'Til Death Do Us Part: the Long Tenured Directors Puzzle

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Abstract

Twenty four percent of independent directors in Russel 3,000 have continuously served in the same firm for fifteen years or more. Are such lengthy terms beneficial to the companies?. On a sample of S&P 1500 over the period 1998-2012 we show strong positive effects on Tobin's Q if a company has one director on the board who served 20 years or more. Long tenured directors protect the firm and other board members by significantly reducing the risk of corporate scandals. Extended tenures allow directors to acquire more information generating better performance also when the cost of information acquisition is high. Superior information translates in higher returns by long tenured directors from insiders purchases and sales. Our results have important implications on the ongoing debate on setting tenure limits for outside directors and suggest that a single rule applying to all independent directors may not be optimal.

Introduction

A growing number of countries have adopted tenure-related guidelines or restrictions for independent directors. With very few exceptions, the "comply and explain" model prevails, and the recommended maximum tenure for a corporate director is between nine and twelve years. However, a recent GMI survey[1] shows that 24% of independent directors in Russel 3,000 firms have continuously served in the same firm for fifteen years or more. Why?

In this paper we argue and show that directors with very long tenures (LT directors) are beneficial to their companies and that this translates into superior performance, lower risk of outside litigation and higher disclosure and information acquisition. We believe that long tenure allows directors to acquire and retain information about the company that new or recently appointed outside directors may fail to obtain. Additionally, a long tenure allows to accumulate information about past events in the firm and about responses to exogenous market shocks that help weathering crises and discontinuities. Supporting the view that the effectiveness of one independent director is the result of a long build-up process, William George, a Harvard Business School professor and independent director stated: "*When directors are truly independent of the companies they serve, they generally lack the [...] knowledge about the industry or business [...]. [O]f the nine boards I served on as an independent director I had industry-specific knowledge in exactly none of them*".[2] These arguments are increasingly opposed by practitioners and activist investors who suggest that when tenures across board members is too long, directors become less effective and less independent in their oversight. Such reduced effectiveness may lead to poorer performance and firm instability. For instance, as re-

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[1] GMI Ratings (2013), "Directors Tenure and Gender Diversity in the United States: a Scenario Analysis".

[2] See: George, W. (2013). William George is a professor of management practice at Harvard Business School, former chairman and CEO of Medtronics and is or has been independent director at ExxonMobil, Goldman Sachs, Mayo Clinic, Novartis AG and Target.

ported by the Wall Street Journal on 2/28/2011 investor unhappiness about too many older directors spurred a proxy fight at Occidental Petroleum.

Despite the profound effect on the governance of companies, empirical studies have failed to provide clear evidence on the effect of increased director tenures. In this paper we also argue that a reason for the lack of conclusive evidence is a misspecification of the main explanatory variable. Research on independent directors usually adopts as a main variable the average tenure across independent board members (e.g. Vafeas, 2003; Huang, 2013). A crucial difference of our methodology is that we focus on the puzzling phenomenon of extremely long tenures that do not occur board-wide but are specific to a single director. Given that multiple regulation changes have increased the fraction of independent board members that now represent 70% to 80% of the board, average board measures significantly underestimate the effect of a single long tenure that gets diluted by the majority of board members exhibiting short or average tenures. Switching the focus to individual, abnormal tenure lengths allows us to isolate the strongly beneficial effects on firm performance that are increasing in the single director tenure and level off after a surprisingly long period.

The positive effect on performance documented in our paper raises two important related questions: first, how do directors affect performance and second, what are the determinants of long tenure? The first question relates to the very nature of independent directors whose main role is to protect firm stakeholders by monitoring the firm, its management and the external environment (ICGN 2014). In this respect, the directors task is crucially related to the quality and amount of information they can gather and process. Following this intuition, we show that LT directors positively affects the firm by superior information acquisition that translates in lower external litigation, increased independence from third parties information and superior returns on insider trades. Tackling the second question requires finding proxies for unobservable individual

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characteristics. In a set of comprehensive tests we show that not all board members are equally likely to become long tenured directors. Differently, personal characteristics and the market perception of these traits and skills positively impact the probability of one individual to become a long tenured director.

Our findings have important normative implications. Consistent with Katz and McIntosh (2014), we posit that board-wide term limits may be detrimental to the board itself, the company, and the shareholders, in particular if such limits force valuable directors off the board.

The remainder of the paper is organized as follows: Section 2 reviews the literature, the main governance regulations, and outlines the hypotheses; Section 3 presents data and methodology. We provide empirical results in section 4. In section 5 we discuss implications and conclude.

1   Literature and governance regulation

Literature on board independence is massive, however, there is surprisingly limited evidence about the effects of outside directors tenure on firm performance.

Early management studies provide preliminary evidence of the effects of average outside directors tenure on corporate governance and firm performance. According to Bacon and Brown (1973) it takes three to five years for a director to gain an "*adequate understanding of a firm and how it operates*". Similarly, Vance (1983) argued that forced retirement of long tenured directors lead to a waste of valuable experience. Supporting these views, Kosnik (1987) on the basis of a sample of 110 companies, shows that boards where directors have longer tenures are less likely to approve "greenmail" buybacks thus offering stakeholders at large better protection. Kesner (1988) shows that directors with longer tenure are more likely to sit in compensation or audit com-

mittees. Westphal & Khanna, (2003) point out that average outside member tenure appears to increase director independence, by offering insulation against social isolation for objecting to a course of action preferred by executives. In an earlier paper, Buchanan (1974) showed that extended tenures align interests of outside directors and stakeholders by increasing the willingness to exert effort and commit to the firm. A similar argument has been put forth by Shivdasani (1993) who suggested increasing outside directors equity holdings as an incentive alignment mechanism.

Yet, other studies highlighted possible detrimental effects of extended board tenure. Katz (1982) and Lipton and Lorsch (1992) claim that long tenure may lead directors to become too involved in the management of the firms with potential executive conflicts. More recently, Hwang and Kim (2009) and Fracassi and Tate (2012) show that independent directors tend to have closer ties with executives and in particular CEOs than optimal corporate governance rules would dictate.

Vafeas (2003) explicitly proposes two opposite hypotheses: the "expertise hypothesis" suggests that lengthy experience at the same firm provides directors with significant knowledge about the firm and its business environment, which ultimately results in greater commitment and competence in governing its affairs. In a similar spirit, Fogel et al. (2014) show that powerful independet directors are valuable to firms and that the market recognizes such value. The rival "management friendliness hypothesis" on the other hand proposes that seasoned directors are more likely to befriend, and less likely to monitor managers. Over time, directors may be co-opted by the management and become less mobile and less employable. This phenomenon is more probable in firms with more powerful CEOs, i.e. firms where CEOs participate in the nomination process, have long tenured CEO, and significant voting power. Vafeas (2003) research approach tests whether directors activity inside and outside the firm is motivated predominantly by expertise or managerial friendliness. Results offer partial support to the

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idea that director long tenures are often associated with powerful CEOs, consistently with Hwang and Kim (2009) and with the CEO entrenchment hypothesis in Baldenius at al. (2014).

In a recent contribution, Huang (2013) for the first time analyzes the effects of average tenure of outside directors on several dimensions of firm performance. His results show signs of a U-shaped inverse relationship between tenure and performance suggesting an optimal tenure length around nine years.

In our paper we crucially differentiate from this literature by isolating the effects of a single, very long tenured director from those of the average board tenure. Our contribution is motivated by the observation that different board compositions can lead to similar average values, underscoring the relevance of the dispersion of tenure lengths across board members. This intuition also implies that average board tenure is therefore a noisy measure that cannot meaningfully capture the true effect on performance.

