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**Does Investor Protection Regulation Induce
Poorly Governed Firms to Go Private?**

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האם רפורמות להגנה על משקיעים גורמות לחברות עם ממשל תאגידי באיכות נמוכה להימחק ממסחר בבורסה?

עודד כהן

תקציר

מחקרים קודמים הראו כי עלייה בעלויות הציות בעקבות רפורמות שנועדו להגביר את ההגנה על משקיעים, גרמו לפירמות ציבוריות להימחק ממסחר בבורסה. תוך שימוש במתודולוגיית הפרש הפרשים אני מראה בנייר זה כי גם לירידה בהיקף טובות ההנאה הפרטיות המתרחשת לאחר כניסתן לתוקף של רפורמות המגבירות את ההגנה על משקיעים יש תפקיד בהקטנת האטרקטיביות של שימור החברה כציבורית בעיני בעלי השליטה. באופן ספציפי אני מראה כי לאחר רפורמות ברמת המדינה שהגבירו את ההגנה על משקיעים בישראל בשנת 2011, גברה ההסתברות של פירמות שהיו עם ממשל תאגידי גרוע ערב הרפורמות להימחק ממסחר בבורסה ולהפוך לפרטיות. יתירה מזאת, הממצאים בנייר תומכים בהשערה לפיה הגבלת היכולת של בעל שליטה הנושא בתפקיד ניהולי בפירמה לעשות שימוש בתפקידו לטובת עושיק בעלי מניות המיעוט לאחר הרפורמות, הקטינה את האטרקטיביות של שימור החברה כציבורית בעיני בעלי השליטה בחברות אלו ועודדה אותם למחוק אותה ממסחר בבורסה.

Does Investor Protection Regulation Induce Poorly Governed Firms to Go Private?

Oded Cohen

Abstract

Earlier studies show that an increase in compliance costs following investor protection reforms induces public firms to delist from stock exchanges. Using a difference-in-differences approach, I show in this paper that a decrease in the private benefits of control following investor protection reforms may also make listing less attractive for the controlling shareholders and induces them to take the firms private. Specifically, following extensive investor protection reforms at the country level in Israel, firms with inferior standards of corporate governance, pre-reform, were more likely to go private post-reform. Moreover, my results support the conjecture that by restricting controlling shareholders from using a senior executive position as a platform for tunneling, the reforms reduced their incentive to keep their firms public.

1. Introduction

Over the past 20 years, there has been a worldwide phenomenon of public companies choosing to delist from stock exchanges. Martinez and Serve (2011) report that between 1995 and 2005, the number of public companies in Europe declined by 25%. Grullon, Larkin, and Michaely (2019) report that between 1997 and 2014, the number of public companies in the US declined by 50%. Similarly, between 2007 and 2017 the number of public companies in Israel declined by 29%.

It is apparent that the delisting phenomenon is not driven by only one factor. For example, Doidge, Karoly, and Stulz (2017) review various explanations for the increase in delistings in the US, including the existence of a general trend of decline in the number of both private and public companies; a sharp drop in the number of small public companies, together with a more moderate increase in the number of large companies; and an investor protection regulation that took effect in the early 2000s. The authors show that some of the suggestions they raised do not explain the phenomenon and some of them explain it only partially. In addition, Grullon, Larkin, and Michaely (2019) find that the increase in delistings in the US is accompanied by an increase in market concentration and an increase in the profitability of the non-delisted companies.

Though we are not able to map all the reasons for the delisting phenomenon, most of the earlier studies agree that legislation aimed at increasing investor protection has a role in inducing firms to delist (e.g., Kamar, Karaca-Mandic, and Talley, 2008). A common explanation for the rise in the number of delisting announcements following investor protection reforms is the existence of compliance costs. In particular, to the extent that the marginal increase in the net listing costs following the reforms is high enough, it may offset the total listing benefits and induce management to delist (e.g., Engel, Hayes, and Wang, 2007).

In this paper, I argue that even if investor protection reforms result in a net increase in a firm's value, limiting the controlling shareholders' (CSHs) ability to draw private benefits of control (PBCs) reduces their incentive to keep the firm public. Specifically, using a difference-in-differences (DID) approach, Cohen (2020b) shows that extensive investor protection reforms at the country level that took effect in Israel around 2011 (henceforth "the reforms") substituted for the internal mechanisms of governance among firms with a low quality of governance pre-

reform, and aligned them with a higher standard of investor protection. As a result of the reforms, CSHs became more limited in implementing tunneling activities through related-party transactions (RPTs) and the firms increased in value. In the present paper, I examine whether the post-reform decrease in PBCs made the status of being public less attractive for CSHs in poorly governed firms and induced them to take the firms private.

I examine this question with a sample of 287 firms registered on the Tel Aviv Stock Exchange (TASE), composed of 137 firms that announced a delisting during the period 2007–2015 and 150 firms that remained public during those years. I use the corporate governance index (CGI) proposed in Cohen (2020a) and described in detail in Appendix 1 and calculate a corporate governance (CG) score for each firm-year observation. I define a firm as a poorly governed, pre-reform, if its average CGI score in those years was lower than the median CGI score. I consider the poorly governed firms pre-reform, whose CSHs decreased the PBCs following the reforms, as the treated group and the well-governed firms in this period as a control group. Then I examine whether the likelihood of the treated group to go private, post-reform, increased, compared to that of the control group.

Consistent with the notion that drawing PBCs makes the public status of a poorly governed firm more attractive for CSHs, I find that, keeping other variables equal, the likelihood of the treated group to go private, pre-reform, was significantly lower than that of the control group. In the post-reform years, after the ability of CSHs to divert assets from the firm became more limited, the likelihood of the treated group to go private increased until it was not significantly different from that of the control group. I also find that the specific aspects of CG whose low quality, pre-reform, predicts an increase in the likelihood to go private post-reform, are board independence and board qualifications measured, respectively, by the proportion of directors with financial, industry, and managerial expertise and by the proportion of CSHs and external directors on the board and its committees.

Moreover, in the post-reform years, and specifically following the 2011 enactment of Amendment 16 to the Companies Law, the compensation of CSHs who are employed as senior executives in a firm (henceforth “controller executives”) became subject to more stringent approval: the Amendment raised the required majority among minority shareholders to approve controllers’ compensation (from a third of the minority to a majority of the minority) and, in

addition, approvals, which had been valid indefinitely before 2011, now had to be renewed at the general meeting each three years. Consistent with the conjecture that strengthening the minority shareholders' power limits the controller executives' ability to use their positions to draw PBCs, Fried, Kamar, and Yafeh (2019) show that CSHs became more likely to quit their executive positions following the legislation of Amendment 16. In the present paper, I develop this line of research by showing that, post-reform, controller executives also became more likely to take firms private.

Yet, one can argue that the employment of optimal controller executives under Amendment 16 became more complicated so that the incremental regulation costs required for their employment exceed the benefits they yield to the firm, in which case the firm will choose to go private. I mitigate this concern with an event study analysis. In particular, I show that consistent with the conjecture that controller executives use their position to draw PBCs, cumulative abnormal returns around the legislation of Amendment 16, which aims to enhance the supervision of their employment, were significantly higher among firms with controller executives.

My findings are robust to various analyses, including controlling for change in the post-reform likelihood of a delisting announcement among small firms, to capture the effect of an increase in compliance costs; repeating the analysis with a matched-sample of firms from the treated and the control groups; excluding firms that did not comply with the TASE rules at the time of a delisting announcement; excluding firms that merged with another company due to a business opportunity; and setting the post variable on different points in time to rule out the possibility that the increase in the likelihood of the treated group to go private was driven by a pre- or post-reform trend.

My study is related to two earlier studies. Leuz, Triantis, and Wang (2008) show that the Sarbanes–Oxley Act (SOX) induced managers in poorly governed firms to take the firms dark.¹ Hostak, Lys, Yang, and Carr (2013) show that, post-SOX, foreign firms with poor governance

¹ A public company may go private by cashing out its shareholders. Alternatively, a company whose number of shareholders and value of assets are below a certain threshold may “go dark.” That is, the company does not cash out the shareholders. Instead, it ceases to be traded on the primary market, begins to be traded on the OTC market, and get an exemption from SEC reporting obligations. For a detailed discussion about the reasons for going dark, see Marosi and Massoud (2007).

registered on US stock exchanges became more likely to delist than their counterparts on the London Stock Exchange. Overall, the evidence in those two papers indicates that to preserve their private benefits post-SOX, managers removed their poorly governed firms to less-regulated markets. However, the firms in those two papers continued to be traded on the OTC market or on their home stock exchange, where they were able to raise capital on the market and their management was able to draw PBCs. In fact, Leuz, Triantis, and Wang (2008) find that the likelihood of firms to go private post-SOX did not change significantly; thus, they conclude that going dark and going private are distinct events. In the present paper, I argue that some of the CSHs keep poorly governed firms public primarily to extract rents. Thus, to the extent that a transition to a less-regulated market in order to preserve their PBCs after investor protection reforms is too costly, those CSHs are induced to take the firm private.

Moreover, the above two papers demonstrate how legislation aimed at improving governance mechanisms at the firm level leads managers in poorly governed firms to delist from stock exchanges. In this paper, I rely on the rationale of Cohen (2020b) and demonstrate how improving the country-level investor protection substitutes for low-quality mechanisms of governance and induces poorly governed firms to go private.²

Finally, the previous two papers belong to a branch of studies that examine the effect of the SOX Act on delisting announcements of US companies. The present paper joins a very few others that examine the effect of an investor protection regulation other than SOX on delisting announcements of non-US companies (Martinez and Serve, 2011; Thomsen and Vinten, 2014).

The paper is organized as follows. Section 2 describes the investor protection reforms in Israel. Section 3 reviews the literature. Section 4 presents the empirical strategy, Section 5

² The systems operating at the country level are external to the firm, while at the firm level, such mechanisms are internal to the firm. For example, the country decides whether minority shareholders have a veto right in approving related-party transactions at the general meeting. Similarly, the country designs the enforcement mechanisms, including courts and regulators, and influences their efficiency. The country also operates within the firm, through a legal requirement that the firm maintain several internal mechanisms of investor protection e.g., the board of directors and certain committees. As is indicated in Table 1 below, several reforms that require firms to establish certain committees on the board went into effect during the sample years. Some researchers consider such mechanisms as part of the CLCG system (Chhaochharia and Laeven, 2009). This paper, however, is in line with most of the literature examining the relation between CLCG and FLCG, and defines all the governance mechanisms that are internal to the firm, whether they are mandatory or are adopted voluntarily, as firm-level corporate governance.

discusses the sample, Section 6 provides some descriptive statistics, Section 7 describes the results, and Section 8 contains some robustness checks. Section 9 concludes.

2. Corporate Governance Reforms in Israel

Israel is an interesting case from the perspective of investor protection. On the one hand, Israel provides high-quality investor protection (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998). On the other hand, its average control premium is high relative to other countries (Dyck and Zingales, 2004; Barak and Lauterbach, 2011). A high control premium indicates that CSHs extract a large amount of private benefits from the firm at the expense of the minority shareholders. The magnitude of these private benefits, along with a worldwide trend to strengthen the quality of corporate governance, triggered extensive reforms aimed at improving investor protection quality in Israel.

To this end, in 2005, the Israel Securities Authority appointed the Goshen Committee for the Review of a Corporate Governance Code in Israel. At the end of 2006, the committee published its conclusions, including recommendations for reforms that would improve investor protection. Based on these recommendations, a package of CG country-level and firm-level reforms was approved in 2010–2012.

The country-level reforms involved changes in laws as well as measures to improve the efficiency of the enforcement systems. The most prominent legal change, which went into effect in May 2011, is Amendment 16 to the Companies Law, which raised the minimal percentage of minority shareholders' in-favor votes required to approve an RPT at a general meeting from a third of the minority to a majority of the minority.

The most notable reform to upgrade the enforcement mechanisms was the establishment, in December 2010, of the Court for Economic Affairs, with the aim of improving the enforcement of the criminal branch of the Companies Law, as well as streamlining the private enforcement through derivatives and class action lawsuits.³ An additional reform in the enforcement

³ Aran and Ofir (2020) analyze the contribution of the Israeli Court for Economic Affairs to the efficiency of legal procedures. The authors find that there is a general trend of an increase in the efficiency of legal procedures that is independent to the establishment of the Court for Economic Affairs. Nonetheless, the authors show that the Court for Economic Affairs has a unique contribution in some aspects of efficiency e.g., the ability to handle with complicated cases.

mechanism enabled the Israel Securities Authority to impose administrative sanctions for specific violations of the Securities Law. This change empowered the regulator to punish violators faster, by making the threshold of proof needed to impose a sanction in the administrative track lower than in the criminal track.

The firm-level reforms were implemented in three stages. In 2010, public firms were required to establish a financial statements committee to supervise the preparation of financial statements. In 2011, Amendment 16 to the Companies Law set a number of new rules to enhance the independence of the audit committee, as well as of the board. Finally, in 2012, Amendment 20 to the Companies Law required firms to establish a compensation committee that would recommend a compensation policy to the board and oversee its implementation.

More details regarding these reforms are provided in Table 1.

3. Literature Review

Several empirical studies examine the effect of investor protection reforms on the likelihood of public firms to delist. Most of these studies focus on checking whether the SOX Act that went into effect in the US in 2002 induced public firms to delist from US stock exchanges. The evidence indicates that the SOX reform imposes compliance costs that induce a specific kind of firms to delist, primarily smaller ones for which the fixed costs required to comply with the SOX provisions exceed the relatively small benefits of being public (e.g., Holmstrom and Kaplan, 2003; Chhaochharia and Grinstein, 2007).

