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Firm-level and Country-level Corporate Governance: Does One Substitute or Complement the Other?

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ממשל תאגידי ברמת פירמה והגנה על משקיעים ברמת מדינה:
האם תחליפים או משלימים?

עודד כהן

תקציר

בנייר זה אני בוחן מהו היחס שבין ממשל תאגידי ברמת פירמה והגנה על משקיעים ברמת מדינה: האם מערכות אלו תחליפיות זו לזו או משלימות זו את זו. בניגוד למחקרים קודמים שבחנו שאלה זו על בסיס השוואה בין מדינות, אני בוחן את השאלה תוך שימוש בנתוני פאנל של חברות הפועלות בתוך אותה מדינה ומראה כי האפקט של איכות הממשל התאגידי של הפירמה על ביצועיה בישראל פחת לאחר כניסתם לתוקף של רפורמות בשנת 2011 ששיפרו משמעותית את ההגנה על משקיעים ברמת המדינה. תוך שימוש בשיטת הפרש-הפרשים, אני מוצא כי לאחר הרפורמות היקף העסקאות עם בעלי שליטה במונחי ₪ ובמונחים מספריים ירד בקרב החברות להן היה הממשל התאגידי הגרוע ביותר לפני הרפורמות ושווי השוק היחסי שלהן עלה כך שהפער בינן לבין החברות שהיו עם הממשל התאגידי הטוב ביותר לפני הרפורמות, הפך לבלתי מובהק סטטיסטית. יתירה מזאת, בעזרת רגרסיה דו-שלבית אני מראה כי הירידה בהיקף העסקאות עם בעלי שליטה בקרב החברות עם הממשל התאגידי הגרוע, הייתה ערוץ אפשרי דרכו שווי השוק שלהן עלה לאחר הרפורמות. ממצאים אלו עקביים עם קיומם של יחסי תחלופה בין שתי המערכות: הרפורמות קבעו רף אחיד וגבוה של הגנה על משקיעים ברמת המדינה ובכך החליפו את המנגנונים של ממשל תאגידי בקרב הפירמות שהיו עם ממשל תאגידי גרוע, אילצו את בעלי השליטה בחברות אלו להפחית את העושק של בעלי מניות המיעוט והובילו לעלייה בערכן.

Firm-level and Country-level Corporate Governance: Does One Substitute or Complement the Other?

Oded Cohen

Abstract

In this paper, I examine whether firm-level and country-level corporate governance substitute or complement each other. In contrast to previous multi-country studies, I address this question using a within-country framework and show that the effect of firm-level corporate governance on performance decreased following major country-level investor protection reforms in Israel in 2011. Using a difference-in-differences design, I find that firms with poor governance pre-reform, reduced the volume (in NIS) and number of their related-party transactions and increased in value post-reform, thereby minimizing the differences between them and the well-governed firms. Moreover, using a two-stage approach I provide evidence that the decrease in the related-party transactions among the firms with the pre-reform poor governance was a possible channel for their post-reform increase in value. These findings are consistent with the substitution hypothesis. The rationale is that the reforms set a unified higher standard of investor protection that substituted for the governance mechanisms in the poorly governed firms. Accordingly, these firms curtailed shareholder expropriation and increased in value.

1. Introduction

A key objective of corporate governance (CG) is protecting shareholders from being expropriated in a firm with dispersed ownership, by management, and in a firm with concentrated ownership – by a controlling shareholder (CSH). Shareholders are protected through country-level corporate governance mechanisms (CLCG) that are external to the firm and through firm-level corporate governance mechanisms (FLCG).[1]

Empirical studies have provided evidence that better investor protection is correlated with a decrease in shareholder expropriation.[2] These findings apply both to CLCG (e.g., La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2002) and to FLCG (e.g., Gompers, Ishii, and Metrick, 2003; Klock, Mansi, and Maxwell, 2005; Chen, Chen and Wei, 2009).[3]

Though CLCG and FLCG are separate systems, they do not have to be mutually independent. The literature advances three hypotheses with regard to the relation between CLCG and FLCG: substitution, complementarity, and independence. According to the substitution hypothesis, the CLCG mechanisms, which in a country are applied equally to all firms, substitute for ineffective FLCG mechanisms and constrain the agent from expropriating shareholders. It follows that, for the FLCG to be effective, the firm must set a standard of investor protection that is higher than that imposed by CLCG. According to the substitution

[1] 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 influences operations 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, anod defines all the governance mechanisms that are internal to the firm, whether they are mandatory or are adopted voluntarily, as firm-level corporate governance.

[2] In particular, those studies show that high-quality investor protection is correlated with a firm's higher market value, higher profitability, lower cost of capital, and less tunneling. The underlying assumption is that a firm's market value and profitability reflect the portion of assets that remain within the firm and that are not diverted to CSHs. The cost of capital reflects, among other things, the risk of being expropriated by a CSH. Hence, the higher the quality of investor protection, the less extensive minority-shareholder expropriation is expected to be, and as a corollary, the higher the firm's market value and profitability, and the lower its cost of capital.

[3] The evidence of a positive effect of FLCG quality on firm performance comes mainly from studies that measure the FLCG quality by a comprehensive CG index. However, in the literature that examines the effect of a specific CG component on firm performance, the findings are inconclusive (Hermalin and Weisbach, 2001; Adams, Hermalin, and Weisbach, 2010, Adams, 2017).

rationale, *ceteris paribus*, the better the CLCG in a country, the greater the percentage of firms whose investor-protection level is not reflected in the quality of their FLCG, and therefore the lower the average correlation between FLCG quality and firm performance.

An alternative hypothesis is that CLCG and FLCG are mutually complementary (henceforth, "complements"). Specifically, the CSH influences the quality of FLCG mechanisms, thereby effectively constraining itself. This dynamic gives rise to a conflict of interests, and consequently, the investors must be able to ascertain that the firm's commitment to investor protection is credible and not just a window dressing. This is achieved through efficient CLCG platforms, e.g., regulators and courts (for the complementarity rationale, see Doidge, Karolyi, and Stulz, 2007; Aggarwal, Erel, Stulz, and Williamson, 2008). Given this approach, all else being equal, we would expect the credibility of FLCG and its effect on firm performance to be higher in countries with high-quality CLCG.

The third hypothesis posits that FLCG and CLCG are neither substitutes nor complements, but are two independent systems.

The empirical studies have hitherto examined the relation between CLCG and FLCG by comparing countries with different levels of CLCG quality in terms of the average effect of FLCG quality on firm performance. To the extent that these two systems substitute, complement, or are independent of each other, this effect is expected to be, respectively, lower, higher, or the same in countries with a high standard of CLCG. The findings of this research are inconclusive. Some studies endorse the substitution hypothesis (e.g., Klapper and Love, 2004; Durnev and Kim, 2005), others adduce evidence in support of complementarity (Homanen and Liang, 2018), yet others demonstrate that CLCG and FLCG are mutually independent (Bruno and Claessens, 2010).

The present paper examines the relation between CLCG and FLCG using a different methodological approach – a within-country analysis. Based on a sample of Israeli public firms with concentrated ownership, I check whether and how the effect of FLCG quality on firm performance in Israel changed following the implementation, in 2011, of extensive legal reforms (henceforth "the reforms") associated with a significant improvement in the quality of CLCG. If CLCG and FLCG are substitutes, the new CLCG standard should reduce minority-

shareholder expropriation in the firms whose FLCG mechanisms are inferior to the new level of CLCG set by the reforms. In these firms, the active level of investor-protection is no longer reflected in FLCG quality but rather in the new, higher-quality CLCG. Hence, the average effect of FLCG quality on firm performance is expected to decrease. In contrast, if CLCG and FLCG are complements, the effect of FLCG quality on performance is expected to rise in the wake of the reforms, due to the increase in the credibility of such mechanisms.

I measure FLCG quality using the corporate governance index (CGI) described in Cohen (2020a) and check the correlation between the CGI scores and Tobin's Q (TQ) in 2007–2014 ("the sample period"). I show that the CGI scores were positively correlated with TQ until 2010, but that this correlation disappeared from 2011 onward, after the country-level reforms went into effect. This pattern is consistent with the substitution hypothesis.

Moreover, under the substitution rationale, the effect of the reforms on performance is expected to be the most pronounced in companies where the pre-reform governance was poor, and whose investor protection improved the most after the CLCG reforms. Thus, I consider the firms whose the average CGI scores, pre-reform, were lower than the median score in those years as a treated group and firms whose the CGI scores were higher than the median score as a control group. Consistent with the dynamic of substitution, I find that the TQ of the treated group increased post-reform relative to the TQ of the control group.

Next, I provide evidence of a post-reform decrease in an activity considered by scholars as conducive to minority-shareholder expropriation. A large body of literature regards related-party transactions (RPTs) as a major platform for tunneling (Bebchuk, Kraakman, and Trianis, 2000; Johnson, La Porta, Lopez-de-Silanes, and Shleifer, 2000; Djankov, La Porta, Lopez-de-Silanes, and Shleifer, 2008; Fried, Kamar, and Yafeh, 2019). In line with this rationale, my analyses revealed a negative correlation in the pre-reform years between CGI scores, on the one hand, and the volume (in NIS, normalized by firm's assets) and number of RPTs (excluding compensation), on the other. In the wake of the reforms, the average volume and number of RPTs decreased – a development that is consistent with the substitution hypothesis. Moreover, the post-reform reduction in RPTs among the treated group was significantly greater than that among the control group. Following the reduction in RPTs in the wake of the reforms, no significant difference in the volume and number of RPTs is observable between poorly and well

governed firms, such that the effect of the CGI scores on these variables in the post-reform years is insignificant.

Moreover, using a two stage approach I provide evidence that the post-reform decrease in the RPTs of the treated group, was a possible channel for its post-reform increase in value. In particular, I show that the predicted volume of RPTs from a regression in which being in the treated group is an explanatory variable, had a negative and significant effect on TQ, pre-reform, that becomes insignificant post-reform.

Finally, I examine which of the FLCG aspects were replaced by CLCG. The analyses yield evidence of two such aspects. The first has to do with board committees: the existence of various committees on the board and the percentage of independent and qualified directors who serve on them. The second aspect pertains to the percentage of qualified outside directors on the board and its committees. I find that, before the reforms, the above two aspects positively correlated with TQ and negatively with RPT volume. Both these correlations disappeared after the reforms went into effect. In addition, the increase in TQ and the decrease in the volume of RPTs were greater among the firms whose pre-reform scores in these two aspects were the lowest. Moreover, the two-stage analysis indicates that the decrease in the volume of RPTs among the firms whose pre-reform scores in these two aspects were the lowest, was a possible channel through which their TQ increased after the reforms.

My findings proved robust to a battery of analyses, including different measures of FLCG quality; different measures of firm performance; a balanced sample that neutralizes the effect of a possible selection bias on results; setting the "post" variable at different points in time and ruling out the possibility that results are driven by an event that occurred in the pre- or post-reform years; and a sub-sample composed of the worst- and medium-governed firms pre-reform that rules out the possibility that results are driven only by a decrease in the value of the best governed firms due to overregulation costs they had to bear in the post-reform years.

This paper contributes to the CG literature in several ways. First, the effect of FLCG quality on firm performance may vary across countries due to systematic differences in FLCG quality rather than to differences in the quality of CLCG. Studies have shown that firms in countries with a high CLCG quality tend to adopt high FLCG standards as well (Durnev and Kim, 2005;

Doidge, Karoly, and Stulz, 2007; Aggarwal, Erel, Stulz, and Williamson, 2008; Dahya, Dimitrov, and McConnell, 2008; Renders, Gaeremynck, and Sercu, 2010; Von Koch, Nilsson, Jönsson, and Jonnergård, 2013). Thus, if the marginal effect of FLCG quality on firm performance is non-linear, such that it decreases with the rise of FLCG quality, it would be lower in countries with a high CLCG quality even if CLCG and FLCG were not in a relation of mutual substitution (henceforth "the non-linearity explanation").[4] In this paper, however, for the first time, the dynamic of substitution between CLCG and FLCG is clearly demonstrated: the TQ of companies with poor FLCG, pre-reform, increased in the wake of an improvement in CLCG.[5] A post-reform increase in TQ cannot be accounted for by the non-linearity explanation.

Second, a "one size" CG index might not be optimal for measuring FLCG quality in countries where, e.g., some of its components do not vary sufficiently between firms (Black, De Carvalho, Khanna, Kim, and Yurtoglo, 2018a). Furthermore, a comparison of the FLCG quality in different countries based on a "one size" CG index may be compromised by divergent local interpretations of one or several of its components (Puchniak and Kim, 2017). These limitations are not a concern in a within-country analysis implemented in this paper.

Third, a main challenge in checking the effect that the quality of either FLCG or CLCG exerts on firm performance is endogeneity. This problem derives from unobserved firm heterogeneity that may affect both FLCG quality and firm performance. In cross-country analysis, it is further exacerbated due to the possibility of unobserved country heterogeneity that affects CLCG quality, FLCG quality, and performance of the firms within a given country. A common strategy for dealing with this concern is through fixed-effects regressions. Yet, most of the previous studies that examine the relation between CLCG and FLCG do not use firm fixed-effects because they analyze cross-sectional data (e.g., Klapper and Love, 2004; Durnev

[4] An alternative explanation for the lower effect of FLCG quality on firm performance in countries with high CLCG standards is overregulation costs that are imposed on well-governed firms and have resulted in a discount in the value of these firms (see Bruno and Claessens, 2010). I address this explanation below in the Robustness Checks section.

[5] Fauver, Hung, Li, and Taboada, (2017) present evidence of substitution between CLCG and FLCG using FLCG reforms. These researchers show that the effect of FLCG reforms on firm performance was lower in countries with high CLCG standards. The current paper complements this study by adducing evidence of substitution using CLCG reforms as an exogenous shock.

and Kim 2005; Dahya Dimitrov, and McConnell, 2008; Francis, Hasan, Song, and Waisman, 2013). Neither have researchers analyzing panel data been able to use either firm or country fixed-effects, due to small variations in the quality of FLCG and CLCG, respectively, over time (e.g., Chen, Chen, and Wei, 2009; Renders, Gaeremynck, and Sercu, 2010; Fauver, Hung, Li, and Taboada, 2017).[6] Hence, in such studies, the effects on firm performance of FLCG, CLCG and the interaction of the two may be biased. The within-country analysis implemented in this paper mitigates concerns over unobserved country heterogeneity. At the same time, the possibility of unobserved firm heterogeneity is tempered through firm fixed-effects regressions, which are appropriate in light of non-negligible longitudinal variation of Israeli firms' CGI scores (see Cohen 2020a).

Fourth, I point to RPTs as a possible channel which poorly governed firms employed to expropriate their minority shareholders and which the country effectively constrained by aligning those firms with a higher level of investor protection.

The paper is organized as follows. Section 2 describes corporate governance reforms in Israel. Section 3 is a literature review. The methodology and the sample are detailed, respectively, in Sections 4 and 5. Section 6 provides some descriptive statistics; Section 7 outlines the results; and Section 8 elaborates 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.

[6] Durnev and Kim (2004), and Bruno and Claessens (2010) mitigate the concern of unobserved country heterogeneity using country random-effects.

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.[7] An additional reform in the enforcement 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.

[7] 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.

3. Literature Review

3.1 Is FLCG quality correlated with firm performance?

A large body of literature examines whether the quality of FLCG is positively correlated with firm performance. A common approach to measuring FLCG quality is by using a comprehensive index to aggregate many CG components into a single score. This strategy was first implemented in a sample of US firms by Gompers, Ishii, and Metrick (2003), who show a positive correlation between governance scores, on the one hand, and a firm's market value and accounting performance, on the other (see also Bebchuk, Cohen, and Ferrell, 2009). A common interpretation of these findings is that FLCG quality is negatively correlated with the extent of shareholder expropriation, which in turn has a bearing on performance.