1.1 Corporate governance regulation

Despite ambiguous empirical evidence, there is a growing concern about the issue of independent directors tenure. Institutional Shareholders Service, a shareholder activist group, has started including independent directors tenure as a constituent of its governance score. In a similar vein, the Council of Institutional Investors has proposed policies for clearly assessing independence of outside directors. Regulators worldwide have expressed similar concerns issuing tenure-related guidelines or restrictions for independent directors. France imposes a twelve years limit to allow qualifying a director as independent. The European Commission recommends that independent directors serve a maximum of three terms or twelve years. The UK Corporate Governance Code (formerly known as the Combined Code) requires that a board should explain, in its annual disclosures, its reasons for determining that a director who has served more than

nine years still qualifies as independent. Hong Kong requires a special, separate vote to keep a director beyond a recommended nine-year cap. Spain's Good Governance Code recommends a twelve-year limit for independent directors, while South Africa and Singapore both say boards should do a "rigorous review" of directors' independence if they have served more than nine years. Singapore also requires boards to explain why the directors are considered independent beyond the nine-year threshold.

1.2 Hypotheses

In this paper we concur with the management friendliness hypothesis that suggests that an average long tenure by all independent directors may lead to leniency and lack of responsiveness by the board. However, we depart from it by proposing that some firms may find beneficial to keep on the board a member for a long time. We argue that a long tenured director can perform several roles that we model as research hypotheses.

First, an extended tenure by a LT director helps building and maintaining a knowledge about the firm and its operations. This information acquisition process builds over time making a LT director an "information reservoir" that can prove beneficial to executives and more importantly to other, more frequently rotating board members. This conjecture is supported by the anecdotal evidence on the significant amount of time necessary to acquire a full set of information and skills by newly appointed outside members. This feature should translate into greater board effectiveness and ultimately into superior performance at the firm level. Accordingly we hypothesize:

Hp. 1: *Firm performance increases with the tenure of the longest serving director.*

A long tenured director experience translates into a greater information set that allows a better and more timely response to market-level and firm-level shocks. This helps in absorbing the lack of experience of younger directors that may become particularly detrimental when information on the firm is opaque. This information acquisition and

processing effect can unfold along different channels. First, as documented by Karpoff et al. (2008) and Gande and Lewis (2009) firms are severely affected by corporate scandals. Brochet and Srinivasan (2012) show that independent directors are not immune to scandals and face personal risks. A long tenure helps in building experience that is valuable in recognizing malpractice signals and potential outside threats. Similarly to the arguments in Beasley (1996), in order to avoid the personal and firm-level costs of a scandal, a long tenured director has an incentive and the skills to minimize litigation risks Second, LT directors knowledge and experience can act as a complement to the external sources of information on which outside directors primarely rely as documented by Duchin et al. (2010). Thirdly, superior information by LT directors can determine a better timing of LT insider trades and therefore increase the diffusion of valuable information in the market.

Hp. 2: *Long tenured directors exhibit superior information acquisition and processing.*

A final question with important normative implications for governance practices is whether long tenured directors are the result of the extension of appointment terms of a random director or rather if they are individuals with exceptional skills that can truly create value by performing the roles conjectured above. A significant body of literature (see for example: Fahlenbrach and Stulz, 2010; Boone et al., 2007; Hermalin and Weisbach, 1988, 1991) has investigated the characteristics of board members. Results are aligned in showing that the monitoring and oversight role of board members is better served by qualified board members, equipped with a broad set of skills that make them valuable directors. For example, Fahlenbrach and Stulz (2010) investigate the strong preference of companies in hiring active CEOs as independent board members because of the expected superior ability in detecting questionable corporate practices and the material contribution they can offer in defining the firm strategy. Following these

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arguments we believe that directors that eventually become LT exhibit superior skills when compared with the average outside director. These differences are observable from the beginning of the director career and translate into a significant value contribution to the firm through an extended relationship. Accordingly we formulate the following:

Hp. 3: *Directors who evolve being LT have superior skills.*

2   Data and methodology

Our sample is composed of SP 1500 companies excluding utilities and financial service, over a fourteen years period from 1998 to 2012. For each firm year we obtain board composition and director information from RiskMetrics and BoardEx. We supplement this information with company financial and accounting data from COMPUSTAT. This approach leads to a final sample of 15,082 firm-year observations on 2,137 distinct firms. Table 1 reports descriptive statistics.

INSERT TABLE 1 HERE

Looking at board characteristics, the average board size across all firm-years is 9 members. Over 70% of the board members are independent with an average tenure of 7.6 years. However, the longest serving independent director average tenure is considerably higher at almost 16 years. Outside directors tend to be limitedly involved in other boards (Busy Board=0.02). Blockholders are represented on board in over 11% of the observations. More than half of the companies have staggered board provisions. CEOs do not own a substantial fraction of the company in more than 4% of the cases. However, in over 60% of the cases they also act as Chairman. Similarly to the other insiders, CEOs tend to have long tenures in excess of 10 years.

2.1 Long tenure measures

Our main research objective is focused on the impact of long tenured independent directors on firm performance and operations. A methodological complexity stems from the design of an appropriate measure of Long Tenure (LT). First, tenure is somewhat mechanically associated with company's age. This characteristic, while obviously biasing results towards larger firms, is partially mitigated by the fact that SP 1500 firms tend, by construction, to be well established and relatively old companies and therefore provides a relatively homogenous sample. Secondly, there is no unconditional measure of "long" tenure. We address this methodological hurdle by developing two distinct measures: we first develop a discrete measure that we adopt for descriptive statistics purposes and for static tests; we then flank this measure with a continuous metric that we use in regression analyses. For both measures we impose the constraint that tenure need to be uninterrupted over the measurement period. We allow a maximum of six months grace period to avoid Type I classification errors originated by the interruption of tenures for strategic or personal reasons.[3].

2.1.1 Discrete measure

The challenge associated with the design of a discrete measure is largely that of identifying "long" tenures through either an arbitrary cutoff or benchmarked one. While benchmarked measures seem intuitively more appropriate they are also affected by significant degrees of subjectivity. To face these issues we explored several alternative measures.

1. As a first measure we define a director as long tenured if his/her tenure in 2012

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[3]We document several cases of directors that apparently leave the board only to join again after a few months. A sample of cases analyzed indicate that these are either cases related to personal reasons (mostly health-related) or to strategic reasons (e.g. artificially reduce outside directors average tenure) or to noise in the data collection process.

exceeds an arbitrary cutoff of twenty years. The cutoff has been selected following the evidence that:

(a) corporate governance guidelines and academics seem to converge on 12 years as a threshold for beginning to question independence. However, since the 12 years measure is similarly arbitrary, we have extended it to 20 years to clearly identify extreme cases.

(b) Empirical evidence from GMI shows a surprising similar fraction of firms with director tenures in excess of 15 and 20 years.

2. We alternatively construct a benchmarked specification as the average tenure of outside director augmented by alternatively:

(a) 1 and 2 standard deviations;

(b) five or seven years.

Both measures have strengths and weaknesses. The first measure unequivocally captures a "long" tenures, however it may underestimate the true effects of tenure length that may appear on shorter periods. The second approach, despite its apparent neutral computation is still influenced by the arbitrary selection of the augmentation factor. Running some comparative preliminary analyses we observe that the results obtained using the two measures tend to converge when the augmentation factor is such that the cutoff approaches the 20 years threshold. In the light of these considerations, we believe that the first approach benefits outweigh the cost of the subjective selection of the cutoff, therefore, we have adopted it as our working measure.

