Bottom-Up Corporate Governance*

Augustin Landier [†]   David Sraer[‡]   David Thesmar[§]

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Abstract

In many instances, "independently minded" top ranking executives can impose strong discipline on their CEO, even though they are formally under his authority. This paper argues that the use of such a disciplining mechanism is a key feature of good corporate governance.

We provide robust empirical evidence consistent with the fact that firms with high internal governance are more efficiently run. We empirically label as "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 after large acquisitions. These results are unaffected when we control for traditional governance measures like board independence or other well-studied shareholder friendly provisions.

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: they commit the firm's resources to value destroying "pet" projects, build unprofitable empires, prevent valuable takeovers from happening, or even, in some rare yet highly publicized instances, engage in fraudulent window dressing or asset tunneling. To set up counter-powers to the CEO, the consensus among practitioners and regulators has been to rely on a strong board of directors, independent from the management. In many countries, informal codes of corporate governance have been recommending the appointment of independent directors for more than a decade.[1] In the US, the

†NYU, Stern School of Business, alandier@stern.nyu.edu

‡CREST and GREMAQ, sraer@ensae.fr

§CREST-ENSAE and CEPR, thesmar@ensae.fr

[1] As a matter of fact, many large firms have been eager to comply with their guidelines. For instance, the Cadbury Report issued in the UK in 1992 recommends that "the majority

recent wave of corporate scandals has triggered a stronger regulatory response, making the hiring of independent directors mandatory for firms listed on the major stock exchanges.[2]

Unfortunately, the findings of the academic literature regarding the efficiency of independent boards are mixed. To be fair, independent boards of directors seem to pay more attention to corporate performance when it comes to CEO turnover or compensation (Weisbach (1988), Dahya, Mc Connel and Travlos (2002)). Also, there is some limited evidence that the stock market hails the appointment of independent directors with small abnormal returns (Rosenstein and Wyatt (1990)). An unsettling result is, however, that there is no evidence that independent boards improve profitability or even the value of corporate assets.[3]

As a result, corporate governance scholars have recently shifted their attention away from board composition towards other dimensions of corporate governance apparent in executive compensation, corporate charters, bylaws or in state takeover laws. The main finding of this literature is that investor-friendly corporate governance provisions boost the price of firms' assets by making them more vulnerable to takeovers (Gompers, Ishii and Metrick (2003), Cremers, Nair and John (2005)). In fact, such provisions seem to matter *only* to the extent that they allow shareholders to cash in takeover premia (Bebchuk and Cohen (2004)). Apart from increasing vulnerability to takeovers, they seem to have no effect on actual corporate performance.

This paper suggests another way to measure corporate governance at the firm level. We start with the following hypothesis: in well governed firms, "independently minded" top executives are able to challenge and discipline CEO decision making, even though they are formally under his authority. We call this mechanism "internal governance". As it turns out, an index of such internal governance is strongly (and positively) correlated with corporate performance in US data.

This paper provides robust evidence that firms with good internal governance are more profitable and make better acquisitions. We start with the issue of measurement. On a panel of US listed corporations, we measure the quality of internal governance as the fraction of top ranking executives who joined the firm *before* the current CEO was appointed. Our underlying hypothesis is that the CEO is always involved in the appointment process of top executives. Executives hired after he took the job will thus (1) share the same preferences and/or (2)

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of non-executives on a board should be independent of the company" . The 1998 "Viénot II" Report in France proposes that "independent directors should account for at least one-third of the Board of Directors". Compliance with these guidelines was not mandatory, but widespread. For instance, by 1996, more than 50% of the UK firms surveyed by Dahya, Mc Connel and Travlos (2002) claimed to comply with the Cadbury Report recommendations.

[2] The NYSE and the NASDAQ require since 2003 a majority of independent directors on the board of companies listed on their exchanges.

[3] In fact, the correlation might even be negative. A likely reason for this is that poorly performing firms tend to appoint more outside director (Kaplan and Minton (1994)). Filtering out this endogeneity leads to no apparent correlation between profitability and board independence. (Baghat and Black (2003), Hermalin and Weisbach (2003)

have an incentive to "return the favor". Under this assumption, by focusing on the fraction of senior executives, we measure the extent to which executives are "independent" from the CEO.

The first piece of evidence is on corporate performance. We find that high internal governance (independent executives) is strongly associated with good performance, using various profitability measures. Our interpretation that internal governance *causes* performance holds in front of various robustness checks. In particular, our findings are not affected when we control for traditional, "external" corporate governance measures. This is not surprising as (1) there is no correlation between external and internal governance and (2), as mentioned above, external governance is uncorrelated with firm performance.

The second piece of evidence is on the costs of acquisitions, measured as the acquirer's long run stock returns. Consistently with previous studies, they are strongly negative (Loughran and Vijh, 1997). As it turns out, good internal governance is associated with a much smaller loss for the acquiror's shareholders. This is consistent with the fact that some independent executives - in particular the firm's CFO - can prevent overtly expansive acquisitions from taking place. Importantly, however, regular indices of *external* governance are not correlated with the shareholders' losses made after an acquisition. The board of director, takeover pressure or the design of corporate charter are less efficient at preventing bad/expansive acquisitions from happening.

Our interpretation of such evidence is the following: "Independent" executives may be more prone to disagreeing with their CEO and as a result may become less willing to implement his decisions. Such a need to elicit his top executives' support is taken into account by the CEO; it prevents him from undertaking controversial projects. Notice that the internal governance mechanism that we have in mind need not arise through an open conflict between the CEO and his subordinates, nor through public denouncement of corporate malpractices ("whistleblowing"). On the contrary, because an executive's job is difficult, complex and hard to monitor, it is always easy for unconvinced subordinates to shirk, slightly modify orientations or even lie about the feasibility of the CEO's strategy. Thus, talented leaders will always internalize such constraints, and because they do, will gain credibility among their executives.[4] This virtuous circle of "internal governance" acts on corporate efficiency on a day-to-day basis and there are thus reasons to believe that firms run that way will be more profitable on average.[5]

This suggests that our study has at least two normative implications for

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[4] The "internal governance" hypothesis is investigated theoretically in a companion paper (Landier, Sraer, and Thesmar, 2005). For more details about the model and its results, see also the conclusion of this paper.