Yet, the agency problem common in the US firms is between managers and dispersed shareholders, while the agency problem in firms with concentrated ownership, typical in other countries, is primarily between the controlling shareholder and minority shareholders (see Berle and Means, 1933; Jensen and Meckling, 1976; Shleifer and Vishny, 1997; La Porta, Lopez-de-Silanes, and Shleifer, 1999; Claessens, Djankov, and Lang, 2000). Thus, the FLCG mechanisms that address the agency problem in US firms may not be useful outside the US (Enrique and Volpin, 2007; Bebchuk and Hamdani, 2009).[8]

For this reason, studies that examine firms with concentrated ownership, propose indexes for measuring FLCG quality that are adjusted accordingly. Calculated for non-US firms based on these indexes, the governance scores are shown to be positively correlated with various measurements of a firm's market value and profitability, and negatively correlated with its cost of capital and with its dependence on the internally generated cash flow. These results were

[8] For example, in the US, a typical tool that deters managers from shirking is market discipline. The rationale is that shareholder expropriation may result in a decline in the firm's share price, which in turn may increase the probability of a firm's takeover and management replacement. Hence, in the US, a firm with high-quality CG will not hinder the mechanism of market discipline by adopting antitakeover provisions like a staggered board or poison pills (Gompers, Ishii, and Metrick, 2003; Bebchuk and Cohen, 2005; Bebchuk, Cohen, and Ferrell, 2009). By contrast, firms with concentrated ownership seldom face the threat of a takeover, as a CSH is the one who decides whether to sell her shares. Accordingly, the severity of the agency problem in this type of firm is reflected by other characteristics such as the efficiency of the audit and control mechanisms, the quality of the disclosure and the extent in which the company ensures the rights of the minority shareholders at the general meeting (e.g., Black, Jang, and Kim, 2006; Black and Kim, 2012; Ararat, Black, and Yurtoglu, 2014).

obtained, among others, by Klapper and Love (2004) for East Asian countries; Carvalhal and Leal (2005) for Brazil; Durnev and Kim (2005) in an international study; Black, Jang, and Kim (2006) for Korea; Kouwenberg (2006) for Thailand; Garay and González (2008) for Venezuela; Balasubramanian, Black, and Khanna (2010) for India; Lauterbach and Shahmoon (2010) for Israel; Kuznecovs and Pal (2012) for Russia; Francis, Hasan, Song, and Waisman (2013) in an international study across emerging markets; Ararat, Black, and Yurtoglu (2014) for Turkey; and Fauver, Hung, Li, and Taboada (2017) in an international study.

However, as is demonstrated in Cohen (2020a), the CG indexes used in the above studies on firms with concentrated ownership have several disadvantages compared to the CGI.[9] Moreover, FLCG quality and firm performance are jointly determined by the firm in equilibrium, and therefore, a causal inference regarding the relation between these variables is limited (Hermalin and Weisbach, 1998). As already discussed, a classic approach to mitigate the unobserved heterogeneity problem is by using firm fixed-effects regressions. However, with few exceptions (e.g., Ararat, Black, and Yurtoglu, 2014), studies that examine the effect of FLCG quality on performance do not apply this method, either because they are based on cross-sectional data, or on account of low longitudinal within-firm variation in the FLCG quality.[10] In the analyses presented below, I mitigate the endogeneity concern by capitalizing on the variation in the CGI scores during the years sampled and examining the effect of FLCG quality on firm performance in a within-country analysis using a firm fixed-effects regression.

3.2 What is the relation between FLCG and CLCG?

Research that examines whether CLCG and FLCG substitute or complement each other compares the effect of FLCG quality, usually measured by a CG index, on firm performance in

[9] Specifically, the CGI has several advantages over indices constructed in previous papers. First, it is calculated based on mandatorily disclosed data and hence it is reliable. Second, all the components included in the CGI are well defined, and therefore the CGI scores are comparable across firms and over time. Third, the CGI contains only those components that measure investor protection. Fourth, in contrast to other indexes, the CGI contains a significant percentage of components (43%) that measure board members' qualifications.

[10] Other studies take advantage of an exogenous firm-level CG legislation and use it as an instrument (Black Jang and Kim, 2006; Ahern and Dittmar, 2012); as a platform for event studies (Chhaocchharia and Grinstein, 2007); as a threshold in a regression discontinuity framework (Black and Kim, 2012); or as a treatment in a difference-in-differences analysis (Fauver, Hung, Li and Taboada, 2017).

several countries differing in the quality of their CLCG. In countries with a high CLCG quality, the effect of FLCG on firms is expected to be greater in the case of complementarity, and lower in the case of substitution.

The empirical evidence gathered to date regarding the relation between CLCG and FLCG is inconclusive. Several studies support the substitution hypothesis and demonstrate that, in countries with a higher level of CLCG, FLCG quality has a weaker effect on firms' market value, operating performance, cost of capital, and investment dependence on the internally generated cash flow (Klapper and Love, 2004, Durnev and Kim, 2005; Dahya, Dimitrov, and McConnell, 2008; Chen, Chen, and Wei, 2009; Renders, Gaeremynck, and Sercu, 2010; Francis, Hasan, Song, and Waisman, 2013; Fauver, Hung, Li, and Taboada, 2017). By contrast, Homanen and Liang (2018) bring evidence of a positive correlation between CLCG quality, on the one hand, and the effect of FLCG on TQ, on the other, suggesting that CLCG and FLCG are mutually complementary. Finally, Bruno and Claessens (2010) show that higher quality of CLCG does not decrease the valuation discount of firms with low FLCG standards, which indicates that these two systems are orthogonal.

It is important to reiterate, at this point, that differences in the effect of FLCG quality on firm performance across countries may lend themselves to the non-linearity explanation elaborated above. It is likewise with the within-country analysis implemented in this paper: due to the high level of FLCG quality, post reform (see Cohen 2020a), a decrease in the effect of FLCG quality on performance may be explained by the non-linearity explanation. However, in this paper, I also test the pattern in which the TQ evolved post-reform – whether it increased among the poorly governed companies, pre-reform, as would be expected if CLCG and FLCG were substitutes, or whether it increased among the well governed companies, pre-reform, as would be expected if CLCG and FLCG were mutually complementary. According to the non-linearity explanation, the TQ of the pre-reform poorly- or well-governed companies is not expected to systematically change post-reform.

3.3 Are RPTs used to expropriate the minority shareholders?

RPTs are recognized in the literature as a major platform for tunneling (Johnson, La Porta, Lopez-de-Silanes, and Shleifer, 2000), [11] a hypothesis that is supported by empirical findings. Thus, Cheung, Qi, Rau, and Stouraitis (2009) show that controlling shareholders tend to overprice the assets that they sell to the firm they control and underprice the assets that they buy from it. Other papers find evidence of negative abnormal returns around the time when a firm announces an RPT (see Gordon, Henry, and Palia, 2004, for an example in the US; and Cheung, Rau, and Stouraitis, 2006, for one in Hong Kong).

Further support for the assumption that some RPTs are commonly used for tunneling comes from several papers that find a negative effect of FLCG quality on the volume (in dollars) and the number of RPTs (e.g., Gordon, Henry, and Palia, 2004, in US firms and Kang, Lee, Lee, and Park, 2014, in Korean firms). Other papers show that a firm's tendency to use RPTs to expropriate the minority shareholders decreases with the rise of its FLCG quality. Thus, Lo, Wong, and Firth (2010) demonstrate that the higher the level of board independence and the audit committee's financial expertise, the closer the RPTs' profit margin tends to be to the margin of transactions with non-related parties. Amzaleg and Barak (2013) find a non-linear correlation between ownership rights and cumulative abnormal returns among Israeli firms around the time of an RPT announcement. Their finding implies that most of a firm's tunneling through RPTs occurs when its controlling shareholder has a "medium" amount of ownership rights, since a small amount of ownership rights reflects limited strategic power that is insufficient to approve an RPT at a general meeting. On the other hand, a large amount of ownership rights decreases the controlling shareholder's incentive to use RPTs for tunneling purposes.

Moreover, several papers argue that the FLCG's negative effect on RPT tunneling accounts for its positive effect on firm performance. Specifically, a higher quality of FLCG leads to less RPT tunneling, which in turn leads to better performance. Dahya, Dimitrov, and McConnell (2008) show that a higher percentage of independent directors on a board has a positive effect

[11] An alternative explanation for RPTs is coinsurance between companies that operate within the same business group. Several studies empirically support this theory (Khanna and Yafeh, 2005; Jian and Wong, 2010; Jia, Shi and Wang, 2013).

on a firm's market value and a negative effect on the likelihood of RPTs. To overcome the endogeneity between RPTs, FLCG quality and performance, Black, Kim, Jang, and Park (2015) capitalize on a South Korean reform requiring large companies to improve their FLCG quality and show that, around the time the new legislation was announced, the cumulative abnormal returns were higher in large companies known for their tendency to implement RPTs.

To the best of my knowledge, none of the papers that show evidence of substitution between CLCG and FLCG points out a channel for minority-shareholder expropriation that is less prominent in high-quality CLCG countries. To the extent that RPTs are a main platform for minority-shareholder expropriation, it is plausible that the alignment of poorly governed firms with high CLCG standards could have resulted in a reduction in the number and volume of RPTs. In the current paper, I examine this hypothesis.

4. Methodology

Following the previous literature, in examining the relation between CLCG and FLCG, I assume that, pre-reform, the FLCG quality positively affected firm performance. Insofar as, this effect depends on the relation between CLCG and FLCG, it is expected to increase, post-reform, if these two systems are mutually complementary and to decrease if they are substitutes.

As is common in the literature, I use primarily the TQ as a measurement of performance (e.g., Durnev and Kim, 2005; Black, Jang, and Kim, 2006). In the robustness tests, I also use other measures of performance as dependent variables. The FLCG quality is measured by means of the CGI, which is introduced and discussed in Cohen (2020a), and which is described in detail in Appendix 1. My analyses include the following fixed-effects regression:

Equation 1.

$$Ln(TQ_{i,t}) = \beta_0 + \beta_1 * CGI_{i,t} + \beta_2 * CGI_{i,t} * Post + \beta_3 * Age_{i,t} + \beta_4 * Size_{i,t} + \beta_5 * Leverage_{i,t} + \alpha_t + \alpha_t * \delta_j + \gamma_i + \varepsilon_{i,t},$$

where *i*, *j*, and *t* denote indexes for firm, industry, and year, respectively; the variables *TQ*, *CGI*, *Age*, *Size*, and *Leverage* are calculated for a firm *i* in year *t* as defined in Table 2; *Post* is a dummy variable that takes the value of 1 for the years 2011–2014 and 0 otherwise; α denotes time fixed-effects to capture shocks that affect all the firms in year *t*; δ is an industry dummy variable; $\alpha*\delta$ denotes interaction variables that capture the effect of shocks that occur in industry *j* in year *t*; γ denotes firm fixed-effects that capture the unobserved heterogeneity of firm *i*.

I expect the effect of CGI on TQ in the pre-reform years, as reflected in β_1, to be positive and significant. The variable of interest is *CGI*Post*, which captures the change in the effect of CGI on TQ in the post-reform years. If CLCG and FLCG are mutually complementary, β_2 is expected to be positive, and if they are substitutes, I would expect it to be significantly negative.

The FLCG quality improved during the sample period (see Figure 1), either due to firm-level reforms that went into effect concomitantly with the country-level reforms (see Section 2) or because of measures that the firms implemented voluntarily (see Cohen 2020a). If the marginal effect of FLCG quality on firm performance is non-linear, i.e., if it decreases with the rise in the level of FLCG quality, the correlation between the CGI scores and TQ may decrease over time even if CLCG and FLCG are not substitutes. Moreover, a positive correlation between the CGI scores and TQ may reflect the fact that these variables are jointly determined in equilibrium (for a discussion of this idea, see Hermalin and Weisbach, 2001). Such an equilibrium was in place in 2007–2010 and thus, during that period, the CGI was significantly correlated with TQ. However, after the firm-level reforms, some components of the CGI ceased to be shaped exclusively by the firm as they came under the influence of the law, and consequently, the CGI scores moved out of equilibrium and their correlation with TQ diminished[12] (the above accounts, which present alternatives to the substitution hypothesis, will henceforth be referred to as "the alternative explanations").

[12] 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.

To further study the relation between FLCG and CLCG, I implement a difference-in-differences (DID) approach using the pre-reform FLCG quality. Specifically, according to the substitution rationale, the poorly governed firms pre-reform are expected to increase in value in the post-reform years, as their investor-protection increased through their alignment with the improved CLCG standard. In contrast, if CLCG and FLCG are mutually complementary, I would expect the well-governed firms pre-reform to increase in value after the reforms, insofar as the country-level reforms are expected to have raised the credibility of their FLCG.[13] In a case whereby the post-reform effect of FLCG quality on performance decreased due to one of the alternative explanations, I would not expect the TQ of the poorly governed or the well-governed firms, pre-reform, to significantly change, post-reform.

Therefore, I define the poorly governed firms pre-reform as a treated group and the well-governed firms pre-reform as a control group, and run the following fixed-effects regression:

Equation 2.

$$Ln(TQ_{i,t}) = \beta_0 + \beta_1 * CGI_{i,t} + \beta_2 * Low\ CGI_{2007-2010,i} * Post + \beta_3 * Age_{i,t} + \beta_4 * Size_{i,t} + \beta_5 * Leverage_{i,t} + \alpha_t + \alpha_t * \delta_j + \gamma_i + \varepsilon_{i,t},$$

where the *Low CGI 2007-2010* is a dummy variable that takes the value of 1 if the average CGI scores in the pre-reform years of a firm *i* is lower than the median CGI score in those years and 0 otherwise. The other variables are calculated similarly to the variables in Equation 1.

The variable of interest is *Low CGI 2007-2010*Post* which captures the effect of the country-level reforms on the TQ of the treated group relative to the control group.[14] I expect β_2 to be

[13] Chhaocchharia and Grinstein (2007) apply the same rationale to check the effect of FLCG improvements on firm performance. They show that firms that were less compliant with SOX rules exhibited greater abnormal returns around the time this legislation was announced. Similarly, Ahern and Dittmar (2012) examine the effect on firm performance of a legislation that required firms to have at least 40% female board members in Norway, using the pre-quota cross-sectional variation in the percentage of women on board to instrument the change in board composition after the legislation.

[14] A post-reform increase in the TQ of the treated group may be driven also by an improvement in the FLCG quality. However, the effect of the variation in the FLCG quality within a firm on *Ln(TQ)* is captured by the *CGI* variable.

significantly negative – that is, the control group increased in value, post-reform, relative to the treated group, if CLCG and FLCG are mutually complementary, and significantly positive if they are substitutes.

One can argue that the median CGI score, pre-reform, is an arbitrary threshold to divide the sample into a treated group and a control group. Thus, in an alternative version of Equation 2, I replace the *Low CGI* $_{2007–2010}$ variable with the *CGI* $_{2007–2010}$ variable which represents the average CGI score of a firm, pre-reform. Under the substitution hypothesis, the lower the CGI score pre-reform, the greater the improvement in the investor protection quality and the post-reform increase in TQ is expected to be. That is, β_2 is expected to be negative. In contrast, under the complementarity hypothesis I would expect β_2 to be positive.

To further examine the relation between CLCG and FLCG, I adopt the assumption of the previous literature that, before the country-level reforms, a predominant mechanism for minority-shareholder expropriation was the RPTs. Thus, in the pre-reform years, I would expect FLCG quality to be negatively correlated with the number and volume of RPTs. Under the substitution rationale, in the post-reform years, investor-protection is contingent not on the FLCG quality but on the higher CLCG standard. Accordingly, the difference between poorly and well governed firms in the number and volume of RPTs is expected to decline.

I examine this issue using the following fixed-effects regression:

Equation 3.

$$RPT_{i,t} = \beta_0 + \beta_1 * CGI_{i,t} + \beta_2 * CGI_{i,t} * Post + \beta_3 * Age_{i,t} + \beta_4 * Size_{i,t} + \beta_5 * Leverage_{i,t} + \beta_6 * ROA_{i,t} + \alpha_t + \alpha_t * \delta_j + \gamma_i + \varepsilon_{i,t}.$$

I run this equation with two versions of the dependent variable that are calculated as presented in Table 2: *Ln(RPT volume)* and *RPT number*. *CGI*, *Age*, *Size*, *Leverage*, *Post*, *Industry*, α, δ, and γ are defined as in Equation 1. *ROA* is calculated as defined in Table 2. I expect β_1 to be significantly negative. Additionally, I expect β_2 to be significantly positive if CLCG and FLCG are substitutes and insignificant if they are complements.