2.1.2 Continuous measure

As a continuous measure of tenure we adopt the absolute number of years of uninterrupted appointment by each individual director. We use this measure to compute the average board tenure and to identify the longest serving director. To account for any non linear effect on performance, we also introduce quadratic specifications of the tenure measure. We use board measures and LT director measures as the main explanatory variables in our regression analyses.

2.2 Descriptive statistics

For descriptive statistics and univariate tests purposes we classify firms as Long Tenure (LT) following the discrete measure introduced in the previous section. We then identify a Treatment and Control group by aggregating respectively LT firms and non-LT firms. Following this initial classification, we backtrack each non-LT firm to control that in previous years they did not have a LT director sitting on the board that eventually left it.[4] If we find evidence of the presence of LT directors in preceding years, we exclude that firm from the control group.

Table 2 shows the board composition across the sample of firms.

INSERT TABLE 2 HERE

Board composition is rather similar although LT firms show a slightly larger board size (9.87 vs. 9.22, $p < 0.01$) and age (63.84 vs. 62.25, $p < 0.01$). However, LT firms are also characterized by a significantly higher number of outside directors which does not seem to support the view that tenure entails more entrenchment. In fact, the median number of LT directors in treatment firms is 1 with a slightly higher average of 1.42. Two thirds of LT firms exhibit one long tenured director only and nearly all

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[4]At this stage we do not investigate the causes of departure.

other firms have two LT directors out of an average board size of ten. This evidence strongly confirms that average board tenure measures poorly capture the long tenure phenomenon, because long tenures significantly away from the mean value are mainly determined by one, or at best two, "outliers", rather than by a widespread abnormal increase in tenure length.

In Table 3 we provide descriptive statistics of the two groups. Panel A reports unmatched figures while Panel B reports figures comparing only observations matched by industry, market equity and age.

<div align="center">INSERT TABLE 3 HERE</div>

Results show that LT firms are slightly older (28.78 vs. 26.45, $p < 0.01$) and essentially similar in terms of book and market value with a small but not significant size difference. Differently, the treatment group shows a strongly significant higher profitability ratio EBITDA/LaggedTotalAssets (one year lagged) of 17.8 for the treatment group vs. 16 for the control group ($p < 0.01$). This stark difference is essentially unchanged both in magnitude and significance after matching firms in the two groups based on industry, size and age. Importantly, the Tobin's Q is significantly larger for LT firms unconditional (2.03 vs. 1.93, $p < 0.01$) and conditional (2.08 vs. 1.99, $p < 0.05$) on matching. In Table 4 we further analyze the comparative performance of the two groups by providing year-level evidence. Treatment companies show a consistently superior performance across all years for the profitability measure (EBITDA/LaggedTotalAssets). The Tobin's Q is also consistently higher although the statistical significance of the difference is lower for the unmatched sample.

<div align="center">INSERT TABLE 4 HERE</div>

These preliminary results support the view that there is a structural difference between LT and non-LT firms with non-negligible economic effects.

3 Results

3.1 Firm Performance

Our main set of tests provides panel data estimation of the effects on firm performance - measured as Tobin's Q - by LT directors. In these tests we turn to a continuous measure of long tenure to avoid measurement biases. Our main regression takes the following functional form:

$$
\begin{aligned}
Q_{i,t} &= \alpha + \beta_1 TenureLTDirector + \beta_2 TenureLTDirector^2 + \Phi BoardControls \\
&+ \Gamma Controls + \theta + \tau + \epsilon
\end{aligned} \tag{1}
$$

where:

- $TenureLTDirector$ is the main explanatory variable and measures the tenure in years of the longest serving director in the board.

- $BoardControls$ is a vector of board-specific controls, namely: average tenure of independent directors (linear and quadratic), average tenure of independent directors excluding the longest tenured director (linear and quadratic), tenure of 2nd longest serving director (linear and quadratic), Standard deviation of independent directors tenure, average tenure of inside directors.

- $Controls$ is a vector of the following controls: CEO age, CEO ownership in excess of 20%, CEO-chairman, CEO tenure on board, Fraction of outside directors, Busy board, Blockholder on board, Board size, Firm age, Total Assets, R&D/Sales ratio, EBITDA/Total assets lagged, Staggered Board, Standard deviation of stock price return in the previous fiscal year.

- θ, τ are industry and year fixed effects, respectively

Table 5 reports results for a battery of different models. Model 1 reports our baseline model. The tenure of the longest serving director is positively related to the company's performance measured by the same year Tobin's Q. The positive parameter is significant at the 1% level and surprisingly large, in particular when compared to the quadratic term. As expected the effect on performance tends to diminish over time but this occurs for extremely long tenures.

Model 2 tests an alternative specification where we exclude our main variable and adopt as the key couplet of explanatory variables the average tenure of the independent board members. Results are aligned with Huang (2013) in showing a similar non-linear relationship suggestive of a positive economic effect of longer tenures across all independent directors. Model (3) repeats the test by excluding from the average computation the longest tenured director. Results turn insignificant indicating that the previously observed effect is largely attributable to the longest serving director. In models (5) and (6) we jointly test the effects of the two alternative sets of variables. Model (5) regresses the performance on both the tenure of the longest serving director (linear and quadratic) and the average tenure of the independent members. While our main explanatory variable maintains its sign and significance, the average board tenure variables switch signs and are weakly indicative of a reverse quadratic effect of the average independent directors tenure, although the negative parameter of the linear term is not significant. This result is largely similar in model (6) where we replace the unconditional measures of average independent board members tenure with the averages calculated by excluding the longest serving director. In Table 2, we showed that LT firms have generally only 1 LT director. However the overwhelming majority of LT firms with multiple LT directors have only two. In models (4) and (7) we control for a possible joint effect of 2 LT directors in the firm. Model (4) indicates a positive relationship

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between the tenure of the second longest tenured director and firm performance, qualitatively similar to that observed in Model (1) for the longest serving director. However this effect disappears in Model (7) which indicates that the effect of the second longest director is fully absorbed by that of the longest serving independent director.

The control variables (unreported) are largely aligned with existing literature and support the consistency of our estimation procedure.

These results strongly support our main hypothesis, i.e. that the extended tenure of a few (typically one) director is positively related with performance. A strong feature of our design is that it is, by construction, less affected by endogeneity problems. Results obtained by adopting unconditional average board tenure measures are, in fact, more likely to be potentially affected by reverse causality issues: highly performing companies could more likely to maintain a "status quo" leading to endogenously longer tenures. This effect would be reinforced by board members' limited incentives in leaving the board of a successful company. Conversely, poorly performing firms might find it more difficult to retain directors in general, and high quality ones in particular. In our design, this endogeneity issue is not immediately detectable considering that: first, the average tenure of independent board members (excluding LT directors) in Treatment and Control companies is the same. Secondly, there are no specific reasons for which an increase in performance should provide a single director enough bargaining power to "force" her/his retention.

The previous results indicate the existence of a quadratic relationship between the tenure of LT directors and performance. This result also implies that there is a theoretical "optimal" tenure that maximizes performance. Such optimal tenure could be identified by solving the regression equation for the tenure that maximizes the estimated performance. This would be a theoretical result that, while of interest, would be prone to severe limitations in its interpretation being conditional on keeping all the covariates

at their mean value. In Table 6 we provide an alternative approach estimating the performance regressions for different tenure brackets.