[5] Obviously, a possible cost of diversity of opinion among executive is the potential paralysis of the chain of command; as executives are in general skeptical towards the CEO's orientations, they are less enthousiastic. Such organisation makes probably less mistakes, but is also less likely to engage with full strength into a particular direction.

Which effect dominates is an empirical question; particular features of the industry may tilt the tradeoff in one direction or another. In the context of corporate governance, the evidence presented in this paper points toward net benefits of internal governance.

practioneers of corporate governance. First, we learn from our statistical analysis that the intensity of such internal governance can be at least partly observed and could be included in the various indexes of the quality of a firm's corporate governance. Second, 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. Therefore, the human resource role of the board is not limited to the usually emphasized CEO succession problem.

The paper has five more sections. Section 2 describes the datasets 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 datasets we use to complete our study. We then discuss the construction of our index of "internal governance" and try to highlight its strengths and weaknesses.

2.1 Datasets

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

2.1.1 Internal Governance

The first dataset is the EXECUCOMP panel of the (at least) 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 non-independent 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. We focus on years from 1992 to 2002; we start by removing observations for which the executive identifying number is missing. We also exclude duplicate observations. In this (nearly) raw dataset, there are 120,762 observations, which correspond to some 1,840 firms per year (20,230 firm-years) with an average of 6 executives each (including the CEO). As it turns out, 3,499 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 BECAMECE variable (date at which the executive became CEO) is non missing, even though the CEOANN dummy is missing (misleadingly indicating that the executive is not the CEO). By filling in these gaps, we get back 2,472 firm year observations, and end up with **19,203** firm-years for which we know the identity of the CEO (totalling 115,933 observations altogether in the executive-firm-year dataset).

To compute the fraction of non indenpendent executives, we will need to compare the CEO's tenure and executives' seniorities within the company. A first approach - which corresponds to the results listed in the paper - is to rely on the seniority (within the firm) and tenure (within the position) variables reported in EXECUCOMP. The BECAMECE variable gives us, for the current CEO, the precise date at which he(she) has been appointed as CEO whether he(she) was hired from inside or outside the firm. Other executives' seniorities can be recovered using the JOINED_C variable, which reports the date at which the executive actually joined the firm. Unfortunately, these variables are often missing: we lose 2,291 firm-years (12,262 executives-firm-years) by focusing on firms where the CEO's date of appointment is non missing. We then lose a further 6,760 firm years (39,695 executives-firm-years) by restricting ourselves to firms where we have non missing seniority for at least one executive. We end up with **11,179** firms, from 1992 to 2002, for which we can now compute the fraction of executives hired *after* the current CEO. We call this measure of executive dependence **FRAC1**. Our interpretation is that FRAC1 is large when internal governance is poor.

We thus lose 19,203-11,179=8,024 firm-year observation in the process of constructing our measure of internal governance, mostly because many executives do not report their seniority within the firm. Even for 4,307 out of our remaining 11,179 firm-years, our internal governance measure will be computed by comparing the CEO's tenure with the tenure of only one executive.

This means that FRAC1 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 would be to dispense wih the seniority and tenure variables altogether and 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, we can compute the fraction of executives that were *not* listed in the dataset *before* the new CEO started on (we name this alternative variable **FRAC2**). This approach's main advantage is that we can dispense of both BECAMECE and JOINED_C variables, which are often missing. The cost is that the need to observe CEO turnover restricts the number of firm-years to **6,617**. This is less that the 11,179 observations required to compute FRAC1. Also, focusing on firms with at least one CEO turnover over the course of ten years may mechanically overweight firms facing governance problems. Last, executives enter the panel when they either (1) are hired by the firm, (2) make it in the five best paid people list or (3) the firm

decides to report their pay in its annual report. Hence, entry in the panel is a very noisy measure of hiring.

In spite of its shortcomings, the second - panel based - variable FRAC2 has a correlation coefficient of 0.41 with the first - seniority based - variable FRAC1. Both approaches led to results very similar in terms of size and significance, so we chose to focus here on the first measurement approach. Of course, estimates based on FRAC2 are available from the authors upon request.

2.1.2 Corporate Accounts

In the following, we will seek to correlate internal governance with corporate performance. Thus, for each firm-year observation from our EXECUCOMP sample, we retrieve firm level accounting information from COMPUSTAT (we lose only 161 observations in the merging process, for which we do not find the book value of assets). We match by GVKEY identifier. We compute profitability as return on assets (ROA). 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). We proxy firm size by log(total assets). We proxy firm age by taking the difference between the current year and the first year of presence in the COMPUSTAT panel. We construct the 48 Fama-French industry dummies using the firm's 4 digit SIC industry code. Variables constructions are presented in detail in appendix B.

2.1.3 External Governance

We will also be interested in looking at how our measure of internal governance correlates with traditionnal corporate governance measures. Thus, for each firm year observation, we gather information on corporate governance from IRRC's corporate governance and directors dataset. This dataset provides us with commonly used proxies for corporate governance. We use this dataset to compute 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 11,179 firm-year observations where we can measure internal governace, only 4,531 observations have information from IRRC. Hence, the sets of firms where both measures of external and internal governance are available do not overlap so well.

We will also look at the increasingly popular Gompers, Ishii and Metrick's (hereafter GIM) index of corporate governance, 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 and 2001. In other years, we assume that it takes the value that it had in the most recent year when it was non missing. Again, barely a half (5,872 over 11,179) of our observations have a defined GIM index.

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2.1.4 Acquisitions

To look at how top ranking executives are able to constrain CEO decision making, we will then focus on the effect of internal governance on the performance of acquisition. We obtain the list of firms who made significant acquisitions from SDC Platinium (deals of value larger than 300 millions $). Among many other variables, SDC provides us with the bidder's identifying number (CUSIP) and the transaction value of the deal. We focus on completed deals where the bidder has bought at least 50% of the shares.

