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Bottom-Up Corporate Governance

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Abstract. This article empirically relates the internal organization of a firm with decision making quality and corporate performance. We call "independent from the CEO" a top executive who joined the firm *before* the current CEO was appointed. In a very robust way, firms with a smaller fraction of independent executives exhibit (1) a lower level of profitability and (2) lower shareholder returns following large acquisitions. These results are unaffected when we control for traditional governance measures such as board independence or other well-studied shareholder friendly provisions. One interpretation is that "independently minded" top ranking executives act as a counter-power imposing strong discipline on their CEO, even though they are formally under his authority.

JEL Classification: G32, G34

1. Introduction

Academics and practitioners have known for long that in the absence of tight monitoring, CEOs of large publicly held firms may take actions that are detrimental to their shareholders. To set up counter-powers to the CEO, the consensus has been to rely on a strong board of directors, independent from the management. The academic literature confirms that board independence improves governance.[1] Yet, there is no evidence that board independence affects the profitability or even the value of corporate assets.[2]

This article proposes a new, easily implementable, measure of governance based on the degree of independence of the CEO's immediate *subordinates*.

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[1] Independent boards of directors seem to pay more attention to corporate performance when it comes to CEO turnover or compensation (Weisbach, 1988; Dahya, McConnel, and Travles, 2002). The stock market hails the appointment of independent directors with abnormal returns (Rosenstein and Wyatt, 1990).

[2] In fact, the correlation is negative. A likely reason for this is that poorly performing firms tend to appoint more outside directors (Kaplan and Minton, 1994).

It shows that, unlike board independence, subordinates' independence is a strong predictor of performance in US data. From the earlier governance literature, we retain the insight that independence matters, but shift the focus to the executive suite. After all, CEOs have to face their subordinates on a daily basis, whereas boards of directors only meet a few times every year. In order to capture top executives' independence from the CEO, we compute the fraction of top ranking executives who joined the firm before the current CEO was appointed. As CEOs are typically involved in the recruiting of their subordinates, executives hired during their tenure are more likely to share the same preferences and/or have an incentive to return the favor. Similarly, executives who have experienced the leadership of previous CEOs are more likely to challenge the current management.

We first provide evidence on corporate performance: we find that high internal governance (high fraction of independent executives) predicts high future performance, measured through accounting ratios or market valuation. Conversely, poor performance does not lead to a decrease in internal governance, suggesting a causal effect of internal governance on performance. Our findings are not affected when we control for traditional, mostly board-based, corporate governance measures. We also show that our results are not driven by the departure of executives "leaving a sinking boat", i.e., quitting due to anticipation of the firm's future decline.

We then look at the impact of internal governance on the quality of decision making. To do this, we focus on acquisitions, which are large investment projects with measurable value effects. We show that a lower fraction of independent executives is associated with significantly lower returns for the acquirer's shareholders. By contrast, regular indices of *external* governance are not correlated with the long-term shareholders' losses made after an acquisition. The board of director, takeover pressure, or the design of corporate charters seem less efficient at preventing bad/expensive acquisitions from happening.

These empirical results echo the theory we develop in a companion paper (Landier, Sraer, and Thesmar, 2009), where we show that dissent in the chain of command may, in some cases, be good for the quality of decision-making.[3] In our model, a decision maker chooses between two projects, but has a preference (bias) for one of them. The decision maker also receives objective information (a signal) about which project is most likely to succeed. Successful completion of the project also requires effort from subordinates. Subordinates may have a preference for the same project as the CEO (monolithic chain of command) or for the other project (dissent).

[3] See also Acharya, Myers, and Rajan (2011) for a related analysis.

We show that dissenting subordinates can be useful because they force the decision maker to internalize their motivation. If he wants the project to succeed, he needs to give in less to his bias. Subordinates know this and expect the order to be more objective: they make more effort as a result. Overall better, more objective, decisions are made. As a by-product of our theoretical analysis, we also show that dissent is more likely to be optimal when product market uncertainty is high. We provide some evidence consistent with this prediction in this article.

At a more general level, we believe an important contribution of our article is to exhibit an organizational firm-level variable with strong systematic predictive power on future performance. Our internal governance variable might simply capture the extent of CEO power over the firm: "powerful CEOs" might be both prone to do inefficient acquisitions and to replace executives with their own friends with no link between the two. The novelty of this measure is, however, that it is the first one to exhibit a robust correlation with corporate performance. In this respect, it does better than traditional measures of "CEO power" such as whether the CEO is chairman of the board, or whether many directors are insiders. As it turns out, internal governance as we measure it exhibits no correlation at all with standard "external" governance measures.

Our study may have two normative implications for practitioners dealing with corporate governance. First, our statistical analysis indicates that the intensity of internal governance can be at least partly observed and could be included in the various measures of the quality of a firm's corporate governance. This implication does not depend on a specific interpretation of our results: be it the sign of a "nonautocratic" CEO, or of the healthy discipline of having to convince one's subordinates, the share of independent executives as we measure it does predict performance. A second implication hinges on our "bottom-up governance" interpretation: in addition to management monitoring and advising, a key role of the board should also consist in designing the optimal balance of power within the firm. Put differently, the human resource role of the board is not limited to the usually emphasized CEO succession problem, but extends to the rest of the executive suite. Such a role could be particularly important in industries where the management of extreme risk is important, like the financial industry. For instance, Ellul and Yerramilli (2010) show that banks with more independent risk managers (i.e., well paid relative to the CEO) have done better during the 2007–08 financial crisis.

This article has five more sections. Section 2 describes the data sets we use and how we construct our index of internal governance. Section 3 looks at the relationship between internal governance and corporate performance.

Section 4 looks at the costs of acquisitions. Section 5 discusses the relation between our internal governance index and usual corporate governance measures. Section 6 concludes on theoretical questions raised by our findings.

2. Data and Measurement Issues

We first describe the data sets we use to conduct our study. We then discuss the construction of our measures of internal governance.

2.1 DATA SETS

We use five data sets. EXECUCOMP provides us with the firm-level organizational variables with which we proxy for internal governance. COMPUSTAT provides us with firm-level accounting information. IRRC's corporate governance and director data allows us to obtain standard measures of external corporate governance. Acquisitions are drawn from SDC Platinum, and stock returns from CRSP.

2.1.1 Internal governance

The first data set is the EXECUCOMP panel of the five best paid executives of the largest American corporations. We use this data source to measure the extent of "internal governance" in the firm. We do this by computing the fraction of executives hired after the CEO took office (i.e., the fraction of nonindependent executives). Thus, internal governance is said to be poor when this fraction is high.

Initially, each observation is an executive (or the CEO) in a given firm in a given year. Our sample period is from 1992 to 2009. In the raw data set, there are 195,890 observations, which correspond to approximately 1,850 firms per year (33,375 firm-years) with an average of six executives each (including the CEO). A total of 4,142 firm-year observations have no CEO (using the CEOANN dummy variable indicating which executive is the CEO). In some cases, it is possible to infer the CEO's identity because, for one of the executives, the BECAMECEO variable (date at which the executive became CEO) is available, even though the CEOANN dummy is missing (misleadingly indicating that the executive is not the CEO). By filling in these gaps, we save an additional 3,053 firm year observations, and end up with 32,286 firm-years for which we know the identity of the CEO (a total of 190,869 observations in the executive-firm-year data set).

To compute the fraction of nonindependent executives, we will need to compare the CEO's tenure with the executives' seniorities within the company. A first approach is to rely on the seniority (within the firm) and tenure (within the position) variables reported in EXECUCOMP. The BECAMECEO variable gives us, for the current CEO, the precise date at which he (she) was appointed as CEO whether he (she) was hired from inside or outside the firm. Other executives' seniorities can be recovered using the JOINED_CO variable, which reports the date at which the executive actually joined the firm. Focusing on observations for which both BECAMECEO and JOINED_CO are nonmissing for at least one executive, we lose more than half of the sample, and end up with 14,907 firm-years, from 1992 to 2009, for which we can now compute the fraction of executives hired after the current CEO's appointment. We call this measure of executive dependence *FRAC*1.

Overall, we lose 32,286−14,907=17,379 firm-year observations in the process of constructing our measure of internal governance, mostly because many executives do not report their seniority within the firm. In 7,022 of our remaining 14,907 firm-years, internal governance is measured by comparing the CEO's tenure with the seniority of only one executive. This means that *FRAC*1 will be a very noisy measure of executive dependence; while this does not create an obviously spurious correlation with corporate performance or returns to acquisitions, it is going to bias our estimates of the effect of internal governance downwards, as measurement error often does.

A second approach is to make direct use of the fact that we can follow individuals in the EXECUCOMP panel. To remove left censorship (the panel starts in 1992), we need to restrict ourselves to firms where we observe at least one episode of CEO turnover. Once the new CEO has been appointed at a given firm, we can compute the fraction of executives that were not listed in the data set as employees of that firmbefore the new CEO started (we name this alternative variable *FRAC*2). The main advantage of this approach is that we can dispense of the JOINED_CO variable, which is often missing. The need to observe CEO turnover restricts the number of firm-years to 16,219. This is more than the 14,907 observations available to compute *FRAC*1. However, focusing on firms with at least one CEO turnover over the course of 18 years may mechanically overweight firms facing governance problems. Moreover, executives enter the panel when they either (1) are hired by the firm, (2) make it into the five best paid people list, or (3) the firm decides to report their pay in its annual report/proxy. Hence, entry in the panel provides only a noisy measure of seniority.

In spite of its shortcomings, the second (panel based) variable *FRAC*2 has a correlation coefficient of 0.47 with the first (seniority based) variable *FRAC*1. We present our results with both *FRAC*1 and *FRAC*2.

We also use EXECUCOMP to construct CEO and executives characteristics to be included as controls in our regressions: (1) CEO seniority, which is the number of years since the executive has been appointed as the CEO (using BECAMECEO variable); (2) a dummy which equals one if the CEO comes from outside the firm—i.e., if the BECAMECEO variable coincides with the JOINED_CO variable or when at least one of the two variables is missing, if the 1st year of presence of the executive in the EXECUCOMP database has been as CEO of the firm; (3) executives' seniority which is the average number of years since executives have been working for the company (using JOINED_CO variable or entry in the EXECUCOMP database); (4) the fraction of executives appointed within 1 year of the CEO nomination—i.e., in the year of the CEO nomination or the next one; (5) the firm-level fraction of executives whose seniority is reported—i.e., for which the JOINED_CO variable is nonmissing. We discuss and show how these variables correlate with *FRAC*1 and *FRAC*2 in Section 2.2.

2.1.2 Corporate accounts

For each firm-year observation in our EXECUCOMP sample, we retrieve firm level accounting information from COMPUSTAT; we match by GVKEY identifier. We compute profitability as return on assets (ROA).[4] We construct "Market to book" as the ratio of the firm's assets market value to their book value, as in Gompers, Ishii, and Metrick (2003).[5] In robustness checks, we use return on equity (ROE) and Net margin as alternative measures of performance.[6] We proxy firm size by taking the logarithm of total assets. We proxy firm age by taking the logarithm of one plus the number of years since the firm has been in the COMPUSTAT database. In robustness checks, we also proxy firm age by taking the logarithm of one plus the number of years since the firm has been in the CRSP database. We construct the 48 Fama–French industry dummies using the

[4] ROA is operating income before depreciation (item OIBDP) minus depreciation and amortization (item DP) over total assets (item AT).