To rule out the possibility that the decrease in the effect of the FLCG quality on RPTs after the reforms occurred due to one of the above-discussed alternative explanations, I use a DID approach similar to that in Equation 2. Specifically, I assume that if CLCG and FLCG are substitutes, the decrease in the volume and number of RPTs should be greater among the treated group, for which the higher level of investor protection after the reforms was binding. I examine this point with the following fixed-effects regression:

Equation 4.

$$RPT_{i,t} = \beta_0 + \beta_1 * CGI_{i,t} + \beta_2 * Low\ CGI_{2007-2010,i} * Post + \beta_3 * Age_{i,t} + \beta_4 * Size_{i,t} + \beta_5 * Leverage_{i,t} + \beta_6 * ROA_{i,t} + \alpha_t + \alpha_t * \delta_j + \gamma_i + \varepsilon_{i,t}$$

where the variables are as defined in Equation 3. I expect β_2 to be significantly negative if CLCG and FLCG are substitutes and insignificant if they are complements. As in Equation 2 above, in an alternative version of Equation 4 I replace the *Low CGI* $_{2007–2010}$ variable with the *CGI* $_{2007–2010}$ variable. Under the substitution hypothesis, the lower the *CGI* $_{2007–2010}$ variable, the greater the improvement in the investor protection quality and the decrease in tunneling activities through RPTs, post-reform. That is, β_2 is expected to be positive. Under the complementarity hypothesis I would expect β_2 to be insignificant.

Finally, I examine whether a channel of the post-reform increase in the TQ of the treated group, under the substitution hypothesis, is the decrease in tunneling through RPTs. I examine this point using a two stage approach with the following regression:

Equation 5.

$$Ln(TQ_{i,t}) = \beta_0 + \beta_1 * CGI_{i,t} + \beta_2 * RPT\ Prediction\ by\ Low\ CGI_{2007-2010,i,t} + \beta_3 * RPT\ Prediction\ by\ Low\ CGI_{2007-2010,i,t} * Post + \beta_4 * Age_{i,t} + \beta_5 * Size_{i,t} + \beta_6 * Leverage_{i,t} + \beta_7 * ROA_{i,t} + \alpha_t + \alpha_t * \delta_j + \gamma_i + \varepsilon_{i,t},$$

where *RPT Prediction by Low CGI* $_{2007–2010}$ is the predicted *Ln(RPT Volume)*, calculated in the first stage based on Equation 4. The other explanatory variables are the control variables from the first stage thus the *RPT Prediction by Low CGI* $_{2007–2010}$ variable captures the effect, pre-reform, of the excess RPTs that are predicted for the treated group on *Ln(TQ)* and the *RPT Prediction by Low CGI* $_{2007–2010}$**Post* captures the change in the effect post-reform. If the RPTs were used, pre-reform, by the treated group for tunneling purposes, I would expect β_2 to be negative. If the substitution between CLCG and FLCG led the treated group to decrease its tunneling activity through RPTs, I would expect β_3 to be positive and the total effect of RPTs on *Ln(TQ)*, that is $\beta_2+\beta_3$ to be insignificant. I repeat the analysis with *RPT Prediction by CGI* $_{2007–2010}$ variable which is the predicted *Ln(RPT Volume)*, calculated based on Equation 4 with the continuous variables *CGI* $_{2007–2010}$ and *CGI* $_{2007–2010}$**Post* as explanatories.

5. Sample and Data

The sample analyzed in this paper is a panel of non-financial publicly traded Israeli firms for the years 2007–2014. I start with a group of 248 firms that were traded on the TA 100 index or the TA MidCap index during at least some of the years in the course of that period. I exclude the following firms from the sample: 32 financial firms; 65 dual firms listed in US stock exchanges, where the legal requirements on CG are substantially different from those in Israel (45 firms in this group are characterized by a dispersed ownership structure); five firms with a dispersed ownership structure, as the CGI is not designed to measure the CG quality in this type of firms; 15 partnerships; seven firms that went public after 2010 for them I am not able to calculate the CGI scores pre-reform, and four firms whose CGI scores cannot be calculated due to insufficient information. All together, the initial sample consists of a panel of 120 firms, of which 35% (41 firms) are in real-estate, 25% (30 firms) in manufacturing, 17% (21 firms) in commerce, 14% (17 firms) in technology, and 9% (11 firms) are in holdings companies. The sample represents the distribution of the total population of the Israeli public firms across industries of which 31% in real-estate, 15% in manufacturing, 16% in commerce, 26% in technology, and 12% in holding companies.

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.

In addition, using two main sources, I manually collect data on the number and volume of the RPTs that the firm carried out during the sample years. The first source is the firms' annual financial statements, while the second is the transaction reports that a firm publicly publishes on the MAYA website before any RPT is discussed at the general meeting. For each firm I collect information about the number and volume of RPTs in each year and the dates at which each RPT was announced and approved. The RPT sample is smaller than the one I use to regress firm-performance measurements on the CGI, as the transaction reports published by some of the firms are incomplete.

Finally, based mainly on the firms' annual financial statements, I collect data on the control variables such as size and ROA.

The sample is not balanced for two main reasons. First, some firms became public only in the middle of the sample period. Second, some firms went private during the sample period. In Table 3, I describe the process of constructing the yearly samples.

6. Summary Statistics

Table 4 presents descriptive statistics. As is expected in long-run equilibrium, the average (median) TQ is approximately 1, namely, 1.17 (1.01). The accounting measurements indicate that the past performance is good: The average (median) ROA and sales growth are both positive and equal to 0.08 (0.07) and 0.06 (0.07), respectively.

The firms in the sample are all traded on the TASE prime indexes. This means that most of them are among the older and larger firms in Israel, with an average (median) age of 19 (17)

years and an average (median) size of 6.64 (1.66) trillion NIS (approximately 1.92 (0.48) trillion $). Their average (median) leverage level is 0.33 (0.34).

A fixed-effects regression framework can be used only if the variables of interest vary substantially over time. In what follows, I outline the development, during the sample period, of this study's three key variables: CGI scores, RPT volume, and RPT number.[15]

Figure 1 shows the development of the average CGI scores, revealing that they increase significantly over the sample period. The average score in 2014 is 67 and is significantly higher, both statistically and economically, than the average score in 2007, which is 38. This increase in CGI scores is driven by both firm-level reforms and FLCG improvements that the firms undertook voluntarily (see Cohen 2020a), and is reflected in a non-negligible within-firm standard deviation of the CGI scores, which is 13.

Figure 1 also presents the cross-sectional variation of the CGI scores in each of the years sampled: They remained approximately the same: 12 in both 2007 and 2014.[16]

Figure 2.1 displays the annual averages of a firm's RPT volume, which is the ratio between the volume (in NIS) of the RPTs, excluding compensation, of firm *i* in year *t* and its assets in each of the years sampled. The average RPT volume of a firm ranged between 5% of its assets in 2007 and 0.6% in 2014, indicating a continuous downward trend. However, a dramatic decrease occurred in 2012, following the reforms: from 2.5% of a firm's assets in 2011 to 0.8% in 2012. In 2013 and 2014, the average RPT volume remained uniformly low.

An analysis of the average RPT number over the years sampled yields similar results, as presented in Figure 2.2. A downward trend is apparent as of 2009 onward, with a dramatic decrease in 2012 (from 0.32 transactions in 2011 to 0.09 in 2012) and a uniform low in 2013 and 2014.

[15] I describe the development of the TQ over the sample period in Section 7 below.

[16] That is, the upward trend of the average CGI scores does not derive from greater CG quality improvements among the poorly governed companies during the sample period and a resulting convergence of their CGI scores with those of the well-governed companies. Rather, this trend seems to reflect a shift of the entire CGI score distribution over time. Hence, a decrease in the cross-sectional correlation between the CGI scores and any output variable across the sample period cannot be explained by a decrease in the CGI scores' variation.

Figures 3.1 and 3.2 display the average volume and number of RPTs in 2007–2010 and in 2011–2014. The figures indicate a statistically and economically significant decrease in the RPT volume, from 3.8% of a firm's assets in 2007–2010 to 1.7% in 2011–2014. A significant decrease occurred also in the average RPT number, from 0.5 in 2007–2010 to 0.1 in 2011–2014. These figures are consistent with a decrease in tunneling via RPTs after the country-level reforms went into effect, supplanting the FLCG mechanisms in poorly governed firms.

7. Results

Are FLCG and CLCG substitutes or complements?

Figures 4.1–4.8 show the cross-sectional correlation between CGI scores (x axis) and the TQ values (y axis) in 2007–2014. In 2007–2010 (Figures 4.1–4.4), the CGI scores are positively associated with TQ, but this correlation disappears in 2011–2014 (Figures 4.5–4.8).

Checking the correlation between *CGI* and *Ln(TQ)* in a multivariate analysis framework yields similar results. The results for the years 2007–2014 obtained using a fixed-effects regression, as in Equation 1, are displayed in Table 5. Column 1 reveals that *CGI* has a statistically significant positive effect on *Ln(TQ)* in 2007–2010, before the country-level reforms. The result hold even after including in the regression the control variables used in Equation 1, as is presented in Column 2. The positive effect of *CGI* on *Ln(TQ)* is also economically significant since a one standard deviation increase in the CGI scores is correlated with an average 4.1%[17] increase in TQ. In the post-reform years, however, the effect of *CGI* on *Ln(TQ)* decreased, as is reflected in a negative and significant coefficient of *CGI*Post*. This finding indicates that CLCG and FLCG operate as substitutes. Moreover, the total effect of *CGI* on *Ln(TQ)* became statistically and economically insignificant post-reform.

Next, I use the DID approach to verify that the pattern of the post-reform change in TQ is consistent with the substitution hypothesis. To this end, I examine whether the TQ of the firms in the treated group increased in value in the post-reform years.

[17] The specific calculation of the effect on TQ of an increase of one standard deviation in the CGI score is $(e^{0.0402} - 1) * 100 = 4.1$.

Figure 5 presents the evolvement of the annual *Ln(TQ)* averages for the treated and control groups over the years sampled. Pre-reform, the average *Ln(TQ)* of the control group is higher than that of the treated group. Moreover, a parallel trend is observed between the average *Ln(TQ)* of the two groups until 2010. In line with the scenario whereby, in the treated group, the country-level reforms substituted for the inadequate FLCG mechanisms, the gap between the average *Ln(TQ)* of the firms in the two groups began to decrease gradually as of 2011 and disappeared altogether by 2013.

The case for the substitution scenario is further supported by a multivariate analysis. The coefficient of *Low CGI* $_{2007–2010}$**Post*, in a regression as in Equation 2, is positive and significant (Column 3 in Table 5). This indicates that, in the post-reform years, the treated group increased in value relative to the control group. The result holds even after including the control variables used in Equation 2 (Column 4). The effect of the alignment with higher investor protection standards after the reforms is also economically significant: post-reform, the average increase in TQ among the treated group was higher by 9.6%[18] than that of the control group. As indicated in Column 5, the results also hold even after replacing the binary *Low CGI* $_{2007–2010}$**Post* variable with the continuous *CGI* $_{2007–2010}$**Post* variable: the coefficient is negative and significant, namely, the lower the CGI score of a firm before the reforms, the greater the post-reform increase in value.

Next, I use Equation 3 to examine whether firms' alignment with the high CLCG standard resulted in a decline in tunneling through RPTs. The results of this test, presented in Table 6, are consistent with the hypothesis that RPTs were used to divert assets from the company, insofar as pre-reform, one can observe a significant negative effect exerted by *CGI* on *Ln(RPT Volume)* (Column 1) and on *RPT Number* (Column 5). No substantial change occurred in the results after including the control variables in Equation 3 (Columns 2 and 6). The negative effect is also economically significant since an increase of one standard deviation in the CGI scores is correlated with a decrease of 19.9%[19] (3.9%) in the RPT volume (number). Consistent with the hypothesis that the country-level reforms constrained the CSHs in poorly governed firms from tunneling through RPTs, the coefficients of the *CGI*Post* variables are significantly

[18] The precise calculation is $(e^{0.0914} - 1) * 100 = 9.6$.
[19] The precise calculation is $(e^{-0.2216} - 1) * 100 = -19.9$.

positive for *Ln(RPT Volume)* (Columns 1 and 2) and *RPT Number* (Columns 5 and 6). Accordingly, the post-reform effect of *CGI* on the volume and number of RPTs is insignificant.

Next, I use the DID approach, as in Equation 4, to verify that the post-reform pattern of the decrease in RPTs is consistent with the substitution hypothesis. The results, displayed in Table 6, support this rationale. Negative and statistically significant coefficients of *Low CGI* $_{2007–2010}$**Post* were obtained in the regressions with the *Ln(RPT Volume)* and the *RPT Number* as dependent variables (Columns 3 and 7, respectively). That is, the volume and number of RPTs decreased post-reform to a greater extent among the treated group. This effect is also economically significant: the volume (number) of RPTs among the treated group decreased post-reform by 50.0%[20] (13.6%) more relative to the control group. As in the analysis above, the conclusion of substitution holds even after replacing the *Low CGI* $_{2007–2010}$**Post* variable with the *CGI* $_{2007–2010}$**Post* variable (Column 4 for *Ln(RPT Volume)* and Column 8 for *RPT Number*).

I examine whether the post-reform decrease in the RPTs among the treated group occurred on account of a reduction in the volume of new RPTs, i.e., the ones that were approved, for the first time, at the general meeting of a firm in each of the sample years (henceforth, "new RPT volume") or the ongoing RPTs, i.e., those that were approved pre-reform and were paid out in annual instalments in each of the following years (henceforth, "existing RPT volume").[21] To this end, I run two fixed-effects regressions, as in Equation 4, with the *Ln(New RPT Volume)* and the *Ln(Existing RPT Volume)* as dependent variables, respectively. The results, presented in Table 7, indicate that the coefficients of *Low CGI* $_{2007–2010}$**Post* (*CGI* $_{2007–2010}$**Post*) are negatively (positively) significant for both kinds of RPTs. That is, the volume of RPTs among the treated group decreased in the post-reform years, through limiting the approval of new RPTs as well as a decrease in the volume of the existing RPTs.

Finally, I use a two stage approach, as in Equation 5, to examine whether the post-reform decrease in RPTs among the treated group is a channel of its post-reform increase in TQ.

[20] The precise calculation is $(e^{-0.6937} - 1) * 100 = -50.0$.

[21] For example, rent transactions. According to a 2011 reform, firms are required to reapprove all existing RPTs within three years of the previous approval. Hence, after the country-level reforms, I would expect the volume of the existing RPTs to decline.

Specifically, in the first stage I calculate the *RPT Prediction by Low CGI* $_{2007–2010}$ and the *RPT Prediction by CGI* $_{2007–2010}$ variables based on the coefficients in Table 6 Columns 3 and 4, respectively. In the second stage I follow Equation 5 and regress *Ln(TQ)* on those predictions of the RPTs' volume. The results of the second stage are presented in Table 8. Consistent with the assumption that RPTs were a major mechanism of shareholder expropriation among the treated group, I find in the second stage a negative and statistically significant effect of the *RPT Prediction by Low CGI* $_{2007–2010}$ on *Ln(TQ)* (Column 1). The excess volume of pre-reform RPTs that are predicted for the treated group, is correlated with a discount of 15.5%[22] in TQ in comparison to the control group. Post-reform, following the decrease in the RPTs, the discount in the TQ of the treated group that is attributed to RPTs, disappeared: the sum of the coefficients of the *RPT Prediction by Low CGI* $_{2007–2010}$ and the *RPT Prediction by Low CGI* $_{2007–2010}$**Post* variables is insignificant. The results hold also with the *RPT Prediction by CGI* $_{2007–2010}$ that is calculated in the first stage with the continuous variables *CGI* $_{2007–2010}$ and *CGI* $_{2007–2010}$**Post* (Column 2 in Table 8).

Overall, my findings corroborate the following scenario. Before the country-level reforms, RPTs served as a platform for minority-shareholder expropriation. Poorly governed firms carried out more RPTs, thereby lowering their value for the minority shareholders, as reflected in these firms' lower TQ. The country-level reforms aligned these firms' investor protection with a higher standard, irrespective of their low FLCG quality. Accordingly, the lower a firm's FLCG quality pre-reform, the greater the improvement in its investor-protection, the decrease in its RPTs, and the increase in its TQ after these reforms. Ultimately, after the country-level reforms, the average difference between well and poorly governed firms in terms of TQ, as well as RPT volume and number, became insignificant.

Which FLCG aspects were substituted by CLCG after the country-level reforms?

This section examines the aspects of FLCG that were substituted by CLCG after the country-level reforms.[23] I posit that a certain aspect of FLCG can be considered as supplanted by the

[22] The precise calculation is $(e^{-0.1690} - 1) * 100 = -15.5$.