For each firm-year observation in our EXECUCOMP sample described above, we compute the number of targets acquired during that year and the overall amount of the deal(s). In our base sample of 11,179 firm-years where the internal governance measure FRAC1 is available, 22% of the observations correspond to firms making at least one acquisition; as expected, 1998 and 1999 are the peak years, with more than 26% of the firms making at least one acquisition. Conditionnally on making at least one acquisition, most firm-years observations correspond to the firm striking only one deal (70%), but there are a few serial acquirers (3% of the observations correspond to at least 5 deals done during the year).

2.1.5 Stock Returns

We are also interested in computing the net benefit of acquisitions. To do this, for each acquirer, we compute 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 818 deals for which we know the acquirer, the date of the acquisition and FRAC1 (the share of executive appointed after the CEO took office). Serial acquirers are overrepresented. Out of 818 deals, 188 have been struck by one time buyers and 368 by firms doing at least 4 such large deals. Overall, our sample features 359 different acquirers.

We then match this deal dataset with the acquirer's stock returns as provided by CRSP. More precisely, we retrieve monthly acquirer stock returns from 48 months before each acquisition until up to 48 months after the deal. We remove deals with less that 48 months of acquirer returns history before the acquisition. This further restricts our sample size from 818 deals to 669. We then estimate a three factor Fama French model *for each acquirer* using the 48 pre-acquisition months available. We use the returns of the MKTRF, SMB and HML portfolios from Kenneth French's web site. We then use this model to compute abnormal returns both before and after the deal.

2.2 Constructing an Internal Governance Index

Our underlying assumption to measure internal governance is that the CEO is directly or indirectly involved in the recruitment process of top executives. Hence, executives appointed during his leadership are more likely to be loyal

to him and/or share his preferences than executives who were picked by his predecessor. The fraction of such executives, FRAC1, is therefore larger when internal governance is poorer.

However, one needs to be careful with the mechanical drivers of FRAC1. As a CEO's seniority increases, a larger fraction of executives have (mechanically) been appointed during his tenure. Conversely, more senior executives are on average more likely to have been hired before the current CEO. This suggests that FRAC1 is positively correlated with CEO tenure, and negatively with executive seniority. Also, outsider CEO often have the mandate to arrange an "executive shake-up". When recruited from the outside, CEOs have enough bargaining power vis à vis the board of directors to bring in their own teams. Hence, FRAC1 should be mechanically larger in the presence of outsider CEOs. Last, a new CEO's appointment is sometimes followed by immediate waves of departures and arrivals of executives that might be unrelated to internal governance (for example, top-executives that were hoping for the top job leave the firm and need to be replaced).

It might be tempting to see these mechanical 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. Ignoring these sources of variation would thus lead to biased estimates of the effect of internal governance on performance. For example, CEO tenure may be directly affecting 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" in the corporate suite (Hayes, Oyer and Schaefer, 2005), which mechanically reduces executives' average turnover. We therefore choose be to as conservative as possible and filter out these mechanical effects when we seek to measure "internal governance". Also, we will include them as controls in all performance regressions.[6]

More precisely, our internal governance (henceforth IG) index is defined as the residual of the regression of the fraction of executives who joined the firm during the CEO's tenure on its expected mechanical correlates:

$$
\begin{aligned}
FRAC1_{it} \;=\;\; & a + b.CEOTEN_{it} + c.EXECSEN_{it} + d.OUTSIDE_{it} \\
& + e.\frac{1}{KNOWN_{it}} + f.FRAC1\_1Y_{it} + \delta_t + \varepsilon_{it}
\end{aligned} \tag{1}
$$

where, for firm i in year t, $CEOTEN_{it}$ stands for CEO's tenure (in years), $EXECSEN_{it}$ for average executives's seniorities within the firm. $OUTSIDE_{it}$ is a dummy indicating whether the CEO comes from outside the firm. $KNOWN_{it}$ is the number of executives for which seniority is reported in the data and $FRAC1\_1Y_{it}$ the fraction of executives that arrived within a year of the CEO's nomination. We also include year dummies δ_t. Once this regression is estimated, we define our internal governance (hereafter IG) index as the residual

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[6]By virtue of Frisch Waugh's theorem, both approaches are redundant. Our residual approach will however be helpful when we look at stock returns following acquisitions, since we will simply compare positive and negative residual firms.

ε_{it}. It is larger when more executives than expected were hired after the current CEO was appointed. Hence, high values of the IG index mean poor internal governance.

The regressions results are reported in table 1: column 1 includes all mechanical controls except $FRAC1\_1Y$, the fraction of executives who joined the firm in the year following the CEO's appointment. Column 2 adds this variable and column 3 also includes firm level controls (to capture possible size and firm age effects). As it turns out, all these mechanical drivers work the way we expect them to: the fraction of relatively recent executives increases when CEO tenure rises, when many executives joined right after CEO nomination and decreases with executive seniority. In line with equation (1), the residual IG index is taken from the equation of column (2); it excludes firm level filters, but they are included as controls in the performance regressions. The sample distribution of IG is plotted in figure 1: It is symmetric, well centered around zero, and has only one mode.

Last, one might be worried that our internal governance index is correlated with intense merger activity in the past. After many mergers, top executives from the targets may have joined the executive suite, mechanically increasing our index. Thus, our index may be a proxy for a past M&A frenzy. If the firm still has trouble "digesting" its past acquisitions, it is likely to underperform on both accounting and stock price measures, which is precisely what we look at in this paper. To adress this concern, we tried to correlate our residual IG index with the number of past acquisitions for a cross section of firms in 2000. We found *no* evidence that high IG index firms had bought a particularly large number of firms in the 1990s. This is robust to various controls and to the year chosen. Our index is thus not a proxy for M&A "indigestion".

3   Internal Governance and Corporate Performance

We start with investigating the correlation between internal governance and corporate performance. Figure 2 provides a first look at the relationship between our index IG and corporate performance. In this figure, we have taken our base sample and splitted the sample distribution of our IG index into 5 quantiles. Then, for each quantile, we have computed the mean industry[7] adjusted performance, as well as the 95% confidence band using a normality assumption. Performance is measured through ROA (left panel) and market to book value of assets (right panel). Figure 2 shows a positive and statistically significant association between internal governance (low values of our IG index) and corporate performance.