[5] Market to book is the ratio of market to book value of assets (item AT). The market value is computed as total assets (item AT) plus the number of common shares outstanding (item CSHO) times share price at the end of the fiscal year (item PRCC) minus common equity (item CEQ) minus deferred taxes (item TXDB).

[6] ROE is net income (item NI) over common equity. Net margin is net income over sales (item SALE).

firm's 4-digit SIC industry code.[7] We also include the number of business segments—obtained from the COMPUSTAT segment files—and cash-flow volatility in our regressions. Cash-flow volatility is defined as in Zhang (2006). Variable definitions are presented in detail in the Appendix. Table I presents summary statistics on our measures of executive dependence and CEO, executive, and firm characteristics. Finally, we trim our measures of performance (ROA, Market to book, ROE, and Net margin) at the 1 and 99% levels.

2.1.3 External governance

We will also look at how our measures of internal governance correlate with traditional corporate governance measures. Thus, for each firm-year observation, we gather information on corporate governance from IRRC's corporate governance and directors data set. This data set provides us with commonly used proxies for corporate governance, namely, the fraction of independent directors, the number of directors sitting on the board and the fraction of former employees sitting on the board. These variables are available for the 1996–2001 period only, and mostly for large firms. Out of 23,670 firm-year observations where we can measure internal governance (either through *FRAC*1 or *FRAC*2), only 5,722 observations have information from IRRC.

We will also look at the Gompers Ishii, and Metrick (2003) index of corporate governance (GIM index), which compiles various corporate governance provisions included in the CEO's compensation package, in the corporate charter and the board structure. The GIM index is available for 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006. In other years, we assume that it takes the value that it had in the most recent year where it was nonmissing.

2.1.4 Acquisitions

We obtain the list of firms who made significant acquisitions from SDC Platinium (deals of value larger than $ 10 million). SDC provides us with the bidder's CUSIP and the transaction value of the deal. We focus on completed deals where the bidder bought at least 50% of the target's shares.

For each firm-year observation in our EXECUCOMP sample, we compute the number of targets acquired during that year and the overall amount spent on the deal(s). In our base sample of 23,670 firm-years where at least one measure of internal governance is available, 34% of the

[7] For this, we use the conversion table in the Appendix of Fama and French (1997).

Table I. Summary Statistics

This table presents summary statistics on our measures of executive dependence and CEO, executive, and firm characteristics. The sample consists of 23,670 firm-years in the period 1992 to 2009 for which we are able to construct at least one measure of executive dependence. *FRAC*1 is the fraction of executives hired after the CEO constructed with the JOINED_CO EXECUCOMP variable. *FRAC*2 is the fraction of executives hired after the CEO constructed through entry and exit in the EXECUCOMP database. Executives turnover measures the fraction of the firm's executives who are no longer reported as working for the company the following year in the EXECUCOMP database. Firm size is the logarithm of the book value of assets (COMPUSTAT item AT). Firm age is the logarithm of one plus the number of years since the firm has been in the COMPUSTAT database. Return on assets (ROA) is operating income after depreciation and amortization (item OIBDP minus item DP) divided by total assets in the current year. Market to book is the market value of assets divided by the book value of assets, where the market value of assets is the book value of assets plus the market value of common stock (item CSHO item PRCC_F) minus the sum of the book value of common stock (item CEQ) and balance sheet deferred taxes (item TXDB). ROA and Market to book are trimmed at the 1 and 99% levels. The number of business segments is obtained from the COMPUSTAT segment files. Cash-flow volatility is defined as in Zhang (2006). ROA and Market to book are trimmed at the 1 and 99% levels.

			Distribution		
	Obs	Mean (SD)	10th	50th	90th
Fraction of executives hired after the CEO					
*FRAC*1 (using JOINED_CO) (%)	14,907	26.5 (24.5)	0	20	60
*FRAC*2 (using entry/exit in EXECUCOMP) (%)	16,219	60.6 (35.8)	0	66.6	100
CEO characteristics					
CEO seniority	23,670	5.574 (6.347)	0	4	13
CEO from outside {0, 1}	22,550	0.327 (0.469)	0	0	1
Executive characteristics					
Executive mean seniority (using JOINED_CO)	14,907	6.831 (8.786)	0	3.5	19
Executive mean seniority (entry in EXECUCOMP)	16,219	3.345 (2.083)	1	3	6.2
Executives whose seniority is reported (%)	14,907	40.7 (24.9)	16.6	33.3	80
Executive turnover (%)	23,670	13.1 (16.3)	0	0	33.3
Firm characteristics					
Firm size (Log of assets $ Million)	23,371	7.444 (1.831)	5.222	7.302	9.898
Firm age (Log)	23,371	2.965 (0.787)	1.946	2.996	3.912
ROA (%)	22,306	8.62 (8.72)	0.30	8.43	18.97
Market to book	20,151	1.930 (1.257)	0.985	1.490	3.464
Nb of business segments	22,259	2.227 (1.789)	1	1	5
Cash-flow volatility	19,920	0.081 (0.165)	0.018	0.049	0.146

observations correspond to firms making at least one acquisition (with value larger than $10 million): 1997–2000 are the peak years, with more than 37% of firms making at least one acquisition. Fifty-seven percent of the acquirers make only one deal per year, but there are a few serial acquirers (3% of the observations correspond to at least five deals carried out during the year).

2.1.5 Stock returns

To see whether having more "independent" top ranking executives in a firm induces better strategic decisions by the CEO, we focus on the effect of internal governance on the firm's acquisitions' performance. We restrict ourselves to large acquisitions (whose value exceeds $300 million) and we compute for each deal, long run abnormal stock returns following the acquisition.

We merge the above SDC extract with our base sample from EXECUCOMP. We end up with a list of 1,813 deals for which we know the acquirer, the date of the acquisition, and either *FRAC*1 or *FRAC*2 (the share of executives appointed after the CEO took office). Serial acquirers are overrepresented. Out of 1,813 deals, 372 involve one time buyers, whereas 947 involve firms carrying out at least four large deals. Overall, our sample features 717 different acquirers.

We then match this deal data set with the acquirer's stock returns as provided by CRSP. More precisely, we retrieve monthly acquirer stock returns from a period extending 48 months prior to each acquisition to 48 months after the deal. We remove deals with less that 48 months of acquirer returns history before the acquisition. This reduces our sample size to 1,334 deals. We then estimate a four factor Fama–French model for each acquirer using the 48 pre-acquisition months available. We use the returns of the MKTRF, SMB, HML, and UMD portfolios from Kenneth French's web site. We then use this model to compute abnormal returns both before and after the deal.

2.2 INTERNAL GOVERNANCE AND CEO/EXECUTIVES CHARACTERISTICS

The assumption underlying the internal governance measures is that the CEO is directly or indirectly involved in the recruitment process of top executives. Hence, executives appointed during his tenure are more likely to be loyal to him and/or share his preferences than executives who were picked by a predecessor.

However, one needs to be careful with the CEO or executive characteristics that are likely to be correlated with *FRAC*1 or *FRAC*2 and to

independently affect firm performance. As a CEO's seniority increases, a larger fraction of executives have (mechanically) been appointed during his tenure. Conversely, executives who have been with the firm longer are on average more likely to have been hired before the current CEO. This suggests that *FRAC*1 and *FRAC*2 are positively correlated with CEO tenure, and negatively correlated with executive seniority. Also, externally appointed CEOs often have the mandate to arrange a shake-out of the executive suite. Hence, *FRAC*1 and *FRAC*2 should be mechanically larger in the presence of outsider CEOs. Finally, a new CEO's appointment is sometimes followed by immediate waves of executive departures and arrivals that might be unrelated to internal governance (for example, top executives who were hopeful of being appointed at the top job might leave the firm).

It might be tempting to see these sources of variation in the proportion of aligned executives as exogenous shocks to internal governance, but they might be related to firm performance for reasons orthogonal to internal governance. For example, CEO tenure may directly affect corporate performance simply because experience on the job matters. Also, if the firm is in really bad shape, a new CEO will have to inject more "fresh blood" into the corporate suite (Hayes, Oyer, and Schaffer 2005), which mechanically increases executive turnover. We therefore include as controls in our performance regressions these CEO and executive characteristics alongside either *FRAC*1 or *FRAC*2.

To observe the strength of these mechanical correlations, we first regress our measures of internal governance, *FRAC*1 and *FRAC*2, on CEO and executive characteristics in order to investigate how they correlate. We estimate:

$$FRAC1_{it} = \alpha_1 + \alpha_2 * CEOTEN_{it} + \alpha_3 * EXECSEN_{it} + \alpha_4 * OUTSIDE_{it} + \alpha_5 * KNOWN_{it} + \alpha_6 * FRAC1\_1Y_{it} + (Firm\ controls)_{it} + \varepsilon_{it} \quad (1)$$

$$FRAC2_{it} = \beta_1 + \beta_2 * CEOTEN_{it} + \beta_3 * EXECSEN_{it} + \beta_4 * OUTSIDE_{it} + \beta_5 * FRAC2\_1Y_{it} + (Firm\ controls)_{it} + \varepsilon_{it} \quad (2)$$

where, for firm i in year t, $CEOTEN_{it}$ stands for CEO's tenure, $EXECSEN_{it}$ for average executive seniority within the firm, $OUTSIDE_{it}$ is a dummy indicating whether the CEO comes from outside the firm, $KNOWN_{it}$ is the fraction of executives for which seniority is reported in the data, $FRAC1\_1Y_{it}$ and $FRAC2\_1Y_{it}$ are the fraction of executives that arrived within a year of the CEO's nomination. We also add firm level

controls: firm size, firm age, the number of business, segments and cash-flow volatility. We include cash-flow volatility to control for the fact that performance variation may trigger turnover of top executives. Finally, we include in our regressions year fixed effects and either industry or firm fixed effects. We cluster standard errors at the firm level to account for serial correlation of the error term within the same firm. It is important to notice that high values of *FRAC*1 or *FRAC*2 mean poor internal governance (consistently with the convention adopted by the Gompers, Ishii, and Metrick (2003) external governance index).

The regression results are reported in Table II. Columns 1–3 (respectively Columns 4–6) present the results when internal governance is *FRAC*1 (respectively *FRAC*2). Columns 1 and 4 include only year dummies and the CEO/executive characteristics as independent variables. When internal governance is *FRAC*1, we also include the fraction of executives for which seniority is actually reported in EXECUCOMP (*KNOWN*, which we include to control for potential selection biases). Columns 2, 3, 5, and 6 add the firm-level controls. Columns 2 and 5 include industry fixed effects, whereas Columns 3 and 6 include firm fixed effects.

The empirical correlations between the CEO/executive characteristics and either *FRAC*1 or *FRAC*2 turn out to have the expected sign. *FRAC*1 and *FRAC*2 are positively and strongly correlated with CEO tenure and negatively correlated with executive tenure. They are also positively associated with the presence of outside CEOs, although the relation is significant only in the specifications of Columns 1 and 2. There are at least two possible interpretations for this. First, outside CEOs are often given a mandate to reshuffle top management, and as a result the fraction of executives who joined the company with them is large. Second, the appointment of outside CEOs triggers the departure of talented executives who were hoping to get the top job. Another possibility could simply be that management shake-ups tend to happen when the firm is doing badly, which may also generate departures. Notice also that *FRAC*1 is positively correlated with the fraction of executives whose seniority is reported: Hence, more "transparent" firms tend to have executives appointed after the CEO. Finally, firm-level variables are not strongly correlated with our measures of internal governance, except for firm age that is negatively and strongly correlated with *FRAC*1 (but not with *FRAC*2).