[23] The importance of recognizing the specific aspects of FLCG that drive the correlation between the FLCG quality and outcome variables is demonstrated in several studies. Bebchuk, Cohen, and Ferrell (2009) show that the

CLCG if the following four conditions are satisfied. First, such an aspect had to be positively (negatively) correlated with TQ (RPTs) before the reforms went into effect (henceforth, "the first condition"). Second, this correlation decreased or disappeared altogether after the reforms went into effect ("the second condition"). Third, the firms with the lowest quality of this FLCG aspect pre-reform increased (decreased) in TQ (RPTs) post-reform relative to the firms with the best quality of this aspect pre-reform ("the third condition"). Fourth, the predicted additional RPTs of the firms with the pre-reform lowest quality of this aspect, are negatively correlated with TQ, pre-reform, and have no significant effect on TQ, post-reform ("the fourth condition").

To begin with, I calculate the scores for several FLCG aspects as the equally weighted average of the values of the CGI components that measure these aspects. For each firm, I calculate the annual *Board Independence* and *Board Qualifications* variables as equally weighted averages of the CGI components that measure the independence and the qualifications of the board and its committees, respectively. It stands to reason that the quality of monitoring the CSHs is more sensitive to the qualifications of outside directors, who are more independent than the other directors. Accordingly, I define the *Outside Directors Qualifications* variable as the equally weighted average of the CGI components that measure the percentage of qualified outside directors on the board and its committees. In line with the previous literature, I consider the board committees as an important executive mechanism of the board (e.g., Adams, Ragunathan, and Tumarkin, 2016); to gauge the quality of the board committees, in terms of both independence and qualifications, I calculate the *Board Committee* variable as an equally weighted average of the CGI components that measure these aspects.

To examine the first and the second conditions, I regress *Ln(TQ)* and *Ln(RPT Volume)* in fixed-effects regressions, as in Equations 1 and 3, respectively. However, in each of the regressions that I run for either of these variables, I replace *CGI* by another variable that represents the quality of a specific FLCG aspect. To prevent an omitted-variable bias, each regression includes also a control variable which is the equally weighted average of the values of the remaining CGI components, that is, those that were not used to calculate the score of the

positive effect on firm performance of the CG index, developed by Gompers Ishii and Metrick (2003), is generated by a single sub-group of components that measure the extent to which the management is entrenched. According to Black, De Carvalho, Khanna, Kim, and Yurtoglo (2018b), the governance aspect that consistently predicts value for firms in emerging markets is disclosure.

FLCG aspect in the given regression. The results indicate that, pre-reform, each of the FLCG aspects above, besides board independence, had a significant positive effect on *Ln(TQ)* (Table 9) and a negative effect on *Ln(RPT Volume)* (Table 10), and that both these effects disappeared in the post-reform years. The effect of *Board Independence* on *Ln(TQ)* and *Ln(RPT Volume)* has the expected signs: positive for *Ln(TQ)* and negative for *Ln(RPT Volume)* however, it is statistically significant only for *Ln(TQ)*.

To examine the third condition, I define as dummy variables *Low Board Independence* $_{2007–2010}$; *Low Board Qualifications* $_{2007–2010}$; *Low Outside Directors Qualifications* $_{2007–2010}$; and *Low Board Committee* $_{2007–2010}$. Each of these four variables takes the value of 1 if the pre-reform average score of the FLCG aspect it measures is lower than the median score in this period, and 0 otherwise. Then, I implement the DID approach, as in Equations 2 and 4, to regress *Ln(TQ)* and *Ln(RPT Volume)*, respectively, each on a different interaction between one of the four dummy variables above and the *Post* variable. I expect to observe a post-reform TQ (RPTs) increase (decrease) for the firms with the lowest pre-reform quality of a FLCG aspect that was supplanted by the CLCG. Alternatively, I regress *Ln(TQ)* and *Ln(RPT Volume)* each on a different interaction between one of the continuous variables *Board Independence* $_{2007–2010}$, *Board Qualifications* $_{2007–2010}$, *Outside Directors Qualifications* $_{2007–2010}$, and *Board Committee* $_{2007–2010}$, which are the pre-reform average score of each of the FLCG aspects, with the *Post* variable. As above, to prevent an omitted-variable bias, each regression includes also a control variable which is the equally weighted average of the values of the CGI components, pre-reform, that were not used to calculate the score of the FLCG aspect in the given regression. I expect to find that the lower the pre-reform score of a FLCG aspect that was substituted by the CLCG, the greater the post-reform TQ (RPTs) increase (decrease).

The results in Tables 11 and 12 indicate that the FLCG aspects that were substituted by CLCG are the quality of the board committees and the percentage of qualified directors, especially outside directors, serving on the board and its committees. In particular, the coefficients of *Low Outside Directors Qualifications* $_{2007–2010}$**Post* and *Low Board Committee* $_{2007–2010}$**Post* are positive and significant in the regressions in which *Ln(TQ)* is the dependent variable (Columns 5 and 7 of Table 11) and negative and significant in the regressions in which *Ln(RPT Volume)* is the dependent variable (Columns 5 and 7 of Table 12). Consistent with

those results, I find that the coefficients of *Outside Directors Qualifications* $_{2007–2010}$**Post* and *Board Committee* $_{2007–2010}$**Post* are negative in the regressions in which the *Ln(TQ)* is the dependent variable (Columns 6 and 8 in Table 11), though only the coefficient of *Board Committee* $_{2007–2010}$**Post* is statistically significant, and significantly positive in the regressions in which *Ln(RPT Volume)* is the dependent variable (Columns 6 and 8 in Table 12).

To examine the fourth condition, I use, in the first stage, the coefficients from the regressions of *Ln(RPT Volume)* on a different interaction of each of the *Low Board Independence* $_{2007–2010}$, *Low Board Qualifications* $_{2007–2010}$, *Low Outside Directors Qualifications* $_{2007–2010}$, and *Low Board Committee* $_{2007–2010}$ variables and the *Post* variable presented in Table 12, and calculate the *RPT Prediction by Board Independence* $_{2007–2010}$, *RPT Prediction by Board Qualifications* $_{2007–2010}$, *RPT Prediction by Outside Directors Qualifications* $_{2007–2010}$, and the *RPT Prediction by Board Committee* $_{2007–2010}$ variables as predictions of *Ln(RPT Volume)*. In the second stage, I follow Equation 5 and regress *Ln(TQ)* on each of the predictions of *Ln(RPT Volume)* and their interactions with the *Post* variable. The results in Table 13, support the conclusion that the FLCG aspects that were substituted by the CLCG are the quality of the board committees and the percentage of qualified outside directors serving on the board and its committees. Specifically, I find in the second stage a negative and significant effect of *RPT Prediction by Outside Directors Qualifications* $_{2007–2010}$, and *RPT Prediction by Board Committee* $_{2007–2010}$, on *Ln(TQ)* that becomes insignificant, post-reform (Columns 3 and 4).

8. Robustness Checks

Alternative versions of the corporate governance index

My analysis is based on a single version of the CG index. One could argue that alternative versions may yield different results, e.g., producing a significant correlation between the CGI scores and TQ even after the country-level reforms went into effect. In order to mitigate this concern, I build five alternative versions of the CG index, three of which contain components different from those comprising the CGI, and two implement other approaches to aggregating the original CGI components.

First, I build on some previous studies (e.g., Black, Jang, and Kim, 2006; Lauterbach and Shahmoon, 2010) and add to the CGI three components that measure internal audit independence (henceforth "CGI extended version A"), as follows: (a) the internal auditor does not work in the firm; (b) the audit committee supervises the internal auditor; and (c) the controlling shareholder does not supervise the internal auditor. Each of these three components takes the value of 1 in the affirmative variant and 0 otherwise. I calculate the *CGI Extended Version A* variable as an equally weighted average of the values of the "CGI extended version A" components.

Second, following Lauterbach and Shahmoon (2010), I extend the "CGI extended version A" components by adding the following two additional components (henceforth "CGI extended version B"): the firm published its financial statements report earlier than the legally stipulated date; and the firm declared a dividend policy.[24] Each of these components takes the value of 1 for the affirmative and 0 otherwise. I calculate the *CGI Extended Version B* variable as an equally weighted average of the values of the "CGI extended version B" components.

Third, I replace the CGI components that are relevant to the outside directors with those pertaining to the independent directors (henceforth "CGI with independent directors"). Within the CGI, the outside directors are considered as the topmost supervisors of CSHs. However, the CSHs are also monitored by the independent directors[25]. Moreover, as is demonstrated in Cohen (2020a), the average percentage of independent directors on the boards of Israeli firms increased significantly during the years sampled. Hence, focusing exclusively on the outside directors may lead to a miscalculation of the true level of a board's independence. I calculate the *CGI with Independent Directors* variable as an equally weighted average of the value of the "CGI with independent directors" components.

[24] These components were used only for robustness checks and were not included in the CGI since they are not part of the FLCG mechanisms but represent an outcome of FLCG quality.

[25] The independence level of independent and outside directors is in principle similar. However, unlike outside directors, the dismissal of an independent director is not subject to the majority of the minority rule and therefore independent directors are may be considered less independent than outside directors (see also in Bebchuk and Hamdani, 2016).

Finally, I build two additional alternative indexes that differ from the CGI in the method of aggregating the components into a single score. In the first such alternative index (henceforth "*CGI Aggregation by Dimensions*"), the aggregation is performed in two stages: calculating a score for each CGI dimension as an equally weighted average of its components, and calculating the CGI score as an equally weighted average of the dimensional scores (as, e.g., in Black, Jang, and Kim, 2006). For the second alternative index (henceforth "*CGI Aggregation by PCA*"), I aggregate the CGI components' scores into a firm's overall CGI score using a principal component analysis.

I regress *Ln(TQ)* on FLCG scores that are calculated according to each of the alternative indexes, in fixed-effects regressions, based on Equation 1. The results are presented in Columns 1–5 of Table 14. In each of the alternative indexes, a positive and significant correlation is apparent between the FLCG scores and *Ln(TQ)* in 2007–2010, and this correlation disappears in 2011–2014.

Exit effect in an unbalanced panel

As mentioned in Section 5, the sample used in this study is an unbalanced panel. One could argue that some of the results obtained are driven by a systematic longitudinal change in the composition of the sample rather than by the effect of the country-level reforms. Such a selection process may have occurred if, during the sample period, firms with poor governance and performance tended to go private to a greater extent than well-governed firms. To the extent that this selection process could have accelerated post-reform, (see Cohen 2020b), the variation of the TQ and the CGI across firms would have decreased, and with it also the explanatory power of the CGI in terms of TQ.

In order to test this conjecture, I regress *Ln(TQ*) of a balanced subsample of firms on the *CGI*, as in Equation 1. The results, presented in Column 6 of Table 14, are similar to those obtained from the analysis of the unbalanced panel: a positive effect of *CGI* on *Ln(TQ)* is observed in 2007–2010, but disappears in 2011–2014.

Alternative outputs of the CGI

In focusing primarily on the correlation between the CGI and TQ, the analysis elaborated above follows the CG literature. However, I expect that, before the reforms, the low extent of minority-shareholder expropriation among the well-governed firms will be reflected also in such measures of performance as market-to-book ratio and accounting measurements (for example, Gompers, Ishii, and Metrick, 2003, show a positive correlation between their CG index and various kinds of accounting performance). Likewise, I expect that the effect of the CGI scores on the market-to-book ratio and on the accounting measurements will have decreased after the country-level reforms went into effect, as is the case with the TQ.

To test these assumptions, I run fixed-effects regressions with *Market to Book ratio, ROA* and *Sales Growth* as the dependent variables, as in Equation 1. The results, presented in Table 15, indicate that, pre-reform, a positive and significant correlation obtained between *CGI* and each of the alternative outcomes, and that this correlation disappeared in 2011–2014.

Alternative definitions of the post variable

A major concern in the DID analysis is the existence, pre-reform, of a non-parallel trend in the evolution of TQ in the treated versus the control groups. Such a pattern would imply that the convergence of these two groups' TQs is driven not by country-level reforms but by a pre-reform development. Equally serious would be a concern over an ongoing parallel trend in the TQ of the two groups after the reforms went into effect. Such an eventuality may imply that the convergence between these two groups' TQs occurred due to a post-reform event, rather than on account of the reforms.

In this connection, Figure 5 reveals a parallel trend operating on the TQ of the poorly- and well-governed firms pre-reform, in the years 2007–2010, which disappears from 2011 onward. In this section, I verify the results in Figure 5 with a multivariate analysis.

I define the *Post* $_{2009–2010}$ as a dummy variable that takes the value of 1 for the years 2009–2010 and 0 otherwise. Similarly, I define a dummy variable *Post* $_{2013–2014}$ that takes the value of 1 for the years 2013–2014 and 0 otherwise. If the firms in the treated group began to increase

in value before the country-level reforms went into effect, I would expect two results. The first is a decrease in the effect of the CGI scores on TQ that began already during the pre-reform years, expressed as a negative and significant coefficient of the interaction variable *CGI* Post* $_{2009–2010}$ in a regression as in Equation 1 for the years 2007–2010. The second result would be a positive and significant coefficient of the interaction variable *Low CGI* $_{2007–2010}$**Post* $_{2009–2010}$ in a regression as in Equation 2 for the years 2007–2010. At the same time, a greater increase in the TQ among the firms in the treated group versus the control group that began several years post-reform would render the coefficient of the interaction variable *CGI*Post* $_{2013–2014}$ in a regression for the years 2011–2014, as in Equation 1, to be negative and significant. In addition, I would expect the coefficient of the interaction variable *Low CGI* $_{2007–2010}$**Post* $_{2013–2014}$ in a regression for the years 2011–2014, as in Equation 2, to be positive and significant.

The results, presented in Table 16, indicate that the coefficient is not significant in any of the four interaction variables enumerated above. The results hold even after replacing the binary variable *Low CGI* $_{2007–2010}$ with the continuous variable *CGI* $_{2007–2010}$ (Columns 5 and 6). That is, there is no evidence either that a pre-reform non-parallel trend operated in both the treated and the control groups, or that the convergence between the two groups' TQ began long after the country-level reforms went into effect.

Long-term effect of the substitution between CLCG and FLCG

The analysis so far does not shed light on the long-term effect of the country-level reforms. It is possible, for example, that the 2011–2014 increase in TQ among the firms in the treated group was driven by a substitution effect that took place only in 2012 and disappeared in 2013 or in 2014. To verify that the substitution effect operated in the long term, i.e., throughout the entire sample period, I regress *Ln(TQ)* on *Low CGI* $_{2007–2010}$**Post* as in Equation 2 for the sample period excluding the years 2011–2012. The *Low CGI* $_{2007–2010}$**Post* variable thus examines whether the TQ of the firms in the treated group increased in 2013–2014 relative to the TQ of the control group. The results, presented in Table 17, indicate that the coefficient of *Low CGI* $_{2007–2010}$**Post* is positive and significant, that is that the substitution effect operated in the long

term. Using the *CGI* $_{2007–2010}$ variable instead of *Low CGI* $_{2007–2010}$ variable yields a similar conclusion (Column 3).

The effect of overregulation costs

One could argue that the above findings point to overregulation costs in the post-reform years rather than to a substitution relation between CLCG and FLCG. Thus, Bruno and Claessens (2010) contend that overregulation costs in countries with a high CLCG quality are borne by well-governed firms. Accordingly, the convergence between the TQ of the treated and the control groups indicated by the positive coefficient of *Low CGI* $_{2007–2010}$**Post* and the post-reform decrease in the average effect of FLCG quality on TQ, may have been stimulated by a post-reform decline in the TQ of firms in the control group, due to overregulation costs, rather than by a post-reform increase in the TQ of firms in the treated group due to the substitution between CLCG and FLCG.

Following Bruno and Claessens (2010), I assume that the overregulation costs in the post-reform years are expected to be greater among the firms with the best pre-reform governance. I define the *CGI* $_{2007–2010}$ *Above* 67^{th} *Value* as a dummy variable that takes the value of 1 for the firms whose pre-reform CGI score was above the 67^{th} value and 0 for the firms whose pre-reform CGI score was between the 33^{rd} and the 67^{th} values. Excluded from the sample are the firms whose pre-reform CGI score was lower than the 33^{rd} value, and for which the increase in the TQ due to the substitution effect is expected to be the greatest. Next, I regress *Ln(TQ)* in a fixed-effects regression, as in Equation 2, but replace the interaction variable *Low CGI* $_{2007–2010}$**Post* with the interaction variable *CGI* $_{2007–2010}$ *Above* 67^{th} *Value*Post*. If the country-level reforms generated overregulation costs, I expect the *CGI* $_{2007–2010}$ *Above* 67^{th} *Value*Post* coefficient to be negative and significant. In fact, the results in Column 1 of Table 18 indicate that this coefficient is insignificant, ruling out the possibility that the results of my analyses are driven by overregulation costs imposed on the firms with the best pre-reform governance.