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[7] We used Fama French's 48 industries classification.

3.1 Basic Results

However, as discussed above, some mechanical correlates of internal governance may be correlated with corporate performance. Outsider CEOs may have been recruited in badly performing firms. Because of inexperience, junior CEOs may be on average worse managers. We thus move to a more multivariate analysis that allows to capture these effects. We run the following regressions:

$$Y_{it} = \alpha + \beta IG_{it-1} + (IG - controls)_{it} + (firm - controls)_{it} + \varepsilon_{it} \quad (2)$$

where Y_{it} measures corporate performance (ROA, ROE, market to book value of assets). IG_{it-1} is our measure of internal governance, lagged one period.[8] We include two sets of controls. First, the mechanical correlates of our index are included since they may be argued to be directly affecting 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). Secondly, we add firm level controls that are traditionnally strong correlates of performance: log(firm age+1), log(assets), year dummies, and 48 Fama French industry dummies. Since we have several observations per firm (corresponding to different years), and that IG_{it} is strongly persistent, it is very likely that the ε_{it} are not independent between different observations of the same firm i. Hence, we correct for this form of heteroskedasticity by looking at Hubert-White-Sandwich estimates.

Regression results are gathered in table 2. Columns 1 to 3 use ROA as dependent variable in equation (2); columns 4 to 6 use market to book value of assets.[9] Columns 1 and 4 report regression results only with firm level controls, columns 2 and 5 include the mechanical correlates of the index. Columns 3 and 6 further control for initial performance, as a limited attempt to control for fixed effects.[10] Each time, our index of governance is significantly and robustly correlated with performance: one standard deviation increase in IG results in a decrease of about 1 percentage point of ROA and 0.08 percentage point of market valuation of assets. The explanatory power of this effect is not very large (some 10% of standard deviation of the explained variable), but, as we will see, it is consistently significant and easily beats usual "external" corporate governance measures. Also, the small size of our coefficients should not surprise us given the high noisiness of our internal governance measure FRAC1 (see section 2.1).

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[8] We seek to partially avoid obivous simultaneity biases, such as the ones we discuss below. As it turns out, our results are insensitive to the time-lag used between our performance measure and our IG index.

[9] Similar results obtain with return on equity, but we did not report them to save space.

[10] We have also run, but not reported, regressions of corporate performance on FRAC1, the fraction of executives hired after the CEO took office, as well as various controls. FRAC1 turned to be highly significant in all specifications we tested. This is not surprising by virtue of Frisch Waugh theorem.

3.2 Robustness Checks and Causality

Table 3 checks whether the correlation reported in table 2 is present separately in all years that our sample covers, and is not driven by a particular subperiod. In this table, we report, for both measures of corporate performance, the point estimate of β in (2), including both firm level and mechanical controls as in columns 2 and 5 of table 2, except that one regression is run for each year. As it turns out, the point estimate is fairly stable across periods and significant in most years.

There are many stories consistent with the relation found in tables 2 and 3. Our favored interpretation is that strong internal governance is a way for shareholders to "hold the CEO on a tight leash" and prevent the firm from undertaking crazy projects or building the CEO's empire. One could, however, argue that the causality runs in the opposite direction; declining performance may actually trigger an increase of IG (a drop in our measure of internal governance). One plausible story could be based on management turnover. In most firms, poor performance triggers a change in the management team; when the situation is critical, the newly appointed CEO is more likely bring his own team. In this scenario, internal governance worsens *because* performance declines, not the contrary. Another story could simply be that, when the firm is about to do badly, top executives have a higher propensity to leave than the CEO; IG would rise even *before* performance declines.

While we have no "smoking gun" to assess the causal relationship between internal governance and corporate performance, we can at least take preliminary steps to reduce the likelihood of reverse causation by looking at the joint dynamics of internal governance and corporate performance. Do changes in corporate performance happen before, or after changes in internal governance ? To see this, we run the following two regressions:

$$
\begin{aligned}
Y_{it} &= \alpha + \beta IG_{it-1} + \gamma Y_{it-1} + controls_{it} + \varepsilon_{it} &\quad (3)\\
IG_{it} &= a + bIG_{it-1} + cY_{it-1} + controls_{it} + \varepsilon_{it} &\quad (4)
\end{aligned}
$$

where Y_{it} is the firm's corporate performance at date t. If changes in corporate performance tend to happen *before*, we should not be able to reject that $c > 0$ and $\gamma = 0$. Such a test can be thought of as the panel data version of causality tests a la Granger in times series analysis.

Estimates of equations (3)-(4) are reported in table 4; the first two columns report estimates with firm level controls (age, size, year and industry dummies), while columns 3 and 4 also control for the potential correlates of performance included as controls in the regression defining our internal governance index. Results suggest that, in general, changes in internal governance happen *before* changes in corporate performance.

Of course, this does not completely rule out the possibility that overall management turnover occurs in response to an expectation of *future* bad performance (two years ahead). To answer this question, we looked at the predictive power of IG_{it-2} or even IG_{it-3} on current performance Y_{it} by running the

following version of (3-4):

$$Y_{it} = \alpha + \beta IG_{it-3} + \gamma Y_{it-3} + controls_{it} + \varepsilon_{it}$$
$$IG_{it} = a + bIG_{it-3} + cY_{it-3} + controls_{it} + \varepsilon_{it}$$

whose estimation resulted in conclusions identical to those of (3-4).

4 Internal Governance and Acquisitions

To test that internal governance increases the quality of the firm's strategy by constraining the CEO in his choices, it is very natural to look at is the acquisition policy of the firm. We know since at least Loughran and Vijh (1997) that the returns to long-run investors in acquiring firms are in general negative, in particular when the deal is financed with stock issues. Hence, acquisitions, in particular large ones,[11] are controversial strategic choices: the loss of shareholder value may be big (Moeller, Schlingemann and Stulz (2005)), the restructuring of the acquiring firm's operations is costly, etc.