<center>INSERT TABLE 6 HERE</center>

Following this approach we identify the empirically observed optimal tenure. In Model (1) we adopt 5 years brackets with the 1-5 bracket being the baseline (intercept) whereas in Model (2) we select 10 years intervals with the 1-10 bracket as a baseline. Results indicate that performance is increasing in the tenure of the LT director and maxes out in the 21-25 years tenure bracket. While the abnormal performance effect decreases for longer tenure it becomes not significantly different from zero only for tenures in excess of 35 years. It is interesting to notice how these results provide an incidental support to the selection of the 20 years cutoff for the LT discrete measure.

Our evidence provides a strong confirmation of Hypothesis 1 suggesting that an extensive relationship between the firm and one of its independent directors adds value to the firm. However, some alternative explanations could also be suggestive of a selectivity effect where the LT director selects firms that are natural outperformers. Given the independent directors often serve in multiple boards, if these rival explanations dominated our interpretation of the findings we should observe a positive effect on the performance of companies where the LT director is also a board member. We address this concern by designing the following two tests:

1) When directors serve on multiple boards, we regress their tenure on other boards onto the firm's Tobin's Q. As in our main test we model this variable in a linear and quadratic form.

2) We replace the variables in the previous test with a dummy variable equal to 1 if the firm has a director that is the longest-serving director on another firm.

<center>INSERT TABLE 7 HERE</center>

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The results reported in Table 7 do not show any significant effect supporting our argument that the positive contribution of LT directors is profoundly firm specific and likely driven by the knowledge about the firm and its business environment that requires a significant amount of time to build. The surprising number of cases of LT directors seem therefore to suggest that firms understand this value and are keen to preserve it.

3.2 Value creation channels

Our previous results show that LT directors are associated with superior firm performance. We have hypothesized that such effect is mainly driven by superior information acquisition and processing. Since information flows are not directly observable, testing these hypotheses requires looking at indirect effects.

3.2.1 Information acquisition

Recent regulation changes have required US listed companies to increase the number of outside directors. Exploiting this exogenous shock, Duchin et al. (2010) shed light on the effects of board independence on firm performance. Their main finding is that board independence has mixed effects on firm performance and the results are strongly driven by the cost of acquiring information. They develop an appropriate measure of information acquisition costs (Infoscore) and show that when costs are low board independence increases significantly firm value. However, when the cost of acquiring information is high, an increase in the fraction of outside directors of 10% (roughly one additional member) reduce Tobin's Q by about 15%. Duchin et al. (2010) argue that when information acquisition costs are high, independent directors fail to properly understand threats and risks (both internal and external). Ultimately they are not timely in taking decisions and selecting the optimal courses of action with a consequent reduction of the firm value.

Duchin et al. (2010) arguments present close similarities with the "management friendliness" hypothesis of negative effects on performance of excessively long tenures by outside board members. A related implication is therefore that the negative effects of long tenure should be increasing in the cost of information acquisition: firms with high information acquisition costs and long tenured directors should experience comparatively lower performance than firms with similarly long tenured directors but low information acquisition costs.

We test this hypothesis by running the following regression:

$$
\begin{aligned}
Q_{i,t} \; = \; & \alpha + \beta_1 MaxTenureDirector + \beta_2 MaxTenureDirector^2 + \\
& \beta_3 DuchinInfoScore + \beta_4 MaxTenureDirectorXDuchinInfoScore + \\
& + \beta_4 MaxTenureDirectorXDuchinInfoScore^2 + \\
& + \Phi BoardControls + \Gamma Controls + \theta + \tau + \epsilon
\end{aligned} \tag{2}
$$

where:

- $DuchinInfoScore$ is a variable measuring the cost of information acquisition that ranges form 0 (low cost) to 1 (high cost).

- $BoardControls$ and $Controls$ are the controls adopted in the main regression.

- θ, τ are industry and year fixed effects, respectively

Results are reported in Table 8.

<div align="center">INSERT TABLE 8 HERE</div>

The positive non-linear relationship between LT director tenure and Tobin's Q is confirmed in all specifications. The Duchin Info Score is, as expected negative and

significant, confirming the results in Duchin et al. (2010). However, the parameter estimates of both the linear and the quadratic interaction terms are insignificant, rejecting the hypothesis that long tenures reduce performance due to diminishing incentives and/or effectiveness in monitoring the firm, conditional and unconditional on the cost of acquiring information.

3.2.2 Litigation

As documented by an extensive body of literature (Gande and Lewis, 2009; Karpoff et al. 2008, among others) firm performance is severely affected by corporate scandals and outside litigation. Additionally, Brochet and Srinivasan (2012) show that corporate scandals have non-trivial effects on independent directors who face an 11% unconditional likelihood of being named as defendant in the lawsuit against the firm in which they serve. A natural channel through which directors may foster performance and reduce reputational and personal risks is by protecting the firm from corporate malpractices and outside threats. This argument is aligned with initial evidence by Beasley (1996) who showed a negative association between directors' tenure and the likelihood of financial statements fraud. We test this conjecture by collecting data from the Stanford Security Class Action Clearinghouse on security class actions filed against US listed companies over our sample period. Over the full sample period we document 813 SCAS filed on companies in our sample over a total of 17,646 firm-year observations. Following our classification we perform a logit regression estimating the likelihood of a company to be sued in a security class action conditional on our main explanatory variable long tenure.

<center>INSERT TABLE 9 HERE</center>

Results reported in Table 9 support our intuition: firms with LT directors are less likely to be involved in a corporate scandal as measured by the filing of a shareholder

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initiated security class action. The odds ratios show that for a one year increase in the tenure of the longest serving director, the company experiences a 3% lower litigation risk. This effect moderately fades away as captured by the quadratic term. The other controlling variable are aligned with existing results and indicate that firms in risky industries (such as, high-tech, pharma, etc.) and firms that experienced large swings in prices are more likely to be sued.

3.2.3   Information processing: directors trading

Ravina and Sapienza (2010) in their study on the returns of directors trades, show that inside directors purchases outperform the market obtaining large and significant positive abnormal (13.6%) BHAR on 180 days window. Insiders sales generate a lower, but positive and significant 1.26% abnormal return. On the contrary, outside director trades underperform insiders by more than 5% on purchases and by 1.3% on sales. LT directors are, by construction, independent directors and their insider trades should therefore exhibit similar returns. However,our previous test suggests that LT directors seem to posses, acquire or process information in a way that adds value to the company. If so, it is reasonable to expect that their insider trades, driven by superior information yielded positive abnormal returns. In order to test this hypothesis we collect insiders trades data from Thomson Insider Filing Data. We merge trades with directors data and classify trades into three groups: insiders, independent and LT directors. Our testing strategy is two-fold. First, since the Ravina and Sapienza datasets spans from 1986 to 2003, we replicate the base specifications of their study to ensure that their main findings hold on our sample window (1998-2012). Following Ravina and Sapienza (2010) argument that firm fixed-effects may generate inconsistent predictions, we test both with and without firm fixed effects, but we ultimately present results of the tests without fixed effects. As in their study, the qualitative results are not meaningfully

affected. Second, we isolate trades by independent directors and we compute differential returns between outside directors and LT directors. Our results are reported in Table 10.