Marosi and Massoud (2007) find that the number of firms that went dark in the US grew following SOX. Moreover, the authors show that the increase in the compliance costs post-SOX, as reflected in an increase in the audit fees, was a major determinant of the decision to go dark. Becker and Pollet (2008) find that the likelihood of small firms to go private also increased after SOX. Engel, Hayes, and Wang (2007) attribute the increase in the likelihood of small firms to go private also to the lower marginal benefit for these firms from the SOX reform.⁴

⁴ Specifically, small firms are characterized as having greater insider ownership, which implies lower agency costs. Moreover, one of SOX's goals is to make insiders' holdings less liquid. Nonetheless, insiders' holdings among the smaller firms were less liquid already pre-SOX, and hence their marginal benefit from the SOX reform was low.

To control for a confounding effect of a general positive trend of delisting decisions, Kamar, Karaca-Mandic, and Talley (2008) examine the change in the likelihood of US firms to go private post-SOX, using non-US firms, which are not subject to SOX provisions, as a control group. Consistent with the argument of an increase in the compliance costs, the authors find that, post-SOX, small firms in the US became more likely to be bought by private owners, after which they were no longer bound by SOX provisions. Bartlet (2009) supports the conjecture that the increase in compliance costs post-SOX is more of a burden for small firms, and shows that the use of high-yield debt to finance going-private transactions, after which a firm remains subject to SOX provisions, decreased post-SOX only in small-medium transactions.

Besides the conjecture on compliance costs, a few papers argue that the post-SOX increase in the likelihood to delist is driven by the incentive of management to preserve its private benefits. Thus, Doidge, Karolyi, and Stulz (2010) show that, post-SOX, cross-listed firms whose investor protection quality in their home country enabled management to keep its private benefits became more likely to delist from the major US stock exchanges. Other studies demonstrate this point using cross-sectional variation in governance quality between firms. Leuz, Triantis, and Wang (2008) show that, post-SOX, poorly governed firms became more likely to go dark, where lower disclosure requirements enabled management to preserve its private benefits. Hostak, Lys, Yang, and Carr (2013) show that poorly-governed foreign firms registered on US stock exchanges became more likely to delist post-SOX than their counterparts on the London Stock Exchange.

Yet, even after implementing one of the ways of delisting as in Doidge, Karolyi, and Stulz (2010), Leuz, Triantis, and Wang (2008), and in Hostak, Lys, Yang, and Carr (2013), the firm nevertheless remains public because its shares are registered on the OTC market or its home stock exchange. In particular, the firm may be able to raise capital, albeit under less favorable conditions, and the management may still be able to extract private benefits at the expense of the other shareholders. To the best of my knowledge, no study shows that compared to well-governed firms, poorly governed firms became more likely to go private following investor protection reforms.

Moreover, the majority of literature focuses on the effect of the SOX reform on delisting announcements. In fact, the research on the effect of investor protection regulation outside the

US on the likelihood of a firm to delist is pretty scarce and focuses mainly on the compliance costs explanation. Martinez and Serve (2011) show that smaller or less profitable firms became more likely to go private following an investor protection reform in France. Thomsen and Vinten (2014) use the index of La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), which was revised by Pagano and Volpin (2005), to examine the effect of changes in national corporate law and in codes of best practice during the years 1996–2004 on the likelihood of firms to delist from European stock exchanges. The authors show that stronger investor protection is associated with a higher number of delisting announcements. Consistent with the compliance costs explanation, the effect on small firms was stronger.

Finally, focusing on the SOX reform enables one to explore the effect of a firm-level regulation on the likelihood to delist. However, to the best of my knowledge, no paper uses the notion of the substitution between firm-level and country-level CG to demonstrate an increase in delisting announcements among poorly governed firms following investor protection reforms at the country level.

In the present paper, I demonstrate how investor protection reforms at the country level outside the US aimed at limiting the ability to draw PBCs, may induce CSHs in poorly governed firms to take those firms private.

4. Empirical Strategy

A public firm has unique costs and benefits not found in private companies (e.g., Pagano, Panetta, and Zingales, 1998). These costs and benefits are attributed to the CSHs in proportion to their holdings. In addition, CSHs expropriate the company at the expense of the other shareholders. In deciding whether to keep the firm public, CSHs face a tradeoff between their portion of the unique benefits of being public and their PBCs, on the one hand, and their portion of the unique costs of being public, on the other. An investor protection regulation thus has a dual impact on the tendency of a CSH to delist the company. On the one hand, decreasing the PBCs makes the status of being public less attractive for CSHs. On the other hand, as is demonstrated in Cohen (2020b), raising the quality of investor protection increases the market value of the company's shares, which in turn makes the cashing out of the minority shareholders

more costly. In Appendix 2, I demonstrate with a very simple theoretical framework how, under certain assumptions, decreasing the PBCs following an investor protection regulation may induce CSHs, especially those for whom the pre-reform benefits of being public do not exceed the costs, to delist their firms.

In this section, I describe the empirical strategy used to study the effect of a decrease in PBCs following investor protection reforms on the tendency of CSHs to delist the firms. Recall that Cohen (2020b) provides evidence that CSHs in firms that were poorly governed before the reforms drew fewer PBCs after the reforms. Based on the model in Appendix 2, I assume that following the decrease in PBCs, CSHs in firms that were poorly-governed pre-reform became, on average, more likely to take those firms private post-reform. Thus, I implement a difference-in-differences approach by considering the firms that were poorly governed before the reforms as a treated group and the firms that were well-governed before the reforms as a control group.⁵

In particular, I define $Low\ CGI_{2007-2010}$ as a variable that takes a value of 1 for a firm whose average CGI score in the years 2007–2010, calculated based on the CGI, was below the median score in those years and 0 otherwise. In addition, I define $Post$ as a dummy variable that takes a value of 0 in the years 2007–2010 and 1 otherwise. I examine the effect of $Low\ CGI_{2007-2010}$ and $Low\ CGI_{2007-2010} * Post$ variables on the likelihood of a delisting announcement. To the extent that drawing PBCs, pre-reform, incentivized CSHs to keep the treated group public, I would expect, keeping other variables equal, a negative effect of $Low\ CGI_{2007-2010}$ on the likelihood of a delisting announcement. Post-reform, the incentive to draw PBCs disappeared and so I would expect the likelihood of the treated group to go private to increase until, *ceteris paribus*, it is not significantly different from that of the control group. Namely, the effect of the interaction variable $Low\ CGI_{2007-2010} * Post$ on the likelihood of a delisting announcement is expected to be positive and the sum of the coefficients of $Low\ CGI_{2007-2010}$ and $Low\ CGI_{2007-2010} * Post$ is expected to be insignificant.

To examine these hypotheses I use two main models. The first is a linear probability model (LPM) with a dependent variable that takes a value of 1 for a firm-year observation with a

⁵ A similar rationale is proposed by Chhaochharia and Grinstein (2007) for checking market reaction to the SOX Act. Specifically, the authors show that the firms that were less compliant with SOX provisions in the pre-SOX period showed higher abnormal returns around the legislation.

delisting announcement and 0 otherwise. The LPM enables us to mitigate the concern of an unobserved heterogeneity by including firm fixed effects in the regressions. Nonetheless, the LPM does not handle the right-censored observations, which are of the firms that announced a delisting only after the end of the sample years. Thus, I follow Mehran and Peristiani (2009) and Bharath and Dittmar (2010) and also use Cox's proportional hazard model. The model assesses the likelihood of a hazard, defined as a delisting announcement, after t years, conditional on the firm not announcing a delisting until that point in time. The hazard rate in that model is formally defined as

$$h(t, \mathbf{X}(t-1)) = h(t-1, 0) \exp(\beta' \mathbf{X}(t-1)),$$

where $h(t, \mathbf{X}(t-1))$ is the hazard rate of a firm in year t conditional on a vector \mathbf{X} of one-year lagged⁶ explanatory variables. The $h(t-1, 0)$ is the baseline hazard function that is the hazard of a delisting given that the variables in \mathbf{X} are zero. The model estimates the hazard ratio $\exp(\beta)$, which is the change in the likelihood to go private given a change of a unit in an explanatory variable. For a given variable, a hazard ratio that is greater than 1 indicates a positive effect of the variable on the likelihood to delist while a hazard ratio lower than 1 indicates a negative effect.

Setting the threshold of the poorly governed and well-governed firms on the median value is arbitrary. For this reason, I also use the $CGI_{2007-2010}$, which is the average CGI score, pre-reform, of each firm, as a continuous explanatory variable. In particular, pre-reform, I would expect that the lower the CGI score is the greater the PBCs and the lower the likelihood of a firm to delist. That is, there is a positive effect of the $CGI_{2007-2010}$ variable on the likelihood to delist. Moreover, I would expect that the lower the quality of governance is pre-reform, the higher the likelihood of a firm to delist post-reform. That is, there is a negative effect of the interaction variable $CGI_{2007-2010} * Post$ on the likelihood to delist.

To control for the effect of governance improvement on the likelihood to delist I include in the regressions the CGI variable, which is the governance score of a firm-year observation that is calculated based on the CGI. Including the CGI variable in the regressions also enables me to isolate the effect of the country-level reforms on the tendency to delist. In particular, the

⁶ Following Mehran and Peristiani (2009), among others, I lag the explanatory variables by one year.

within-firm variation in the *CGI* variable captures both changes in CG quality voluntarily undertaken by a firm and improvements owing to legal reforms at the firm level as well.⁷ Thus, the coefficient of the interaction variable *Low CGI* $_{2007-2010} * Post$ exclusively captures the effect of the country-level reforms on the likelihood of a delisting announcement among the treated group.

In December 2013, the Law for Promotion of Competition and Reduction of Concentration (“the Concentration Law”) went into effect. The Concentration Law includes a provision prohibiting the existence of a pyramid with more than two layers. To the extent that firms in the treated group are more likely to be part of a pyramid with more than two layers, the post-reform increase in their propensity to delist may be part of a preparation to comply with the provisions of the Concentration Law by decreasing the pyramid’s layers instead of a reaction to a decline in the PBCs. To rule out this concern I include in the regressions a dummy variable *Concentration Law* that takes a value of 1 if a firm *i* in year *t* is part of a pyramid composed of at least three layers and so is more likely to delist due to the Concentration Law, and 0 otherwise.

Finally, as in earlier studies, the regressions include a battery of control variables that may affect the decision to go private besides the reforms. Table 2 provides the definition of the variables that are used in this paper. Table 3 presents the predicted effect of the control variables that are used in this paper on the delisting decision, based on the previous literature.

⁷ As mentioned in Cohen (2020a), the CGI components that became legally required during the sample-period are useful in a fixed-effects regression for a period that began before the legislation and ended after it went into effect. In such a regression, I would be interested in the effect of any change in CG quality over time, be it voluntary or legally required, on firm outcomes. Thus, in calculating the CGI scores in the present paper, I do not exclude the components that became legally required during the sample period.

5. Sample and Data

My sample is a panel of non-financial publicly traded Israeli firms during the years 2007–2015. To build the sample of delisted companies, I used the report on “The Development of the Number of Public Firms” that is published annually by the TASE. I started with a group of 339 firms that were delisted during the sample years. I excluded from this group: 42 dual companies registered on the US stock exchanges, where the CG legal requirements are substantially different from those in Israel; 22 financial firms; 62 debt companies⁸; 46 firms that were forced to delist due to liquidation or debt restructuring; 13 firms in which the data that is required for calculating the financial variables was not fully available; and 17 firms excluded for other various reasons, including firms that became public after 2010 for which I cannot calculate the pre-reform CGI scores, firms whose CSHs post-reform differ from their CSHs pre-reform, and firms with dispersed ownership. The final sample consists of 137 delisted firms. The sample of non-delisted firms consists of 150 nonfinancial companies that were listed exclusively on the TASE from 2007 or later until 2015, the majority of which were traded on the TA 100 Index and the TA MidCap Index for at least part of this period. Altogether, the total sample of delisted and non-delisted firms consists of 287 companies. In Table 4, I describe the construction process of the sample.

For each firm-year observation, I calculated a CGI score based on the CGI. The database used for calculating the CGI scores is hand-collected. Its main source is annual reports, which are publicly available on the MAYA website. Of particular relevance is Chapter 4 of these reports, entitled “Additional Details Regarding the Company,” which contains information on CG, including the directors’ education, employment history, and family ties within the board; board committees and other boards on which the directors serve; whether a director is an outside or independent director; the names of the directors employed by the firm; and details of the firm’s structural ownership.

Finally, based mainly on the firms’ annual financial statements, I collected data on control variables such as size and leverage.

⁸ Of these, 13 companies did not publish financial statements reports and 23 were compulsorily delisted due to liquidation or debt restructuring.

6. Summary Statistics

Table 5 presents a comparison between the financial variables of the delisted firms and the non-delisted firms in the year before the delisting announcement. There are significant differences between the firms in the two groups. The average age of the delisted firms is 16 years and is greater than the average age of 14 years of the non-delisted firms. Consistent with the conjecture that some of the listing costs are fixed, and hence are more burdensome for small firms, the average size of the delisted firms, NIS 0.26 billion, is less than the NIS 0.65 billion of the non-delisted firms. The average leverage of the delisted firms is 0.22, less than the 0.26 of the non-delisted firms. Consistent with the free cash flow hypothesis suggested by Jensen (1986), the average ratio between the free cash flow from operating activities and the firms' liabilities among the delisted firms is greater than that of the non-delisted firms; however, the difference is insignificant. As in Becker and Pollet (2008), I find that the growth opportunities of the delisted firms—an average market-to-book ratio of 0.41 and an average CAPEX of -0.01—are significantly lower than the 0.69 and 0.04, respectively, of the non-delisted firms. The average holdings of institutional investors among the delisted firms are 3 percent versus 8 percent among the non-delisted firms. This finding is consistent with Mehran and Peristiani (2009) who show that the financial visibility of delisted firms is significantly lower than that of non-delisted companies. Additionally, this finding is consistent with Lauterbach and Mugerman (2018) who show evidence of a negative effect of institutional investors on the likelihood of a freeze-out offer acceptance. The profitability of the delisted firms as reflected in the average ROA is 0.04, significantly lower than the 0.06 of the non-delisted firms. Finally, the average CGI score of the delisted firms, which I consider as a proxy for governance quality, is 47, significantly lower than the 51 of the non-delisted firms. Overall, it seems that compared to the non-listed firms, the delisted firms in my sample are older, smaller, less leveraged, less profitable, with lower growth opportunities, lower financial visibility, and lower quality of governance.