Our first investigation is about the impact of internal governance on acquisition *policy*. Its result - non reported, but available from the authors - is that firms with good internal governance do not make less acquisitions and that their acquisitions do not correspond to smaller firms. To see this, we followed Gompers, Ishii and Metrick (2003), and used SDC to compute, for each firm-year of our EXECUCOMP extract: (1) the number of deals of more than 10 millions \$ 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 capitalisation. None of these measures of acquisition intensity turned out to be correlated with our IG-index.

Our second investigation is on the impact of internal governance on acquisition *quality*. To measure the performance of acquisitions, we follow Loughran and Vijh (1997) and focus here on the acquirer's long term abnormal stock returns, which we compute using a Fama-French 3 factor model estimated *at the firm level* in the 48 month preceeding the acquisition.

We break the sample of transactions down into two parts (each having some 400 deals): deals where the acquirer has above median IG index (low internal governance), and deals where the acquirer has below median IG index (high internal governance). Columns 1 and 2 of table 5 report, separately for high and low internal governance acquirers, the average cumulative - starting 12 months before the deal - abnormal returns up to 48 months after the deal. Column 3 reports the difference in cumulative returns, and tests for the equality of the average returns using a standard t-test, without assuming the equality of variances of the distribution. Figure 3 plots cumulative abnormal returns

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[11] In a recent paper, Bradley and Sundaram (2004) look at the effect of the size of the acquisition on acquirer's stock returns. They find that both long run returns, as well as announcement returns, tend to be very negative when the target size is large, but positive when the target size is small.

for each month, separately for low (left panel) and high (right panel) internal governance acquirers.

We find that firms with low internal governance do largely underperforming acquisitions. Precisely, 4 years after the acquisition, firms with good internal governance have on average lost some 15% of shareholder value, which is significantly different from zero. However, firms with poor internal governance have lost almost 30%, which is both significantly different from zero and from the wealth lost by long term shareholders of well governed firms. This difference is robust to (1) the way we split the sample, as long as there are enough observations in each category (high/low governance) and (2) to the pricing model (results are somewhat noisier, but still point in the right direction if we use the CAPM or if we merely substract the market return from stock returns) Note also that, reassuringly, on our sample of large deals, the average long term shareholder loses wealth; this is consistent with findings from Bradley and Sundaram (2004).

5   External Versus Internal Governance

Hence, we have shown that our measure of "internal governance" correlates well with (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 imperial 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 enough loyalty, which makes our IG index go up. At the same time, weak boards have no mean to oppose large wasteful acquisitions.

This alternative story puts external governance back to the fore: when "external" governance is bad, the firm performs less well, and most executives are more junior than the CEO. If this were true, however, the existing literature on "external" governance would have had no trouble in finding a positive statistical relation between corporate performance and any measure of governance quality. Existing contribution have repeatedly failed to find a positive correlation between the share of outsiders in the board and profitability (see Baghat and Black (2003) and also Hermalin and Weisbach (2003) for a survey). Using corporate charter based measures of governance, Gompers, Ishii and Metrick (2003) do not find a consistent correlation between investor friendly firm level institutions and operating performance. Thus, the available evidence casts doubts on internal governance being a proxy of external governance in our regressions.

We look directly at the correlation between our measure of internal governance and some measures of "external" governance that are usually used in the literature. To do this, we regress our internal governance proxy on (1) the Gompers-Ishii-Metrick index of governance, which takes large values for management-friendly corporate charters, (2) the fact that the CEO is also the chairman of the board, which measure the degree of CEO power on the board

(see for instance Adams, Almeida and Ferreira (2004)), (3) the size of the board (Yermack (1996) shows that firms with large boards are less efficient), (4) the share of current employees and (5) of past employees as corporate directors. The first measure is available for a subset of our main sample - the largest firms. The second measure is available for our whole sample - it is extracted from EX-ECUCOMP. The third, fourth and fifth measures are extracted from IRRC's boards and directors database, and available only for a subsample of our main dataset.

Overall, the evidence is not consistent with internal governance being a proxy of external governance. Regression results, controlling for both firm level variables and mechanical correlates of IG are reported in table 6. Columns 1-3 include the external governance indices separately, and column 4 puts them all together. Some results slightly point toward a correlation between both governance measures. Our index is only weakly correlated with the charter based GIM index (the coefficient is small and significant at 10%). Also, internal governance is worse when the CEO is chairman, a hint that CEOs who are powerful inside the firm are also powerful in the boardroom. The only other significant relation is more surprising: internal governance turns out to be better when there are more employees sitting on the board of directors. One plausible interpretation of this negative correlation between internal and external governance is the following. The peculiarity of these board members (employees) is their intimate knowledge of human capital and power struggles within the firm. Insiders sitting on the board have thus enough information about the competence of executives to efficiently interfere with the CEO in the nominating process. By preventing the CEO from appointing new subordinates, they enforce a high level of internal governance. Such an interpretation does, however, reverse the conventionnal wisdom on employees-directors.

Table 6 suggests there might be some weak correlation between internal and external governance. We thus provide in table 7 new estimates of equation (2) including an external governance measure as further control. Columns 1-3 focus on ROA as a measure of performance, while columns 4-6 look at the effects on market valuation of assets. Columns 1 and 4 include the GIM index only and the firm controls and mechanical correlates of (2). Columns 2 and 5 further add our internal governance IG index. Columns 3 and 6 also include the other external governance indices.

Consistently with Gompers, Ishii and Metrick (2003), the GIM index is negatively correlated with market to book, but not with operating performance. This correlation with market to book disappears, however, once we include our index of internal governance. To be fair, the coefficient estimate becomes noisier, but not smaller, partly because the number of observations where our index and theirs overlap is less than 5,000. Notice that both in columns 2 and 5, the coefficient on internal governance is identical to results from table 2.

Last, the inclusion of the other external governance indices shows that (1) most are not really correlated with corporate performance, which is consistent with the existing literature, (2) the share of inside directors is *positively* correlated wth performance (as a result from the selection effect discussed in Hermalin

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and Weisbach (2003)) and (3) the effect of our index remains unaffected by the inclusion of these controls, even though they reduce sample size considerably.