To confirm this conclusion, I exclude from the sample the firms whose CGI scores in the pre-reform years are higher than the 67^{th} value, and which are thus supposed to bear the brunt of the overregulation costs. Then, I define the *CGI* $_{2007–2010}$ *Below* 33^{th} *Value* dummy variable

that takes the value of 1 if the pre-reform CGI score of a firm is lower than the 33rd value and 0 if it is between the 33rd and 67th values. Finally, I regress *Ln(TQ)*, as in Equation 2, but replace the interaction variable *Low CGI* $_{2007–2010}$**Post* with the interaction variable *CGI* $_{2007–2010}$ *Below 33th Value *Post* that captures the post-reform change in TQ among the firms with the worst governance in the pre-reform years. I consider this change to represent the effect of the substitution between CLCG and FLCG. As displayed in Column 2 of Table 18, the results are consistent with the substitution hypothesis: The *CGI* $_{2007–2010}$ *Below 33th Value*Post* coefficient is positive and significant.

9. Conclusions

In this paper I examine the relation between FLCG and CLCG, testing whether these two systems substitute or complement each other. In contrast to previous studies, I address this question in a within-country framework. The results show that, before the reforms, FLCG quality had a positive association with firm value and a negative association with the volume and number of RPTs. In the post-reform years, the firms with a poor pre-reform governance increased in value compared to the firms that were well-governed pre-reform. A two-stage analysis indicates that a possible channel for the increase in value of the firms with the pre-reform poor governance, was a post-reform decrease in their RPTs. In the post-reform years, no correlation is any longer observable between the FLCG quality, on the one hand, and either the value or the volume and number of RPTs, on the other.

These findings imply that CLCG and FLCG are substitutes, based on the following rationale. Before the reforms, CSHs used RPTs to expropriate minority shareholders, thereby lowering the firm value. The higher standard of investor protection implemented in the wake of the reforms substituted for poor FLCG mechanisms and constrained the CSHs from tunneling. The decrease in tunneling in compliance with the new uniform standard of investor protection was greater among the firms with a poor pre-reform governance, and consequently they increased in value. After the reforms, all the firms aligned with the higher standard of investor protection, such that the difference between the values of the well- and poorly-governed firms was insignificant.

It is worth noting that a CSH decides the level of PBCs in equilibrium. In particular, Burkart, Gromb, and Panunzi (2000) show that the CSH draws PBCs from the firm until her utility from the marginal diverted asset is equal to the marginal decrease in the market value of her shares. Thus, we would not expect a CSH to deviate from her equilibrium and decrease the expropriation without an external intervention though such a decrease results in an increase in market value, as is demonstrated in the present paper.

The overarching contention of this study is that the FLCG components that were salient for investor protection prior to the country-level reforms lost some of their importance after being supplanted by the CLCG. That is not to say that the country-level reforms rendered FLCG, and in particular the board of directors, altogether irrelevant. Thus, certain kinds of companies, e.g., those with greater capital requirements, may come to stand out by adopting a new, higher FLCG standard. To the extent that these companies' new FLCG standard will ensure an even higher level of investor protection than the one imposed by CLCG, it may regain its relevance for the investors. Under this scenario, an updated CG index comprising components measuring this new standard may be able to account for differences in performance across firms.[26]

A promising question for future research that logically arises from this paper is whether the reforms increased the tendency of poorly governed firms to go private. From the time the reforms went into effect, poorly governed firms have faced two options: they could either curtail minority-shareholder expropriation, or go private. In the present paper, I focus primarily on the first of these two strategies and provide evidence to an overall change in the behavior of poorly governed firms after the reforms. Cohen (2020b) examines whether the tendency among the firms with poor pre-reform governance to go private increased after the reforms went into effect.

[26] All the more so as a board of directors has two main roles: monitoring and advising (Adams and Ferreira, 2007). CLCG mechanisms may substitute for the board's role as supervisor, but they cannot replace the board as a strategic adviser to management.

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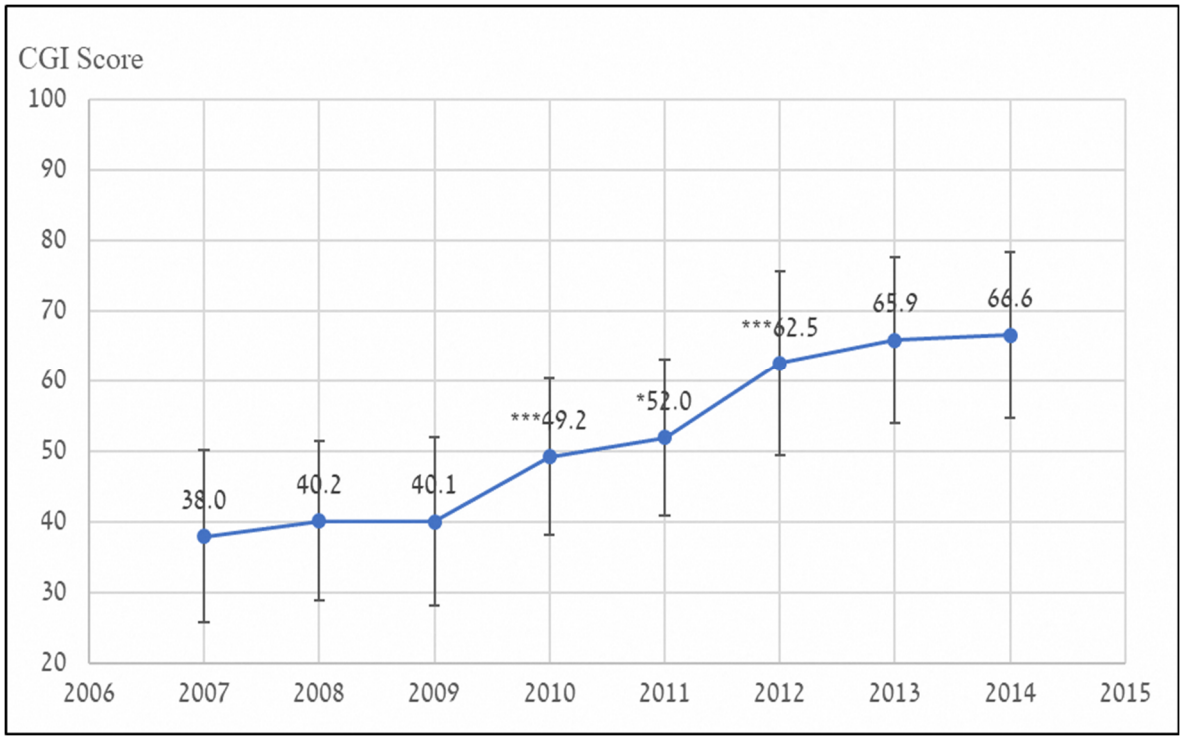
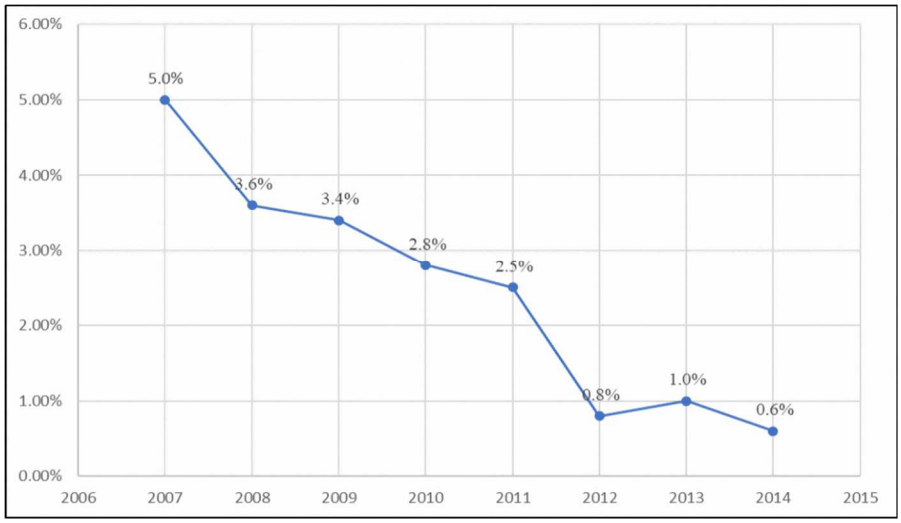
Figure 1. The Average CGI Scores in 2007–2014



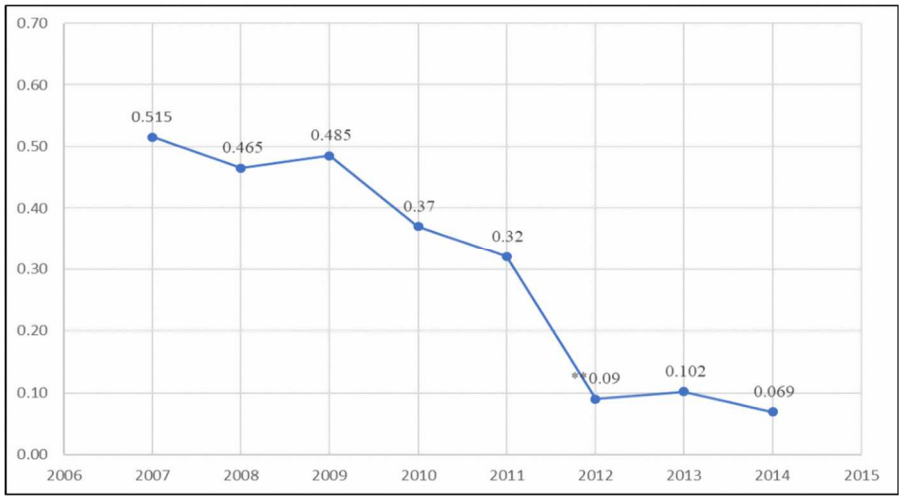
The figure presents the yearly average of the CGI scores. CGI scores are the firm's corporate governance scores that are calculated based on the index proposed in Cohen (2020a). The scores are calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014. The average CGI score in year t that is different from the average CGI score in year t-1 at significance levels of 1%, 5%, and 10% is indicated by ***, **, *, respectively.

Figure 2.1 The Average RPT Volume in 2007-2014



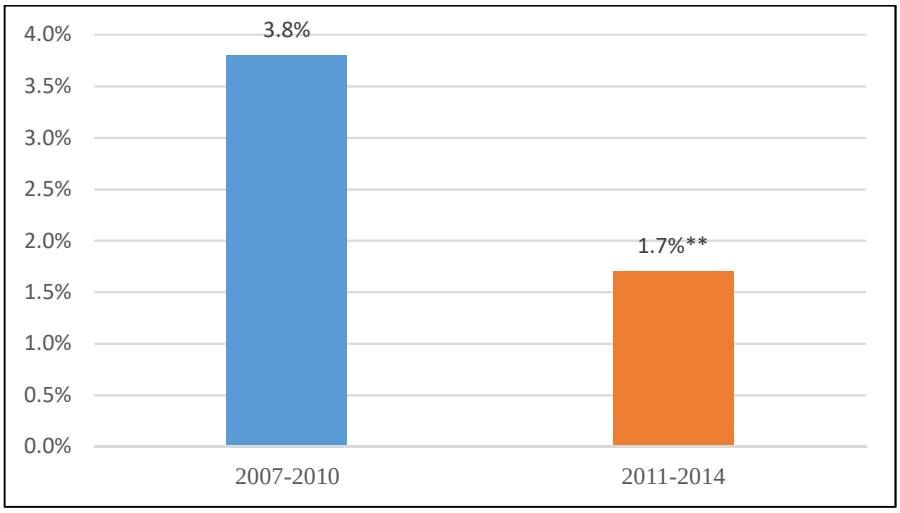
The figure presents the average volume of RPTs that were carried out by a sample of Israeli firms in each of the years 2007–2014. The RPT volume for a firm is calculated as the ratio between the volume (in NIS) of RPTs, excluding compensation, and the book value of the firm's assets. The average RPT volume is calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014.

Figure 2.2 The Average RPT Number in 2007–2014



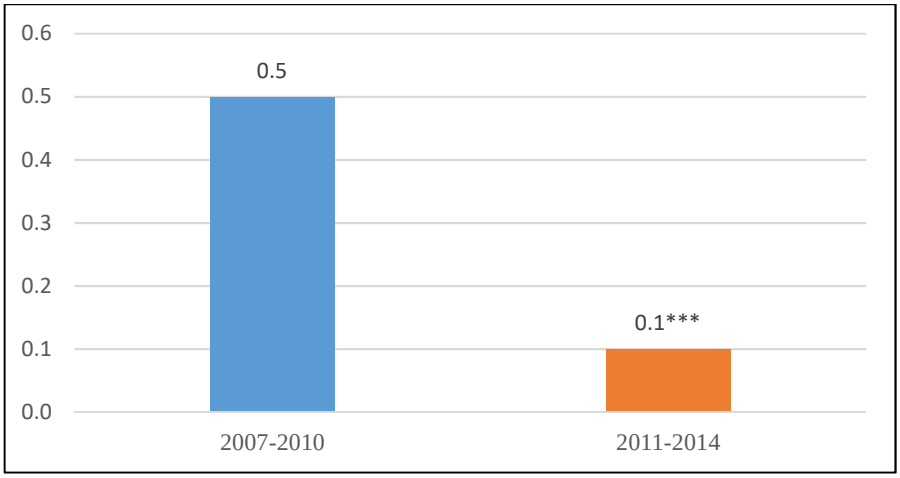
The figure presents the average number of RPTs, excluding compensation, that were approved by a sample of Israeli firms at a general meeting in each of the years 2007–2014. The average RPT number is calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014. The average number of RPTs in year t that is different from the average number in year t-1 at significance levels of 1%, 5%, and 10% is indicated by ***, **, *, respectively.

Figure 3.1: The Average RPT Volume in 2007–2010 and in 2011–2014



The figure presents the average volume of RPTs that were carried out by a sample of Israeli firms in the period 2007–2010 and in the period 2011–2014. The RPT volume for a firm is calculated as the ratio between the volume (in NIS) of its RPTs, excluding compensation, and the book value of its assets. The average RPT volume is calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014. The average volume of RPTs in the period 2011–2014 that is different from the volume in the period 2007–2010 at significance levels of 1%, 5%, and 10% is indicated by ***, **, *, respectively.

Figure 3.2: The Average RPT Number in 2007–2010 and in 2011–2014



The figure presents the average number of RPTs, excluding compensation, that were approved by a sample ofs Israeli firms at a general meeting in the period 2007–2010 and in the period 2011–2014. The average RPT number is calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014. The average number of RPTs in the period 2011–2014 that is different from the number in the period 2007–2010 at significance levels of 1%, 5%, and 10% is indicated by ***, **, *, respectively.