The existence of systematic differences between the delisted and the non-delisted firms indicates that the assignment of firms to those two groups is not random. Thus, the possibility to draw a clear causal inference between a certain characteristic of a firm and the decision to delist in the absence of an exogenous shock to this characteristic, is limited. In the present paper,

I examine the effect of a decrease in the PBCs on the decision to delist, using the change in the quality of investor protection following the reforms as an exogenous shock.

Specifically, Figure 1 presents the number of firms that were delisted from the TASE in each of the years 2007–2015. It is apparent that in 2007–2011, there is a trend of a slight increase in the number of delisted firms. However, in 2012 this number increased dramatically, from 17 firms in 2011 to 33 firms in 2012. The number of delisted companies remained high in 2013 and 2014 and dropped back to a lower level of 14 firms only in 2015. The increase in the number of delisted firms in 2012–2014 is consistent with the hypothesis that the reforms induced firms to delist.

To the extent that the increase in the delistings from 2012 was driven by a post-reform limitation on drawing PBCs, I would expect the number of delistings to increase more among firms in the treated group than among firms in the control group. In Figure 2, I present the Kaplan–Meier survival estimates,⁹ separately for the treated group and the control group. The survival estimates in the first part of the sample, that is, for the years 2007–2010, was similar in both groups.¹⁰ From the fifth year of my sample—2011—the survival estimates of both groups decreased. However, the decrease was greater in the treated group. These findings are consistent with my conjecture that the increase in delistings post-reform was driven by a decrease in the PBCs.

In Figure 3.1, I show the proportion of the firms that announced a delisting from the treated group and the control group, denoted respectively by “Low CGI 2007–2010” and “High CGI 2007–2010,” separately before and after the reforms. The treatment effect of the reforms on the

⁹ The Kaplan–Meier survival estimator reflects the probability that a firm will survive as a public company in year t conditional that it did not go private in the previous years. More formally, the survival estimator $\hat{S}(t)$ is calculated as $\hat{S}(t) = \prod_{i,t_i \leq t} (1 - \frac{d_i}{n_i})$, where d_i is the number of firms that announced a delisting in year t_i , and n_i is the number of firms that did not announce a delisting in the year t_i .

¹⁰ The similarity between the survival estimators in the treated and control groups, pre-reform, derives from the fact that Figure 2 is based on a univariate analysis. Specifically, pre-reform, CSHs in poorly governed firms are incentivized to keep the firm public and so preserve their PBCs. However, poor governance may be correlated with a lower investment opportunities, which in turn is correlated with a lower capital requirement and a greater likelihood to go private. To isolate the negative effect of drawing PBCs from poorly governed firms on the decision to delist, pre-reform, one has to implement a multivariate analysis and to keep the investment opportunities, as reflected in market-to-book and CAPEX ratios, constant. Actually, in Section 7 I implement such a multivariate analysis and show that, pre-reform, the likelihood of the treated group to delist was significantly lower than that of the control group.

likelihood to announce a delisting is the difference between the post-reform and pre-reform differences in the proportion of delisting announcements in the treated group and the control group. A positive difference-in-differences may indicate that the reforms induced the treated group to announce a delisting. Figure 3.1 indicates that indeed the difference-in-differences is positive $((35\% - 20\%) - (19\% - 16\%)) = 12\%$.

Next, I examine what is the governance aspect, whose low quality, pre-reform, predicts an increase in the likelihood to go private, post-reform. Specifically, I examine two aspects: “board qualifications” and “board independence,” which are the equally weighted average of the CGI components that measure board qualifications and board independence, respectively. I define a firm as “Low Board Qualifications 2007–2010” and as “Low Board Independence 2007–2010” if its average board qualifications score and board independence score, pre-reform, are below the median board qualifications score and the median board independence score, respectively, in those years. Next, I repeat the same difference-in-differences analysis as in Figure 3.1 for the pre-reform low-qualified firms and for the pre-reform low-independence firms. The findings in Figures 3.2 and 3.3 indicate that the reforms induced the pre-reform low-qualified firms and the pre-reform low-independence firms, respectively, to announce a delisting: the difference-in-differences for the pre-reform low-qualified firms is $(36\% - 20\%) - (20\% - 15\%) = 11\%$ and for the pre-reform low-independence firms is $(33\% - 18\%) - (19\% - 14\%) = 10\%$.

Fried, Kamar, and Yafeh (2019) show that making compensation approval subject to the majority of the minority rule in Amendment 16 induced CSHs to quit their executive positions. Developing this line of research, I examine whether making compensation approval more stringent induced controller executives to take the firm private. Figure 3.4 shows that, pre-reform, 8% of the firms in which at least one of the senior executives was a CSH announced a delisting, relative to 19% otherwise. Those findings are consistent with the conjecture that holding a senior position in a firm, pre-reform, was considered by CSHs as a means of drawing PBCs and so incentivized them to keep the firm public. The difference-in-differences analysis shows that, consistent with the rationale in Fried, Kamar, and Yafeh (2019), the percentage of delisting announcements, post-reform, among the firms whose senior executives, pre-reform, were also CSHs increased by $(36\% - 26\%) - (8\% - 19\%) = 21\%$.

7. Results

In Table 6, I present the results of the hazard model regressions (Columns 1–3) based on the empirical strategy in Section 4. The hazard ratios of the *Low CGI* _{2007–2010} variable are significantly lower than 1 (Columns 1 and 2). This finding supports the conjecture that extracting PBCs was a pre-reform positive incentive for CSHs in the treated group to keep the firms public. Limiting the ability of expropriation, post-reform, pushed firms in the treated group to go private: the hazard ratio of the *Low CGI* _{2007–2010} **Post* variable is statistically significant and higher than 1. Moreover, the sum of the hazard ratios that are calculated for the *Low CGI* _{2007–2010} and *Low CGI* _{2007–2010} **Post* variables is statistically insignificant. Namely, post-reform, extracting PBCs no longer has a positive effect on the tendency of CSHs to keep the treated group public. A similar conclusion is obtained in Column 3, with the *CGI* _{2007–2010} and *CGI* _{2007–2010} **Post* variables: the hazard ratio is statistically significant and greater than 1 for the *CGI* _{2007–2010} variable and lower than 1 for the *CGI* _{2007–2010} **Post* variable.

The results from the LPM analysis in Columns 4–6 also support the hypothesis that the drop in the PBCs of the treated group after the reforms induced their CSHs to announce a delisting: the coefficient of the *Low CGI* _{2007–2010} **Post* (*CGI* _{2007–2010} **Post*) variable is positive (negative) and significant. The LPM analysis also indicates that the effect of the reforms is economically significant: compared to the control group, the likelihood of the treated group to announce a delisting, post-reform, increased by 8 percentage points (Column 5). Similarly, Column 6 indicates that a decrease of one standard deviation in the pre-reform CGI score is correlated with an increase of 6 percentage points in the likelihood of the treated group to announce a delisting, post-reform.

The effect of each of the control variables on the likelihood of a delisting announcement is in line with the predictions in Table 3. Specifically, compared to the non-delisted firms, the firms with a greater likelihood to delist tend to be smaller, with lower growth opportunities (as reflected in a lower market-to-book ratio), greater free cash flow, lower financial visibility (as reflected in fewer institutional holdings), and they tend to be part of a pyramid with at least three layers and therefore were influenced by the Concentration Law. The effect of the *Leverage* variable on the likelihood of a delisting announcement is statistically insignificant. It is worth

mentioning that I have no exogenous shock to establish a causal inference between those characteristics and the likelihood of a delisting.

Next, I examine what was the specific governance aspect whose low quality, pre-reform, induced the CSHs to delist the firms they controlled, post-reform. In particular, I examine whether the firms whose board were low-qualified or low-independence pre-reform, denoted respectively by the *Low Board Qualifications* 2007–2010 and *Low Board Independence* 2007–2010 variables, were more likely to announce a delisting post-reform. The results in Table 7 indicate that low quality in each of these aspects significantly decreased the pre-reform hazard of a delisting announcement: the hazard ratio of each of the *Low Board Qualifications* 2007–2010 and the *Low Board Independence* 2007–2010 variables is lower than 1 (Columns 1 and 3, respectively). However, as the coefficients of the *Low Board Qualifications* 2007–2010**Post* and *Low Board Independence* 2007–2010**Post* variables reflect, the post-reform likelihood of a delisting announcement among firms with pre-reform low quality in each of those aspects increased. Moreover, the LPM analysis in Column 2 (Column 4) indicates that the effect is also economically significant: the firms whose board had low qualifications (independence), pre-reform, became more likely to announce a delisting by 11 (9) percentage points, post-reform.

In Table 8, I repeat the analysis with the continuous variables *Board Qualifications* 2007–2010 and *Board Independence* 2007–2010, which are the equally weighted average of the CGI components that measure board qualifications and board independence, respectively, pre-reform.¹¹ The results do not substantially change. In the pre-reform years, firms with a less qualified board or a less independent board were less likely to go private (Columns 1 and 3, respectively). In the post-reform years, the likelihood of these firms to go private increased. The effect is also economically significant: a decrease of one standard deviation in the score of the board qualifications (independence), pre-reform, is correlated with an increase of 6 (4) percentage points in the likelihood to delist, post-reform (Columns 2 and 4, respectively).

Finally, I use an LPM and a hazard model as specified in Section 4, to verify that firms whose management included a CSH, pre-reform, became more likely to go private, post-reform.

¹¹ To avoid omitted variable bias, I include in the regression with *Board Qualifications* 2007–2010 (*Board Independence* 2007–2010) as an explanatory variable also the *CGI Minus Board Qualifications* 2007–2010 (*CGI Minus Board Independence* 2007–2010), which is the equally weighted average of the CGI components that do not measure the board qualifications (board independence) pre-reform.

The *Low CGI* _{2007–2010} and the *Low CGI* _{2007–2010} **Post* variables are replaced, respectively, with the *CSH is Senior Executive* _{2007–2010} variable that takes a value of 1 for a firm whose senior executives, pre-reform, included a CSH and 0 otherwise and with the interaction variable *CSH is Senior Executive* _{2007–2010} **Post*.¹²

The results, in Table 9, support the hypothesis that CSHs who served as senior executives, pre-reform, used their position to draw PBCs and thus had a greater incentive to keep the firms public: the hazard ratio for the *CSH is Senior Executive* _{2007–2010} variable is less than 1 (Column 1). Following the post-reform limitations on using a senior managerial position to draw PBCs, controller executives were more likely to take the firm private, as reflected in the hazard ratio of the *CSH is Senior Executive* _{2007–2010} **Post* variable, which is significantly greater than 1. Thus, in the post-reform years, controller executives are not incentivized either to keep the firm public or to take it private more than CSHs who do not hold a managerial position: the sum of the coefficients of the *CSH is Senior Executive* _{2007–2010} and *CSH is Senior Executive* _{2007–2010} **Post* variables is not significant. A similar conclusion follows from the LPM regression (Column 2).

8. Robustness Checks

Are the above results confounded by systematic differences between the control group and the treated group?

As mentioned above, in the present study I examine whether firms with poor governance, pre-reform, became more likely to announce a delisting, post-reform. A main concern in this kind of analysis is the possibility that the results are driven by systematic differences between the treated group and the control group, rather than by differences in governance quality.

Accordingly, possibly my results are driven by a post-reform shock, other than the reforms, that affected an underlying characteristic of the treated group and led the firms to delist.

¹² To avoid omitted variable bias I include in the regressions the variable *CGI Minus CSH is Senior Executive* _{2007–2010}, which is calculated as the equally weighted average of the CGI components, pre-reform, except the component that examine whether a CSH is a senior manager.

Nonetheless, as a change in an underlying characteristic is likely to be reflected in a change in some of the observable variables of the treated group, I examine whether the observable variables of the treated group changed post-reform. Table 10 presents the differences in observable characteristics between the treated and the control groups separately for the years before and after the reforms. The results for the pre-reform years indicate that there are systematic differences between those two groups: the treated group is significantly smaller, less leveraged, with more free-cash flow, and with lower investment opportunities (lower market-to-book ratio and CAPEX). However, with the exception of the market-to-book ratio, the pre-reform differences in those variables between the treated and control groups did not change significantly post-reform (Column 7). Consistent with the conjecture of substitution between country-level and firm-level corporate governance proposed in Cohen (2020b), the market-to-book ratio of the treated group significantly increased after the alignment with higher standard of investor protection post-reform so that it became insignificantly different from that of the control group. Overall, there is no evidence of a change in an underlying characteristic that made the treated group more likely to go private post-reform.

Yet, possibly the reforms caused the increase in the likelihood to delist among the treated group but through another systematic difference, rather than the difference in governance quality, between the treated and the control groups. The concern is more severe either if that systematic difference is not included as a control variable in the regressions above or that its effect on the likelihood to delist is non-linear. For example, to the extent that the treated group is composed of smaller firms, its post-reform increase in the likelihood to delist could be explained by more burdensome compliance costs following the reforms rather than by a decrease in PBCs.