Before concluding, we run a similar horse race between external and internal governance for our acquisition returns result. The implest way to do it is to ask whether after acquisition, the long run stock returns of acquirers with low external governance underperform those of acquirers with good external governance. To do this, we repeat the exercise of section 4 by computing long run cumulative abnormal returns for acquirers with above and below median GIM index. Average long run returns are reported in columns 4-6 of table 5, as well as in figure 4. Column 4 displays returns to long term shareholders of management friendly companies, column 5 does the same for shareholder friendly companies. Column 6 computes the difference and tests for equality. As is apparent from both table and figure, the two subgroups display strong negative returns to large acquisitions (15-20% after 4 years); the difference between them is, however, statistically insignificant and small. This is in sharp contrast with the large explanatory power of our IG index.

6   Conclusion

This paper argues that the careful design of the chain of command *within the firm* affects the efficiency of the decisions that are taken. Our informal argument is that independently minded executives always impose more constraints on the CEO than executives that owe him their jobs. These constraints may prevent controversial decisions from being taken, and have in general the useful effect of de-biasing the CEO. To do this, top executives do not have to formally disobey, or enter in open conflict with their boss. They may simply work less enthusiastically.

This argument is explored theoretically in a companion paper (Landier, Sraer and Thesmar, 2005). Our framework is very simple: a firm has to choose between two projects A and B. A CEO receives a private signal on which project is best, and orders his executives which project to implement. They can put in various degree of effort. Importantly, both CEO and executives have a bias toward A or B, which can be similar (executive dependence) or different (executive independence). We thus make two key assumptions. First, the CEO has privileged information on the project's quality. Second, the top executives have to implement the project that they are ordered, and cannot openly disobey.

We find that it might be optimal from an (unbiased) shareholder perspective to have executives who disagree with the CEO over the preferred course of action. The reason is that the CEO has to "elicit the executive's support", i.e. he needs them to put him high effort. This constraint will reduce his bias and lead to an improvement in decision making. This effect will be reinforced by increasing credibility: executives know that the CEO will be less biased, and thus believe his orders more often. The cost of such de-biasing is that skeptical executives are always less motivated.

An important normative lesson of the model is that, when the CEO's private

information is very relevant, the former effect dominates the latter: bottom-up governance improves corporate performance. This last prediction is in fact supported by the data. In unreported regressions, we found that in diversified firms, where CEOs have little information advantage over division managers, internal governance does not improve performance. It does, however, matter a lot for focused corporations. This, along with the evidence gathered in this paper, suggest that "bottom-up" governance is a powerful mechanism. We document in our companion paper that such a feature pervades in many organizations, in particular in bureaucracy, where decision makers (politicians) have little informational advnatage over their subordinates (bureaucrats). Further empirical investigation of its achievements and shortcomings is high on our research agenda.

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A Tables

Table 1: Mechanical Correlates of Internal Governance

	Fraction of executives appointed after the CEO		
	(1)	(2)	(3)
CEO Seniority	0.02***	0.02***	0.02***
	(0.00)	(0.00)	(0.00)
Executives' mean Seniority	-0.00***	-0.00***	-0.00***
	(0.00)	(0.0)	(0.0)
Fraction of executives where	-0.09***	-0.06***	-0.06***
seniority is reported^{-1}	(0.00)	(0.00)	(0.00)
CEO Hired From Outside	0.06***	0.03***	0.04***
	(0.01)	(0.01)	(0.01)
Fraction of executives appointed	-	0.61***	0.61***
in the year foll. CEO nomination		(0.02)	(0.02)
Ln(Firm Age)	-	-	-0.02***
			(0.01)
Firm Size	-	-	-0.01**
			(0.00)
48 industry dummies	No	No	Yes
Year dummies	Yes	Yes	Yes
Observations	9,625	9,625	9,017

Source: OLS estimates, allowing for heteroskdastic residuals, clustered at the firm level. The fraction of executives appointed after the CEO is regressed on various variables suspected to be mechanically correlated: column 1 controls for the fact that the CEO is an outsider, the seniority of the CEO as well as for the mean seniority of executives ; column 2 adds the number of executives appointed in the first two years following the CEO nomination ; column 3 adds firm specific control, namely Firm Size as measured by log of Asset, the log of Firm Age and the 48 Fama-French Industries. *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

Table 2: Accounting Performance and Internal Governance

	Return on Assets			Market to Book		
	(1)	(2)	(3)	(1)	(2)	(3)
Internal governance	-0.06***	-0.06***	-0.04***	-0.49**	-0.52***	-0.32**
(delayed by 1 year)	(0.01)	(0.01)	(0.01)	(0.17)	(0.17)	(0.14)
Firm initial profitability	-	-	0.48***	-	-	0.43***
			(0.03)			(0.03)
Firm log(assets)	Yes	Yes	Yes	Yes	Yes	Yes
Firm log(age)	Yes	Yes	Yes	Yes	Yes	Yes
CEO seniority	No	Yes	Yes	No	Yes	Yes
Executives' mean sen.	No	Yes	Yes	No	Yes	Yes
Frac. Exec. whose sen is reported	No	Yes	Yes	No	Yes	Yes
CEO has been hired from outside	No	Yes	Yes	No	Yes	Yes
Frec. Exec. "from CEO team"	No	Yes	Yes	No	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
48 Industry effects	Yes	Yes	Yes	No	Yes	Yes
Observations	8,011	7,180	6,630	6,951	6,524	5,834

Source: Huber-White-Sandwich estimates, allowing for correlation of all observations of a given firm. "Internal Governance" is the share of EXECUCOMP executives who joined the company after the CEO was appointed. Corporate performance is measured through Return on Assets (first three columns) and through market valuation of assets (last three columns). All regressions use log(book assets), year dummies and the 48 Fama French industry dummies. In columns 2 and 5, we add the CEO's tenure as CEO, the executives' average tenure in the firm and log of firm age (as proxied by date of entry in COMPUSTAT). Column 3 (resp. column 6) further adds the firm's ROA (resp. market to book) computed in its first year of presence in COMPUSTAT after 1991, as a limited attempt to control for firm level unobserved heterogeneity. *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