Last, one possible concern is that *FRAC*1 and *FRAC*2 might be correlated with intense merger activity in the past. After mergers, top executives from the targets often join the executive suite, mechanically increasing our indexes. And, if the firm still has trouble "digesting" its past acquisitions, it is likely to underperform on both accounting and stock price measures.

Table II. Internal governance and CEO/executive characteristics

Internal governance is regressed on CEO and executive characteristics. Internal governance is *FRAC*1 in Columns (1)–(3), and *FRAC*2 in Columns (4)–(6). CEO characteristics are CEO seniority and whether the CEO is an outsider. Executives characteristics are the mean seniority of executives and the number of executives appointed in the 1st year following the CEO nomination. When internal governance is *FRAC*1, we add the fraction of executives whose seniority is reported. In Columns (2), (3), (5), and (6), we include firm age, firm size, the number of business segments, and cash-flow volatility as controls. Standard errors, presented in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5, and 1 level of significance. The sample period is from 1992 to 2009.

	Fraction of executives appointed after the CEO (×100)					
	*FRAC*1			*FRAC*2		
	(1)	(2)	(3)	(4)	(5)	(6)
CEO seniority	1.116***	1.115***	1.273***	9.323***	9.308***	9.145***
	(0.052)	(0.055)	(0.079)	(0.104)	(0.112)	(0.150)
CEO from outside	1.591***	1.349**	1.473	0.787	0.669	0.508
	(0.578)	(0.616)	(1.014)	(0.437)	(0.481)	(0.833)
Executives' mean seniority	−0.842***	−0.832***	−0.589***	−7.606***	−7.739***	−8.334***
	(0.031)	(0.034)	(0.044)	(0.162)	(0.175)	(0.192)
Fraction of executives appointed in the year following the CEO nomination (×100)	0.442***	0.419***	0.416***	0.668***	0.667***	0.645***
	(0.019)	(0.021)	(0.028)	(0.007)	(0.008)	(0.010)
Fraction of executives whose seniority is reported (×100)	0.514***	0.528***	0.558***	–	–	–
	(0.019)	(0.020)	(0.022)			
Firm age	–	−1.470***	−9.923***	–	0.813**	−0.241
		(0.457)	(1.828)		(0.376)	(1.981)
Firm size	–	0.206	−0.386	–	0.114	0.473
		(0.194)	(0.555)		(0.155)	(0.569)
No. of business segments	–	0.020	−0.017	–	−0.093	−0.130
		(0.139)	(0.171)		(0.112)	(0.183)
Cash-flow volatility	–	0.458	−3.126	–	0.159	−1.142
		(0.918)	(2.491)		(0.913)	(2.364)
Industry fixed effects	No	Yes	No	No	Yes	No
Firm fixed effects	No	No	Yes	No	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.68	0.68	0.86	0.87	0.86	0.92
Observations	14,117	11,752	11,772	15,758	13,478	13,485

The insignificant correlation between the number of business segments and *FRAC*1 or *FRAC*2 already partially alleviates this concern. To further address this point, we correlated *FRAC*1 and *FRAC*2 with the number of past acquisitions for a cross section of firms in 2000. We found no evidence that high *FRAC*1 or *FRAC*2 firms had bought a particularly large number of firms in the 1990s. This is robust to various controls and to the year chosen. Our indexes are thus not proxies for M&A "indigestion".

3. Internal Governance and Corporate Performance

Figure 1 provides a first look at the relationship between internal governance and corporate performance. We first filter out the mechanical effects of CEO/executive characteristics from *FRAC*1 and *FRAC*2 by taking the residuals of regressions (1) and (4) in Table II. We then split the sample distribution of the residuals into five quintiles, and we compute for each quintile the mean industry-adjusted performance,[8] as well as the 95% confidence band assuming normality. Performance is measured through ROA (left panels) and Market to book (right panels). Figure 1 shows a positive and statistically significant association between good internal governance (low values of the residuals) and corporate performance.

3.1 BASIC RESULTS

We now move to the multivariate analysis. We run the following regression:

$$Y_{it} = \alpha + \beta * IG_{it-1} + (IG \text{ controls})_{it} + (\text{Firm controls})_{it} + \varepsilon_{it} \qquad (3)$$

where Y_{it} measures corporate performance (ROA, Market to book). IG_{it-1} is our measures of internal governance (either *FRAC*1 or *FRAC*2), lagged one period.[9] We use the same control variables as in Equations (1) and (2). As already mentioned, we include the CEO and executive characteristics (*IG* controls) since it may be argued that they directly affect corporate performance (CEO tenure, mean executive seniority, share of executive hired right after the CEO, a dummy indicating if the CEO is an insider or not). When internal governance is *FRAC*1, we also include the fraction of executives for which seniority is reported in the data. Because *FRAC*1 and *FRAC*2 are strongly persistent, it is likely that the ε_{it} are not independent from different observations of the same firm *i*. We therefore cluster standard errors at the

[8] We used the Fama–French 48 industries.

[9] We seek to partially avoid obvious simultaneity biases, such as the ones we discuss below. We obtain similar results if our measures of internal governance are lagged two periods.

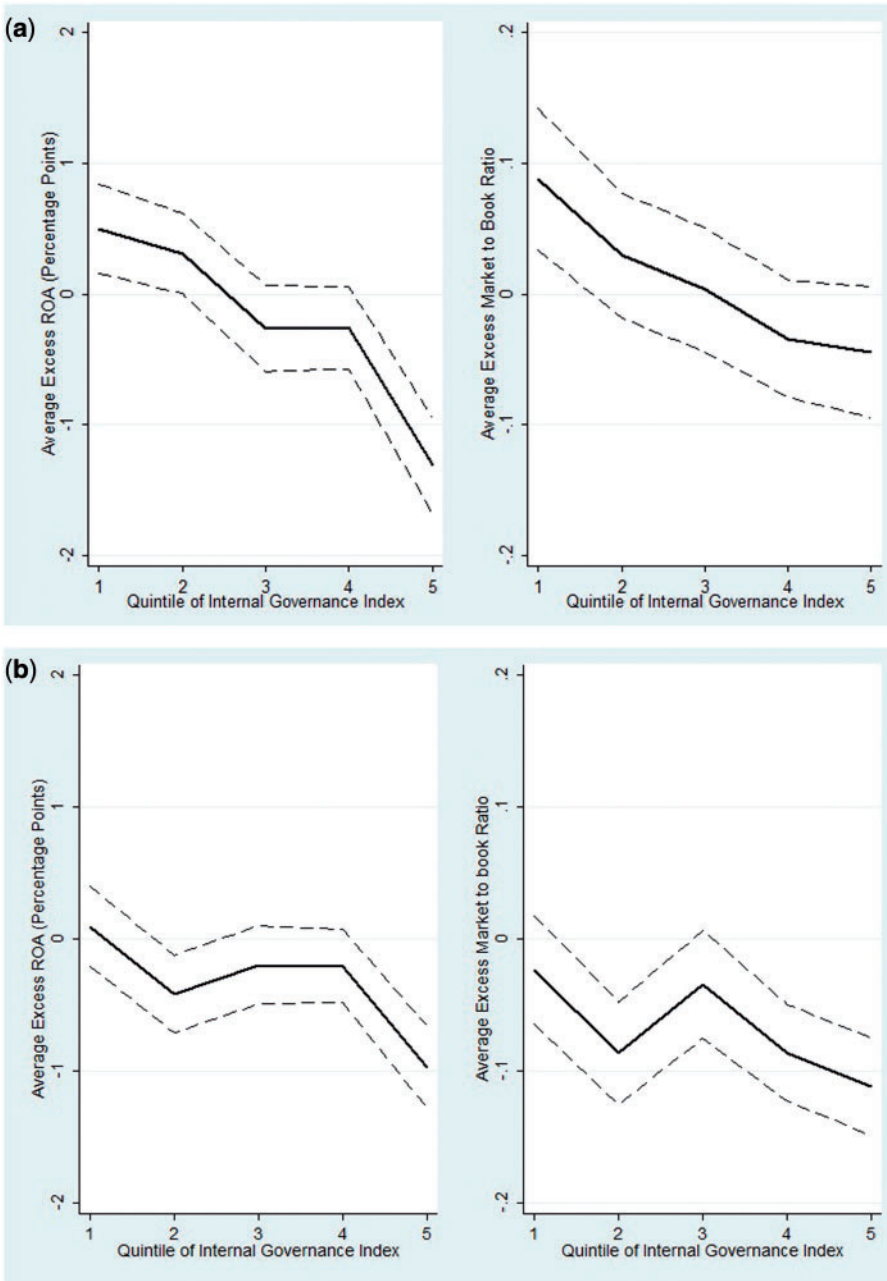

Figure 1. Abnormal performance by quintile of governance index.

firm level to account for serial correlation of the error term within the same firm.

Table III presents the results when performance is measured through ROA. Columns 1 and 2 use *FRAC*1 as measure of internal governance whereas Columns 3 and 4 use *FRAC*2. Columns 1 and 3 report regression results with year and industry fixed effects, whereas Columns 2 and 4 report results with year and firm fixed effects. With industry fixed effects, an increase in either *FRAC*1 or *FRAC*2 is negatively and significantly (at the 1% level) associated with a drop in ROA. As for the economic significance of our findings, a one-standard deviation increase in *FRAC*1 is associated with a decrease of about 0.8 ROA percentage points (3.28*0.245); a one-standard deviation increase in *FRAC*2 is associated with a decrease of about 0.5 ROA percentage points. The explanatory power of this effect is not very large (9% of one standard deviation of ROA in the case of *FRAC*1 and 6% in the case of *FRAC*2), but, as we will see, it is consistently significant contrary to some of the usual "external" corporate governance measures. Also, the small size of our coefficients is not surprising given the noise of our internal governance measures (see Section 2.1.1). Our results are robust to the introduction of firm fixed effects when internal governance is measured with *FRAC*2. When internal governance is *FRAC*1, the coefficient remains negative but it is not significant when Equation (3) is run with firm fixed effects.

Table IV presents the results when performance is measured through Market to book. With industry fixed effects, an increase in *FRAC*1 or *FRAC*2 is associated with a lower Market to book. However, this relation is not significant in the case of *FRAC*1. As for the economic significance of our findings, a one-standard deviation increase in *FRAC*1 or *FRAC*2 is associated with a decrease in Market to book of about 5 percentage points. Again, the explanatory power of the effect is small (3% of one standard deviation of Market to book). Finally, our results are again robust to the introduction of firm fixed effects when internal governance is measured with *FRAC*2.