Figure 4.1: CGI Scores and Ln(TQ) in 2007

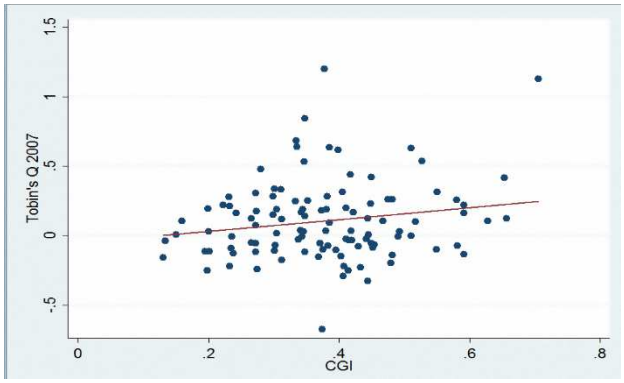


Figure 4.2: CGI Scores and Ln(TQ) in 2008

Figure 4.3: CGI Scores and Ln(TQ) in 2009

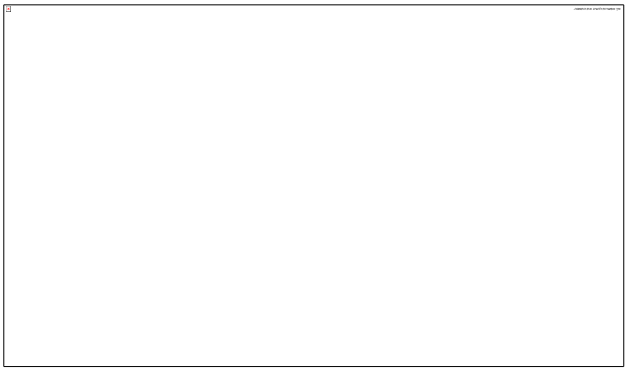


Figure 4.4: CGI Scores and Ln(TQ) in 2010

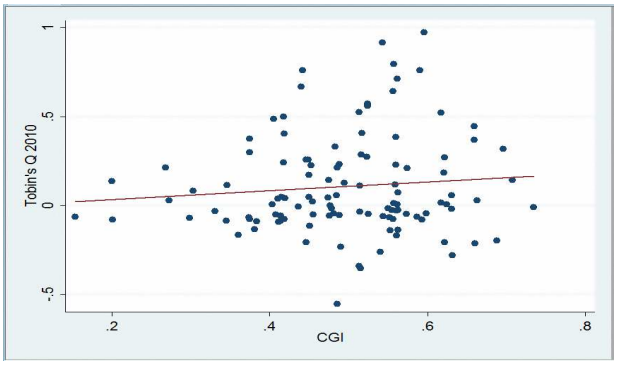


Figure 4.5: CGI Scores and Ln(TQ) in 2011

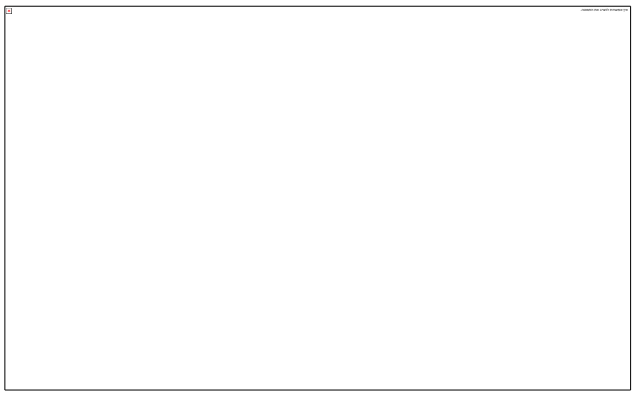


Figure 4.6: CGI Scores and Ln(TQ) in 2012

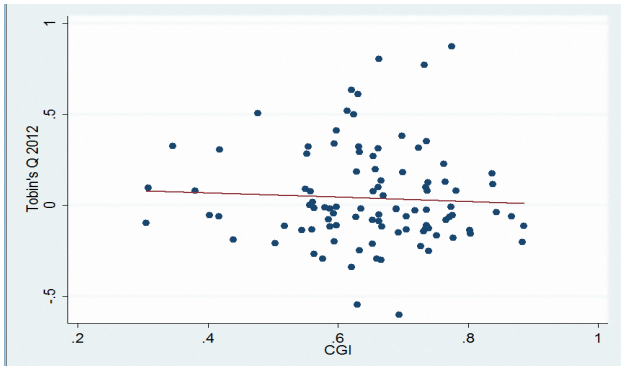


Figure 4.7: CGI Scores and Ln(TQ) in 2013

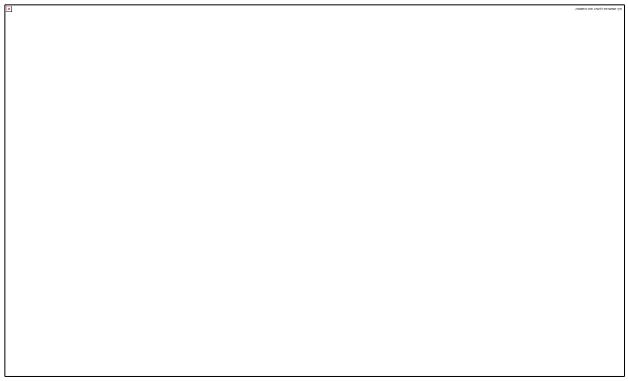
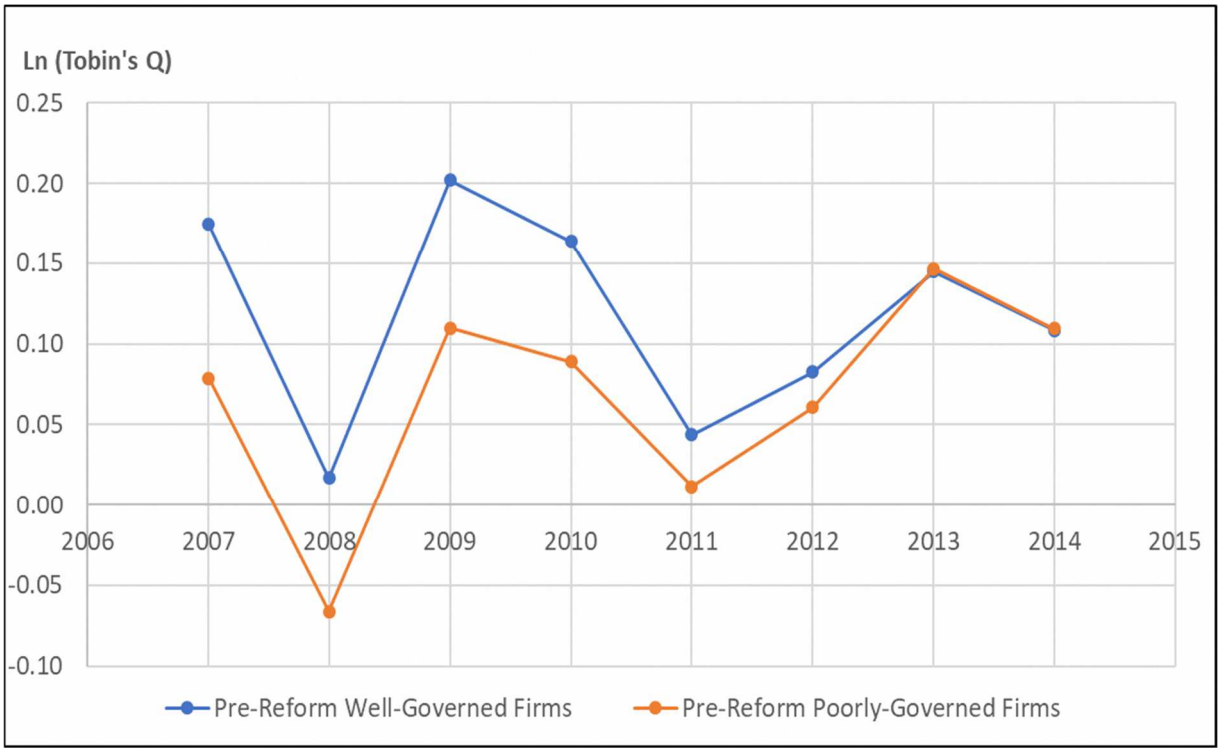


Figure 4.8: CGI Scores and Ln(TQ) in 2014

The figures show the cross-sectional correlation between the CGI scores and *Ln(TQ)* in each of the years 2007–2014. The correlations are calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014. CGI is the firm's corporate governance scores that are calculated based on the index proposed in Cohen (2020a). *Ln(TQ)* is calculated as the natural logarithm of the firm's average market value 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.

Figure 5: The 2007–2014 Average Ln(TQ) of Firms with High and Low CG Quality in 2007–2010



The figure presents the evolution of the average *Ln(TQ)* as calculated based on a sample of Israeli public companies that were traded on the TA 100 index or on TA MidCap index during at least some of the years 2007 to 2014. The average *Ln(TQ)* are calculated for two groups: *pre-reform well governed firms* and *pre-reform poorly governed firms*. *Pre-reform well governed firms* are the firms whose average CGI scores in the period 2007–2010 were higher than the median CGI score in those years. *Pre-reform poorly governed firms* are the firms whose average CGI scores in the years 2007–2010 were lower than the median CGI score in those years. *Ln(TQ)* is calculated as the natural logarithm of the firm's average market value 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. CGI scores are the firm's corporate governance scores that are calculated based on the index proposed in Cohen (2020a).

Table 1. Israeli Corporate Governance 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
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 this paper I use the natural log of Tobin's Q.
CGI	The firm's corporate governance scores as calculated based on the index proposed in Cohen (2020a). In the regressions in the present paper I use the CGI scores that are normalized to an average of 0 and a standard deviation of 1.
CGI $_{2007–2010}$	The average CGI scores of a firm in the period 2007–2010.
Low CGI $_{2007–2010}$	A dummy variable that takes the 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.
Board Independence	The equally weighted average of the CGI components that measure board independence.
Board Qualifications	The equally weighted average of the CGI components that measure board qualifications.
Outside Directors Qualifications	The equally weighted average of the CGI components that measure the percentage of qualified outside directors on the board and its committees.
Board Committee	The equally weighted average of the CGI components that measure the independence and the qualifications of the board committees.
CGI Extended Version A	The firm's corporate governance scores calculated based on the components that are included in the CGI plus three additional components that measure the independence of the internal auditor.
CGI Extended Version B	The firm's corporate governance scores calculated based on the components that are included in the CGI, plus three additional components that measure the independence of the internal auditor, plus two additional components that check whether the firm has a dividend policy and whether the firm publishes its financial statements earlier than the legally stipulated date.
CGI with Independent Directors	The firm's corporate governance scores calculated based on the components that are included in the CGI, with the components of the CGI targeting outside directors replaced by components targeting independent directors
CGI Aggregation by Dimensions	The firm's corporate governance scores calculated based on the components that are included in the CGI. The aggregation is performed in two stages: calculating a score for each CGI dimension as an equally weighted average of its components, and calculating the CGI score as an equally weighted average of the dimensional scores
CGI Aggregation by PCA	The firm's corporate governance scores calculated based on the components that are included in the CGI. The components are aggregated into the firm's CGI score based on a principal component analysis.
RPT Volume	The ratio between the volume (in NIS) of RPTs, excluding compensation, that are carried out by a firm in year t and the book value of the firm's assets. In the regressions in the present paper I use the natural log of RPT volume.
RPT Number	The number of RPTs, excluding compensation, that were approved at the general meeting of a specific firm in year t.
ROA	The operating profits normalized by the book value of the firm's assets.
Sales Growth	The sales of a firm in year t, divided by its sales in year t-1 minus 1.
Age	The number of months during which the firm had been public. In the regressions in the present 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.
Industry	Industry dummy variables that are defined based on two-digit TASE codes.

Table 3. The Yearly Samples

	Initial sample	Number of firms that went public after year t	Number of firms that went private until year t	Final CGI sample	Final RPT sample
2007	120	6	0	114	101
2008	120	5	0	115	103
2009	120	4	1	115	103
2010	120	0	2	118	106
2011	120	0	12	108	97
2012	120	0	18	102	92
2013	120	0	26	94	85
2014	120	0	28	92	82

The table presents the yearly samples used in this study. I started with a group of 248 Israeli firms traded on the TA 100 Index or the TA MidCap Index for at least some of the years between 2007 and 2014. From this sample I removed 32 financial firms, 65 dual firms, five firms characterized by dispersed ownership structures, 15 partnerships, seven firms that went public after 2010 for them I am not able to calculate the pre-reform CGI scores, and four firms for which data were insufficient for calculating CGI scores. The resulting initial sample comprised 120 firms. From that sample, for each of the years sampled, I deducted firms that went public either during or after that year and firms that went private before that year, in order to obtain the final sample for calculating the CGI scores. From that final CGI sample, I deducted firms for which data were insufficient in regard to the RPTs that they had carried out, in order to get the final sample for calculating the number and the volume of the RPTs.

Table 4. Descriptive Statistics

	Average	Median	Min	Max	Standard Deviation
TQ	1.17	1.01	0.47	7.15	0.54
CGI	51	51	13	89	16
ROA	0.08	0.07	-0.67	0.84	0.09
Sales Growth	0.06	0.07	-0.90	3.27	0.60
Age (years)	18.76	17.04	0.85	85.00	13.81
Size (trillion NIS)	6.64	1.66	0.05	131.18	14.43
Leverage	0.33	0.34	0.00	0.89	0.21

The table presents descriptive statistics of the main variables used in this paper. *TQ* is 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. *CGI* is the firm's corporate governance scores as calculated based on the index proposed in Cohen (2020a). *ROA* is the operating profits normalized by the book value of the firm's assets. *Sales Growth* is the sales of a firm in year t, divided by its sales in year t-1 minus 1. *Age* is the number of months during which the firm had been public. *Size* is 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.

Table 5. Fixed Effects Regressions of Ln(TQ) on the CGI

	Dependent Variable: Ln(TQ)				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
CGI	**0.0382*** **	**0.0402*** **	0.0020	0.0054	0.0018
	(0.014)	**(0.013)**	(0.012)	(0.012)	(0.013)
CGI*Post	**-0.0644*** **	**-0.0610*** **			
	(0.019)	**(0.017)**			
Low CGI $_{2007\text{-}2010}$*Post			**0.0908*** **	**0.0914*** **	
			(0.032)	**(0.032)**	
CGI $_{2007\text{-}2010}$*Post					**-0.0445** **
					(0.020)
Ln(Age)		0.0138		0.0065	0.0167
		(0.036)		(0.037)	(0.037)
Ln(Size)		**-0.1331*** **		**-0.1359*** **	**-0.1349*** **
		(0.033)		**(0.030)**	**(0.033)**
Leverage		**0.6165*** **		**0.6171*** **	**0.6273*** **
		(0.174)		**(0.172)**	**(0.174)**
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
R^2 Adjusted	0.208	0.324	0.196	0.315	0.312
Firm-Year Observations	747	747	747	747	747

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* in the years 2007–2014. *Ln(TQ)* is calculated as the natural logarithm of the firm's average market value 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. *CGI* 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 2011–2014 and 0 otherwise. *CGI* $_{2007\text{-}2010}$ is the average CGI score of a firm in the period 2007–2010. *Low CGI* $_{2007\text{–}2010}$ is a dummy variable that takes the value of 1 for a firm whose *CGI* $_{2007\text{-}2010}$ was below the median score in the period 2007–2010 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 6. Fixed Effects Regressions of Ln(RPT Volume) and RPT Number on the CGI

	Dependent Variable: Ln(RPT Volume)				Dependent Variable: RPT Number			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
CGI	-0.2125*	**-0.2216****	0.0121	0.0601	-0.0372*	-0.0386*	0.0171	0.0325
	(0.122)	**(0.108)**	(0.100)	(0.123)	(0.023)	(0.023)	(0.021)	(0.021)
CGI*Post	**0.3673****	**0.3623****			**0.0706****	**0.0665****		
	(0.181)	**(0.181)**			**(0.030)**	**(0.029)**		
Low CGI $_{2007–2010}$*Post			-0.6937*				**-0.1364****	
			(0.381)				**(0.068)**	
CGI $_{2007-2010}$*Post				**0.3713****				**0.0567****
				(0.190)				**(0.029)**
Ln(Age)		-0.2810	-0.0172	-0.0534		0.0791	0.1492*	0.1398*
		(0.456)	(0.430)	(0.435)		(0.069)	(0.081)	(0.081)
Ln(Size)		-0.1486	-0.2830	-0.2630		0.0197	0.0074	0.0105
		(0.420)	(0.426)	(0.418)		(0.061)	(0.065)	(0.064)
Leverage		-0.2343	0.6348	0.5179		-0.0631	-0.1652	-0.1681
		(1.465)	(1.446)	(1.433)		(0.199)	(0.204)	(0.204)
ROA		**3.0231***	3.1430*	3.1362*		**1.0786****	0.7025*	0.7192*
		(1.726)	(1.720)	(1.733)		**(0.554)**	(0.424)	(0.424)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Adjusted	0.082	0.090	0.1036	0.1040	0.099	0.121	0.095	0.093
Firm-Year Observations	660	660	660	660	660	660	660	660

In Columns 1–4, the table reports the coefficients of four fixed-effects regressions in which the dependent variable is *Ln(RPT Volume)* in the years 2007–2014, while in Columns 5–8, the coefficients of four fixed-effects regressions in which the dependent variable is *RPT Number* in the years 2007–2014. The variable *Ln(RPT Volume)* is the natural logarithm of the ratio between the volume (in NIS) of related-party transactions, excluding compensation, and the book value of the firm's assets. The variable *RPT number* is the number of the related-party transactions, excluding compensation, that were approved at the general meeting of a specific firm in year t. *CGI* 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 2011–2014 and 0 otherwise. *CGI $_{2007-2010}$* is the average CGI score of a firm in the period 2007–2010. *Low CGI $_{2007–2010}$* is a dummy variable that takes the value of 1 for a firm whose *CGI $_{2007-2010}$* was below the median score in the period 2007–2010 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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; and *ROA* is the operating profits normalized by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 7. Fixed Effects Regressions of Ln(RPT Volume) on the CGI

