (1) and (2) in Table 6. Treated firms are firms that do not have covenants and whose net worth over assets in 2012 is below the sample median. *Post* is an indicator variable that takes the value one for the three years after the court ruling (2013-2015) and zero for the prior year (2012). In Columns (1)-(2), the dependent variable is Net Worth, calculated as total assets net of total liabilities, scaled by total assets (values below -1 or above +1 are omitted). In columns (3)-(4), the dependent variable is Negative Net Worth, a dummy variable which takes the value one if Net Worth is negative, and zero otherwise. In columns (5)-(6) the dependent variable is discretionary long-term accruals, DLAC, calculated as in Teoh et al. (1998), where discretionary and non-discretionary total accruals are calculated using modified Jones model of Dechow et al. (1995) and are decomposed into short-term and long-term discretionary and non-discretionary components; Appendix B provides further details. Columns 1, 3 and 5 include firms that are below the sample median of net worth over assets in 2012. Columns 2, 4 and 6 serve as a placebo test and include firms that do not (do) have financial covenants whose net worth over assets above the sample median. Firm and year fixed effects are included throughout. Robust standard errors clustered by firms are reported in parentheses. ***, **, and *, indicate significance levels of 0.01, 0.05, and 0.10, respectively.

Appendix L: Monte Carlo Simulations



The figure presents the distribution of the *t*-statistics derived from 10,000 Monte Carlo simulations in which we pick at random 52 "placebo treated firms" (the number of firms with below-median net worth and no covenants) and run a regression similar to that in Table 4A, Column 1. The *t*-statistic refers to the coefficient of "placebo treated" (no covenant) times *post* (the post-court ruling period). The solid (black) vertical line is the true *t*-statistic on the coefficient (no covenant) times *post* from Table 4A, Column 1 (1.900). The dashed (red) vertical line is the average simulated *t*-statistic (0.002).

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