3.2 ROBUSTNESS CHECKS AND CAUSALITY

Table V presents robustness checks. Rows 1–3 (respectively Rows 4–6) report regression results from variants of Equation (3), measuring performance by ROA (respectively Market to book). In Rows 1 and 4, we proxy firm age with the number of years since the firm has been in CRSP instead of COMPUSTAT. In Rows 2 and 5, we replace the number of business segments by a diversification dummy which equals 1 if the firm reports

Table III. Performance and internal governance—ROA

ROA is regressed on internal governance and control variables. Internal governance is *FRAC*1 in Columns (1) and (2), and *FRAC*2 in Columns (3) and (4). Columns (1) and (3) include industry and year fixed effects. Columns (2) and (4) include firm and year fixed effects. ROA is trimmed at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	ROA			
	(1)	(2)	(3)	(4)
*FRAC*1 (lagged 1 year)	−3.283***	−1.135	–	–
	(0.881)	(0.839)		
*FRAC*2 (lagged 1 year)	–	–	−1.488***	−0.896***
			(0.356)	(0.344)
CEO seniority	0.121***	0.067***	0.166***	0.123***
	(0.025)	(0.026)	(0.047)	(0.040)
CEO from outside	−0.093	−0.278	−0.386	−0.251
	(0.371)	(0.503)	(0.310)	(0.363)
Executives' mean seniority	0.049***	0.024	0.335***	0.180***
	(0.017)	(0.018)	(0.073)	(0.066)
Fraction of executives appointed in the year following CEO nomination	−1.308	−1.334	0.741*	−0.053
	(1.295)	(1.332)	(0.448)	(0.421)
Fraction of executives whose seniority is reported	0.066	−1.116	–	–
	(0.869)	(0.896)	–	–
Firm age	−0.286	−4.039***	−0.007	−1.628
	(0.292)	(1.246)	(0.269)	(1.072)
Firm size	0.811***	0.100	0.765***	−0.025
	(0.161)	(0.411)	(0.133)	(0.346)
Number of business segments	−0.411***	−0.223**	−0.150**	−0.135*
	(0.091)	(0.094)	(0.071)	(0.076)
Cash-flow volatility	−11.01***	−2.922	−8.418***	−3.850***
	(2.391)	(2.051)	(2.280)	(1.401)
Industry fixed effects	Yes	No	Yes	No
Firm fixed effects	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.15	0.65	0.14	0.63
Observations	9,838	9,855	11,715	11,720

more than one business segment, and 0 otherwise. In Rows 3 and 6, we include the square of all control variables as additional controls to check whether our results are not driven by the fact that *FRAC*1 and *FRAC*2 are correlated with some CEO and executive characteristics in a nonlinear way. In all specifications, the results are similar to those in Tables III and IV.

Table IV. Performance and internal governance—market to book

Market to book is regressed on internal governance and control variables. Internal governance is *FRAC*1 in Columns (1) and (2), and *FRAC*2 in Columns (3) and (4). Columns (1) and (3) include industry and year fixed effects. Columns (2) and (4) include firm and year fixed effects. Market to book is trimmed at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5 and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	Market to book			
	(1)	(2)	(3)	(4)
*FRAC*1 (lagged 1 year)	−17.84	−2.503	–	–
	(12.71)	(10.95)		
*FRAC*2 (lagged 1 year)	–	–	−11.36**	−8.708**
			(4.83)	(4.141)
CEO seniority	0.591	1.007**	1.745***	1.106**
	(0.441)	(0.423)	(0.622)	(0.547)
CEO from outside	6.657	6.043	−0.086	1.256
	(5.575)	(7.046)	(4.259)	(4.789)
Executives' mean seniority	0.854***	0.621**	2.820***	3.731***
	(0.288)	(0.286)	(1.028)	(0.976)
Fraction of executives appointed in the year following CEO nomination	−0.345	−13.28	8.769	4.798
	(20.05)	(20.68)	(6.589)	(6.155)
Fraction of executives whose seniority is reported	6.182	−6.776	–	–
	(12.33)	(12.31)		
Firm age	−19.79***	−91.50***	−12.71***	−41.25***
	(4.655)	(17.67)	(3.990)	(14.21)
Firm size	−1.132	−33.29***	−2.541	−36.45***
	(2.469)	(5.103)	(1.832)	(4.972)
Number of business segments	−5.760***	−2.013	−2.713***	−1.187
	(1.507)	(1.456)	(1.032)	(1.072)
Cash-flow volatility	−5.558	21.22	1.797	9.361
	(9.128)	(34.32)	(8.209)	(13.30)
Industry fixed effects	Yes	No	Yes	No
Firm fixed effects	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.22	0.70	0.22	0.70
Observations	9,098	9,116	10,831	10,836

Table V. Performance and internal governance—robustness

This table presents coefficients on internal governance from variants of the regressions in Table III and Table IV. Internal governance (lagged one year) is *FRAC*1 in Panel A and *FRAC*2 in Panel B. In Columns (1) and (2), the control variables (not reported for brevity) are the same as in Table III, Column (1). In Columns (3) and (4), the control variables are the same as in Table III, Column (3). In Rows (1) and (4), we proxy firm age by taking the logarithm of the number of years since the firm has been in the CRSP database, instead of the COMPUSTAT database. In Rows (2) and (5), we replace the number of business segments by a diversification dummy as control. The diversification dummy equals one if the firm reports more than one business segment. Rows (3) and (6) include the square of all control variables as additional controls. In Rows (7) and (8), we use alternative measures of performance as dependent variable, namely Net margin—defined as net income (item NI) over sales (item SALE)—and return on equity (ROE)—defined as net income over common stock (item CEQ). For regressions with ROE, observations for which common stock is negative are excluded. ROA, Market to book, Net margin, and ROE are trimmed at the 1 and 99% levels. Standard errors, reported in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	Panel A: *FRAC*1		Panel B: *FRAC*2	
	Industry fixed effects (1)	Firm fixed effects (2)	Industry fixed effects (3)	Firm fixed effects (4)
	Dependent variable: ROA			
(1) Firm age CRSP	−3.231***	−0.946	−1.489***	−0.855**
	(0.881)	(0.839)	(0.356)	(0.345)
(2) Diversification dummy	−3.316***	−1.145	−1.504***	−0.907***
	(0.882)	(0.838)	(0.356)	(0.345)
(3) The square of control variables	−3.002***	−1.331	−1.534***	−1.015***
	(0.860)	(0.832)	(0.348)	(0.345)
	Dependent variable: Market to book			
(4) Firm age CRSP	−14.59	1.791	−10.48**	−7.643*
	(12.71)	(10.90)	(4.810)	(4.164)
(5) Diversification dummy	−18.42	−2.551	−11.99**	−8.925**
	(12.72)	(10.93)	(4.817)	(4.157)
(6) The square of control variables	−18.35	−1.410	−12.80***	−9.149**
	(12.54)	(10.79)	(4.838)	(4.162)
	Dependent variable: alternative performance measures			
(7) Net margin	−4.058***	−1.649	−2.206***	−1.307*
	(1.433)	(1.694)	(0.627)	(0.697)
(8) ROE	−2.929	−0.467	−3.812***	−2.933**
	(1.920)	(2.426)	(1.042)	(1.232)

Finally, in Rows 7 and 8, we re-estimate the specification of Equation (3) except that the dependent variable is Net margin and ROE. The coefficients on *FRAC*1 and *FRAC*2 are always negative. Moreover, for *FRAC*2, the coefficients are significant with both industry (Column 3) and firm fixed effects (Column 4).

In the Appendix (Table A1), we report results for year-by-year cross-sectional regressions. We also report Fama–MacBeth estimates. For both *FRAC*1 and *FRAC*2 and for both measures of performance (ROA and Market to book), the Fama–MacBeth estimate is negative and significant.[10]

There are several economic mechanisms consistent with the relation between our measures of internal governance and performance found in Tables III and IV. Our favored interpretation is that strong internal governance is a way for shareholders to "hold the CEO on a tight leash" and prevent the CEO from undertaking negative Net Present Value projects or indulging in inefficient empire building. One could argue, however, that the causality runs in the opposite direction: declining performance may actually trigger an increase in *FRAC*1 or *FRAC*2 (i.e., a drop in our internal governance quality measures). One plausible story could be based on management turnover. In most firms, poor performance triggers a change in the management team. In this scenario, internal governance worsens *because* performance declines, not the contrary.

While we have no "smoking gun" to assess the causal relation between internal governance and corporate performance, we can at least reduce the likelihood of reverse causation through two additional tests. First, we look at the joint dynamics of internal governance and corporate performance. Do changes in corporate performance happen before or after changes in internal governance? To test this, we estimate the following two regressions:

$$Y_{it} = \alpha_1 + \alpha_2 * IG_{it-1} + \alpha_3 * Y_{it-1} + (\text{controls})_{it} + \varepsilon_{it} \quad (4)$$

$$IG_{it} = \beta_1 + \beta_2 * IG_{it-1} + \beta_3 * Y_{it-1} + (\text{controls})_{it} + \varepsilon_{it} \quad (5)$$

where Y_{it} is the firm's corporate performance at date t (ROA or Market to book), while IG is one of our two measures of internal governance (either *FRAC*1 or *FRAC*2). If changes in corporate performance tend to lead changes in IG, we should not be able to reject that $\beta_3 > 0$.

[10] When internal governance is *FRAC*1, we exclude the years 2007, 2008, and 2009 because the JOINED_CO variable is very rarely reported from 2007 onwards. When internal governance is *FRAC*2, we exclude the years 1993 and 1994. For these years, by construction, the correlation between *FRAC*2 and the fraction of executives appointed within a year of the CEO's nomination is close to one.

Estimates of Equations (4) and (5) are reported in the Appendix (Table A2). All regressions include the same control variables as in Equation (3). Columns 1 and 3 report the estimates of α_2 and α_3 of Equation (4), whereas Columns 2 and 4 report the estimates of β_2 and β_3 from (5). The results suggest that changes in internal governance tend to happen before changes in corporate performance as estimates of β_3 are never significantly different from zero, whereas estimates of α_2 always are.

Another endogeneity concern, which is not ruled out by our time-series evidence is the following: executives might tend to leave companies when they anticipate poor performance (for example because they want to avoid the danger of getting fired), while the CEO stays on board to steer the ship through bad times. If executives have private information on future performance, internal governance would worsen before performance declines. This would mechanically happen because "independent" executives would be replaced by new ones which would de facto be less senior than the CEO. One justification for such anticipation effects is that executives can observe the CEO's ability, or changes in product–market conditions, before they materialize in corporate accounts. As a consequence, *FRAC*1 and *FRAC*2 might be simply proxying for executive turnover, which would itself be a predictor of performance decline.

We thus add to Equation (3) the fraction of executive that left the firm in the previous year as a control. This turnover control is constructed as the fraction of the firm's year $t-1$ executives who are no longer reported as working for the company at year t in the EXECUCOMP data. A limitation of this measure is that executives can drop out of our sample either because they are no longer employees of the company, or because they do not belong any more to the most paid employees of the company. EXECUCOMP does not allow us to measure executive departures more accurately. Controlling for such measure of executive turnover means that we compel the estimation to not reflect the most recent changes in the executive suite.

We present the new estimation results in Table VI, using the same controls as in Equation (3). As it turns out, executive turnover indeed has a significant negative impact on firm performance, confirming the idea that unexpectedly high executive turnover is an early sign of bad performance. Nevertheless, adding this control does not affect—actually slightly increases—the magnitude and significance of the impact of our internal governance measures on performance (either measured as ROA or Market to book). Overall, our results point toward a causal link going on from poor Internal Governance (high values of *FRAC*1 and *FRAC*2) to bad performance.