I address this concern using propensity score matching. In particular, I run a probit regression with the *Low CGI* 2007–2010 as a dependent variable and the *Size*, *Leverage*, *OCF*, *Market to Book ratio*, and *CAPEX* as explanatory variables. I choose those explanatory variables as the results in Table 10 show that these variables systematically differ between the treated and the control groups. Based on the probit regression, I build a subsample of 172 matched firms in which the average predicted probability of being part of the control group or the treated group is very similar. To the extent that my results are confounded by differences, other than differences in

governance quality, between the treated and the control groups, I would expect the increase in the post-reform likelihood of the treated group to delist not to hold in an analysis that is based on a matched sample. The results, presented in Table 11, indicate that this is not the case. Specifically, the analysis based on the matched sample indicates that the likelihood of the treated group to delist increased. These results hold both in the hazard model regressions (Columns 1 and 2) and in the LPM regressions (Columns 3 and 4).

Finally, to more specifically mitigate the concern that my results are driven by an increase in compliance costs, I include in the regressions the *Size*Post* variable. To the extent that my results are driven by compliance costs, I would expect an increase in the post-reform likelihood to go private among the small firms. The results presented in Table 12 indicate that this is the case. Pre-reform, smaller firms were more likely to go private, as reflected in the hazard model (LPM) regressions: the hazard ratio (coefficient) for the *Size* variable is less than 1 (negative). Consistent with the existence of compliance costs, the post-reform likelihood of small firms to delist increased: the hazard ratio (coefficient) for the *Size*Post* variable is lower than 1 (negative). However, even after including the *Size*Post* variable in the regressions, the coefficients of the *Low CGI₂₀₀₇₋₂₀₁₀*Post* or *CGI₂₀₀₇₋₂₀₁₀*Post* variables remain statistically significant. That is, even if the increase in the post-reform delisting announcements was driven to some extent by compliance costs, it appears that it was driven by a decrease in PBCs as well.

Is the post-reform increase in the tendency of firms to delist due to a limitation on the employment of optimal controller executives?

Above, I argue that the post-reform limitation on the use of a senior managerial position to draw PBCs decreased the incentive of a controller executive to keep the firm public. Alternatively, it may be argued that, on average, CSHs are indeed optimal managers. Nonetheless, the post-reform employment of a CSH as a senior manager became more complicated so that the incremental regulation costs can exceed the benefits that the controller executive generates for the firm, in which case the firm will choose to go private.

To mitigate this concern, I implement an event study around the legislation of Amendment 16, which, as mentioned above, is a specific regulation that makes the employment continuation of a CSH as a senior executive more stringent. In the case where the controller executives are

indeed optimal managers, I would expect firms whose pre-reform senior executives are CSHs to react more negatively to the legislation of Amendment 16 than the other firms. However, in the case where the controller executives use their position to expropriate the minority shareholders, I would expect the firms' reaction to be positive.

As a first step, I calculate the abnormal returns based on the capital asset pricing model (CAPM). Next, I calculate the cumulative abnormal returns (CARs) around March 6, 2011—the date on which Amendment 16 was approved by the Knesset—for four different time windows. Then, I run four OLS regressions in each of which the dependent variable is one of the CARs that were calculated and the main explanatory variable is *CSH is senior Executive 2007–2010*. Consistent with the conjecture that firms consider Amendment 16 as a reform that decreases the ability of controller executives to draw PBCs, the firms with pre-reform controller executives had significantly higher CARs around the legislation, by 5 to 15 percentage points in the time windows of +1, -1 and in +5, -5, respectively, compared to other firms (Table 13).¹³

Distinguishing between different kinds of delistings

In the above analysis, I did not distinguish between different triggers of delisting announcements. In particular, there are two reasons why a firm may announce a delisting besides a decrease in PBCs which I discussed above. The first is a business opportunity of merging with another company that is controlled by different CSHs. The second reason for a delisting is a violation of the TASE rules including those of size or liquidity. In Table 14, I repeat the analysis with a sample that does not include the mergers with firms that are not CSHs (Columns 1 and 3) and the firms that were forced to delist due to a violation of the TASE rules (Columns 2 and 4). The conclusions do not change. Specifically, the hazard ratios (coefficients) of the *Low CGI 2007–2010*Post* variable remains significant and greater than 1 (positive) in the hazard model (LPM) regressions.

¹³ It may be argued that the legislation of Amendment 16 was anticipated and that, therefore, it is not an appropriate platform for an event study. However, a comparison between the market values of the firms whose pre-reform senior executives were CSHs and the other firms indicates that the difference between those two groups did not significantly change during the year before the Amendment 16 went into effect. This finding does not support the existence of earlier expectations that were embedded into the share price and so distort the above event study analysis.

Alternative definitions of the post variable

It may be argued that the likelihood of the treated group to delist increased already before the reforms. Alternatively, it may be argued that the likelihood increased long after the reforms due to another shock rather than the reforms. I verify that those are not the cases with two tests. In the first test, I define *Post*_{2009–2010} as a dummy variable that takes a value of 1 for the years 2009 and 2010 and 0 otherwise. Then I run a regression on a subsample of firms in 2007–2010 and verify that the likelihood of the treated group to delist did not increase in 2009–2010; i.e., the coefficient of the *Low CGI*_{2007–2010}**Post*_{2009–2010} is insignificant. In the second test, I repeat a similar analysis with a regression on a subsample of firms in 2011–2015 and verify that the coefficient of the interaction variable *Low CGI*_{2007–2010}**Post*_{2013–2015} is insignificant.

The results, presented in Table 15, indicate that the coefficients of the *Low CGI*_{2007–2010}**Post*_{2009–2010} variable (Columns 1 and 3) and of the *Low CGI*_{2007–2010}**Post*_{2013–2015} variable (Columns 2 and 4) are indeed insignificant.

9. Conclusions

The corporate finance literature shows evidence for a greater tendency of public firms to announce a delisting following investor protection reforms due to an increase in compliance costs. Using a DID approach and the heterogeneity in governance quality between firms, I show that limiting the ability of CSHs to draw PBCs from the company following investor protection reforms possibly also has a role in incentivizing CSHs to take firms private. Specifically, I show that firms with poor governance, in which the CSHs draw more PBCs, were less likely to go private pre-reform. Then I show that, post-reform, when it became harder to draw PBCs, CSHs in poorly governed firms lost their unique positive incentive to keep the firms they controlled public so that the difference in the likelihood to delist between the firms with poor governance and well governance is insignificant.

It is worth noting that in the present study I do not assess the overall welfare effect of the increase in the tendency of poorly governed firms to go private. This effect may depend on various factors, such as the extent to which the market is efficient. In particular, in a completely efficient market the investors fully internalize the negative effect of the pre-reform expropriation into the firm's share price. In this case, the welfare benefit of investor protection

legislation may be lower than either the cost of reducing the ability of the delisted firms to raise fund and the increase in compliance costs of the firms that remained public.

This paper complements the findings in Cohen (2020b) and shows that increasing investor protection quality in a country may force CSHs in poorly governed firms to choose between becoming more investor-friendly, as shown in Cohen (2020b), or to take the firms private.

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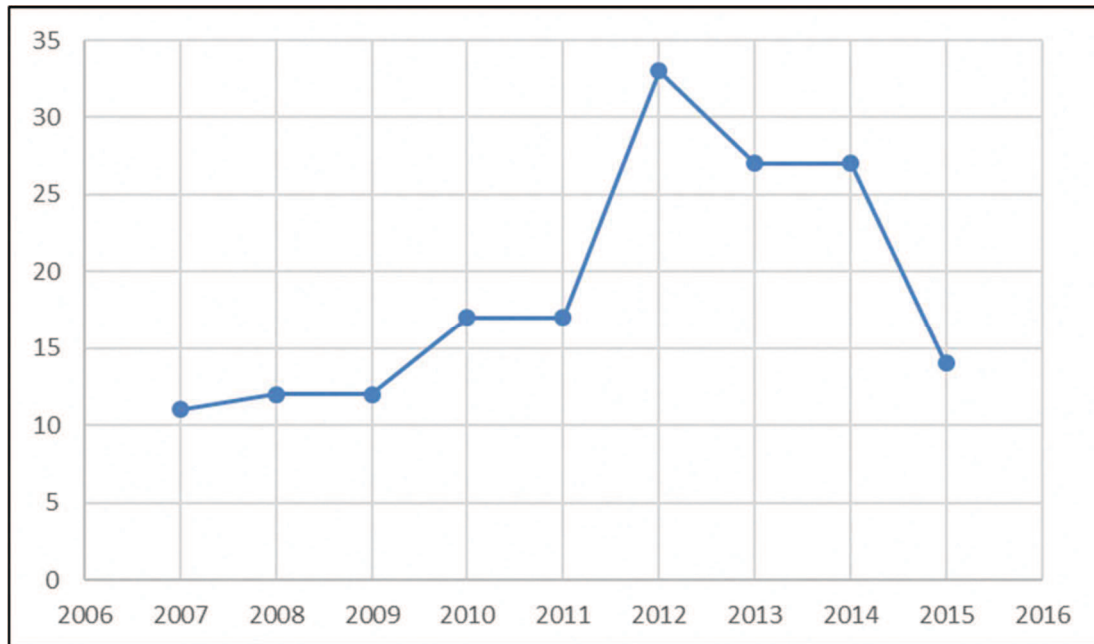
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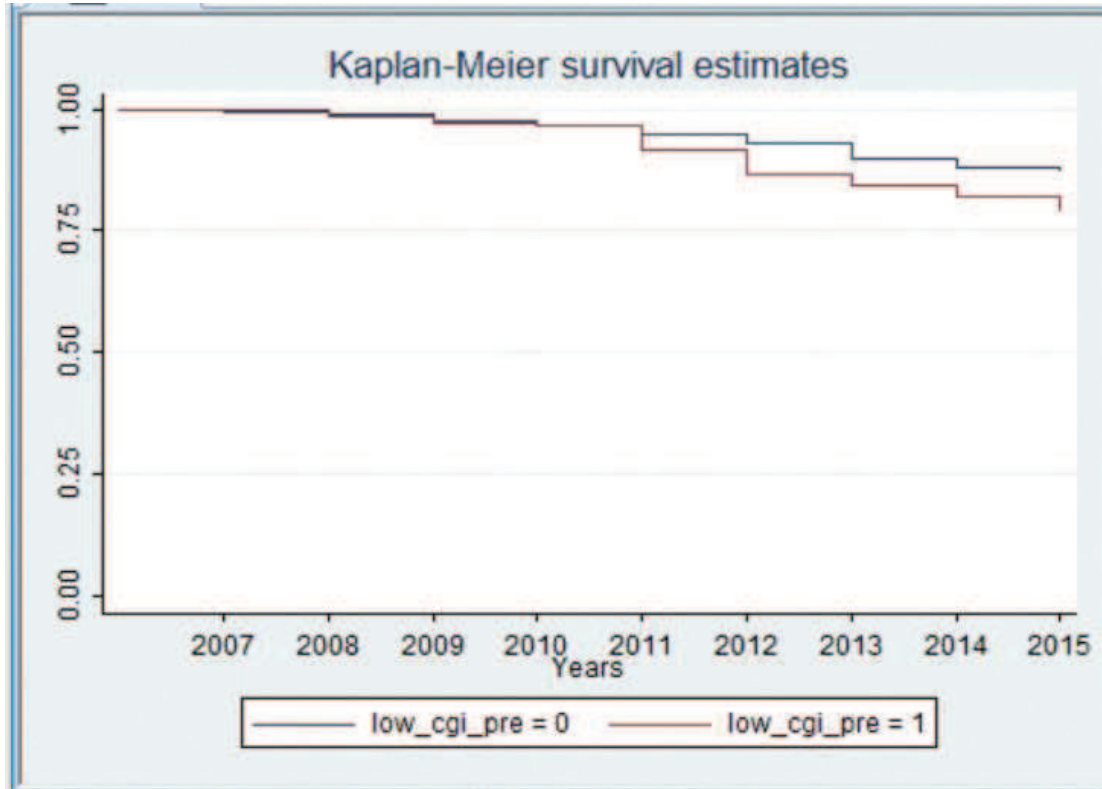
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Figure 1: Delistings of Companies from the TASE in 2007–2015



The figure presents the number of firms that were delisted from the TASE in each of the years 2007–2015. Excluded from the delisted firms are financial firms, dual firms, debt companies, firms that were delisted due to liquidation or debt restructuring, and firms on which the financial or governance data is incomplete.

Figure 2: Kaplan–Meier Survival Estimates in 2007–2015 by Pre-Reform Corporate Governance Quality



The figure presents the Kaplan–Meier survival estimates of the firms in my sample. The “Low CGI Pre” takes a value of 1 for firms whose average CGI score in the period 2007–2010 was below the median CGI score in those years and 0 otherwise. The CGI scores are the firm’s corporate governance scores as calculated based on the index proposed in Cohen (2020a). The sample includes 287 firms from the TASE, of which 137 were delisted in 2007–2015 and 150 were listed during all that period. Excluded from the sample are financial firms, dual firms, debt companies, firms that were delisted due to liquidation or debt restructuring, and firms on which the financial or the governance data is incomplete.