Dependent Variable:	**Ln(New RPT Volume)**		**Ln(Existing RPT Volume)**	
	(1)	**(2)**	**(3)**	**(4)**
Low CGI $_{2007–2010}$*Post	-0.5614*		-0.4944*	
	(0.318)		(0.294)	
CGI $_{2007-2010}$*Post		0.2829*		0.2373*
		(0.159)		(0.132)
CGI	0.0602	0.0798	0.0399	0.0546
	(0.114)	(0.117)	(0.076)	(0.082)
Ln(Age)	0.7449*	0.7369*	-0.5556*	-0.5626*
	(0.434)	(0.439)	(0.328)	(0.333)
Ln(Size)	-0.6020	-0.5650	0.2317	0.2652
	(0.491)	(0.488)	(0.265)	(0.270)
Leverage	-0.4795	-0.5600	0.6595	0.5929
	(1.363)	(1.360)	(0.640)	(0.652)
ROA	2.6293*	2.6000*	-0.0724	-0.0927
	(1.588)	(1.572)	(0.634)	(0.643)
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes
R^2 Adjusted	0.113	0.113	0.109	0.107
Firm-Year Observations	660	660	660	660

The table reports the coefficients of fixed-effects regressions for the years 2007–2014. In Columns 1 and 2, the dependent variable is *Ln(New RPT volume)*, which is the natural logarithm of the ratio between the volume (in NIS) of related-party transactions, excluding compensation, that were approved for the first time at the general meeting of a specific firm in year t, and the book value of the firm's assets. In Columns 3 and 4, the dependent variable is *Ln(Existing RPT volume)*, which is the natural logarithm of the ratio between the volume of continuous RPTs, excluding compensation, that were approved at the general meeting of a specific firm before 2011 and were paid out in each of the following years, and the book value of the firm's assets. *CGI* 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. *CGI $_{2007-2010}$* is the average CGI score of a firm in the period 2007–2010. *Low CGI $_{2007–2010}$* is a dummy variable that takes the value of 1 for a firm whose *CGI $_{2007-2010}$* was below the median score in the period 2007–2010 and 0 otherwise. *Post* is a dummy variable that takes the value of 1 for the years 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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; and *ROA* is the operating profits normalized by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 8. Fixed Effects Regressions of Ln(TQ) on the Predictions of Ln(RPT Volume)

	Dependent Variable: Ln(TQ)	
	(1)	**(2)**
RPT Prediction by Low CGI $_{2007–2010}$	**-0.1690****	
	(0.071)	
RPT Prediction by Low CGI $_{2007–2010}$ *Post	**0.1281*****	
	(0.040)	
RPT Prediction by CGI $_{2007–2010}$		-0.0962*
		(0.063)
RPT Prediction by CGI $_{2007–2010}$*Post		**0.1326*****
		(0.038)
CGI	-0.0080	-0.0020
	(0.015)	(0.014)
Ln(Age)	-0.0116	-0.0149
	(0.046)	(0.048)
Ln(Size)	**-0.2248*****	**-0.2023*****
	(0.061)	**(0.057)**
Leverage	**0.7179*****	**0.6695*****
	(0.157)	**(0.162)**
ROA	**1.3953*****	**1.1448*****
	(0.348)	**(0.306)**
Year Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes
R^2 Adjusted	0.4211	0.4204
Firm-Year Observations	660	660

The table reports the coefficients of fixed-effects regressions for the years 2007–2014 in which the dependent variable is *Ln(TQ)*. *Ln(TQ)* is calculated as the natural logarithm of the firm's average market value 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. The variables *RPT Prediction by Low CGI* $_{2007–2010}$ and *RPT Prediction by CGI* $_{2007-2010}$ are the predictions of *Ln(RPT Volume)* that are calculated based on the coefficients in Table 6 Columns 3 and 4, respectively. *Ln(RPT Volume)* is the natural logarithm of the ratio between the volume (in NIS) of related-party transactions, excluding compensation, and the book value of the firm's assets. *CGI* $_{2007-2010}$ is the average CGI score of a firm in the period 2007–2010. *Low CGI* $_{2007–2010}$ is a dummy variable that takes the value of 1 for a firm whose *CGI* $_{2007-2010}$ was below the median score in the period 2007–2010 and 0 otherwise. *CGI* is the firm's corporate governance scores that are 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 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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; and *ROA* is the operating profits normalized by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 9. Fixed Effects Regressions of Ln(TQ) on Different Aspects of the CGI

	Dependent Variable: Ln(TQ)			
	(1)	**(2)**	**(3)**	**(4)**
Board Independence	0.0183*			
	(0.012)			
Board Independence*Post	**-0.0433****			
	(0.018)			
CGI Minus Board Independence	**0.0502*****			
	(0.013)			
(CGI Minus Board Independence)*Post	**-0.0446*****			
	(0.012)			
Board Qualifications		**0.0559*****		
		(0.018)		
Board Qualifications*Post		**-0.0816*****		
		(0.024)		
CGI Minus Board Qualifications		0.0163		
		(0.015)		
(CGI Minus Board Qualifications)*Post		**-0.0457****		
		(0.022)		
Outside Directors Qualifications			**0.0531*****	
			(0.016)	
Outside Directors Qualifications *Post			**-0.0765*****	
			(0.021)	
CGI Minus Outside Directors Qualifications			**0.0264***	
			(0.014)	
(CGI Minus Outside Directors Qualifications)*Post			**-0.0413****	
			(0.021)	
Board Committee				**0.0357*****
				(0.012)
Board Committee*Post				**-0.0622*****
				(0.016)
CGI Minus Board Committee				0.0182
				(0.013)
(CGI Minus Board Committee)*Post				-0.0144
				(0.014)
Ln(Age)	0.0163	0.0168	0.0143	0.0095
	(0.036)	(0.036)	(0.037)	(0.037)
Ln(Size)	**-0.1346*****	**-0.1344*****	**-0.1333*****	**-0.1341*****
	(0.031)	**(0.033)**	**(0.033)**	**(0.033)**
Leverage	**0.6137*****	**0.6061*****	**0.6146*****	**0.6171*****
	(0.167)	**(0.170)**	**(0.172)**	**(0.173)**
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes
R^2 Adjusted	0.332	0.328	0.324	0.330
Firm-Year Observations	747	747	747	747

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* in the years 2007–2014. *Ln(TQ)* is calculated as the natural logarithm of 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. The variables *Board Independence*, *Board Qualifications*, *Outside Directors Qualifications*, and, *Board Committee* are calculated as the equally-weighted averages of the CGI components that measure board independence, board qualifications, outside directors' qualifications, and board committees, respectively, of a firm *i* in year *t*. The variables *CGI Minus Board Independence*, *CGI Minus Board Qualifications*, *CGI Minus Outside Directors Qualifications*, and *CGI Minus Board Committee* are calculated as the equally-weighted averages of the CGI components that were not used in calculating the *Board Independence*, *Board Qualifications*, *Outside Directors Qualifications*, and, *Board Committee* variables, respectively. CGI is the firm's corporate governance scores that are calculated based on the index proposed in Cohen (2020a). *Post* is a dummy variable that takes the value of 1 for the years 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 10. Fixed Effects Regressions of Ln(RPT Volume) on Different Aspects of the CGI

	Dependent Variable: Ln(RPT Volume)			
	(1)	**(2)**	**(3)**	**(4)**
Board Independence	-0.0740			
	(0.145)			
Board Independence *Post	0.2522			
	(0.195)			
CGI Minus Board Independence	**-0.3262****			
	(0.168)			
(CGI Minus Board Independence)*Post	0.2975			
	(0.223)			
Board Qualifications		-0.2928*		
		(0.180)		
Board Qualifications *Post		**0.4399****		
		(0.226)		
CGI Minus Board Qualifications		-0.0762		
		(0.212)		
(CGI Minus Board Qualifications)*Post		0.0779		
		(0.292)		
Outside Directors Qualifications			**-0.2977****	
			(0.151)	
Outside Directors Qualifications *Post			**0.4488****	
			(0.219)	
CGI Minus Outside Directors Qualifications			0.1006	
			(0.213)	
(CGI Minus Outside Directors Qualifications)*Post			-0.0653	
			(0.226)	
Board Committee				**-0.3029****
				(0.149)
Board Committee *Post				**0.4933*****
				(0.193)
CGI Minus Board Committee				-0.0361
				(0.177)
(CGI Minus Board Committee)*Post				0.0031
				(0.194)
Ln(Age)	-0.2997	-0.2984	-0.2747	-0.2441
	(0.487)	(0.472)	(0.453)	(0.462)
Ln(Size)	-0.1505	-0.1431	-0.1654	-0.1500
	(0.432)	(0.429)	(0.415)	(0.409)
Leverage	0.2914	-0.2565	-0.4189	-0.3565
	(1.439)	(1.433)	(1.419)	(1.410)
ROA	**3.1880****	3.1199*	3.1119*	3.1060*
	(1.699)	(1.704)	(1.709)	(1.702)
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes
R^2 Adjusted	0.093	0.094	0.096	0.094
Firm-Year Observations	660	660	660	660

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(RPT Volume)* in the years 2007–2014. *Ln(RPT Volume)* is the natural logarithm of the ratio between the volume (in NIS) of related-party transactions, excluding compensation, and the book value of the firm's assets. The variables *Board Independence, Board Qualifications, Outside Directors Qualifications,* and, *Board Committee* are calculated as the equally-weighted averages of the CGI components that measure board independence, board qualifications, outside directors' qualifications, and board committees, respectively, of a firm *i* in year *t*. The variables *CGI Minus Board Independence, CGI Minus Board Qualifications, CGI Minus Outside Directors Qualifications,* and *CGI Minus Board Committee* are calculated as the equally-weighted averages of the CGI components that were not used in calculating the *Board Independence, Board Qualifications, Outside Directors Qualifications,* and, *Board Committee* variables, respectively. CGI is the firm's corporate governance scores that are calculated based on the index proposed in Cohen (2020a). *Post* is a dummy variable that takes the value of 1 for the years 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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; and *ROA* is the operating profits normalized by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 11. Fixed Effects Regressions of Ln(TQ) on the CGI

	Dependent Variable: Ln(TQ)							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Low Board Independence $_{2007\text{-}2010}$*Post	0.0209							
	(0.029)							
Board Independence $_{2007\text{-}2010}$*Post		-0.0070						
		(0.018)						
(CGI Minus Board Independence) $_{2007\text{-}2010}$*Post		**-0.0427*** **						
		(0.017)						
Low Board Qualifications $_{2007\text{-}2010}$*Post			**0.0676** **					
			(0.035)					
Board Qualifications $_{2007\text{-}2010}$*Post				**-0.0323** **				
				(0.017)				
(CGI Minus Board Qualifications) $_{2007\text{-}2010}$*Post				-0.0199				
				(0.019)				
Low Outside Directors Qualifications $_{2007\text{-}2010}$*Post					**0.0890*** **			
					(0.032)			
Outside Directors Qualifications $_{2007\text{-}2010}$*Post						-0.0150		
						(0.018)		
(CGI Minus Outside Directors Qualifications) $_{2007\text{-}2010}$*Post						-0.0354*		
						(0.021)		
Low Board Committee $_{2007\text{-}2010}$*Post							**0.0915*** **	
							(0.036)	
Board Committee $_{2007\text{-}2010}$*Post								**-0.0421** **
								(0.020)
(CGI Minus Board Committee) $_{2007\text{-}2010}$*Post								-0.0120
								(0.016)
CGI	0.0111	0.0016	0.0084	0.0021	0.0084	0.0014	0.0045	0.0002
	(0.012)	(0.013)	(0.012)	(0.013)	(0.012)	(0.013)	(0.012)	(0.013)
Ln(Age)	0.0115	0.0157	0.0115	0.0169	0.0052	0.0176	0.0041	0.0126
	(0.039)	(0.037)	(0.038)	(0.037)	(0.038)	(0.037)	(0.038)	(0.039)
Ln(Size)	**-0.1360*** **	**-0.1347*** **	**-0.1318*** **	**-0.1346*** **	**-0.1301*** **	**-0.1358*** **	**-0.1328*** **	**-0.1356*** **
	(0.033)	**(0.032)**	**(0.032)**	**(0.033)**	**(0.032)**	**(0.033)**	**(0.031)**	**(0.033)**
Leverage	**0.6114*** **	**0.6304*** **	**0.6247*** **	**0.6261*** **	**0.6267*** **	**0.6297*** **	**0.6337*** **	**0.6373*** **
	(0.175)	**(0.172)**	**(0.173)**	**(0.174)**	**(0.173)**	**(0.175)**	**(0.172)**	**(0.173)**
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Adjusted	0.300	0.314	0.307	0.313	0.314	0.313	0.315	0.315
Firm-Year Observations	747	747	747	747	747	747	747	747

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* in the period 2007–2014. *Ln(TQ)* is calculated as the natural logarithm of 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. The variables *Board Independence* $_{2007\text{-}2010}$, *Board Qualifications* $_{2007\text{-}2010}$, *Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Board Committee* $_{2007\text{-}2010}$ are the equally-weighted averages of the CGI components that measure board independence, board qualifications, outside directors' qualifications, and board committees, respectively, of a firm in the years 2007–2010. Each of the *Low Board Independence* $_{2007\text{-}2010}$, *Low Board Qualifications* $_{2007\text{-}2010}$, *Low Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Low Board Committee* $_{2007\text{-}2010}$ is a dummy variable that takes 1 for a firm whose the value of *Board Independence* $_{2007\text{-}2010}$, *Board Qualifications* $_{2007\text{-}2010}$, *Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Board Committee* $_{2007\text{-}2010}$, respectively, is lower than the median value in 2007–2010 and 0 otherwise. The variables *CGI Minus Board Independence* $_{2007\text{-}2010}$, *CGI Minus Board Qualifications* $_{2007\text{-}2010}$, *CGI Minus Outside Directors Qualifications* $_{2007\text{-}2010}$, and *CGI Minus Board Committee* $_{2007\text{-}2010}$ are calculated as the equally-weighted averages of the CGI components in the years 2007–2010 that were not used in calculating the *Board Independence* $_{2007\text{-}2010}$, *Board Qualifications* $_{2007\text{-}2010}$, *Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Board Committee* $_{2007\text{-}2010}$ variables, respectively. *CGI* 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 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 12. Fixed Effects Regressions of Ln(RPT Volume) on the CGI

	Dependent Variable: Ln(RPT Volume)							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Low Board Independence 2007-2010*Post	-0.0479							
	(0.320)							
Board Independence 2007-2010*Post		-0.0013						
		(0.185)						
(CGI Minus Board Independence) 2007-2010*Post		**0.4064****						
		(0.200)						
Low Board Qualifications 2007-2010*Post			**-1.1258*****					
			(0.364)					
Board Qualifications 2007-2010*Post				**0.5274****				
				(0.235)				
(CGI Minus Board Qualifications) 2007-2010*Post				-0.1064				
				(0.191)				
Low Outside Directors Qualifications 2007-2010*Post					**-0.8970****			
					(0.406)			
Outside Directors Qualifications 2007-2010*Post						**0.7548*****		
						(0.274)		
(CGI Minus Outside Directors Qualifications) 2007-2010*Post						-0.2654		
						(0.226)		
Low Board Committee 2007-2010*Post							**-0.7755****	
							(0.398)	
Board Committee 2007-2010*Post								**0.5260****
								(0.222)
(CGI Minus Board Committee) 2007-2010*Post								-0.0073
								(0.181)
CGI	-0.0361	0.0630	0.0479	0.0429	0.0241	0.0304	0.0267	0.0721
	(0.115)	(0.125)	(0.118)	(0.126)	(0.119)	(0.128)	(0.114)	(0.124)
Ln(Age)	-0.0680	-0.0332	-0.0082	-0.0473	-0.0026	-0.0269	0.0241	-0.0101
	(0.441)	(0.444)	(0.418)	(0.432)	(0.431)	(0.408)	(0.421)	(0.421)
Ln(Size)	-0.2299	-0.2833	-0.3699	-0.3169	-0.3277	-0.3852	-0.3158	-0.2832
	(0.424)	(0.416)	(0.391)	(0.411)	(0.400)	(0.385)	(0.415)	(0.407)
Leverage	0.5920	0.4118	0.4529	0.4923	0.4027	0.2782	0.3484	0.1493
	(1.445)	(1.421)	(1.385)	(1.416)	(1.429)	(1.343)	(1.454)	(1.387)
ROA	**3.3937****	**3.2212****	2.9648*	3.1794*	3.0833*	3.1675*	2.9982*	3.2136*
	(1.717)	**(1.682)**	(1.685)	(1.673)	(1.773)	(1.703)	(1.747)	(1.704)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Adjusted	0.097	0.1059	0.1132	0.1092	0.1075	0.1184	0.1049	0.1091
Firm-Year Observations	660	660	660	660	660	660	660	660