Table VI. Performance and nternal governance—controlling for executive turnover

Measures of performance is regressed on internal governance, executive turnover and control variables. Performance is measured through ROA in Panel A and through Market to book in Panel B. Executive turnover at year $t-1$ measures the fraction of the firm's year $t-1$ executives who are no longer reported as working for the company at year t in the EXECUCOMP data. In regressions (1) and (2) of Panels A and B, the control variables (not reported for brevity) are the same as in Table III, Column (1). In regressions (3) and (4) of Panels A and B, the control variables are the same as in Table III, Column (3). ROA and Market to book are trimmed at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5 and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	(1)	(2)	(3)	(4)
Panel A	ROA			
*FRAC*1 (lagged 1 year)	−3.717***	−1.530*	–	–
	(0.879)	(0.840)		
*FRAC*2 (lagged 1 year)	–	–	−1.904***	−1.174***
			(0.362)	(0.353)
Executive turnover (lagged 1 year)	−7.829***	−4.397***	−4.722***	−2.412***
	(0.720)	(0.649)	(0.541)	(0.458)
CEO/executive characteristics	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	Yes	No
Firm fixed effects	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.16	0.65	0.15	0.63
Observations	9,838	9,855	11,714	11,719
Panel B	Market to book			
*FRAC*1 (lagged 1 year)	−21.67*	−7.163	–	–
	(12.75)	(10.99)		
*FRAC*2 (lagged 1 year)	–	–	−15.66***	−12.30***
			(4.566)	(3.771)
Executive turnover (lagged 1 year)	−70.85***	−47.00***	−48.99***	−30.83***
	(9.827)	(8.511)	(6.612)	(5.322)
CEO/executive characteristics	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	Yes	No
Firm fixed effects	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.22	0.70	0.23	0.70
Observations	9,098	9,116	10,830	10,835

3.3 THE ROLE OF UNCERTAINTY

In our companion paper (Landier, Sraer, and Thesmar 2009), we provide a model where independent subordinates can improve the quality of decisions made at the top of the hierarchy. A testable prediction of this model is that organizational dissent is more effective when the firm faces uncertain product market conditions. As suggested by a large literature in sociology of organizations (see our theory paper for references), turbulent product markets, either because of demand instability or competitive pressure, are particular circumstances where it is important to make "objective" choices (as opposed to choices driven by private benefits or biases). And in our model, independent subordinates improve the likelihood of an "objective" decision being taken, since they force the CEO to give in less to her bias. In other words, dissenting organization are more reactive to new information.

To test this complementarity between uncertainty and executive independence, we check if our measure of bottom-up governance has a stronger impact on performance, when measured uncertainty is higher. We implement this test in Table VII: following the asset pricing literature, we measure uncertainty through the dispersion of analysts' earnings EPS forecasts, normalized by the stock price. We define a dummy equal to 1 if this dispersion is above median. We then regress our corporate performance measures on our proxies *FRAC*1 and *FRAC*2, interacted with the uncertainty dummy. In Panel A, we measure performance through ROA; in panel B, we use Market to book. In both panels, the specifications in Columns 1 and 2 use *FRAC*1: looking at these columns, we find that performance is indeed more strongly correlated with internal governance when forecast dispersion is higher. This suggests that in more uncertain environments, independent subordinates tend to be a particularly important factor of performance. In Columns 3 and 4, we use our second performance proxy *FRAC*2. There, results are insignificant, but point in the same direction.

4. Internal Governance and Acquisitions

To test whether internal governance increases the quality of CEOs decision-making by constraining their choices, a natural place to look is the firm's acquisition policy. There is a long-lasting debate among financial economists as to whether long-run acquisition returns are positive or negative for the acquiring firm. Loughran and Vijh (1997) find that the returns to long-run investors in acquiring firms are on average negative, in particular when the deal is financed with stock issues. Mitchell and Stafford (2000), among others, criticize their estimates, partly because post-acquisition returns

Table VII. Performance and internal governance—interaction with uncertainty

Measures of performance is regressed on internal governance, analysts' earnings forecasts dispersion and control variables. Performance is measured through ROA in Panel A and through Market to book in Panel B. Uncertainty is a dummy which equals one for firm-year observations with analysts' forecasts dispersion above the median. The data on analysts' earnings forecasts are taken from the Institutional Brokers Estimate System (I/B/E/S). For each stock and fiscal year, we keep only the last forecast of each analyst. Dispersion is then defined as the ratio of the standard deviation of analysts' earnings forecasts normalized by the fiscal year's stock price. In regressions (1) and (2) of Panels A and B, the control variables (not reported for brevity) are the same as in Table III, Column (1). In regressions (3) and (4) of Panels A and B, the control variables are the same as in Table III, Column (3). ROA and Market to book are trimmed at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5 and, 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	(1)	(2)	(3)	(4)
Panel A	ROA			
*FRAC*1 (lagged 1 year)	−1.302	0.378	–	–
	(0.965)	(0.976)		
*FRAC*1 (lagged 1 year) * Uncertainty	−3.945***	−3.863***	–	–
	(1.197)	(1.144)		
*FRAC*2 (lagged 1 year)	–	–	−1.089**	−0.814**
			(0.458)	(0.385)
*FRAC*2 (lagged 1 year) * Uncertainty	–	–	−0.055	0.023
			(0.605)	(0.489)
Uncertainty	−3.709***	−1.305***	−4.532***	−1.993***
	(0.362)	(0.312)	(0.347)	(0.269)
CEO/executive characteristics	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	Yes	No
Firm fixed effects	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.22	0.67	0.21	0.66
Observations	7,204	7,204	8,886	8,886
Panel B	Market to book			
*FRAC*1 (lagged 1 year)	−1.772	17.80	–	–
	(18.15)	(15.92)		
*FRAC*1 (lagged 1 year)*Uncertainty	−28.93*	−48.97***	–	–
	(16.00)	(15.55)		
*FRAC*2 (lagged 1 year)	–	–	−10.09	−6.837
			(7.297)	(5.475)
*FRAC*2 (lagged 1 year)*Uncertainty	–	–	−1.144	−5.089
			(7.532)	(6.645)
Uncertainty	−48.38***	−16.92***	−45.57***	−19.00***
	(5.532)	(5.081)	(5.187)	(4.424)
CEO/executive characteristics	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	No	Yes	No
Firm fixed effects	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.26	0.73	0.27	0.73
Observations	6,652	6,652	8,177	8,177

tend not to be independent events, as acquisitions generally cluster around stock market booms. The main problem this literature has been dealing with, is that there is considerable heterogeneity among types of acquisitions and their performance. Thus, researchers lose substantial information on their entire distribution by focusing on average returns and average profitability. In an attempt to reduce this heterogeneity, some recent papers have outlined the size of acquisitions as a key factor for success or failure (Moeller, Schlingemann, and Stulz, 2005; Bradley and Sundaram, 2006). The evidence they present is consistent with small acquisitions being value-creating, and large ones being value-destroying. Following up on these papers, we look at the effect of internal governance on shareholder losses (gains) in large acquisitions.

But before looking at this issue, we first investigate the relation between internal governance and acquisition policy. In nonreported regressions, we find that firms with good internal governance do not make fewer acquisitions and that their acquisitions do not correspond to smaller purchases. We follow Gompers, Ishii, and Metrick (2003), and use SDC to compute, for each firm-year of our EXECUCOMP data: (1) the number of deals of more than $10 million in value and (2) the overall amount of all deals struck within the year (the sum of all transaction values if there are several deals), normalized by the acquirer's market capitalization. None of these measures of acquisition intensity prove to be correlated with either *FRAC*1 or *FRAC*2. Moreover, we find that *FRAC*1 and *FRAC*2 are not correlated with the number of past acquisitions, which means that selecting firms with poor internal governance does not select "serial acquirers". Finally, we find that *FRAC*1 and *FRAC*2 are not correlated with method of payment of the deal—i.e., whether the deal is financed by cash or by stock.

We then turn to the impact of internal governance on acquisition quality. As mentioned above, we focus on large acquisitions (whose value exceeds $300 million). To measure the performance of acquisitions, we follow Loughran and Vijh (1997) and focus on the acquirer's long term abnormal stock returns, which we compute using a four factor pricing model (the Fama and French (1996) three factors plus momentum) estimated at the firm level in the 48 months preceding the acquisition. We restrict ourselves to the 1993–2009 period, in order to be able to use EXECUCOMP information.

We then compute the average cumulative abnormal returns, starting 12 months before the deal up to 48 months after the deal. We winsorize cumulative abnormal returns at the 1 and 99% levels. Then, we split the sample of transactions into two parts: deals of acquirers with *FRAC*1

(respectively *FRAC*2) above the median—i.e., poor internal governance—and deals of acquirers with *FRAC*1 (respectively *FRAC*2) below the median—i.e., good internal governance—in the year preceding the acquisition. Each part comprises around 400 deals when internal governance is *FRAC*1 and around 500 deals when internal governance is *FRAC*2. Columns 1 and 2 (respectively Columns 4 and 5) of Table VIII report, separately for good and poor internal governance acquirers constructed from *FRAC*1 (respectively *FRAC*2), the average cumulative abnormal returns, starting 12 months before the deal up to 48 months after the deal. Column 3 (respectively Column 6) reports the difference in cumulative returns for *FRAC*1 (respectively *FRAC*2), and tests for the equality of average returns using a standard *t*-test, without assuming equal variances. Figure 2 plots cumulative abnormal returns for each month, separately for poor (left panel) and good (right panel) internal governance acquirers. Internal governance is *FRAC*1 in Figure 2a and *FRAC*2 in Figure 2b.

We find that firms with poor internal governance make largely underperforming acquisitions. When internal governance is measured by *FRAC*1, 4 years after the acquisition, firms with good internal governance have on average lost some 16% of shareholder value, which is significantly different from zero. However, firms with poor internal governance have lost around 45%, which is both significantly different from zero and from the wealth lost by shareholders of firms with good internal governance. This difference is robust to (1) the way we split the sample, on condition that each contains enough observations in each category (good/poor governance) and (2) to the pricing model (results are almost similar when we omit the momentum factor or if we simply use the CAPM). When internal governance is measured by *FRAC*2, the results are similar, although weaker in magnitude. Four years after the acquisition, firms with good internal governance have on average lost 15% of shareholder value against 32% for firms with poor internal governance.