Figure 3.1. Percentage of Delisting Announcements from the Firms with “Low CGI 2007–2010” and “High CGI 2007–2010” Before and After the Reforms

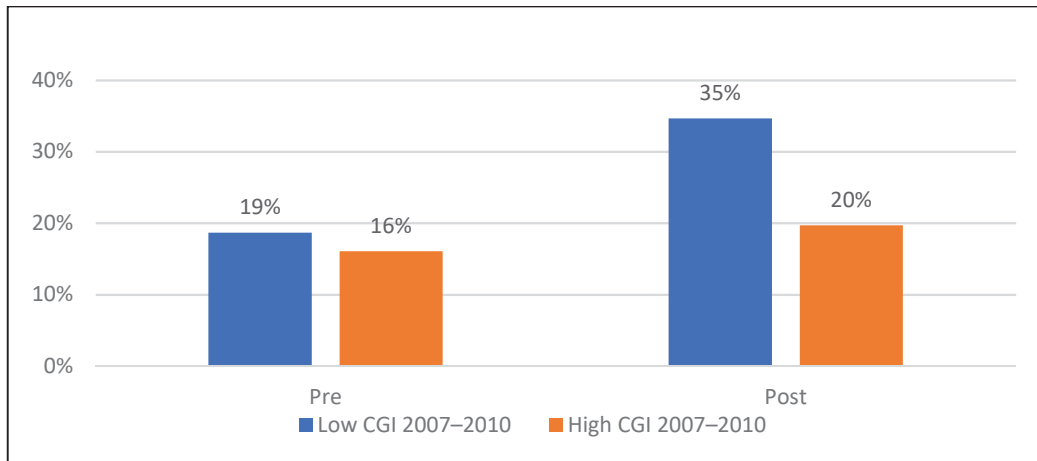


Figure 3.2. Percentage of Delisting Announcements from the Firms with “Low Board Qualifications 2007–2010” and “High Board Qualifications 2007–2010” Before and After the Reforms

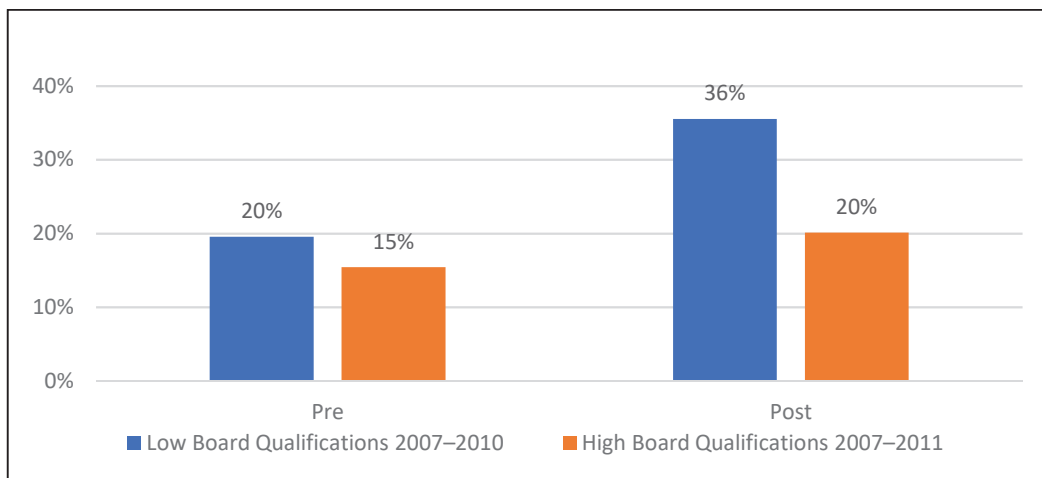


Figure 3.3. Percentage of Delisting Announcements from the Firms with “Low Board Independence 2007–2010” and “High Board Independence 2007–2010” Before and After the Reforms

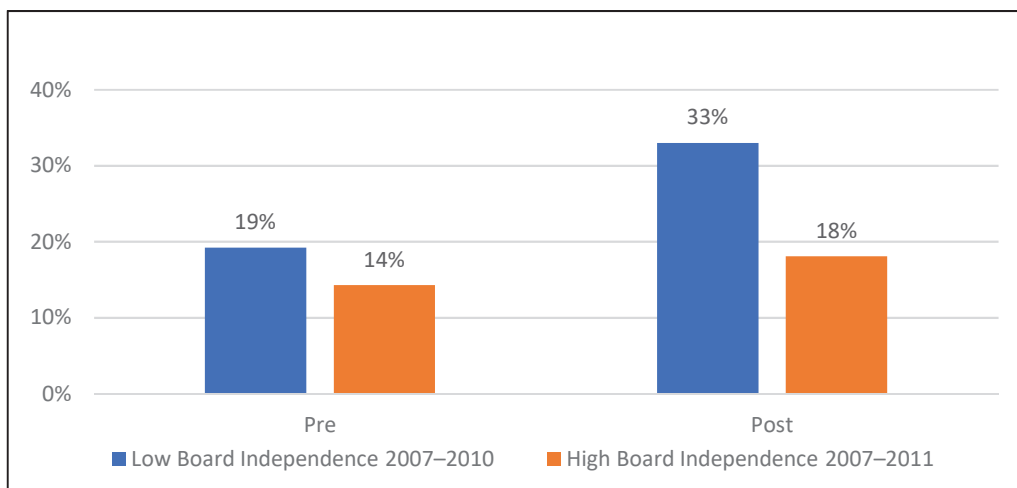
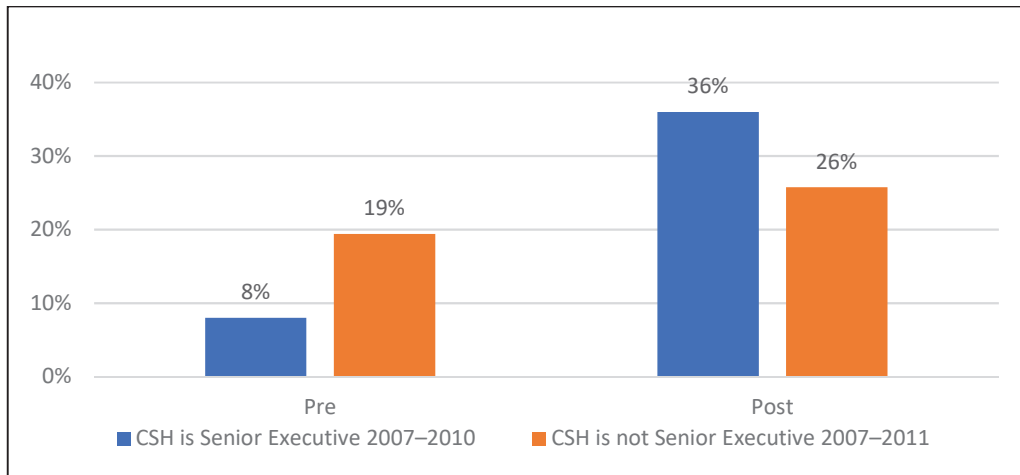


Figure 3.4. Percentage of Delisting Announcements from the Firms with “CSH is Senior Executive 2007–2010” and “CSH is not Senior Executive 2007–2010” Before and After the Reforms



The figures present the proportion of each of the different groups of firms that announced a delisting in the pre- and post-reform years. The “Low CGI 2007–2010” and “High CGI 2007–2010” groups consist of firms whose CGI scores in the period 2007–2010 were respectively below and above the median score in those years. The “Low Board Qualifications 2007–2010” and “High Board Qualifications 2007–2010” groups consist of firms whose qualifications scores in the period 2007–2010 were respectively below and above the median score in those years. The “Low Board Independence 2007–2010” and “High Board Independence 2007–2010” groups consist of firms whose independence scores in the period 2007–2010 were respectively below and above the median score in those years. The “CSH is Senior Executive 2007–2010” and “CSH is not Senior Executive 2007–2010” groups consist of firms in which at least one of the senior executives during the years 2007–2010 was respectively the controlling shareholder and not the controlling shareholder. The qualifications score is the equally weighted average of the CGI components that measure board qualifications. The independence score is the equally weighted average of the CGI components that measure board independence. CGI is the firm’s corporate governance scores as calculated based on the index proposed in Cohen (2020a).

Table 1. Israeli Investor-Protection Legal Reforms Enacted in 2007–2014

Reform	Year	Provisions
Firm-Level Reforms		
Financial Statements Committee Reform	2010	The reform requires public firms to establish a financial statements committee. The financial statements committee is responsible for advising the board on critical issues that arise in the course of preparing financial statements, including the accounting policy adopted by the firm; completeness of disclosure; assessments used in preparing financial statements; the reasonability of the assumptions underlying asset or debt valuations; and internal auditing activities relevant to preparing financial statements.
Amendment 16 Reform	2011	The reform intends to improve board and audit committee independence by restricting the chairman from serving as the firm’s CEO; requiring the audit committee’s chairman to be an outside director; requiring all outside directors to serve on the audit committee; requiring the majority of directors on the audit committee to be independent; and prohibiting dependent directors from serving on the audit committee.
Amendment 20 Reform	2012	The reform requires the firm to establish a compensation committee. The compensation committee is responsible for recommending a compensation policy to the board and supervising its implementation.
Country-Level Reforms		
	2010	The establishment of the Court for Economic Affairs.
The Law for Improvement of the Enforcement Process	2011	The law enables the ISA to sanction certain violations of Securities Law requirements in the administrative track.
Amendment 16 Reform	2011	The amendment increases the required minimum percentage of “for” votes of minority shareholders from a third of the minority to a majority of the minority in order for an RPT to be approved at the general meeting. Additionally, this amendment requires continuous RPTs, which are RPTs that were approved in a certain year and whose cash flow is paid in each of the following years, to be reapproved at the general meeting every three years.
Amendment 20 Reform	2012	The amendment requires the firm to approve a compensation policy at the general meeting. The approval is conditional on the support of a majority of the minority shareholders. Additionally, the amendment increases the required minimal percentage of “for” votes of minority shareholders from a third of the minority to a majority of the minority in order for non-controlling shareholder compensation to be approved at the general meeting.

Table 2. Definitions of the Main Variables

Variable	Definition
CGI	The firm's corporate governance scores as calculated based on the index proposed in Cohen (2020a). In the regressions in this paper, I use the CGI scores that are normalized to an average of 0 and a standard deviation of 1.
Low CGI 2007–2010	A dummy variable that takes a value of 1 for firms whose the average CGI scores in the period 2007–2010 were below the median score in those years and 0 otherwise.
Low Board Qualifications 2007–2010	A dummy variable that takes a value of 1 for firms whose average qualifications score in the period 2007–2010 is below the median qualifications score in those years and 0 otherwise. The qualifications score is the equally weighted average of the CGI components that measure board qualifications.
Low Board Independence 2007–2010	A dummy variable that takes a value of 1 for firms whose average independence score in the period 2007–2010 is below the median independence score in those years and 0 otherwise. The independence score is the equally weighted average of the CGI components that measure board independence.
CSH is Senior Executive 2007–2010	A dummy variable that takes a value of 1 for firms in which at least one of the senior executives during the years 2007–2010 was the controlling shareholder and 0 otherwise.
Tobin's Q	The average market value of the firm during the three days after the financial statements were published plus the book value of the debt, divided by the book value of the assets. In the regressions in the present paper I use the natural log of Tobin's Q.
Market to Book ratio	The average market value of the firm during the three days after the financial statements were published divided by the book value of the assets.
Age	The number of months during which the firm had been public. In the regressions in this paper I use the natural log of age.
Size	The book value of the firm's assets. In the regressions in the present paper I use the natural log of size.
Leverage	The book value of long-term liabilities divided by the book value of the firm's assets.
CAPEX	The difference between the tangible assets of a firm in year t and the tangible assets in year $t-1$, divided by the firm's assets in year t .
ROA	The operating profits normalized by the book value of the firm's assets.
Cash Flow/Liabilities	The cash flow from operating activities divided by the firm's liabilities.
Institutional	The shareholdings of the institutional investors in a firm.
Industry	Industry dummy variables that are defined based on two-digit TASE codes.
Concentration Law	A dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise.