Table 3: Accounting Performance and Internal Governance - Year by Year Results

	ROA	Market To Book
1993	-7.0	-0.23
	(3.1)	(0.36)
1994	-9.1	-0.62
	(2.8)	(0.28)
1995	-9.5	-0.50
	(2.4)	(0.29)
1996	-9.5	-0.59
	(2.4)	(0.30)
1997	-4.5	-0.70
	(2.2)	(0.30)
1998	-8.6	-0.77
	(2.2)	(0.30)
1999	-4.9	-0.78
	(2.0)	(0.28)
2000	-4.5	-0.51
	(2.2)	(0.28)
2001	-4.0	-0.18
	(2.0)	(0.28)
2002	-5.5	-0.33
	(2.1)	(0.22)
Fama-Mac Beth	-6.7	-0.52
	(0.7)	(0.07)

Source: OLS estimates. Regressions of corporate performance on internal governance and controls are run each year separately. Internal governance is measured as the share of EXECUCOMP executives who joined the company after the CEO was appointed. The coefficients on internal governance and their standard error are reported. Each column correponds to the choice of one corporate performance measure (ROA or M/B). Corporate performance is then regressed on one-year-lagged internal governance, controlling for CEO and executive seniority, log(assets), log(firm age), sales growth and 48 industry-dummies. The specification is identical to table 2, columns 2 and 5. The bottom row indicates the Fama-Mac Beth estimate. *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

Table 4: Accounting Performance and Internal Governance - Granger Causality

	Internal Governance	ROA	Internal Governance	ROA
Internal governance	0.82***	-0.02***	0.81***	-0.02***
(lagged 1 yr)	(0.01)	(0.00)	(0.01)	(0.00)
ROA	-0.00	0.77***	-0.01	0.75***
(lagged 1 yr)	(0.00)	(0.01)	(0.01)	(0.01)
Firm log(assets)	Yes	Yes	Yes	Yes
Firm log(age)	Yes	Yes	Yes	Yes
CEO seniority	No	No	Yes	Yes
Executives' mean sen.	No	No	Yes	Yes
Frac. Exec. whose sen is reported	No	No	Yes	Yes
CEO has been hired from outside	No	No	Yes	Yes
Frec. Exec. "from CEO team"	No	No	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
48 Industry effects	Yes	Yes	Yes	Yes
Observations	7,464	7,866	7,113	7,060

Source: Hubert-White-Sandwhich estimates, allowing for residuals correlated across observation of each firm. In the first panel, column 1 reports the estimate of a regression of internal governance on past internal governance and past corporate performance. Column 2 reports the result of a regression of corporate performance on past internal governance and past corporate performance. Both regressions control for industry and year fixed effects. The second panel reports the same regression results, with additional firm level controls, as reported in the table. Internal governance is measured as the share of EXECUCOMP executives who joined the company after the CEO was appointed. Corporate performance is measured through Return on Assets. Standard errors are between parentheses. *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

Table 5: Long Run Abnormal Returns Following a Major Acquisition

	Internal Governance			External Governance		
	Low	High	Difference	Low	High	Difference
Months since acquisition						
-12	-	-	-	-	-	-
-6	0.3	-0.5	-0.8	0.6	0.0	-0.6
0	-0.1	-3.2*	-3.1	-0.2	-0.9	-0.7
+6	-5.3**	-4.5**	0.7	-4.4**	-4.0*	0.4
+12	-13.4***	-7.1***	6.4*	-7.3***	-7.1***	0.2
+18	-23.3***	-10.9***	12.3***	-13.2***	-11.2***	2.0
+24	-26.1***	-12.7***	13.3***	-12.4***	-15.4***	3.0
+30	-30.7***	12.7***	18.0***	-14.9***	-16.0***	-1.1
+36	-28.7***	-14.4***	14.3***	-15.0***	-15.9***	-0.9
+42	-29.0***	-12.2***	16.7***	-13.2***	-17.9***	-4.6
+48	-28.0***	-13.8***	14.2***	-13.5***	-18.9***	-5.4

Source: 818 acquisitions from SDC Database. Abnormal returns are computed after estimating, for each acquirer, a 3 factor Fama French model on the 48 months preceeding the acquisition. Cumulative abnormal returns, starting 12 months before the deal, are computed for each firms. Column 1 reports the average cumulative abnormal returns of acquirers with internal governance lower than median every 6 months. Column 2 does the same for above median internal governance acquirers, while column 3 reports the difference. In all columns, stars represent standard t-tests of equality to zero: *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

Table 6: Are Internal and External Governance Related ?

| | Internal Governance | | | |
	(1)	(2)	(3)	(4)
GIM Governance index	0.003*	-	-	0.001
	(0.002)			(0.002)
CEO is Chairman		0.032***	-	0.01
		(0.011)		(0.01)
Board size	-	-	-0.002	-0.000
			(0.002)	(0.002)
Frac directors	-	-	-0.11**	-0.08
who are current employees			(0.04)	(0.05)
Frac indep. directors	-	-	-0.01	-0.01
who are former employees			(0.05)	(0.06)
CEO/Firm controls	Yes	Yes	Yes	Yes
48 industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Observations	5,398	8,229	3,470	2,622

Source: OLS estimates, allowing for heteroskdastic residuals. Internal governance (see table 1) is regressed on various corporate governance indicators, controlling for log(assets), log(firm age), sales growth, 48 industry-dummies, year fixed effects, CEO tenure and executive seniority. Columns 1 to 4 add various corporate governance controls. Column 1 uses the corporate charter based corporate governance index from Gompers,Ishii and Metrick (2003). Column 2 uses the number of directors on the board as a measure of board effectiveness. Columns 3 uses two classical measures of board dependence to the CEO: the share of currently employed directors and the share of past employees. Column 4 uses all four measures simultaneously. *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