One might be concerned that the difference in the cumulative abnormal returns between acquirers with poor and good internal governance is driven by an omitted variable bias. To partly address this point, we move to a multivariate analysis and regress cumulative abnormal returns at different time horizons on CEO/executive characteristics, firm-level controls and deal characteristics. We estimate the following cross sectional regressions:

$$\begin{aligned} CAR_{it} = &\alpha + \beta * IG_{it_0-1} + (IG \text{ controls})_{it_0} + (\text{Firm controls})_{it_0} \\ &+ (\text{Deal controls})_{it_0} + \varepsilon_{it} \end{aligned} \tag{6}$$

Table VIII. Long run abnormal returns following a major acquisition

Abnormal returns are computed after estimating, for each acquirer, a Fama French 3 factor model + momentum on the 48 months preceding the acquisition. Cumulative abnormal returns, starting 12 months before the deal, are computed for each firm and are winsorized at the 1 and 99% levels. Internal governance is *FRAC*1 in Columns (1)–(3), and *FRAC*2 in Columns (4)–(6). Columns (1) and (4) report, every 6 months, the average cumulative abnormal returns of acquirers with internal governance lower than median. Columns (2) and (5) does the same for above-median internal governance acquirers, while columns (3) and (6) report the difference. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance, using a standard test of equality, assuming away the equality of variances. T-statistics are in parenthesis. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

Months since acquisition	Internal governance					
	*FRAC*1			*FRAC*2		
	Poor (1)	Good (2)	Difference (3)	Poor (4)	Good (5)	Difference (6)
−6	1.470	0.613	−0.858	0.284	−0.440	−0.724
			(0.477)			(0.544)
0	−2.760	0.055	2.816	−2.281	−2.468	−0.187
			(1.314)			(0.117)
+6	−10.91	0.047	10.96***	−7.169	−3.991	3.178
			(4.040)			(1.520)
+12	−18.63	−3.343	15.28***	−12.11	−6.969	5.138**
			(4.969)			(2.058)
+18	−27.42	−5.504	21.92***	−16.04	−7.832	8.211***
			(6.743)			(2.737)
+24	−31.19	−9.686	21.51***	−18.76	−10.09	8.677***
			(5.997)			(2.594)
+30	−35.64	−12.01	23.63***	−21.57	−11.61	9.963***
			(6.068)			(2.661)
+36	−39.02	−12.05	26.97***	−24.50	−10.00	14.50***
			(6.192)			(3.413)
+42	−43.30	−13.06	30.23***	−29.13	−12.44	16.69***
			(6.707)			(3.758)
+48	−45.63	−16.09	29.54***	−32.70	−14.51	18.19***
			(6.171)			(3.841)

where CAR_{it} are cumulative abnormal returns at $t = 0$, 6, 12, 18, 24, 30, 36, 42, and 48 months after the deal has been announced. IG_{it_0-1} is *FRAC*1 or *FRAC*2 of acquirer i, in the year before the acquisition. As for Equation (3), we include CEO/executive characteristics, firm age, firm size, the number of business segments, and cash-flow volatility as control variables. We also include two deal characteristics as additional controls, namely the logarithm

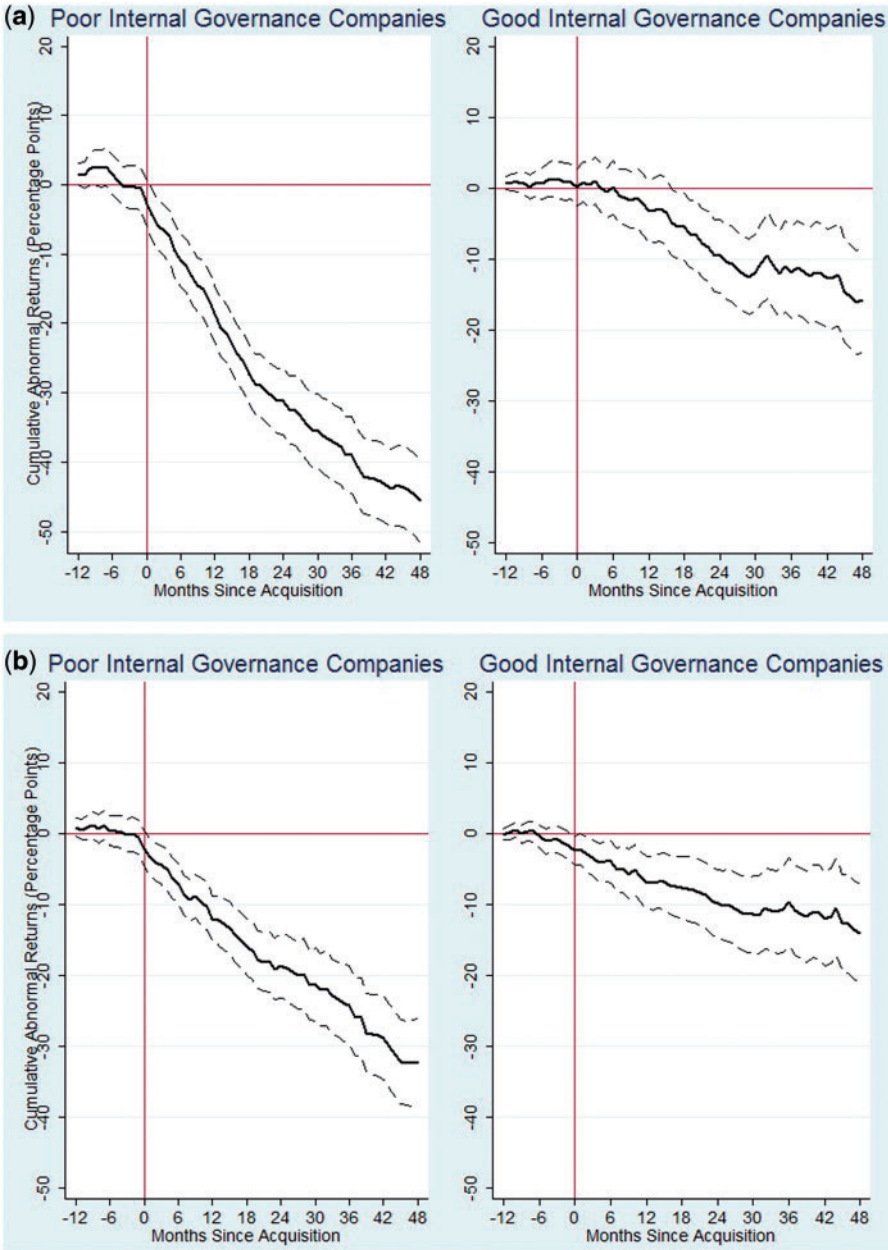

Figure 2. Long-run returns from acquisitions: good versus poor internal governance.

of the deal value and a dummy which equals 1 if the deal has been financed only by cash. Finally, we include year and industry fixed effects. Standard errors are clustered at the acquirer and year levels. This ensures that the results are not driven by overweighting some few acquirers making more than one deal over the sample period.

Table IX presents the results of Equation (6) when internal governance is *FRAC*1 and Table X presents the results when internal governance is *FRAC*2. Consistent with the results in Table VIII, the coefficients on either *FRAC*1 or *FRAC*2 are negative, significant (from 6 months after the deal for *FRAC*1 and from 12 months for *FRAC*2) and increase over time (in absolute terms). Four years after the acquisition, a one-standard deviation increase in *FRAC*1 is associated with a decrease in post-acquisition cumulative abnormal returns of about 21 percentage points (84.20*0.245). Consistent with the results in Table VIII, the economic magnitude of the results is smaller for *FRAC*2: 4 years after the acquisition, a one-standard increase in *FRAC*2 is associated with a decrease in cumulative abnormal returns of about 14 percentage points.

5. External Versus Internal Governance

We have shown that our two measures of "internal governance" are significant predictors of (1) overall corporate performance and (2) the efficiency of some crucial strategy choices (acquisitions). However, one possible story consistent with such evidence is that we are proxying for corporate governance in the "traditional" sense: firms with weak shareholders, weak boards and powerful CEOs could also be the ones where the CEO has all the power to appoint faithful executives. Hence, a well-entrenched CEO is more likely to replace executives who do not show sufficient loyalty, which makes our measures of internal governance rise. At the same time, weak boards do not have the means to oppose large, wasteful acquisitions.

This alternative story puts external governance back to the fore: when "external" governance is poor, the firm performs less well, and most executives have had less time on the job than the CEO. If this were true, however, the existing literature on "external governance" should also find a positive statistical relation between corporate performance and measures of governance quality. Existing contributions have, however, repeatedly failed to find a positive correlation between the share of outsiders in the board and profitability (see Hermalin and Weisbach (2003) for a survey). Using corporate charter-based governance measures, Gompers, Ishii, and Metrick (2003) do not find a consistent correlation between investor-friendly firm-level

Table IX. Long run abnormal returns—multivariate analysis—*FRAC*1

Abnormal returns around acquisitions are regressed on *FRAC*1 and control variables. Abnormal returns are computed after estimating, for each acquirer, a Fama French 3 factor model + momentum on the 48 months preceding the acquisition. Cumulative abnormal returns, starting 12 months before the deal, are computed for each firm-and are winsorized at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the acquirer and year levels. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

Months since acquisition	Cumulative abnormal returns								
	0	6	12	18	24	30	36	42	48
*FRAC*1 (lagged 1 year)	−3.394	−34.68***	−39.13**	−56.43***	−59.16***	−79.59***	−84.74***	−79.78***	−84.20***
	(14.34)	(11.90)	(19.57)	(13.92)	(19.14)	(14.13)	(22.57)	(12.13)	(18.30)
CEO seniority	−0.276	−0.090	0.116	−0.061	0.135	0.180	0.019	−0.113	0.131
	(0.332)	(0.246)	(0.376)	(0.284)	(0.462)	(0.389)	(0.441)	(0.428)	(0.568)
CEO from outside	1.732	3.079	0.574	1.420	2.379	6.251	5.574**	5.387	6.163
	(7.267)	(7.749)	(5.633)	(5.754)	(4.009)	(5.550)	(2.223)	(3.287)	(6.310)
Executives' mean seniority	−0.254	0.143	0.150	0.031	0.056	−0.016	0.200	0.502	0.086
	(0.169)	(0.239)	(0.262)	(0.294)	(0.362)	(0.255)	(0.406)	(0.358)	(0.397)
Percentage of executives appointed in the year following CEO nomination	3.516	0.039	15.13	−1.100	19.91	4.728	−6.998	−10.76	4.056
	(29.02)	(24.13)	(16.16)	(30.53)	(25.10)	(23.62)	(20.14)	(21.60)	(30.04)
Percentage of executives whose seniority is reported	19.34**	38.62***	17.19*	21.48	27.69**	31.63**	32.23*	31.11*	20.30
	(9.375)	(12.67)	(9.345)	(14.71)	(13.15)	(14.89)	(18.79)	(17.57)	(18.84)

(continued)

Table IX. Continued

Months since acquisition	Cumulative abnormal returns								
	0	6	12	18	24	30	36	42	48
Firm age	1.576	3.139	4.497	7.263	15.01**	14.75***	14.69*	12.13**	10.94
	(2.859)	(4.323)	(3.101)	(4.523)	(6.448)	(5.565)	(7.751)	(6.091)	(7.293)
Firm size	−0.358	−0.979	−2.846	−2.104	−2.933	−5.244**	−3.979	−4.295*	−1.055
	(1.436)	(1.670)	(1.992)	(2.406)	(2.428)	(2.457)	(3.159)	(2.335)	(2.977)
Number of business segments	1.620**	1.753	2.303**	2.771**	1.777	2.663*	3.228*	2.166	3.542*
	(0.752)	(1.206)	(1.059)	(1.079)	(1.501)	(1.522)	(1.892)	(1.743)	(1.986)
Cash-flow volatility	−34.24***	−27.64*	−18.66	−12.70	−22.44	−1.179	12.16	14.62	21.39
	(9.035)	(14.76)	(26.01)	(34.50)	(27.06)	(22.64)	(19.11)	(21.05)	(18.85)
Deal size	0.592	1.991*	1.969	2.531	1.456	1.567	1.711	3.178**	4.243*
	(1.359)	(1.170)	(2.292)	(1.985)	(1.188)	(1.617)	(1.507)	(1.544)	(2.465)
All-cash deal	−0.403	1.619	4.991	4.885	5.667	10.60	9.002	14.25***	9.890
	(4.393)	(3.565)	(5.008)	(4.938)	(3.955)	(6.695)	(7.416)	(5.196)	(6.727)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.16	0.23	0.25	0.29	0.36	0.36	0.38	0.40	0.39
Observations	552	551	546	537	527	517	506	492	472