Table 3. Predictions of the Effect of the Control Variables on the Likelihood to Delist

	Theory	Empirical evidence	The Variable in the regressions	Predicted effect on a delisting
Size	Some listing costs are fixed and hence more burdensome for smaller firms (e.g., Holmstrom and Kaplan, 2003). In addition, large firms are less affected by information asymmetry and the corresponding discount in value (Mehran and Peristiani, 2009).	<u>A negative effect on the likelihood to delist</u> Marosi and Massoud, 2007; Leuz, Triantis, and Wang, 2008; Mehran and Peristiani, 2009; Aslan and Kumar, 2011; Martinez and Serve, 2011; Michelsen and Klein, 2011; Pour and Lasfer, 2013.	Size	-
Leverage	High leverage implies that a firm fails to rebalance its capital structure by raising equity and is thus more likely to delist (Pour and Lasfer, 2013). By contrast, high leverage aligns management's and shareholders' interests, and hence decreases agency costs (Jensen, 1986).	<u>A positive effect on the likelihood to delist</u> Marosi and Masoud, 2007; Leuz, Triantis, and Wang, 2008; Mehran and Peristiani, 2009; Chancharat, Krishnamurti, and Tian, 2012; Pour and Lasfer, 2013.	Leverage	+
Free Cash Flow	High free cash flow is associated with greater agency costs. An efficient way to align the interests of management with those of shareholders is leveraged buyout (Jensen, 1986).	<u>The effect on the likelihood to delist is inconclusive</u> <u>Evidence for a positive effect:</u> Lehn and Poulsen, 1989; Leuz, Triantis, and Wang, 2008; Mehran and Peristiani, 2009; Bharath and Ditmar, 2010; Belkhir, Boubaker, and Rouatbi, 2013. <u>Evidence for no effect:</u> Andres, Betzer, and Weir, 2007; Marosi and Masoud, 2007; Renneboog, Simons, and Wright, 2007; Becker and Pollet, 2008; Aslan and Kumar, 2011; Michelsen and Klein, 2011; Pour and Lasfer, 2013.	OCF	Inconclusive
Growth Opportunities	Low growth opportunities, accompanied by high free cash flow, are associated with greater agency costs. An efficient way to align the interests of management with those of shareholders is leveraged buyout (Jensen, 1986). Moreover, the shareholders in a private company may limit the leverage of the firm, in order to compensate for the risk of not being diversified. Thus, the firm may not raise the required finance to implement its growth opportunities (Becker and Pollet, 2008).	<u>A negative effect on the likelihood to delist</u> Marosi and Masoud, 2007; Becker and Pollet, 2008; Leuz, Triantis, and Wang, 2008; Mehran and Peristiani, 2009; Bharath and Ditmar, 2010; Aslan and Kumar, 2011; Pour and Lasfer, 2013.	MB	-
Financial Visibility	Greater financial visibility reflects lower information asymmetry and lower price of capital (Mehran and Peristiani, 2009).	<u>A negative effect on the likelihood to delist</u> Marosi and Masoud, 2007; Mehran and Peristiani, 2009; Bharath and Ditmar, 2010; Martinez and Serve, 2011; Michelsen and Klein, 2011.	Institutional	-

Table 4. The Sample

Delisted Firms: Total	339
Dual Companies	42
Financial Firms	22
Debt Companies	62
Liquidations and Debt Restructuring	46
Firms with Incomplete Data	13
Other	17
Final Sample of Delisted Firms	137
Final Sample of Non-Delisted Firms	150
Total Final Sample	287

Table 5. Comparison of Delisted and Non-Delisted Firms

	Delisted	Non-Delisted	Diff
Age (years)	16	14	2*
Size (trillion NIS)	0.265	0.645	-0.381***
Leverage	0.217	0.261	-0.045**
Cash Flow/Liabilities	0.166	0.105	0.061
Market to Book ratio	0.410	0.693	-0.283**
CAPEX	-0.012	0.037	-0.049***
Institutional	0.026	0.082	-0.056***
ROA	0.038	0.064	-0.025**
CGI	46.6	50.7	-4.1***

The table presents a comparison of the delisted and non-delisted firms in my sample. *Age* is the number of years during which the firm had been public. *Size* is the book value of the firm's assets. *Leverage* is the book value of long-term liabilities divided by the book value of the firm's assets. *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm's liabilities. *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets. *CAPEX* is the difference between the tangible assets of a firm in year t and the tangible assets in year $t-1$, divided by the firm's assets in year t . *Institutional* is the shareholdings of the institutional investors in a firm. *ROA* is the operating profits normalized by the book value of the firm's assets. *CGI* is the firm's corporate governance scores calculated based on the index proposed in Cohen (2020a). Significant differences between the delisted and non-delisted firms of 1%, 5%, and 10% are indicated by ***, **, *, respectively. Significant differences of 5% and 1% are shown in bold. The sample includes 287 firms from the TASE, of which 137 were delisted in 2007–2015 and 150 were listed during all that period. Excluded from the sample are financial firms, dual firms, debt companies, firms that were delisted due to liquidation or debt restructuring, and firms on which the financial or governance data is incomplete.

Table 6. Regressions of Delisting Decisions on CG Quality

	Hazard Model			LPM		
	(1)	(2)	(3)	(4)	(5)	(6)
Low CGI _{2007–2010}	0.4818** (0.147)	0.2972*** (0.094)				
Low CGI _{2007–2010} *Post	2.6986*** (0.987)	3.2345*** (1.204)		0.0914*** (0.030)	0.0819*** (0.030)	
CGI _{2007–2010}			2.1525*** (0.435)			
CGI _{2007–2010} *Post			0.5200*** (0.106)			-0.0578*** (0.017)
CGI	0.5197** (0.067)	0.4624*** (0.063)	0.4106*** (0.063)	-0.0169 (0.015)	-0.0054 (0.015)	-0.0180 (0.016)
Age		1.1160 (0.148)	1.1110 (0.148)		-0.0453* (0.029)	-0.0346 (0.027)
Size		0.6795*** (0.045)	0.6664*** (0.044)		-0.0807*** (0.024)	-0.0837*** (0.023)
Leverage		0.9613 (0.406)	1.0667 (0.431)		0.0467 (0.072)	0.0311 (0.054)
Market to Book ratio		0.4934*** (0.128)	0.6997** (0.132)		-0.0178** (0.008)	-0.0197** (0.009)
Cash Flow/Liabilities		1.2479* (0.158)	1.1750 (0.141)		0.0327** (0.014)	0.0347*** (0.014)
Concentration Law		2.3801*** (0.590)	2.4329*** (0.606)		0.0659** (0.031)	0.0679** (0.032)
Institutional		0.0001*** (0.000)	0.0001*** (0.000)		-0.3492*** (0.111)	-0.3500*** (0.110)
Firm Fixed Effects	No	No	No	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	No	No	No
Industry-Year Fixed Effects	No	No	No	Yes	Yes	Yes
Pseudo R ²	N/A	N/A	N/A	0.125	0.150	0.158
Firm-Year Observations	1693	1693	1693	1693	1693	1693

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions for 2007–2015. The dependent variable in Columns 1–3 is the time to a delisting announcement. The dependent variable in Columns 4–6 is a dummy variable that takes a value of 1 if a firm i announced a delisting in year t and 0 otherwise. The regressions in Columns 1–3 present the hazard ratios with year and industry fixed effects and the regressions in Columns 4–6 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The *Low CGI_{2007–2010}* variable is a dummy variable that takes a value of 1 for firms whose CGI scores in the period 2007–2010 were below the median score in those years and 0 otherwise. *CGI_{2007–2010}* is the firm's average corporate governance score in 2007–2010 calculated based on the CGI. The *CGI* variable is the firm's corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm's assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm's assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm's liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Low CGI_{2007–2010}* and *CGI_{2007–2010}*, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 7. Regressions of Delisting Decisions on the Quality of CGI Aspects

	(1)	(2)	(3)	(4)
	Hazard Model	LPM	Hazard Model	LPM
Low Board Qualifications <i>2007–2010</i>	0.4678*** (0.143)			
Low Board Qualifications <i>2007–2010</i> *Post	2.4587*** (0.902)	0.1144*** (0.029)		
Low Board Independence <i>2007–2010</i>			0.5234** (0.168)	
Low Board Independence <i>2007–2010</i> *Post			2.3294** (0.931)	0.0861*** (0.028)
CGI		-0.0016 (0.014)	0.5333*** (0.066)	-0.0084 (0.015)
Age	1.1296 (0.150)	0.0484* (0.029)	1.1461 (0.152)	-0.0412* (0.028)
Size	0.7015*** (0.046)	0.0783*** (0.024)	0.6991*** (0.046)	-0.0890*** (0.023)
Leverage	0.9374 (0.412)	0.0428 (0.071)	0.9733 (0.424)	0.0481 (0.072)
Market to Book ratio	0.5245*** (0.133)	-0.0176** (0.008)	0.5264*** (0.135)	-0.0197** (0.008)
Cash Flow/Liabilities	1.2292* (0.158)	0.0326** (0.014)	1.2165* (0.156)	0.0331** (0.014)
Concentration Law	2.4133*** (0.600)	0.0709** (0.031)	2.2874*** (0.569)	0.0670** (0.033)
Institutional	0.0001*** (0.000)	-0.3417*** (0.115)	0.0001*** (0.000)	-0.3917*** (0.105)
Firm Fixed Effects	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	No	Yes	No
Industry-Year Fixed Effects	No	Yes	No	Yes
Pseudo R ²	N/A	0.157	N/A	0.150
Firm-Year Observations	1693	1693	1693	1693

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions for 2007–2015. The dependent variable in Columns 1 and 3 is the time to a delisting announcement. The dependent variable in Columns 2 and 4 is a dummy variable that takes a value of 1 if a firm i announced a delisting in year t and 0 otherwise. The regressions in Columns 1 and 3 present the hazard ratios with year and industry fixed effects and the regressions in Columns 2 and 4 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The *Low Board Qualifications* *2007–2010* variable is a dummy variable that takes a value of 1 for firms whose average qualifications score in the period 2007–2010 is below the median qualifications score in those years and 0 otherwise. The *Low Board Independence* *2007–2010* variable is a dummy variable that takes a value of 1 for firms whose average independence score in the period 2007–2010 is below the median independence score in those years and 0 otherwise. The qualifications score is the equally weighted average of the CGI components that measure board qualifications and the independence score is the equally weighted average of the CGI components that measure board independence. The *CGI* variable is the firm’s corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm’s assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm’s assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm’s liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Low Board Qualifications* *2007–2010* and *Low Board Independence* *2007–2010*, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 8. Regressions of Delisting Decisions on the Quality of CGI Aspects

	(1)	(2)	(3)	(4)
	Hazard Model	LPM	Hazard Model	LPM
Board Qualifications _{2007–2010}	1.8435*** (0.332)			
Board Qualifications _{2007–2010} *Post	0.5730*** (0.108)	-0.0606*** (0.016)		
(CGI Minus Board Qualifications) _{2007–2010}	1.4454** (0.263)			
(CGI Minus Board Qualifications) _{2007–2010} *Post	0.7921 (0.170)	-0.0118 (0.016)		
Board Independence _{2007–2010}			1.7836*** (0.366)	
Board Independence _{2007–2010} *Post			0.6569** (0.144)	-0.0385** (0.016)
(CGI Minus Board Independence) _{2007–2010}			1.4986*** (0.233)	
(CGI Minus Board Independence) _{2007–2010} *Post			0.6465** (0.120)	-0.0469*** (0.016)
CGI	0.4257*** (0.067)	-0.0134 (0.016)	0.4262*** (0.067)	-0.0138 (0.016)
Age	1.1186 (0.150)	0.0427* (0.028)	1.1197 (0.150)	-0.0418* (0.027)
Size	0.6723*** (0.045)	-0.0798*** (0.023)	0.6712*** (0.045)	-0.0798*** (0.023)
Leverage	0.8847 (0.384)	0.0391 (0.069)	0.8703 (0.378)	0.0397 (0.069)
Market to Book ratio	0.4847*** (0.127)	-0.0180** (0.008)	0.4846*** (0.126)	-0.0178** (0.008)
Cash Flow/Liabilities	1.2196* (0.148)	0.0345** (0.014)	1.2203* (0.147)	0.0346** (0.014)
Concentration Law	2.3422*** (0.589)	0.0712** (0.031)	2.3368*** (0.592)	0.0712** (0.032)
Institutional	0.0001*** (0.000)	-0.3416*** (0.113)	0.0001*** (0.000)	-0.3450*** (0.112)
Firm Fixed Effects	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	No	Yes	No
Industry-Year Fixed Effects	No	Yes	No	Yes
Pseudo R ²	N/A	0.157	N/A	0.156
Firm-Year Observations	1693	1693	1693	1693

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions for 2007–2015. The dependent variable in Columns 1 and 3 is the time to a delisting announcement. The dependent variable in Columns 2 and 4 is a dummy variable that takes a value of 1 if a firm i announced a delisting in year t and 0 otherwise. The regressions in Columns 1 and 3 present the hazard ratios with year and industry fixed effects and the regressions in Columns 2 and 4 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The *Board Qualifications*_{2007–2010} variable is the average qualifications score in 2007–2010 and the *Board Independence*_{2007–2010} variable is the average independence score in those years. The qualifications score is the equally weighted average of the CGI components that measure board qualifications in a firm and the independence score is the equally weighted average of the CGI components that measure board independence. The *(CGI Minus Board Qualifications)*_{2007–2010} and the *(CGI Minus Board Independence)*_{2007–2010} variables are the equally weighted average of the CGI components that do not measure board qualifications and board independence, respectively, in 2007–2010. The *CGI* variable is the firm's corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm's assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm's assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm's liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Board Qualifications*_{2007–2010}, *(CGI Minus Board Qualifications)*_{2007–2010}, *Board Independence*_{2007–2010}, and *(CGI Minus Board Independence)*_{2007–2010}, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 9. Regressions of Delisting Decisions on the Quality of CGI Aspects

	Hazard Model	LPM
	(1)	(2)
CSH is Senior Executive 2007–2010	0.5215*** (0.079)	
CSH is Senior Executive 2007–2010*Post	1.8479*** (0.357)	0.0265** (0.014)
CGI (Minus CSH is Senior Executive) 2007–2010	1.7660*** (0.349)	
CGI (Minus CSH is Senior Executive) 2007–2010*Post	0.6356** (0.129)	-0.0526*** (0.017)
CGI	0.4122*** (0.064)	-0.0193 (0.016)
Age	1.0973 (0.147)	-0.0367 (0.026)
Size	0.6676*** (0.045)	-0.0818*** (0.023)
Leverage	0.9507 (0.408)	0.0501 (0.069)
Market to Book ratio	0.4775*** (0.128)	-0.0188** (0.008)
Cash Flow/Liabilities	1.2237* (0.159)	0.0339** (0.014)
Concentration Law	2.0654*** (0.516)	0.0655** (0.032)
Institutional	0.0001*** (0.000)	-0.3478*** (0.108)
Firm Fixed Effects	No	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	No
Industry-Year Fixed Effects	No	Yes
Pseudo R ²	N/A	0.158
Firm-Year Observations	1693	1693