INSERT TABLE 10 HERE

Panels A1 and B1 report the results of the replication tests for respectively purchases and sales. Looking at the reference window, BHAR 180, we largely confirm Ravina and Sapienza findings: director purchases generate a 14.9% abnormal return (vs. 13.7%) and independent directors underperform by about 2% points. Our results are not significant on this window but they are on shorter windows. Looking at sales we obtain evidence of small but positive returns for all directors (3.8% vs. 1.26%). Differently from Ravina and Sapienza (2010), independent director trades do not generate abnormal returns significantly different from zero. Panel A2 and B2 present results for our main test. The constant captures the return of all independent directors, while our main variable of interest is an indicator variable that identifies long tenured directors. Long tenure directors obtain significantly higher returns when purchasing their own firm stocks than the other independent directors. This leads to a staggering 22.7% estimated return on the six-months window that outperforms also returns on trades by inside directors. Looking at the sales we still observe significant results although the unconditional return for independent directors is negative by 5.9% We attribute this difference with the Ravina and Sapienza (2010) results to the meaningful difference in the sample period and sample size when looking at trades by independent directors only. However, supporting our previous result on purchases, LT directors experience a positive abnormal return also on sales. The 5.6% abnormal return essentially offsets the negative unconditional return yielding a net return on sales of zero.

These findings strongly support the view that LT directors efficiently obtain and process information and that this leads to optimal timing in their insider trades.

3.3 Director-level determinants of LT

These results show that LT directors are meaningful components of firms and can contribute to create long term stakeholders value. A related still unanswered question is whether there are individual characteristics that make directors particularly valuable to firms or rather the observed effects are just the mechanical consequence of the extension of tenure length. In the following we attempt at providing some preliminary answers to this question.

In table 11 we begin by testing the demographic characteristics of LT and non-LT directors. We identify LT directors using the discrete measure described in section 2.

INSERT TABLE 11 HERE

Figures show significant differences between the two classes of directors and suggest that long tenures are at least partially the result of observable individual characteristics. In particular LT directors are more likely to have attended an Ivy League school (38.9% vs. 30.9%), to have a Ph.D. (5.1% vs. 4%) and to have attended Law School (15.2% vs. 10.7%). They are also more likely to hold a CFA (1% vs. .8%) but less likely to have a CPA (8.3% vs. 11.9%). The BoardEX Network measure indicates smaller network size of LT directors vs. the average independent director but this may be related to a measurement bias given that the measure overweights the recent years. These professional characteristics seem to suggest that board members are in general sought after based on objective measures of quality and that this holds more strongly for LT directors. What is unobservable at this stage is whether, keeping their observable, professional qualifications constant, LT directors were distinguishable from their peers at the beginning of their careers. We address this issue by looking at the evolution of board membership of directors during their careers. If individual who eventually become LT directors have personal traits that the market consider valuable over and

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beyond their professional qualifications, then firms should compete for their skills and appoint them more often. As a result, early on in their careers, future LT directors should serve on multiple boards more often than the average board member. Over time though, if the value of LT directors stems from the close relationship with the firm as our result indicate, we should observe a decrease in multiple memberships.

We test this conjecture by looking at directors in 2012 and backtracking their board membership to 1998. We then present comparative statistics between LT and non-LT directors based on the discrete measure described in section 2 As a complement to this descriptive analysis we run a regression analysis of the following form:

$$N_{i,t} = \alpha + \beta_1 Tenure + \beta_2 LT\_2012 + TenureXLT\_2012 + \theta + \tau + \epsilon \qquad (3)$$

where:

- $Tenure$ is the director tenure.

- LT_2012 is a dummy variable that indicates whether director i satisfies the LT director definition in 2012.

- θ, τ are industry and year fixed effects, respectively

Results are reported in Table 12 and in Figure 1 and provide some interesting intuitions.

INSERT TABLE 12 AND FIGURE 1 HERE

Looking at Panel A, consistently with the conjecture that LT directors are characterized by a complex set of hard and soft skills we show that, early in their careers they served in about 40% more companies than non-LT directors (1.257 board membership vs. 0.908, $p < 0.001$) This difference declines over time, interestingly becomes

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not significantly different from zero when the director becomes LT, i.e. at 20 years of uninterrupted service, and then turns negative and significant supporting the idea that the close relationship with the firm is the main source of value. These results (restricted to the significant differences) are plotted in Figure 1 and show a surprisingly linear and negatively sloped relationship. Similarly, regression results reported in Panel B show a significant and economically relevant correlation: a random director serve in 1.088 boards but the LT dummy is positive and significant indicating more board membership for LT directors. The interaction term is negative and indicates that 10 years of tenure in the same firm reduce the number of board membership of the average LT director by 0.2 in absolute term or 20% of the unconditional mean.

4   Conclusions

A recent GMI survey highlights that 24% of independent directors in Russel 3,000 have continuously served in the same firm for fifteen years or more. Are these lengthy tenures of outside directors detrimental for the companies performance? A growing number of countries believes that this is the case and has introduced ad-hoc corporate governance rules capping the maximum tenure of a director in order to qualify as independent between nine and twelve years. In this paper we argue and show that while an increase in the average tenure of all independent members doesn't materially impact performance, the presence of a director with very long tenure (LT director) is beneficial to his/her company and translates into superior performance, lower risk of outside litigation and higher information acquisition and disclosure. We believe that long tenures allow directors to acquire and retain information about the company that new or recently appointed outside directors may fail to obtain. Additionally, a long tenure allows to accumulate information about past events in the firm and about responses to exogenous

market shocks that help weathering crises and discontinuities. We test our conjectures on a sample of S&P 1500 over the period 1998-2012 (excluding utilities and financial services). The use of US data offers the advantage that currently there are no limits to tenure length, therefore results are unaffected by exogenous changes. Our findings show a strong and significant quadratic relationship between the tenure of the longest serving director and firm performance measured by the Tobin's Q. Jointly testing the main variable and the average tenure of the independent board members clearly indicates that any effect attributable to the average board is fully absorbed by the longest serving director. LT directors generate value by acquiring and processing information that eventually benefits the firm. We provide evidence of this contribution by showing the insensitiveness of LT directors to the cost of information acquisition in a set of tests modelled following the Duchin et al. (2010) research design. Such superior information and skills appear meaningful also in protecting firms from outside litigation. In our tests we show that LT director firms have a significantly lower probability of being involved in a corporate scandals as measured by being sued in a security class-action. Supporting our main conjecture, we show that market participants can observe such information advantage by monitoring LT directors trade that consistently outperform the market by 22.7% on purchases and are aligned with those of insiders on sales Given the economic significance of the effects documented in our tests, we provide evidence on the determinants of long tenures. Looking at directors personal characteristcis and career we whow that LT directors are characterized by materially superior professional profiles and that early on in their careers they appear to be actively sought after by firms. Over time, however the relationship with one firm prevails as documented by a sharply decreasing number of outside board memberships.

Our results are suggestive of a critical and overlooked role played by LT directors that explains their surprisingly large presence across firms. We believe that the recog-

nition of this role is crucial in designing regulation that imposes unconditional limits on the tenure of outside directors.

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Table 1

Descriptive statistics - Full sample

The sample is obtained from Risk-metrics and is given S&P1500 firms from 1998 until 2012. Financial services (SIC from 4900 to 4999) and utilities (SIC from 6000-6999) were eliminated. The descriptive statistics show the difference between the board tenure of the independent director with the longest tenure and the average board tenure of all of the independent directors.