Table X. Long run abnormal returns—multivariate analysis—*FRAC*2

Abnormal returns around acquisitions are regressed on *FRAC*2 and control variables. Abnormal returns are computed after estimating, for each acquirer, a Fama–French 3 factor model + momentum on the 48 months preceding the acquisition. Cumulative abnormal returns, starting 12 months before the deal, are computed for each firm-and are winsorized at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the acquirer and year levels. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

Months since acquisition	Cumulative abnormal returns								
	0	6	12	18	24	30	36	42	48
*FRAC*2 (lagged 1 year)	−4.352	−8.760*	−16.24***	−20.70***	−20.14***	−21.05**	−29.59***	−23.84**	−39.19***
	(4.269)	(5.222)	(6.078)	(5.711)	(6.083)	(9.822)	(7.465)	(12.05)	(11.74)
CEO seniority	0.635	0.563	1.113**	0.796*	0.499	0.00441	0.728	0.0619	2.349
	(0.396)	(0.610)	(0.566)	(0.426)	(0.846)	(0.633)	(1.430)	(1.018)	(1.781)
CEO from outside	−3.790	−3.405	−2.752	−0.430	−1.904	0.756	−1.976	−2.704	−2.929
	(2.740)	(3.139)	(3.840)	(3.926)	(4.770)	(3.915)	(5.690)	(4.251)	(6.039)
Executives' mean seniority	−0.0278	0.637	0.939	1.081	2.339	2.752	3.280	4.664**	4.671
	(0.574)	(1.115)	(1.046)	(1.859)	(1.776)	(2.287)	(2.939)	(2.289)	(2.918)
Percentage of executives appointed in the year following CEO nomination	12.32	10.62	15.27*	14.92*	22.95**	31.44***	35.32***	34.13***	39.46***
	(7.627)	(7.526)	(7.871)	(8.019)	(9.076)	(9.874)	(10.01)	(10.88)	(15.19)
Firm age	4.479	8.440**	11.65***	16.77***	15.68***	16.85***	20.11***	19.38***	16.40***
	(2.747)	(3.608)	(3.719)	(4.086)	(4.554)	(3.638)	(4.625)	(4.245)	(4.260)
Firm size	−1.801*	−3.181***	−5.049***	−5.785***	−4.989***	−5.674**	−5.110*	−6.981***	−6.269*
	(1.033)	(1.019)	(0.981)	(1.249)	(1.465)	(2.257)	(2.711)	(2.201)	(3.802)
Number of business segments	0.486	0.440	0.482	0.371	0.730	2.150**	0.701	1.265	1.593
	(0.712)	(0.531)	(0.859)	(1.099)	(1.304)	(1.069)	(2.064)	(1.243)	(1.274)
Cash-flow volatility	−16.67**	−11.23	−5.065	1.256	−8.270	2.976	15.31	13.46	34.90
	(6.941)	(21.01)	(37.41)	(34.94)	(26.38)	(30.19)	(35.05)	(33.92)	(28.47)
Deal size	−0.150	0.565	1.893	1.748	1.790	0.443	0.196	1.046	2.143
	(0.625)	(1.223)	(1.232)	(2.176)	(2.237)	(1.992)	(2.773)	(2.403)	(2.503)
All-cash deal	−0.887	3.299	8.176*	9.507*	9.960**	9.383	10.34	9.662	6.714
	(2.448)	(3.643)	(4.439)	(4.868)	(5.002)	(5.878)	(6.956)	(6.504)	(6.785)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.11	0.17	0.20	0.22	0.26	0.26	0.26	0.29	0.28
Observations	793	793	787	743	722	690	658	612	557

institutions and operating performance. Thus, the available evidence casts doubts on internal governance being just a proxy for external governance in our regressions.

To look at this directly, we correlate our measures of internal governance with some measures of "external governance" that are used in the literature: more precisely, we regress our internal governance indexes on (1) the Gompers, Ishii, and Metrick (2003) index of governance, which takes large values for management-friendly corporate charters, (2) a dummy variable equal to 1 when the CEO is also the chairman of the board, which measures the CEO's degree of power on the board (see, for example, Adam, Almeida, and Ferreira, 2004), (3) the size of the board (as Yermack (1996) shows that firms with large boards are less efficient), (4) the fraction of board members who are currently employed by the firm, and (5) the fraction of board members who are former employees. Variable (1) is available for a subset of our main sample (the largest firms). Variable (2) is available for our whole sample (being extracted from EXECUCOMP). Variables (3) and (4) are extracted from IRRC's boards and directors database and so are available only for a subsample of our main data set.

Table XI presents the results. Overall, the evidence is not consistent with internal governance being a proxy of external governance. Neither *FRAC*1 nor *FRAC*2 are correlated with the charter-based GIM index (Columns 1 and 4). *FRAC*1 is significantly higher when the CEO is chairman (Column 2), suggesting that CEOs who are powerful inside the firm are also powerful in the boardroom. However, this relation does not hold when internal governance is measured with *FRAC*2 (the coefficient is reversed but not significant). The only significant relation holding for both *FRAC*1 and *FRAC*2 is more surprising: internal governance turns out to be better when there are more employees sitting on the board of directors. One possible interpretation is that monitoring by nonexecutive directors (external governance) or monitoring by subordinates (bottom-up governance) are to some extent substitute.

Table XI suggests there might be some weak correlation between internal and external governance. We thus provide new estimates of Equation (3) in Table XII including external governance measures as further controls. We also include the control variables used in Gompers, Ishii, and Metrick (2003) that are not in our other regressions, namely Delaware incorporation and a S&P500 dummy. Panel A focuses on ROA as a measure of performance, whereas Panel B looks at the effects on Market to book. In both panels, Columns 1 include the GIM index only, and firm-level controls. Columns 2 and 3 add *FRAC*1, whereas Columns 4 and 5 add *FRAC*2. Columns 3 and 5 include the other external governance indexes. Consistent with Gompers,

Table XI. Are internal and external governance related?

Internal governance is regressed on various corporate governance indicators and control variables. Internal governance is *FRAC*1 in Columns (1)–(3), and *FRAC*2 in Columns (4)–(6). Columns (1) and (4) use the (mostly) corporate charter-based corporate governance index from Gompers, Ishii, and Metrick (2003). Columns (2) and (5) use a dummy that equals 1 if the CEO is also the chairman of the board. Columns (3) and (6) use Gompers, Ishii, and Metrick (2003) governance index, the chairman dummy, and add the number of directors on the board, the share of currently employed directors and the share of past employees on the board. The control variables (not reported for brevity) included in Columns (1)–(3) are the same as in Table III, Column (1). The control variables included in Columns (4)–(6) are the same as in Table III, Column (3). Standard errors, reported in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience.

	*FRAC*1			*FRAC*2		
	(1)	(2)	(3)	(4)	(5)	(6)
GIM governance index	−0.018	–	−0.199	0.031	–	−0.081
	(0.115)	–	(0.161)	(0.101)	–	(0.124)
CEO is chairman	–	1.554**	0.809	–	−0.750	−1.087
		(0.621)	(0.809)		(0.510)	(0.807)
Board size (# directors)	–	–	−0.506***	–	–	0.041
			(0.186)			(0.162)
Fraction directors who are current employees	–	–	−15.97***	–	–	−6.822*
			(3.741)			(3.598)
Fraction ind. directors who are former employees	–	–	−0.152	–	–	−3.648
			(4.829)			(3.526)
CEO/executive characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.67	0.68	0.67	0.87	0.86	0.92
Observations	7,788	11,145	2,916	9,154	13,316	2,803

Table XII. Internal versus external governance—performance

Performance is regressed on measures of internal and external governance and control variables. The control variables (not reported for brevity) in Columns (1) of Panels A and B are firm size, firm age, the number of business segments, and cash-flow volatility. In Columns (2) and (3), the control variables are the same as in Table III, Column (1). In Columns (4) and (5), the control variables are the same as in Table III, Column (3). Delaware incorporation and a S&P dummy are included as additional controls in all regressions. All columns include industry and year fixed effects. ROA and Market to book are trimmed at the 1 and 99% levels. Standard errors, reported in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience.

	(1)	(2)	(3)	(4)	(5)
Panel A			ROA		
*FRAC*1 (lagged 1 year)	–	−3.177***	−4.135***	–	–
		(0.974)	(1.564)		
*FRAC*2 (lagged 1 year)	–	–	–	−1.517***	−1.751**
				(0.397)	(0.685)
GIM governance index	−0.057	0.021	0.148	−0.009	0.039
	(0.055)	(0.076)	(0.108)	(0.061)	(0.092)
CEO is chairman	–	–	0.611	–	0.315
			(0.730)		(0.621)
Board size (# directors)	–	–	0.137	–	0.142
			(0.124)		(0.105)
Fraction directors	–	–	4.811**	–	3.638
who are current employees			(2.431)		(2.458)
Fraction ind. directors	–	–	4.021	–	2.653
who are former employees			(3.272)		(2.721)
CEO/executive characteristics	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
R^2	0.16	0.19	0.21	0.19	0.20
Observations	12,391	6,800	2,565	8,050	2,408
Panel B			Market to book (×100)		
*FRAC*1 (lagged 1 year)	–	−19.39	−23.98	–	–
		(14.16)	(24.11)		
*FRAC*2 (lagged 1 year)	–	–	–	−16.02***	−2.827
				(5.664)	(10.32)
GIM governance index	−2.928***	−2.140*	−1.643	−3.314***	−3.997**
	(0.802)	(1.127)	(1.741)	(0.941)	(1.611)
CEO is chairman	–	–	−14.76	–	−9.926
			(10.62)		(9.078)
Board size (# directors)	–	–	−0.168	–	0.427
			(2.115)		(1.749)
Fraction of directors	–	–	60.30	–	77.82*
who are current employees			(39.03)		(44.79)
Fraction of ind. directors	–	–	−8.396	–	2.914
who are former employees			(49.10)		(39.93)
CEO/executive characteristics	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
R^2	0.26	0.27	0.34	0.27	0.37
Observations	11,408	6,230	2,295	7,429	2,192

Ishii, and Metrick (2003), the GIM index is negatively and significantly correlated with Market to book, but not with operating performance. But the size and significance of the coefficients on *FRAC*1 and *FRAC*2 remains similar to those in Tables III and IV once we include the GIM index.

The inclusion of the other external governance indexes shows that (1) most of them are not really correlated with corporate performance, which is consistent with the existing literature, (2) the share of inside directors is *positively* correlated with performance (consistent with Kaplan and Minton, 1994) and (3) the effect of *FRAC*1 or *FRAC*2 remains unaffected by the inclusion of these controls when performance is measured with ROA, even though they considerably reduce the sample size.