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions for 2007–2015. The dependent variable in Column 1 is the time to a delisting announcement and the dependent variable in Column 2 is a dummy variable that takes a value of 1 for a firm i that announced a delisting in year t and 0 otherwise. The regression in Column 1 presents the hazard ratios with year and industry fixed effects and the regression in Column 2 presents the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The *CSH is Senior Executive 2007–2010* variable is a dummy variable that takes a value of 1 for firms in which at least one of the senior executives during the years 2007–2010 was the controlling shareholder and 0 otherwise. The *(CGI Minus CSH is Senior Executive) 2007–2010* is the equally weighted average of the CGI components that do not measure whether a CSH is a senior executive in 2007–2010. The *CGI* variable is the firm's corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. The *Age* variable is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm's assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm's assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm's liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *CSH is Senior Executive 2007–2010*, *(CGI Minus CSH is Senior Executive) 2007–2010*, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 10. Comparison of the Treated Group and the Control Group

	Pre-Reform			Post-Reform			Diff in Diff
	(1) Treated Group	(2) Control Group	(3) Diff (1–2)	(4) Treated Group	(5) Control Group	(6) Diff (4–5)	(7) Diff in Diff (6–3)
Size (trillion NIS)	0.307	0.528	-0.221**	0.355	0.880	-0.525***	-0.304
Leverage	0.232	0.289	-0.057**	0.207	0.288	-0.081***	-0.024
Cash Flow/Liabilities	0.136	0.075	0.061*	0.123	0.082	0.041*	-0.020
Market to Book ratio	0.444	0.575	-0.131**	0.539	0.538	0.001	0.132**
CAPEX	0.035	0.071	-0.036**	0.001	0.038	-0.037***	-0.001
Institutional	0.052	0.046	0.006	0.075	0.088	-0.013	-0.019
ROA	0.069	0.066	0.003	0.063	0.047	0.016	0.013

The table presents a comparison of the treated group and the control group separately for the pre- and post-reform periods. The firms in the treated group and the control group are those whose CGI score in the years 2007–2010 was respectively lower and higher than the median score in this period. The CGI is the firm's corporate governance scores, which are calculated based on the index proposed in Cohen (2020a). *Size* is the book value of the firm's assets. *Leverage* is the book value of long-term liabilities divided by the book value of the firm's assets. *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm's liabilities. *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets. *CAPEX* is the difference between the tangible assets of a firm in year t and the tangible assets in year $t-1$, divided by the firm's assets in year t . *Institutional* is the shareholdings of the institutional investors in a firm. *ROA* is the operating profits normalized by the book value of the firm's assets. Significant differences between the treated and the control groups of 1%, 5%, and 10% are indicated by ***, **, *, respectively. Significant differences of 5% and 1% are shown in bold. The sample includes 287 firms from the TASE, of which 137 were delisted in 2007–2015 and 150 were listed during all that period. Excluded from the sample are financial firms, dual firms, debt companies, firms that were delisted due to liquidation or debt restructuring, and firms on which the financial and governance data is incomplete.

Table 11. Regressions of Delisting Decisions on CG quality Based on a Matched Sample

	Hazard Model		LPM	
	(1)	(2)	(3)	(4)
Low CGI _{2007–2010}	0.2729*** (0.101)			
Low CGI _{2007–2010} *Post	3.6977*** (1.604)		0.0723* (0.042)	
CGI _{2007–2010}		2.3224*** (0.551)		
CGI _{2007–2010} *Post		0.4779*** (0.111)		-0.0714*** (0.028)
CGI	0.4915*** (0.077)	0.4295*** (0.078)	0.0071 (0.015)	-0.0124 (0.025)
Age	1.1221 (0.192)	1.1284 (0.194)	-0.0658 (0.482)	-0.0694 (0.047)
Size	0.7438*** (0.055)	0.7177*** (0.053)	-0.0965*** (0.036)	-0.1014*** (0.036)
Leverage	0.9330 (0.453)	0.9954 (0.447)	0.0073 (0.098)	0.0030 (0.097)
Market to Book ratio	0.5583** (0.156)	0.7877 (0.141)	-0.0315** (0.014)	-0.0325** (0.014)
Cash Flow/Liabilities	1.2354* (0.162)	1.1675 (0.143)	0.0434*** (0.015)	0.0432*** (0.015)
Concentration Law	2.7456*** (0.815)	2.7973*** (0.832)	0.1145** (0.048)	0.1230*** (0.049)
Institutional	0.0001*** (0.000)	0.0001*** (0.000)	-0.4683** (0.189)	-0.4284** (0.194)
Firm Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	No
Industry-Year Fixed Effects	No	No	Yes	Yes
Pseudo R ²	N/A	N/A	0.195	0.203
Firm-Year Observations	932	932	932	932
Firm fixed Effects	No	No	Yes	Yes

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions for 2007–2015. The dependent variable in Columns 1–2 is the time to a delisting announcement. The dependent variable in Columns 3–4 is a dummy variable that takes a value of 1 if a firm i announced a delisting in year t and 0 otherwise. The regressions in Columns 1–2 present the hazard ratios with year and industry fixed effects and the regressions in Columns 3–4 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The *Low CGI_{2007–2010}* variable is a dummy variable that takes a value of 1 for firms whose CGI scores in the period 2007–2010 were below the median score in those years and 0 otherwise. *CGI_{2007–2010}* is the firm’s average corporate governance score in 2007–2010 calculated based on the CGI. The *CGI* variable is the firm’s corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm’s assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm’s assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm’s liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Low CGI_{2007–2010}* and *CGI_{2007–2010}*, are lagged by one year. The sample in this table is a matched sample of firms with a very similar probability of being poorly-governed or well-governed company in the years 2007–2010. The probability of being poorly-governed or well-governed company is calculated with a probit regression with *Size*, *Leverage*, *Cash Flow/Liabilities*, *Market to Book ratio*, and *CAPEX* as explanatory variables. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 12. Regressions of Delisting Decisions on the Interaction between Size and Post

	Hazard Model		LPM	
	(1)	(2)	(3)	(4)
Low CGI _{2007–2010}	0.3227*** (0.103)			
Low CGI _{2007–2010} *Post	2.6749*** (0.016)		0.0600** (0.029)	
CGI _{2007–2010}		2.0622*** (0.412)		
CGI _{2007–2010} *Post		0.5681*** (0.116)		-0.0471*** (0.016)
CGI	0.4412*** (0.060)	0.3863*** (0.060)	-0.0173 (0.015)	-0.0290* (0.016)
Age	1.1361 (0.148)	1.1279 (0.147)	-0.0429* (0.028)	-0.0352 (0.026)
Size	0.8188** (0.077)	0.8334** (0.076)	-0.0579*** (0.023)	-0.0590*** (0.022)
Size*Post	0.7460** (0.083)	0.7071** (0.077)	-0.0394*** (0.008)	-0.0407*** (0.008)
Leverage	0.9353 (0.385)	1.0014 (0.393)	0.0390 (0.067)	0.0296 (0.050)
Market to Book ratio	0.4905*** (0.130)	0.7224* (0.141)	-0.0199** (0.009)	-0.0211*** (0.009)
Cash Flow/Liabilities	1.2314* (0.159)	1.1497 (0.145)	0.0266* (0.015)	0.0281** (0.014)
Concentration Law	2.2436*** (0.562)	2.2949*** (0.578)	0.0496* (0.031)	0.0501* (0.031)
Institutional	0.0001*** (0.000)	0.0001*** (0.000)	-0.3353*** (0.109)	-0.3335*** (0.109)
Firm Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	No
Industry-Year Fixed Effects	No	No	Yes	Yes
Pseudo R ²	N/A	N/A	0.166	0.176
Firm-Year Observations	1693	1693	1693	1693
Firm fixed Effects	No	No	Yes	Yes

The table reports the coefficients of Linear Probability Model (LPM) regressions and of Hazard Model regressions for 2007–2015. The dependent variable in Columns 1–2 is the time to a delisting announcement and the dependent variable in Columns 3–4 is a dummy variable that takes 1 for a firm i that announced a delisting in year t and 0 otherwise. The regressions in Columns 1–2 present the hazard ratios with year and industry fixed effects and the regressions in Columns 3–4 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The *Low CGI*_{2007–2010} variable is a dummy variable that takes a value of 1 for firms whose CGI scores in the period 2007–2010 were below the median score in those years and 0 otherwise. *CGI*_{2007–2010} is the firm's average corporate governance score in 2007–2010 calculated based on the CGI. The *CGI* variable is the firm's corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm's assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm's assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm's liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Low CGI*_{2007–2010} and *CGI*_{2007–2010}, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 13. OLS Regressions of the CARs around the Legislation of Amendment 16 to the Companies Law on the *CSH is Senior Executive 2007–2010* Variable

Dependent Variable:	(1) CAR +1, -1	(2) CAR +2, -2	(3) CAR +3, -3	(4) CAR +5, -5
<i>CSH is Senior Executive 2007–2010</i>	0.0462* (0.026)	0.0665** (0.032)	0.1029** (0.045)	0.1529** (0.066)
Age	-0.0095** (0.004)	-0.0098** (0.005)	-0.0167*** (0.006)	-0.0280*** (0.010)
Size	0.0051* (0.003)	0.0053* (0.003)	0.0119*** (0.005)	0.0218*** (0.008)
Leverage	-0.0048 (0.014)	-0.0011 (0.019)	-0.0216 (0.022)	-0.0344 (0.036)
Industry Fixed Effects	Yes	Yes	Yes	Yes
R ²	0.066	0.039	0.046	0.060
Observations	231	231	231	231

The table reports the coefficients of OLS regressions in which the dependent variable is the cumulative abnormal returns (CARs), calculated based on Capital Asset Pricing Model around the legislation of Amendment 16 to the Israeli Companies Law. The dependent variable in Columns 1–4 is the CARs calculated based on windows of one day, two days, three days, and five days, before and after the legislation. The *CSH is Senior Executive 2007–2010* is a dummy variable that takes a value of 1 for firms in which at least one of the senior executives during the years 2007–2010 was the controlling shareholder and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm's assets; *Leverage* is the book value of the long-term liabilities divided by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Robust standard errors appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 14. Regressions of Delisting Decisions, without Mergers with a Non-CSH or Delistings Due to TASE Rules, on the CGI

	Hazard Model		LPM	
	(1) Excluding Mergers with Non-CSH	(2) Excluding Delistings Due to Violation of Exchange Rules	(3) Excluding Mergers with Non-CSH	(4) Excluding Delistings Due to Violation of Exchange Rules
Low CGI ₂₀₀₇₋₂₀₁₀	0.2900*** (0.094)	0.2963**** (0.109)		
Low CGI ₂₀₀₇₋₂₀₁₀ *Post	3.6318*** (1.411)	3.5162** (1.552)	0.0906*** (0.029)	0.0635** (0.028)
CGI	0.4583*** (0.064)	0.4499*** (0.074)	-0.0055 (0.014)	-0.0179 (0.014)
Age	1.1781 (0.166)	1.0446 (0.174)	-0.0442* (0.028)	-0.0745*** (0.023)
Size	0.6647*** (0.045)	0.7021*** (0.066)	-0.0766*** (0.024)	-0.0362** (0.019)
Leverage	1.0630 (0.447)	0.8606 (0.641)	0.0509 (0.075)	0.1160* (0.073)
Market to Book ratio	0.4675*** (0.132)	0.5688** (0.160)	-0.0159** (0.008)	-0.0072 (0.005)
Cash Flow/Liabilities	1.2400* (0.159)	1.3192** (0.166)	0.0337** (0.014)	0.0267 (0.022)
Concentration Law	2.4882*** (0.649)	2.9586*** (0.851)	0.0665** (0.030)	0.0474* (0.029)
Institutional	0.0001*** (0.001)	0.0001*** (0.001)	-0.3459*** (0.109)	-0.3058*** (0.101)
Firm Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	No
Industry-Year Fixed Effects	No	No	Yes	Yes
Pseudo R ²	N/A	N/A	0.148	0.118
Firm-Year Observations	1666	1533	1666	1533

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions for 2007–2015. The dependent variable in Columns 1–2 is the time to a delisting announcement and the dependent variable in Columns 3–4 is a dummy variable that takes a value of 1 for a firm i that announced a delisting in year t and 0 otherwise. The regressions in Columns 1–2 present the hazard ratios with year and industry fixed effects and the regressions in Columns 3–4 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The sample used in the regressions in Columns 1 and 3 does not include firms that were delisted due to mergers with a company that is not controlled by their CSHs. The sample used in the regressions in Columns 2 and 4 does not include firms that were delisted during a period in which they were in violation of the TASE rules. The *Low CGI 2007–2010* variable is a dummy variable that takes a value of 1 for firms whose CGI scores in the period 2007–2010 were below the median score in those years and 0 otherwise. The *CGI* variable is the firm’s corporate governance score which is calculated based on the index proposed in Cohen (2020a) and is normalized to an average of 0 and a standard deviation of 1. *Post* is a dummy variable that takes the value of 1 for the years 2011–2015 and 0 otherwise. *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm’s assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm’s assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm’s liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Low CGI 2007–2010*, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Table 15. Regressions of Delisting Decisions with Alternative Definitions of the Post Variable