Variable	N	Mean	Std Dev	Minimum	25th Pctl	Median	75th Pctl	Maximum
Max Tenure of Indep Directors	15,082	15.78	8.05	1.00	10.00	15.00	20.00	58.00
Avg Tenure of Indep Directors	15,082	7.65	3.47	0.25	5.25	7.20	9.40	29.33
Standard Deviation of Independent Directors Tenure	15,082	5.44	3.08	0.33	3.27	4.97	6.99	23.60
Avg Tenure of Inside Directors	15,082	10.17	7.81	0.00	4.00	8.00	14.00	51.50
CEO age	15,082	55.88	7.39	31.00	51.00	56.00	61.00	97.00
CEO ownership >= 20%	15,082	0.04	0.19	0.00	0.00	0.00	0.00	1.00
CEO-chair	15,082	0.60	0.49	0.00	0.00	1.00	1.00	1.00
CEO tenure on board	15,082	10.54	9.27	0.00	4.00	8.00	15.00	61.00
Fraction of Independent	15,082	0.71	0.16	0.13	0.62	0.75	0.83	0.94
Busy Board	15,082	0.02	0.15	0.00	0.00	0.00	0.00	1.00
Blockholder on Board	15,082	0.10	0.31	0.00	0.00	0.00	0.00	1.00
Board Size	15,082	9.09	2.27	3.00	7.00	9.00	11.00	21.00
log(1+FirmAge)	15,082	26.81	16.16	2.00	13.00	22.00	40.00	63.00
log(Assets)	15,082	7.50	1.50	2.64	6.44	7.35	8.43	13.59
R&D/Sales	15,082	0.08	1.99	0.00	0.00	0.00	0.05	237.86
EBITDA/lagTA	15,082	0.16	0.10	-0.13	0.10	0.15	0.21	0.50
Staggered Board	15,082	0.56	0.50	0.00	0.00	1.00	1.00	1.00
Standard Deviation of Daily Returns over Past Fiscal Year	15,082	0.03	0.01	0.01	0.02	0.03	0.03	0.19

Table 2

Board characteristics

In this table we present board characteristics of firms with and without a long tenured directors. For preliminary analysis we adopt a discrete cutoff identifying a treatment group of Long Tenured director firms as firms where at least one independent directors has continuously served for 20 or more years. The control group is given by firms that never had a long tenured director as defined by a tenure of 20 or more years. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	Treatment	Control	Difference
Average board size	9.87	9.22	0.65***
Average # of independent directors	8.45	7.81	0.64***
Average # of Gray directors	0.75	0.36	0.39***
Average directors age	63.84	62.25	1.59***
Average directors tenure (excluding LT)	9.44	7.55	1.89***
% of LT firms	25.22%	-	
Average number of LT directors	1.42		
% of firms with N=1 LT directors	66.11%	-	
% of firms with N=2 LT directors	92.73%	-	

Table 3

Descriptive statistics: Treatment and control groups

In this table we present descriptive statistics on firm characteristics of firms with and without a long tenured directors. For preliminary analysis we adopt a discrete cutoff identifying a treatment group of Long Tenured director firms as firms where at least one independet directors has continuously served for 20 or more years. The control group is given by firms that never had a long tenured director as defined by a tenure of 20 or more years. In the matched sample we compare treatment a control firms after matching on firm age, size and industry. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A - Unmatched Sample

Variable		Treatment						Control				
	N	Mean	Median	Std Dev	25th Pctl	75th Pctl	N	Mean	Median	Std Dev	25th Pctl	75th Pctl
AGE Compustat	4005	28.78***	25.00	15.36	16.00	41.00	7245	26.45	21.00	16.54	13.00	40.00
Tobin's Q	4005	2.03***	1.62	1.26	1.23	2.33	7245	1.93	1.56	1.21	1.16	2.25
EBITDA/lagTA	4005	0.18***	0.17	0.10	0.12	0.23	7245	0.16	0.15	0.12	0.10	0.22
Total assets	4005	7,604.99	1,278.44	41,560.83	523.03	3,851.41	7245	7,115.62	1,271.86	21,387.68	451.70	4,293.60
R&D/Sales	4005	0.044***	0.001	0.07	0.00	0.04	7240	0.036	0.002	0.08	0.00	0.05
Market Equity	4004	9,919.44	1,604.67	34,179.97	582.84	5,024.86	7236	9,033.07	1,304.03	30,118.17	501.65	4,670.59

Panel B - Matched Sample

Variable		Treatment						Control				
	N	Mean	Median	Std Dev	25th Pctl	75th Pctl	N	Mean	Median	Std Dev	25th Pctl	75th Pctl
AGE Compustat[m]	2055	28.30	22.00	17.05	14.00	43.00	2055	28.30	22.00	17.05	14.00	43.00
Tobin's Q	2055	2.08**	1.67	1.30	1.26	2.41	2055	1.99	1.61	1.30	1.18	2.26
EBITDA/lagTA	2055	0.17***	0.16	0.10	0.12	0.22	2055	0.16	0.14	0.12	0.09	0.20
Total assets	2055	9,889.27	1,198.07	57,071.56	494.84	3,469.10	2055	7,947.30	1,844.81	18,732.65	518.22	6,092.00
R&D/Sales	2055	0.055	0.02	0.11	0.00	0.06	2055	0.059	0.02	0.10	0.00	0.10
Market Equity[m]	2054	12,096.51	1,553.90	43,436.01	581.14	4,943.15	2051	13,317.61	1,851.27	40,467.46	588.50	6,206.35

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Table 4

Treatment and Control: group yearly performance

In this table we present year-level descriptive statistics on firm performance measured as EBITDA over lagged total assets of firms with and without a long tenured directors. For preliminary analysis we adopt a discrete cutoff identifying a treatment group of Long Tenured director firms as firms where at least one independet directors has continuously served for 20 or more years. The control group is given by firms that never had a long tenured director as defined by a tenure of 20 or more years. In the matched sample we compare treatment a control firms after matching on firm age, size and industry. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	UNMATCHED				MATCHED			
Year	Treatment EBITDA/TA$_{t-1}$	Control EBITDA/TA$_{t-1}$	Difference	Wilcoxon p-value	Treatment EBITDA/TA$_{t-1}$	Control EBITDA/TA$_{t-1}$	Difference	Wilcoxon p-value
1998	0.195	0.170	0.025***	0.006	0.187	0.210	-0.023	0.335
1999	0.210	0.197	0.013**	0.032	0.208	0.196	0.012*	0.067
2000	0.204	0.194	0.010**	0.044	0.200	0.207	-0.007	0.442
2001	0.174	0.154	0.021***	0.000	0.157	0.147	0.009**	0.030
2002	0.166	0.145	0.022***	0.000	0.144	0.142	0.002*	0.080
2003	0.172	0.148	0.024***	0.000	0.157	0.134	0.024***	0.001
2004	0.179	0.171	0.008**	0.035	0.170	0.155	0.016**	0.011
2005	0.182	0.176	0.006*	0.069	0.171	0.150	0.021***	0.002
2006	0.183	0.176	0.007*	0.052	0.173	0.159	0.014**	0.026
2007	0.181	0.163	0.017***	0.002	0.167	0.142	0.026***	0.003
2008	0.167	0.148	0.019***	0.004	0.159	0.137	0.022***	0.005
2009	0.147	0.122	0.025***	0.001	0.134	0.106	0.028**	0.011
2010	0.173	0.155	0.019***	0.001	0.166	0.149	0.017**	0.043
2011	0.175	0.157	0.018***	0.006	0.168	0.154	0.014**	0.026
2012	0.167	0.149	0.018***	0.002	0.157	0.146	0.011*	0.059
N	267	483			137	137		