To conclude our analysis, we also check that our results on post M&A long-run performance continue to hold when controlling for external governance: we re-estimate the specifications of Tables IX and X including the GIM index as a control, and report the results in Table XIII: Panel A uses *FRAC*1 as the measure of internal governance, and Panel B uses *FRAC*2. To save space, we do not report the coefficients of the basic controls of Tables IX and X, even though they are included in the estimation. Because the GIM index is not available for the entire sample, we lose about 20% of observations. Nonetheless, the estimates of internal governance coefficients and their statistical significance are unaffected by the external governance control. The GIM index has no predictive power on its own.

6. Conclusion

This article shows that independence of top executives from the CEO has an impact on corporate performance. We measure independence by looking at whether an executive was appointed during or before the current CEO's tenure. Our rationale is that independently minded executives impose more constraints on the CEO than executives who owe him their jobs. These constraints may prevent inefficient decisions from being taken, and have in general the useful effect of de-biasing the CEO's strategic choices. To play this positive role on the quality of CEO decisions, top executives need not disobey, or enter in open conflict with their boss: knowing that the firm's key executives might be less enthusiastic in their work when they disapprove decisions, the CEO has incentives to take their opinion into account.

The insight that the independence of the executive suite from the CEO affects the quality of corporate decisions has two normative implications for practitioners of corporate governance and organization behavior. First, the

Table XIII. Long run abnormal returns—multivariate analysis—controlling for external governance

Abnormal returns around acquisitions are regressed on *FRAC*1 and control variables. Abnormal returns are computed after estimating, for each acquirer, a Fama–French 3 factor model + momentum on the 48 months preceding the acquisition. Cumulative abnormal returns, starting 12 months before the deal, are computed for each firm-and are winsorized at the 1 and 99% levels. Standard errors, presented in parenthesis, are clustered at the acquirer and year levels. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	Cumulative abnormal returns								
Months since acquisition	0	6	12	18	24	30	36	42	48
Panel A: using *FRAC*1 as the measure of internal governance									
*FRAC*1 (lagged 1 year)	−14.59	−32.61*	−27.52	−40.54**	−58.16**	−83.51***	−83.42***	−82.92***	−78.51***
	(9.165)	(16.68)	(27.25)	(19.70)	(23.97)	(25.14)	(31.04)	(21.62)	(27.53)
GIM governance index	−1.275**	−0.555	−0.495	0.502	0.929	0.497	1.598	2.383*	2.452**
	(0.613)	(0.386)	(1.136)	(1.089)	(0.763)	(1.445)	(1.082)	(1.373)	(1.237)
Controls as in Table X	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.29	0.32	0.30	0.34	0.36	0.37	0.39	0.41	0.38
Observations	451	449	446	439	431	424	416	405	390
Panel B: using *FRAC*2 as the measure of internal governance									
*FRAC*2 (lagged 1 year)	−2.827	−5.620*	−9.710*	−14.45***	−21.68***	−21.51*	−26.74***	−22.22	−32.97***
	(3.726)	(2.907)	(5.818)	(4.870)	(5.109)	(11.57)	(8.070)	(14.69)	(11.77)
GIM governance index	−1.126**	−0.845	−1.357**	−0.289	0.144	−0.044	0.893	1.439	1.413
	(0.479)	(0.658)	(0.575)	(0.889)	(0.719)	(1.324)	(1.409)	(1.818)	(1.901)
Controls as in Table X	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.15	0.20	0.22	0.23	0.24	0.25	0.24	0.26	0.23
Observations	613	612	607	601	599	588	582	538	489

intensity of internal governance as we define it can be easily observed and could be included in the various indexes of the quality of a firm's corporate governance. This implication does not depend on our interpretation of our results: be it the sign of executives "leaving the sinking boat", of an autocratic CEO, or of the healthy discipline of having to convince one's subordinates, the share of independent executives as we measure it predicts performance. A second implication hinges on our "bottom-up governance" interpretation: in addition to management monitoring and advising, a key role of the board should also consist in designing the optimal balance of power within the firm. Put otherwise, the human resource role of the board should not be limited to the usually emphasized CEO succession problem, but should also be concerned with the choice of key executives.

Appendix

Table A1. Performance and internal governance—year by year results

Regressions of performance on internal governance and controls are run separately each year. Performance is measured through ROA in the first columns of Panel A and Panel B, and through "Market to book" in the second columns of Panel A and Panel B. The coefficients on *FRAC*1 (lagged one period) are reported in Panel A, whereas the coefficients on *FRAC*2 (lagged one period) are reported in Panel B. In Panel A, the control variables are the same as in Table 3, Column (1). In Panel B, the control variables are the same as in Table 3, Column (3). Regressions include industry fixed effects. The bottom row indicates the Fama–MacBeth estimate. "ROA" and "Market to book" are trimmed at the 1 and 99% levels. Standard errors are reported in parenthesis. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The coefficients are multiplied by 100 for expositional convenience. The sample period is from 1992 to 2009.

	Panel A: *FRAC*1		Panel B: *FRAC*2	
	ROA (1)	Market to book (2)	ROA (3)	Market to book (4)
1993	−4.282	−37.57	–	–
	(2.755)	(41.62)		
1994	−2.621	0.812	–	–
	(2.320)	(27.96)		
1995	−1.322	8.376	−1.454	−45.94**
	(1.946)	(27.82)	(1.712)	(22.05)
1996	−4.367**	−21.97	−5.310***	−8.106
	(1.931)	(26.43)	(1.609)	(20.80)
1997	−2.729	−11.13	−0.017	−1.163
	(1.894)	(29.29)	(1.407)	(22.39)
1998	−4.071**	−14.69	0.553	25.27
	(1.865)	(30.22)	(1.357)	(19.56)

(continued)

Table A1. Continued

	Panel A: *FRAC*1		Panel B: *FRAC*2	
	ROA (1)	Market to book (2)	ROA (3)	Market to book (4)
1999	−4.109**	−24.77	−1.381	−19.50
	(1.845)	(32.66)	(1.339)	(22.00)
2000	−4.875***	−82.54***	−1.163	−32.19
	(1.863)	(31.44)	(1.188)	(20.59)
2001	−3.528*	0.356	−1.274	21.71
	(1.938)	(29.21)	(1.166)	(16.52)
2002	−4.094**	−44.98**	−2.485**	−20.10
	(1.872)	(21.99)	(1.198)	(13.68)
2003	−4.639**	−53.87*	−2.259*	−32.29**
	(1.939)	(28.08)	(1.150)	(15.80)
2004	−2.371	−24.22	−1.102	−23.98*
	(2.103)	(29.01)	(1.033)	(14.02)
2005	−1.926	24.64	−0.935	−25.12*
	(2.379)	(32.78)	(0.964)	(13.55)
2006	−3.440	−8.566	−2.146**	−16.39
	(2.536)	(34.96)	(0.921)	(11.76)
2007	–	–	−1.075	−12.71
			(1.017)	(13.94)
2008	–	–	−2.102*	−2.313
			(1.193)	(11.09)
2009	–	–	−1.794	1.714
			(1.217)	(12.00)
Fama–MacBeth	−3.455***	−20.72***	−1.596***	−12.74**
	(0.291)	(7.379)	(0.338)	(5.052)

Table A2. Performance and internal governance–granger causality In Panels A and B, Columns (1) and (3) report the result of a regression of performance on 1-year lagged internal governance and 1-year lagged performance. Columns (2) and (4) report the result of a regression of internal governance on 1-year lagged internal governance and 1-year lagged performance. Performance is measured through "ROA" in Panel A, and through Market to book in Panel B. Internal governance is *FRAC*1 in Columns (1) and (2), and *FRAC*2 in Columns (3) and (4). In Columns (1) and (2), the control variables (not reported for brevity) are the same as in Table 3, Column (1). In Columns (3) and (4), the control variables are the same as in Table 3, Column (3). Regressions include industry and year fixed effects. "ROA" and "Market to book" are trimmed at the 1 and 99% levels. Standard errors, reported in parenthesis, are clustered at the firm level. *, **, and *** means statistically different from zero at 10, 5, and 1% level of significance. The sample period is from 1992 to 2009.

	(1)	(2)	(3)	(4)
Panel A	ROA	*FRAC*1	ROA	*FRAC*2
*FRAC*1 (−1)	−1.593***	50.34***	–	–
	(0.503)	(1.367)		

(continued)

Table A2. Continued

	(1)	(2)	(3)	(4)
*FRAC*2 (−1)	–	–	−0.638***	23.36***
			(0.222)	(0.695)
ROA (−1)	60.26***	1.065	62.36***	−1.114
	(3.459)	(1.019)	(2.242)	(1.313)
CEO/executive characteristics	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.55	0.81	0.56	0.88
Observations	9,812	10,106	11,710	11,976
Panel B	MARKET TO BOOK	*FRAC*1	MARKET TO BOOK	*FRAC*2
*FRAC*1 (−1)	−16.86*	50.02***	–	–
	(9.527)	(1.432)		
*FRAC*2 (−1)	–	–	−5.624*	23.03***
			(2.978)	(0.722)
Market to book (−1)	31.65***	0.065	52.79***	−0.041
	(6.410)	(0.076)	(5.221)	(11.03)
CEO/executive characteristics	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
R^2	0.42	0.81	0.58	0.88
Observations	8,954	9,345	10,671	11,037

Variable	Description
	Panel A: governance variables
*FRAC*1	Fraction of executives hired after the CEO constructed with the JOINED_CO EXECUCOMP variable. High values mean poor internal governance.
*FRAC*2	Fraction of executives hired after the CEO constructed through entry and exit in the EXECUCOMP database. High values mean poor internal governance.
GIM index	Gompers, Ishii, and Metrick (2003) index of corporate governance, based on 24 antitakeover provisions. High values of GIM index mean poor external governance.
CEO is chairman	Dummy variable: 1 if the CEO is also chairman of the board, 0 otherwise.
Board size	Number of directors sitting on the board.
	Panel B: CEO/executive characteristics
CEO seniority	Number of years since the executive has been appointed as the CEO (using BECAMECEO EXECUCOMP variable).
CEO from outside	Dummy variable: 1 if the CEO has been appointed from the outside, 0 otherwise.
Executive's seniority	Number of years since the executive has been working for the company (using the JOINED_CO EXECUCOMP variable or entry in the EXECUCOMP database).
Percentage of executives whose seniority is reported	Percentage of executives for which the JOINED_CO variable is nonmissing.
Executives turnover	Fraction of executives who are no longer reported as working for the company the following year in the EXECUCOMP database.
	Panel C: firm characteristics
Firm age	Logarithm of one plus the number of years since the firm has been in the COMPUSTAT database.
Firm size	Logarithm of book value of total assets (COMPUSTAT item AT).
ROA	Operating income after depreciation and amortization (OIBDP minus DP) divided by total assets (AT).
Market to book	Market value of assets over book value of assets (AT+(CSHO×PRCC)-CEQ-TXDB)/AT.
Cash-flow volatility	Defined as in Zhang (2006)— i.e., the standard deviation of cash flows from operations over the past 5 years, with a minimum of 3 years.
Number of business segments	Obtained from the COMPUSTAT segment files.
	Panel D: deal characteristics
Cumulative abnormal returns	Computed using a four factor model (Fama–French factors + Momentum), estimated over the 48 months preceding the acquisition.
All-cash deal	Dummy variable: 1 if the deal has been financed only by cash, 0 otherwise (from SDC).
Deal size	Logarithm of deal value (from SDC).

Figure 3. Definition of variables.

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