	Hazard Model		LPM	
	(1) 2007–2010	(2) 2011–2015	(3) 2007–2010	(4) 2011–2015
Low CGI 2007–2010		0.6139 (0.251)		
Low CGI 2007–2010*Post 2013–2015		1.1728 (0.839)		0.0270 (0.031)
Low CGI 2007–2010	0.7657 (0.399)			
Low CGI 2007–2010*Post 2009–2010	0.5418 (0.308)		-0.0211 (0.027)	
CGI	0.8109 (0.256)	0.4731*** (0.091)	-0.0171 (0.027)	0.0004 (0.021)
Age	1.0875 (0.198)	0.8120 (0.216)	-0.0801*** (0.027)	-0.3064*** (0.107)
Size	0.8627 (0.106)	0.4998*** (0.058)	-0.0381* (0.025)	-0.0610 (0.060)
Leverage	0.2084* (0.202)	1.4773 (0.786)	0.0090 (0.061)	-0.0589 (0.189)
Market to Book ratio	0.2017*** (0.108)	0.2325*** (0.125)	-0.0126 (0.013)	-0.0033 (0.007)
Cash Flow/Liabilities	1.9711*** (0.351)	1.1775 (0.265)	0.0146 (0.017)	0.0214 (0.038)
Concentration Law	1.8173* (0.719)	6.7882*** (2.955)	0.0038 (0.032)	0.0654*** (0.026)
Institutional	0.0001*** (0.001)	0.0001*** (0.001)	-0.2743* (0.190)	-0.2590* (0.185)
Firm Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	No
Industry-Year Fixed Effects	No	No	Yes	Yes
Pseudo R ²	N/A	N/A	0.109	0.094
Firm-Year Observations	771	692	771	692

The table reports the coefficients of Hazard Model regressions and of Linear Probability Model (LPM) regressions. The dependent variable in Columns 1–2 is the time to a delisting announcement and the dependent variable in Columns 3–4 is a dummy variable that takes 1 for a firm i that announced a delisting in year t and 0 otherwise. The regressions in Columns 1–2 present the hazard ratios with year and industry fixed effects and the regressions in Columns 3–4 present the coefficients of a linear probability model with firm, year, and industry-year fixed effects. A hazard ratio that is greater than 1 indicates that the variable is associated with a higher likelihood of a delisting and a hazard ratio that is less than 1 indicates that the variable is associated with a lower likelihood of a delisting. The regressions in the Columns 1 and 3 are for the period 2007–2010 and the regressions in Columns 2 and 4 are for the period 2011–2015. The *Post 2013–2015* and *Post 2009–2010* are dummy variables that take a value of 1 for the years 2013–2015 and for 2009–2010, respectively, and 0 otherwise. The *Low CGI 2007–2010* variable is a dummy variable that takes a value of 1 for firms whose CGI scores in the period 2007–2010 were below the median score in those years and 0 otherwise. The *CGI* variable is the firm’s corporate governance scores calculated based on the index proposed in Cohen (2020a). *Age* is the natural logarithm of the number of months during which the firm had been public; *Size* is the natural logarithm of the book value of the firm’s assets; *Leverage* is the book value of long-term liabilities divided by the book value of the firm’s assets; *Market to Book ratio* is the average market value of the firm during the three days after the financial statements were published divided by the book value of the assets; *Cash Flow/Liabilities* is the cash flow from operating activities divided by the firm’s liabilities; *Concentration Law* is a dummy variable that takes a value of 1 for a firm that is part of a pyramid composed of at least three layers and 0 otherwise; *Institutional* is the shareholdings of the institutional investors in a firm; *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. The explanatory variables, except for *Low CGI 2007–2010*, are lagged by one year. Standard errors are clustered by firm and appear in parentheses. *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively.

Appendix 1. The Corporate Governance Index

The CGI focuses on three dimensions: board independence, board qualifications, and control-cash flow wedge.

I measure board independence by the following components: (a) the percentage of directors on the board who are CSHs or CSH dependents (directors that work in another firm that is controlled by the same controlling shareholder); (b) whether CSHs or a CSH dependents serve on a board committee; (c) the percentage of members of the board or its committees who are outside directors;¹⁴ and (d) whether the board chairman is also the firm's CEO or CSH. In addition, I use two other components to measure the extent to which a conflict of interest hinders the board in monitoring the firm's management: whether a CSH is a senior executive in the firm; and whether a firm's senior manager serves on the compensation committee.

The second of the above-mentioned dimensions is board qualifications. I measure board qualifications by the following components: (a) the percentage of directors with financial and accounting expertise; (b) the percentage of directors with industry expertise; (c) the percentage of directors who are familiar with management methods; and (d) the board members' "busyness."

The third dimension focuses on a characteristic of a firm's structural ownership chain that incentivizes the CSHs to expropriate from minority shareholders. I follow previous studies and consider the control-cash flow wedge as a proxy for the controlling shareholder's incentive to expropriate from minority shareholders. To calculate the wedge, I identify the firm's ultimate owner by mapping the firm's structural ownership chain.¹⁵ Next, I calculate the ownership rights attributed to the ultimate owner by multiplying the ownership rights along the firm's structural ownership chain. The wedge is calculated as the difference between 100% and the percentage of ownership rights that the controlling shareholder holds in the specific firm.

¹⁴ The controlling shareholders have a great deal of influence over the appointment of outside directors. However, unlike other directors, the decision of an outside director's dismissal is subject to the majority of the minority rule at the general meeting of the company's shareholders. Therefore outside directors are may be considered more independent than other directors.

¹⁵ By "ultimate owner" I mean a shareholder who holds at least 25% of a firm's shares. Several shareholders between whom there is a control agreement that their holdings will sum up to 25% are considered a single ultimate owner.

Binary components in the CGI, e.g., “whether the chairman is a CSH,” take the values of 1 and 0, for negative and affirmative, respectively. The score of continuous components, which are ones whose values could range between 0 and 1 (except for the control-cash flow wedge) is normalized to 1 or 0 based on their respective median values as a threshold.¹⁶ The score of the control-cash flow wedge is the controlling shareholder’s ownership rights, which increase with the lowering of the wedge. The firm’s CGI score is calculated as the equally weighted average of the CGI components’ scores. Table A, presents the components included in the CGI and the method by which the score of each component was calculated.

Some of the components included in the CGI are qualitative variables and thus require objective and unified criteria in order to compare the CGI scores across different firms and different years. Specifically, a director is defined as a “financial expert” if one of the following criteria is fulfilled: The director has a Ph.D. in finance or economics; the director is an accountant; the director holds or has held a senior financial position; or the director manages or has managed a financial institution. An “industry expert director” is defined as one who has formal education or practical experience relevant to the business of the firm.¹⁷ The “busyness” of a director is measured by the number of positions she holds in other firms.

¹⁶ For example, the score of the component “percentage of controlling shareholders on the board” is 0 if its value is above the median and 1 otherwise.

¹⁷ A director in a holding company is considered to be an industry expert if she has financial expertise.

Table A. The Corporate Governance Index

Dimension	Component	Score Calculation
Board	Percentage of controlling shareholders on the board ¹⁸	“0” if higher than the median value, “1” otherwise
Independence	Percentage of outside directors on the board	“1” if higher than the median value, “0” otherwise
	The chairman is not a controlling shareholder	“1” if true, “0” otherwise
	The chairman is not the CEO	“1” if true, “0” otherwise
	The controlling shareholder is not a senior executive in the firm	“1” if true, “0” otherwise
	Percentage of outside directors on the audit committee	“1” if higher than the median value, “0” otherwise
	Controlling shareholder does not serve on the audit committee ¹⁸	“1” if true, “0” otherwise
	Financial statements committee exists	“1” if true, “0” otherwise
	Percentage of outside directors on the financial statements committee	“1” if higher than the median value, “0” otherwise
	Controlling shareholder does not serve on the financial statements committee ¹⁸	“1” if true, “0” otherwise
	Compensation committee exists	“1” if true, “0” otherwise
	Percentage of outside directors on the compensation committee	“1” if higher than the median value, “0” otherwise
	Controlling shareholder does not serve on the compensation committee ¹⁸	“1” if true, “0” otherwise
	No senior manager on the compensation committee	“1” if true, “0” otherwise
	Nomination committee exists	“1” if true, “0” otherwise
Corporate governance committee exists	“1” if true, “0” otherwise	
Board	Percentage of financial expert directors on the board	“1” if higher than the median value, “0” otherwise
Qualifications	Percentage of industry expert directors on the board	“1” if higher than the median value, “0” otherwise
	Percentage of MBA directors on the board	“1” if higher than the median value, “0” otherwise
	Directors’ busyness level	“0” if higher than the median value, “1” otherwise
	Percentage of financial expert outside directors on the board	“1” if higher than the median value, “0” otherwise
	Percentage of industry expert outside directors on the board	“1” if higher than the median value, “0” otherwise
	Percentage of MBA outside directors on the board	“1” if higher than the median value, “0” otherwise
	Outside directors’ busyness level	“0” if higher than the median value, “1” otherwise
	Percentage of financial expert outside directors on the audit committee	“1” if higher than the median value, “0” otherwise
	Percentage of industry expert outside directors on the audit committee	“1” if higher than the median value, “0” otherwise
	Percentage of financial expert outside directors on the financial statements committee	“1” if higher than the median value, “0” otherwise
	Percentage of industry expert outside directors on the financial statements committee	“1” if higher than the median value, “0” otherwise
	Percentage of financial expert outside directors on the compensation committee	“1” if higher than the median value, “0” otherwise
	Percentage of industry expert outside directors on the compensation committee	“1” if higher than the median value, “0” otherwise
	Structural	Control-cash flow wedge
Ownership		

¹⁸In calculating this component for a specific firm, I consider the directors that work in another firm that is controlled by the same controlling shareholder, as controlling shareholders.

The table describes the components of the CGI. The index contains 31 components that measure three dimensions of CG quality: board independence, board qualifications, and control-cash flow wedge. All the components, excluding control-cash flow wedge, are assigned a value of 0 or 1. The control-cash flow wedge is calculated as the difference between 100% and the percentage of multiplied ownership rights along the ownership chain until the ultimate owner. The score of the control-cash flow wedge is the controlling shareholder's ownership rights. The CGI score for a specific firm, is calculated as an equally weighted average of the components' scores. A director with financial expertise is defined as one of the following: a director who has a Ph.D. in finance, an accountant, a director who holds or has held a senior financial position, or a director who manages or has managed a financial institution. An industry expert director is defined as a director who has a formal education or practical experience relevant to a firm's business. A director's busyness level is measured as the sum of the positions she holds in other firms. Controlling shareholder is a shareholder who holds at least 25% of a firm's shares. Several shareholders between whom there is a control agreement that their holdings will sum up to 25% are considered a single controlling shareholder.

Appendix 2.

In this appendix I use a very simple model to demonstrate how a decrease in PBCs following investor-protection reforms induces a CSH of a firm to take it private. I denote the value of a private company by V_{pr} . A public firm has unique additional costs and benefits (see, for example, Pagano, Panetta, and Zingales, 1998) and its value is denoted by V_{pu} . The portion of the firm's assets that are extracted by a CSH is denoted by \emptyset . Using the extracted assets, $\emptyset * V_{pu}$, a CSH produces private benefits of $d(\emptyset) * V_{pu}$. Following Burkart, Gromb, and Panunzi (2000), I assume that the function $d(\emptyset)$ is strictly increasing and strictly concave; that is, the marginal private benefit is positive and diminishing.

Therefore, the portion of V_{pu} that is attributed to the minority shareholders of a public company whose CSH holds α percent of its shares is:

(1)

$$V_{msh} = (1-\alpha) * (1 - \emptyset) * V_{pu}$$

The value for the CSH is her proportional portion in V_{pu} plus the PBCs:

(2)

$$V_{csh} = \alpha * (1 - \emptyset) * V_{pu} + d(\emptyset) * V_{pu}$$

To take the firm private the CSH has to pay the minority shareholders their portion in the public company, namely, V_{msh} . Thus, a CSH would take the firm private if $V_{csh} < V_{pr} - V_{msh}$. Using Equations 1 and 2, I show that a CSH will take the firm private if:

(3)

$$d(\emptyset) - \emptyset < \frac{V_{pr}}{V_{pu}} - 1$$

The $\frac{V_{pr}}{V_{pu}}$ on the right side of Equation (3) is the relative cost of keeping the firm public. In particular, $\frac{V_{pr}}{V_{pu}} > 1$ indicates a positive cost for keeping the firm public, and so we would expect the CSH to take it private. Nonetheless, the left side of Equation (3) indicates that a CSH can compensate for the cost of keeping the firm public by having it adopt poor governance, which would enable her to draw PBCs.¹⁹ That is, *ceteris paribus*, I would expect a high \emptyset , and its corresponding poor governance, to be correlated with a high tendency of the CSH to keep the firm public.

An investor-protection reform may decrease the incentive of the CSH to keep the firm public through two channels. The first, represented by the right side of Equation (3), is a decrease in V_{pu} due to compliance costs, which in turn results in an increase in the relative cost of being public $\frac{V_{pr}}{V_{pu}}$. The second channel, represented by the left side of Equation (3), is restricting the ability of the CSH to draw PBCs so that \emptyset , and the corresponding $d(\emptyset) - \emptyset$, substantially decline. In that case, I would expect an average increase in the post-reform likelihood to delist among the pre-reform poorly governed firms. The present paper focusses on the second channel.

¹⁹ More specifically, the left side of Equation 3 reflects the net effect of PBCs on the incentive of a CSH to keep the firm public. On the one hand, a higher \emptyset enables a CSH to produce more PBCs (that is higher $d(\emptyset)$) and so induces her to keep the firm public. On the other hand, expropriating the firm decreases its market value, which in turn increases the CSH's incentive to take it private both due to the loss after her shares' market value declines, and due to the decline in the market value she has to pay for the minority shareholders' shares in the case of a delisting. The net effect of PBCs on the incentive of a CSH to keep the firm public is reflected in the difference $d(\emptyset) - \emptyset$. By the assumptions of strong concavity and a strong increase of $d(\emptyset)$, there is a range of \emptyset for which the difference $d(\emptyset) - \emptyset$ is positive so that it may compensate for the existence of positive costs in keeping the firm public (the right side of Equation 3).