Table 5

Performance and LT director tenure

In this table we present results of OLS regressions of firm performance measured as Tobin's Q on the tenure of the longest serving independent director and its squared term. Additionally, we control for the average tenure of independent directors with and without the longest serving director. CONTROLS is a vector of the following controls: Standard deviation of independent directors tenure, Average tenure of inside directors, CEO age, CEO ownership in excess of 20%, CEO-chairman, CEO tenure on board, Fraction of outside directors, Busy board, Blockholder on board, Board size, Firm age, Total Assets, R&D/Sales ratio, EBITDA/Total assets lagged, Staggered Board, Standard deviation of stock price return in the previous fiscal year. The regression controls for year and industry fixed effects. Standard errors have been clustered alternatively at the firm and industry level without meaningful differences. We report results for industry clustered SE. t-Statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q
Tenure of LT Indep Director	0.034***				0.027**	0.022**	0.024***
	(3.17)				(2.47)	(2.36)	(2.98)
Tenure of LT Indep Director Squared	-0.001***				-0.001***	-0.001***	-0.001***
	(-2.83)				(-2.89)	(-2.87)	(-3.05)
Avg Tenure of Indep Directors		0.033*			-0.005		
		(1.88)			(-0.38)		
Avg Tenure of Indep Directors Squared		-0.001			0.001**		
		(-0.59)			(2.01)		
Avg Tenure of Indep Directors (exc.LT)			0.020			0.010	
			(1.12)			(0.71)	
Avg Tenure of Indep Directors Squared (exc. LT)			0.000			0.001	
			(0.17)			(1.5)	
Tenure of 2nd LT Indep Director				0.028***			0.015
				(2.75)			(1.31)
Tenure of 2nd LT Indep Director Squared				-0.000			0.000
				(-1.57)			(-0.24)
CONTROLS	YES	YES	YES	YES	YES	YES	YES
Constant	1.170***	1.093***	1.175***	1.262***	1.089***	1.114***	1.229***
	(6.39)	(5.39)	(5.94)	(6.43)	(5.71)	(6.08)	(6.68)
Industry FE?	YES	YES	YES	YES	YES	YES	YES
Year FE?	YES	YES	YES	YES	YES	YES	YES
Industry Clustered SE?	YES	YES	YES	YES	YES	YES	YES
N	15,082	15,082	15,082	15,082	15,082	15,082	15,082
R^2	31.45%	31.38%	31.39%	31.40%	31.64%	31.63%	31.56%

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Table 6

Performance and LT director tenure brackets

In this table we present results of OLS regressions of firm performance measured as Tobin's Q on several tenure brackets. . CONTROLS is a vector of the following controls: Standard deviation of independent directors tenure, Average tenure of inside directors, CEO age, CEO ownership in excess of 20%, CEO-chairman, CEO tenure on board, Fraction of outside directors, Busy board, Blockholder on board, Board size, Firm age, Total Assets, R&D/Sales ratio, EBITDA/Total assets lagged, Staggered Board, Standard deviation of stock price return in the previous fiscal year. Standard errors have been clustered alternatively at the firm and industry level without meaningful differences. We report results for industry clustered SE. t-Statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	(1) Tobin's Q		(2) Tobin's Q	
Dependent Variable	Parameter	t-stat	Parameter	t-stat
LT director tenure between 6-10	0.194**	(2.31)		
LT director tenure between 11-15	0.285***	(2.81)		
LT director tenure between 15-20	0.309***	(2.71)		
LT director tenure between 21-25	0.372***	(2.73)		
LT director tenure between 26-30	0.311***	(2.67)		
LT director tenure between 31-35	0.281**	(2.20)		
LT director tenure between 36-40	0.389***	(2.65)		
LT director tenure between 41-45	0.306	(1.62)		
LT director tenure between 46-50	0.328	(1.59)		
LT director tenure between 51-55	0.006	(0.03)		
LT director tenure between 56-60	-0.212	(-1.08)		
LT director tenure between 11-20			0.115***	(2.79)
LT director tenure between 21-30			0.141**	(2.42)
LT director tenure between 31-40			0.076	(0.93)
LT director tenure between 41-50			0.037	(0.32)
LT director tenure between 51-60			-0.441***	(-2.64)
CONTROLS	YES		YES	
Constant				
Industry FE?	YES		YES	
Year FE?	YES		YES	
Industry Clustered SE?	YES		YES	
N	15,082		15,082	
R^2	31.37%		31.20%	

Table 7

Director tenure's impact on other firms' performance

In this table we present results of the effects on performance of directors who serve on multiple boards. Model 1 estimates the effect on Tobin's Q of the coninuous measure of director's tenure on another board. Model 2 estimates the effect on Tobin's Q of having a director on the board who is a Long Tenured director in another company, modeled as a dummy variable. CONTROLS is a vector of the following controls: Standard deviation of independent directors tenure, Average tenure of inside directors, CEO age, CEO ownership in excess of 20%, CEO-chairman, CEO tenure on board, Fraction of outside directors, Busy board, Blockholder on board, Board size, Firm age, Total Assets, R&D/Sales ratio, EBITDA/Total assets lagged, Staggered Board, Standard deviation of stock price return in the previous fiscal year. Standard errors have been clustered alternatively at the firm and industry level without meaningful differences. We report results for industry clustered SE. t-Statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	(1)	(2)
Tenure on other board	-0.007	
	(-0.74)	
Tenure on other board squared	0.001	
	(0.71)	
LT on other board		0.033
		(1.15)
CONTROLS	YES	YES
Constant	0.732*	1.22***
	(1.65)	(6.14)
Industry FE?	YES	YES
Year FE?	YES	YES
Industry Clustered SE?	YES	YES
N	4,961	15,082
R^2	38.29%	31.15%

Table 8

Information environment and LT directors

In this table we test the impact of the information environment on the effectiveness of long-tenured directors. As a measure of information quality we use Duchin et al. (2010) info score. CONTROLS is a vector of the following controls: Standard deviation of independent directors tenure, Average tenure of inside directors, CEO age, CEO ownership in excess of 20%, CEO-chairman, CEO tenure on board, Fraction of outside directors, Busy board, Blockholder on board, Board size, Firm age, Total Assets, R&D/Sales ratio, EBITDA/Total assets lagged, Staggered Board, Standard deviation of stock price return in the previous fiscal year. Standard errors have been clustered alternatively at the firm and industry level without meaningful differences. We report results for industry clustered SE. t-Statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

| | (1) | (2) | (3) |
Dependent Variable	Tobin's Q	Tobin's Q	Tobin's Q
Tenure of LT Indep Director	0.041***	0.035***	0.054***
	(6.74)	(5.87)	(3.67)
Tenure of LT Indep Director Squared	-0.001***	-0.001***	-0.001***
	-7.06	-5.95	-2.69
Duchin Info Score		-2.092***	-1.614***
		-20.37	-5.77
Tenure of LT Indep Director x Duchin Info Score			-0.048
			-1.51
Tenure of LT Indep Director Squared x Duchin Info Score			0.001
			(1.04)
CONTROLS	YES	YES	YES
Constant	0.731***	2.616***	2.416***
	(4.96)	(15.26)	(11.88)
Year FE?	YES	YES	YES
Industry FE?	YES	YES	YES
Industry Clustered SE?	YES	YES	YES
N	10650	10650	10650
R^2	35.15%	37.70%	37.71%