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(RPT Volume)* in the years 2007–2014. *Ln(RPT Volume)* is the natural logarithm of the ratio between the volume (in NIS) of related-party transactions, excluding compensation, and the book value of the firm's assets. The variables *Board Independence* $_{2007\text{-}2010}$, *Board Qualifications* $_{2007\text{-}2010}$, *Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Board Committee* $_{2007\text{-}2010}$ are the equally-weighted averages of the CGI components that measure board independence, board qualifications, outside directors' qualifications, and board committees, respectively, of a firm in the years 2007–2010. Each of the *Low Board Independence* $_{2007\text{-}2010}$, *Low Board Qualifications* $_{2007\text{-}2010}$, *Low Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Low Board Committee* $_{2007\text{-}2010}$ is a dummy variable that takes 1 for a firm whose the value of *Board Independence* $_{2007\text{-}2010}$, *Board Qualifications* $_{2007\text{-}2010}$, *Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Board Committee* $_{2007\text{-}2010}$, respectively, is lower than the median value in 2007–2010 and 0 otherwise. The variables *CGI Minus Board Independence* $_{2007\text{-}2010}$, *CGI Minus Board Qualifications* $_{2007\text{-}2010}$, *CGI Minus Outside Directors Qualifications* $_{2007\text{-}2010}$, and *CGI Minus Board Committee* $_{2007\text{-}2010}$ are calculated as the equally-weighted averages of the CGI components in the years 2007–2010 that were not used in calculating the *Board Independence* $_{2007\text{-}2010}$, *Board Qualifications* $_{2007\text{-}2010}$, *Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Board Committee* $_{2007\text{-}2010}$ variables, respectively. *CGI* 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 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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; and *ROA* is the operating profits normalized by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 13. Fixed Effects Regressions of Ln(TQ) on Different Predictions of Ln(RPT Volume) as Calculated with Different Aspects of the CGI

	Dependent Variable: Ln(TQ)			
	(1)	**(2)**	**(3)**	**(4)**
RPT Prediction by Board Independence $_{2007\text{-}2010}$	1.0297			
	(0.774)			
RPT Prediction by Board Independence $_{2007\text{-}2010}$*Post	**0.1436*** **			
	(0.040)			
RPT Prediction by Board Qualifications $_{2007\text{-}2010}$		**-0.1212*** **		
		(0.047)		
RPT Prediction by Board Qualifications $_{2007\text{-}2010}$*Post		**0.0959*** **		
		(0.033)		
RPT Prediction by Outside Directors Qualifications $_{2007\text{-}2010}$			**-0.1334*** **	
			(0.052)	
RPT Prediction by Outside Directors Qualifications $_{2007\text{-}2010}$*Post			**0.1097*** **	
			(0.037)	
RPT Prediction by Board Committee $_{2007\text{-}2010}$				-0.1181*
				(0.065)
RPT Prediction by Board Committee $_{2007\text{-}2010}$*Post				**0.1189*** **
				(0.037)
CGI	0.0346	-0.0064	-00076	-0.0065
	(0.030)	(0.014)	(0.014)	(0.015)
Ln(Age)	0.0631	-0.0043	-0.0049	0.0019
	(0.070)	(0.047)	(0.046)	(0.046)
Ln(Size)	**-0.1469** **	**-0.2153*** **	**-0.2170*** **	**-0.2110*** **
	(0.061)	**(0.059)**	**(0.059)**	**(0.061)**
Leverage	**0.6774*** **	**0.6835*** **	**0.6869*** **	**0.6724*** **
	(0.162)	**(0.162)**	**(0.161)**	**(0.155)**
ROA	0.6403	**1.2746*** **	**1.3034*** **	**1.2318*** **
	(0.658)	**(0.296)**	**(0.299)**	**(0.323)**
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes
R^2 Adjusted	0.434	0.418	0.419	0.418
Firm-Year Observations	660	660	660	660

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* in the years 2007–2014. *Ln(TQ)* is calculated as the natural logarithm of 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. The variables *RPT Prediction by Board Independence* $_{2007\text{-}2010}$, *RPT Prediction by Board Qualifications* $_{2007\text{-}2010}$, *RPT Prediction by Outside Directors Qualifications* $_{2007\text{-}2010}$, and *RPT Prediction by Board Committee* $_{2007\text{-}2010}$ are the predictions of *Ln(RPT Volume)* that are calculated based on the coefficients in Columns 1, 3, 5 , and 7 of Table 12, in which the *Low Board Independence* $_{2007\text{-}2010}$, *Low Board Qualifications* $_{2007\text{-}2010}$, *Low Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Low Board Committee* $_{2007\text{-}2010}$, respectively, are included as explanatories. Each of the *Low Board Independence* $_{2007\text{-}2010}$, *Low Board Qualifications* $_{2007\text{-}2010}$, *Low Outside Directors Qualifications* $_{2007\text{-}2010}$, and *Low Board Committee* $_{2007\text{-}2010}$ is a dummy variable that takes 1 for a firm whose the value of board independence, board qualifications, outside directors qualifications, and board committee, respectively, in the years 2007–2010 is lower than the median value in those years and 0 otherwise. The scores of board independence, board qualifications, outside directors qualifications, and board committee are calculated as the equally-weighted average of the CGI components that measure board independence, board qualifications, outside directors' qualifications, and board committees, respectively, of a firm *i* in year *t*. *CGI* 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 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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; and *ROA* is the operating profits normalized by the book value of the firm's assets. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 14. Fixed Effects Regressions of Ln(TQ) on alternative Versions of CGI

	Dependent Variable: Ln(TQ)					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
CGI Extended Version A	**0.0334*** **					
	(0.013)					
CGI Extended Version A*Post	**-0.0507*** **					
	(0.018)					
CGI Extended Version B		**0.0327*** **				
		(0.013)				
CGI Extended Version B*Post		**-0.0471*** **				
		(0.017)				
CGI with Independent Directors			**0.0385*** **			
			(0.014)			
CGI with Independent Directors*Post			**-0.0512*** **			
			(0.016)			
CGI Aggregation by Dimensions				**0.0281** **		
				(0.014)		
CGI Aggregation by Dimensions*Post				-0.0235*		
				(0.014)		
CGI Aggregation by PCA					**0.0409*** **	
					(0.011)	
CGI Aggregation by PCA*Post					**-0.0717*** **	
					(0.017)	
CGI						**0.0450*** **
						(0.017)
CGI*Post						**-0.0691*** **
						(0.021)
Ln(Age)	0.0131	0.0163	0.0135	-0.0083	0.0035	0.0046
	(0.038)	(0.038)	(0.037)	(0.033)	(0.036)	(0.046)
Ln(Size)	**-0.1330*** **	**-0.1312*** **	**-0.1365*** **	**-0.1430*** **	**-0.1355*** **	**-0.1235*** **
	(0.034)	**(0.034)**	**(0.033)**	**(0.033)**	**(0.032)**	**(0.042)**
Leverage	**0.6179*** **	**0.6252*** **	**0.6427*** **	**0.6460*** **	**0.6275*** **	**0.7026*** **
	(0.175)	**(0.175)**	**(0.176)**	**(0.173)**	**(0.171)**	**(0.211)**
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Adjusted	0.316	0.314	0.318	0.314	0.332	0.317
Firm-Year Observations	747	747	747	747	747	592

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* in the period 2007–2014. *Ln(TQ)* is calculated as the natural logarithm of 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. *CGI Extended Version A* is the firm's corporate governance scores calculated based on the components that are included in the CGI plus three additional components that measure the independence of the internal auditor; *CGI Extended Version B* is the firm's corporate governance scores calculated based on the components that are included in the CGI, plus three additional components that measure the independence of the internal auditor, plus two additional components that check whether the firm has a dividend policy and whether the firm publishes its financial statements earlier than the legally stipulated date; *CGI with Independent Directors* is the firm's corporate governance scores calculated based on the components that are included in the CGI, with the CGI components targeting outside directors replaced by components targeting independent directors; *CGI Aggregation by Dimensions* is the firm's corporate governance scores calculated based on the components that are included in the CGI. The aggregation is performed in two stages: calculating a score for each CGI dimension as an equally weighted average of its components, and calculating the CGI score as an equally weighted average of the dimensional scores. *CGI Aggregation by PCA* is the firm's corporate governance scores calculated based on the components that are included in the CGI. The components are aggregated into the firm's CGI score based on a principal component analysis. Column 6 reports the coefficients of variables in a fixed-effects regression, run based on a balanced sample. *Post* is a dummy variable that takes the value of 1 for the years 2011–2014 and 0 otherwise. *CGI* 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. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 15. Fixed Effects Regressions of Different Outcomes on the CGI

Dependent Variable:	**Market to Book ratio**	**ROA**	**Sales Growth**
	(1)	**(2)**	**(3)**
CGI	**0.0692*** **	**0.0012*** **	**0.0841** **
	(0.021)	**(0.001)**	**(0.039)**
CGI*Post	**-0.0849*** **	-0.0010*	**-0.0720** **
	(0.026)	(0.001)	**(0.038)**
Ln(Age)	0.0711	-0.0135	-0.1181
	(0.066)	(0.019)	(0.155)
Ln(Size)	**-0.1435*** **	**0.0567*** **	0.2857*
	(0.042)	**(0.016)**	(0.173)
Leverage	**-0.4084** **	**-0.1367*** **	0.0002
	(0.187)	**(0.055)**	(0.623)
Year Fixed Effects	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes
R^2 Adjusted	0.298	0.203	0.067
Firm-Year Observations	747	747	747

The table reports the results of fixed-effects regressions for the years 2007–2014. Column 1 reports the coefficients of a regression in which the dependent variable is *Market to Book ratio*; Column 2 reports the coefficient in a regression in which the dependent variable is ROA; and Column 3 reports the coefficients of a regression in which the dependent variable is *Sales Growth*. *Market to Book ratio* is calculated as 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. *ROA* is calculated as the operating profits normalized by the book value of the firm's assets; *Sales Growth* is calculated as the sales of a specific firm in year t, divided by its sales in year t-1 minus 1. *CGI* 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 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 16. Fixed Effects Regressions of Ln(TQ) with Alternative Definitions of the Post Variable

	Dependent Variable: Ln(TQ)					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	2007–2010	**2011–2014**	**2007–2010**	**2011–2014**	**2007–2010**	**2011–2014**
CGI	**0.0441****	0.0005	**0.0450*****	0.0163	**0.0445*****	-0.0176
	(0.019)	(0.018)	**(0.017)**	(0.020)	**(0.016)**	(0.021)
CGI* Post $_{2009–2010}$	0.0004					
	(0.013)					
CGI* Post $_{2013-2014}$		-0.0325				
		(0.027)				
Low CGI $_{2007–2010}$*Post $_{2009–2010}$			-0.0180			
			(0.025)			
Low CGI $_{2007–2010}$*Post $_{2013–2014}$				0.0637		
				(0.046)		
CGI $_{2007–2010}$* Post $_{2009–2010}$					0.0030	
					(0.013)	
CGI $_{2007–2010}$* Post $_{2013–2014}$						-0.0081
						(0.025)
Age	**0.1086****	-0.1966	**0.1103****	-0.1968	0.1082	-0.1991
	(0.054)	(0.146)	**(0.053)**	(0.151)	(0.054)	(0.151)
Size	**-0.1188*****	**-0.2814*****	**-0.1203*****	**-0.2781*****	**-0.1189*****	**-0.2782*****
	(0.021)	**(0.039)**	**(0.021)**	**(0.037)**	**(0.021)**	**(0.039)**
Leverage	**0.3635*****	**1.3739*****	**0.3717*****	**1.3506*****	**0.3655*****	**1.3526*****
	(0.120)	**(0.525)**	**(0.118)**	**(0.513)**	**(0.120)**	**(0.523)**
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Adjusted	0.424	0.423	0.425	0.425	0.424	0.416
Firm-Year Observations	407	340	407	340	407	340

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)*. Columns 1, 3 and 5 report the coefficients from regressions for the years 2007–2010; and Columns 2, 4 and 6 report the coefficients from regressions for the years 2011–2014. *Ln(TQ)* is calculated as the natural logarithm of 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. *CGI* 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* $_{2009-2010}$ is a dummy variable that takes the value of 1 for the years 2009–2010 and 0 otherwise. *Post* $_{2013-2014}$ is a dummy variable that takes the value of 1 for the years 2013–2014 and 0 otherwise. *CGI* $_{2007-2010}$ is the average CGI score of a firm in the period 2007–2010. *Low CGI* $_{2007–2010}$ is a dummy variable that takes the value of 1 for a firm whose *CGI* $_{2007-2010}$ was below the median score in the period 2007–2010 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 17. The Long Term Effect of the Substitution between CLCG and FLCG

	Dependent Variable: Ln(TQ)		
	(1)	**(2)**	**(3)**
CGI	0.0032	0.0043	0.0024
	(0.015)	(0.015)	(0.016)
Low CGI $_{2007–2010}$* Post	**0.1279****	**0.1259*****	
	(0.055)	**(0.052)**	
CGI $_{2007–2010}$*Post			**-0.0599****
			(0.026)
Age		-0.0169	-0.0001
		(0.040)	(0.040)
Size		**-0.1353*****	**-0.1310*****
		(0.034)	**(0.037)**
Leverage		**0.5365*****	**0.5515*****
		(0.144)	**(0.145)**
Year Fixed Effects	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes	Yes
R^2 Adjusted	0.209	0.335	0.344
Firm-Year Observations	565	565	565

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* for the years 2007–2014 excluding the years 2011–2012. *Ln(TQ)* is calculated as the natural logarithm of 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. *CGI* 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 2011–2014 and 0 otherwise. *CGI* $_{2007-2010}$ is the average CGI score of a firm in the period 2007–2010. *Low CGI* $_{2007–2010}$ is a dummy variable that takes the value of 1 for a firm whose *CGI* $_{2007-2010}$ was below the median score in the period 2007–2010 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 10%, 5%, and 1%, respectively.

Table 18. Fixed Effects Regressions of Ln(TQ) on the CGI

	Dependent Variable: Ln(TQ)	
	(1)	**(2)**
CGI	0.0181	-0.0177
	(0.014)	(0.017)
CGI $_{2007\text{-}2010}$ Above 67th Value*Post	-0.0278	
	(0.037)	
CGI $_{2007\text{-}2010}$ Below 33th Value* Post		**0.1085****
		(0.045)
Age	-0.0211	0.0555
	(0.040)	(0.058)
Size	**-0.1043*****	**-0.1731*****
	(0.037)	**(0.049)**
Leverage	**0.5838****	**0.6502*****
	(0.238)	**(0.213)**
Year Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
Industry-Year Fixed Effects	Yes	Yes
R^2 Adjusted	0.318	0.361
Firm-Year Observations	480	486

The table reports the coefficients of fixed-effects regressions in which the dependent variable is *Ln(TQ)* for the years 2007–2014. The observations in Column 1 are the firms whose average CGI scores in 2007–2010 are higher than the 33rd value, and in Column 2, the firms whose the average scores in 2007–2010 are lower than the 67th value. *Ln(TQ)* is calculated as the natural logarithm of 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. *CGI $_{2007\text{-}2010}$ Above 67th Value* is a dummy variable that takes the value of 1 for a firm whose the average CGI score in the years 2007–2010 was above the 67th value and 0 otherwise. *CGI $_{2007\text{-}2010}$ Below 33th Value* is a dummy variable that takes the value of 1 for a firm whose the average CGI score in the years 2007–2010 was below the 33rd value and 0 otherwise. *CGI* 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 2011–2014 and 0 otherwise. *Ln(Age)* is the natural logarithm of the number of months during which the firm had been public; *Ln(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. *Industry* is the industry dummy variables that are defined based on two-digit TASE codes. Standard errors are clustered by firm and appear in parentheses. The symbols *, **, *** indicate significance levels for 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;[27] 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.[28] 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.

[27] 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.

[28] 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.[29] 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.[30] The "busyness" of a director is measured by the number of positions she holds in other firms.

[29] 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.
[30] 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[31]	"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 committee31	"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 committee31	"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 committee31	"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 rights
Ownership		

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 these components except for those pertaining to 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 one who has a formal education or practical experience relevant to the 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.

[31]In 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.