Table 9

Litigation probability and LT Director Tenure

In this table we investigate the probability of class-action lawsuits against the company conditional on the tenure of the longest serving director. We use class action lawsuits in Stanford University's Securities Class Action Clearinghouse database. We use a logit model, where the dependent variable is a dummy variable indicating whether there was a class action lawsuit against the firm during that year. We use control variables shown to be significant in Kim and Skinner (2012). Chi-squared statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	Coefficient	Odds ratio (+/- 1 unit)
Tenure of LT Indep Director	-0.045***	0.956
	(7.57)	
Tenure of LT Indep Director Squared	0.001**	1.001
	(4.23)	
Log(Total Assets$_{t-1}$)	0.221***	1.247
	(66.40)	
Risk Industries	0.311***	1.364
	(13.76)	
MVE/BVE$_{t-1}$	0.032***	1.033
	(33.11)	
Sales Growth$_{t-1}$	0.502***	1.651
	(33.00)	
Return$_{t-1}$	-0.040	0.996
	(2.61)	
Return Skewness$_{t-1}$	-0.218	0.978
	(0.32)	
Return Volatility$_{t-1}$	17.66***	18.796
	(25.19)	
Constant	-5.423***	
	(260.95)	
Year FE	YES	
Year Clustered SE	YES	
N	14,158	
Chi^2	219.58***	

Table 10
Market-adjusted return of individual director trades

In this table we replicate Ravina and Sapienza (2010) test on independent directors insider trades as a proxy for the knowledge of inside directors and extend them on Long tenured directors. The observations are at the transaction-level, and returns are adjusted by subtracting the raw returns from buying-and-holding the market. In Panel A2, we focus on purchases of independent directors that are able to be matched in RiskMetrics. We compare the buy-and-hold abnormal returns of independent directors with directors that are the longest-serving directors on their firm's board. t-Statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10%, respectively.

Panel A - Purchases

	Panel A1 - Replication Ravina-Sapienza (2010) on full sample period					Panel A2 - Independent Directors Only				
	BHAR1	BHAR30	BHAR60	BHAR90	BHAR180	BHAR1	BHAR30	BHAR60	BHAR90	BHAR180
Constant	0.007***	0.053***	0.081***	0.093***	0.149***	0.007***	0.0382***	0.068***	0.088***	0.137***
	(8.85)	(13.53)	(14.71)	(12.66)	(9.87)	(9.97)	(14.57)	(14.38)	(14.86)	(12.74)
Independent Director	-0.001	-0.008***	-0.017***	-0.014*	-0.017					
	(-0.70)	(-2.59)	(-2.80)	(-1.91)	(-1.12)					
Large Outside Blockholder	-0.002	-0.016*	-0.039***	-0.034*	-0.017					
	(-0.83)	(-1.62)	(-3.02)	(-1.92)	(-0.46)					
Max Independent Director						0.002	0.042***	0.014	0.013	0.090***
						(1.26)	(6.88)	(1.29)	(.95)	(3.59)
Firm Fixed Effects	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO
SE Clustered by Firm	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO
Observations	222,616	221,814	220,896	220,110	216,760	8,879	8,873	8,862	8,844	8,735
Adjusted R^2	0.000	0.001	0.006	0.005	0.004	0.000	0.005	0.000	0.000	0.001

Panel B - Sales

	Panel B1 - Replication Ravina-Sapienza (2010)					Panel B2 - Independent Directors Only				
	BHAR1	BHAR30	BHAR60	BHAR90	BHAR180	BHAR1	BHAR30	BHAR60	BHAR90	BHAR180
Constant	0.003***	0.009***	0.016***	0.022***	0.038***	-0.004***	-0.023***	-0.040***	-0.035***	-0.059***
	(23.31)	(10.4)	(12.27)	(11.41)	(11.37)	(-34.07)	(-49.06)	(-59.58)	(-47.87)	(-47..33)
Independent Director	-0.001	0.002	0.004	0.004	0.005					
	(-1.09)	(0.99)	(1.22)	(0.82)	(0.80)					
Large Outside Blockholder	-0.001	0.016***	0.026***	0.037***	0.089***					
	(-0.81)	(2.86)	(3.26)	(3.12)	(4.09)					
Max Independent Director						-0.001	0.012***	0.032***	0.036***	0.056***
						(-0.75)	(10.42)	(20.36)	(18.84)	(19.49)
Firm Fixed Effects	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO
SE Clustered by Firm	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO
Observations	1,626,484	1,616,670	1,607,354	1,599,976	1,570,122	79,042	78,993	78,895	78,858	78,400
Adjusted R^2	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.005	0.005	0.004

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Table 11

Long Tenure determinants: directors characteristics

In this table we compare demographic characteristics of long tenured directors. We identify Long Tenured directors adopting the >20 years tenure cutoff described in Section 2. The control group is given by all directors that never recorded a tenure in excess of the cutoff. Ivy League, Business School, PhD, Medical School, Law School General Undergraduate, General Gradutae, CFA and CPA are self-explanatory dummies; Directors Network is a continuous measure ranging from X to Y where higher numbers indicate larger network. All variables are obtained from Boardex. Differences are tested through a Wilcoxon Two-sample test. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Variable	Treatment	Control	Difference
Ivy League	0.389	0.309	0.080***
Business School	0.470	0.466	0.004
PhD	0.051	0.040	0.011***
Medical School	0.000	0.001	-0.001**
Law School	0.152	0.107	0.045***
General Graduate	0.146	0.187	-0.041***
CFA	0.010	0.008	0.002**
CPA	0.083	0.119	-0.036**
Director Network	490.4	638.8	-148.4***

Table 12

Long Tenure determinants: skills

In this table we present evidence on the number of outside boards held by LT and non-LT directors. Panel A present summary statistics clustered by length of tenure identifying Long Tenured directors adopting the >20 years tenure cutoff described in tables XX and control group directors as all directors that never recorded a tenure in excess of the cutoff. Panel B present results of an OLS regression of the number of outside boards on the length of tenure, the tenure of the longest serving director in 2012 and the interaction term. The regression controls for year and industry fixed effects. Standard errors have been clustered alternatively at the firm and industry level without meaningful differences. We report results for industry clustered SE. t-Statistics in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A

	Treatment	Control	Difference
Tenure (0 to 5)	1.257	0.904	0.353***
Tenure (6 to 10)	1.146	0.968	0.179***
Tenure (11 to 15)	1.065	0.954	0.111***
Tenure (16 to 20)	0.964	0.883	0.081*
Tenure (21 to 25)	0.818	0.906	-0.089
Tenure (26 to 30)	0.558	0.811	-0.254**
Tenure (31 to 35)	0.387	0.884	-0.497***
Tenure (36 to 40)	0.333	0.471	-0.137
Tenure (41 to 45)	0.308	0.000	0.308
Tenure (46 to 50)	0.000	-	-

Panel B

Dependent variable	# Outside boards
Tenure	-0.013
	(-1.11)
LT 2012	0.382***
	(3.72)
Tenure x LT_2012	-0.020***
	(-2.62)
Constant	1.088***
	(5.94)
Year FE?	YES
Industry FE?	YES
Industry clustered SE	YES
N	11,535
R^2	2.31%

Figure 1
Directors tenure and outside board membership
In this figure we plot the difference in outside board membership between LT and non-LT directors conditional on directors tenure. We first classify directors as LT or non-LT if in 2012 they were LT directors in a firm. We then backtrack their outside boardmembership to the beginning of their careers and plot the results over the tenure length.