Table 7: Internal Versus External Governance

	Return on Assets			Market To Book		
	(1)	(2)	(3)	(1)	(2)	(3)
Internal governance	-	-0.06***	-0.06**	-	-0.75***	-0.84***
(delayed by 1 year)		(0.01)	(0.02)		(0.21)	(0.28)
GIM governance index	-0.001	-0.001	-0.001	-0.02***	-0.02	-0.01
	(0.001)	(0.001)	(0.001)	(0.01)	(0.01)	(0.02)
CEO = Chairman	-	-	0.003	-	-	-0.21**
			(0.007)			(0.10)
Board size (# directors)	-	-	-0.002	-	-	-0.02
			(0.001)			(0.02)
% Directors currently	-	-	0.07**	-	-	0.58
employed			(0.03)			(0.39)
% Directors previously	-	-	0.01	-	-	-0.58
employed			(0.03)			(0.46)
Firm/CEO controls	yes	yes	yes	yes	yes	yes
Year effects	yes	yes	yes	yes	yes	yes
48 Industry effects	yes	yes	yes	yes	yes	yes
Observations	9,304	4,792	2,432	9,199	4,339	2,146

Source: Huber-White-Sandwich estimates, allowing for correlation of all observations of a given firm. The measure of internal governance is the share of EXECUCOMP executives who joined the company after the CEO was appointed. Corporate performance is measured through Return on Assets (first three columns) and through Return on Equity (last three columns). All regressions use as controls: CEO and executive seniorities, sales growth, log(book assets), log(Firm age), year dummies and the 48 Fama French industry dummies. Columns 1 and 4 use the corporate charter based corporate governance index from Gompers,Ishii and Metrick (2003). Columns 2 and 5 use the number of directors on the board as a measure of board effectiveness. Columns 3 and 6 use two classical measures of board dependence to the CEO: the share of current and past employees serving as directors. The limited availability of corporate governance data is responsible for the drop in observation number. *, ** and *** means statistically different from zero at 10,5 and 1% level of significance.

B   Variable Definitions

Return on Assets (ROA) is Operating Income Before Depreciation (item 13) minus Depreciation and Amortization (item 14) over Total Assets (item 6).

Return on Equity (ROE) is Net Income (item 172) over Common Equity (item 60)

Assets if Total Assets (item 6)

Market to Book is the ratio of market to book value of assets (item 6). The market value is computed as Total Assets (item 6) plus the number of common shares outstanding (item 25) times share price at the end of the fiscal year (item 199) minus Common Equity (item 60) minus Deferred Taxes (item 74).

Industry dummies are computed using the four digit SIC codes as reported in COMPUSTAT, and then aggregating them into the 48 Fama and French industries. The correspondance table was taken from Kenneth French's web site.
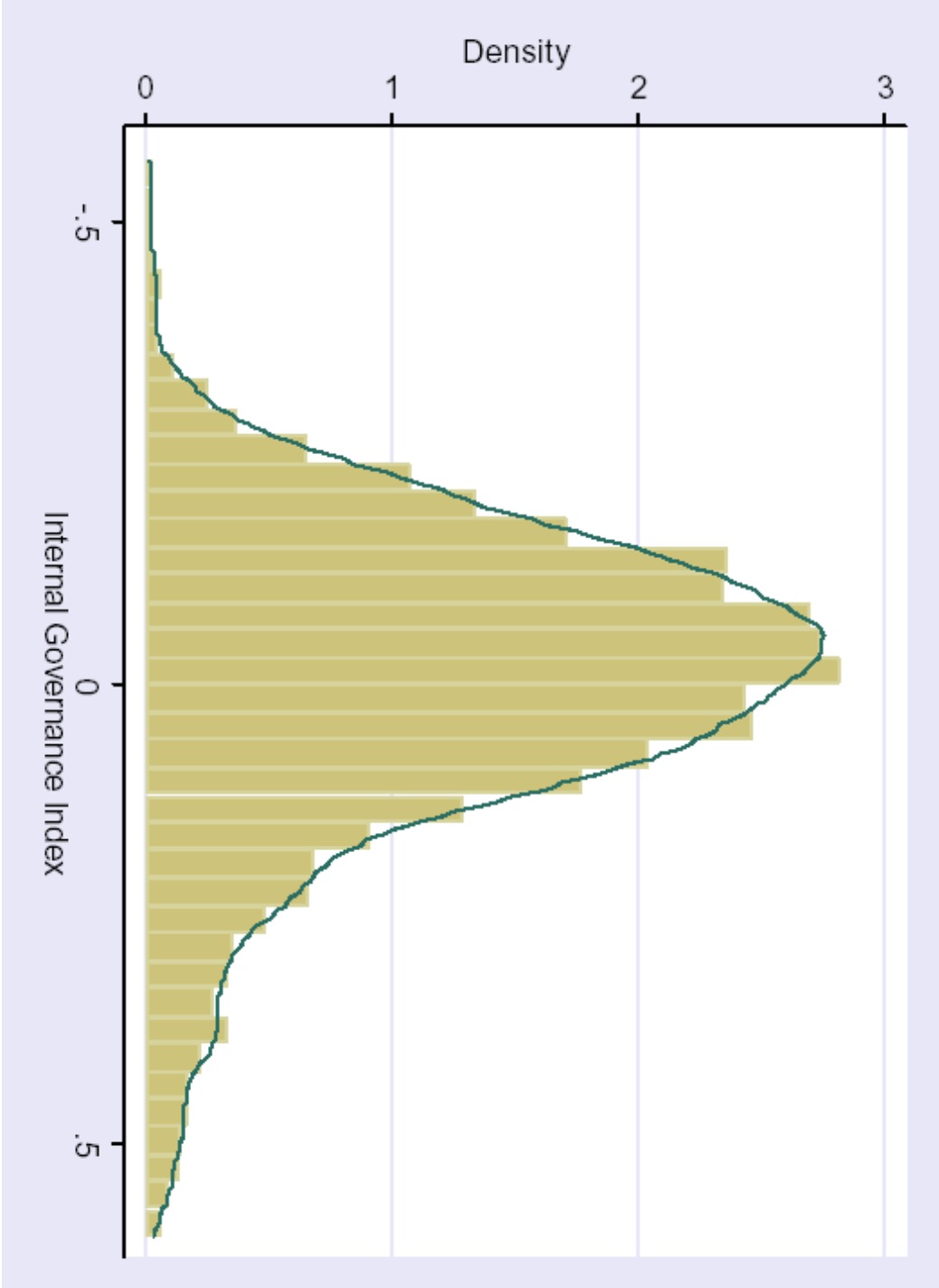
C Figures

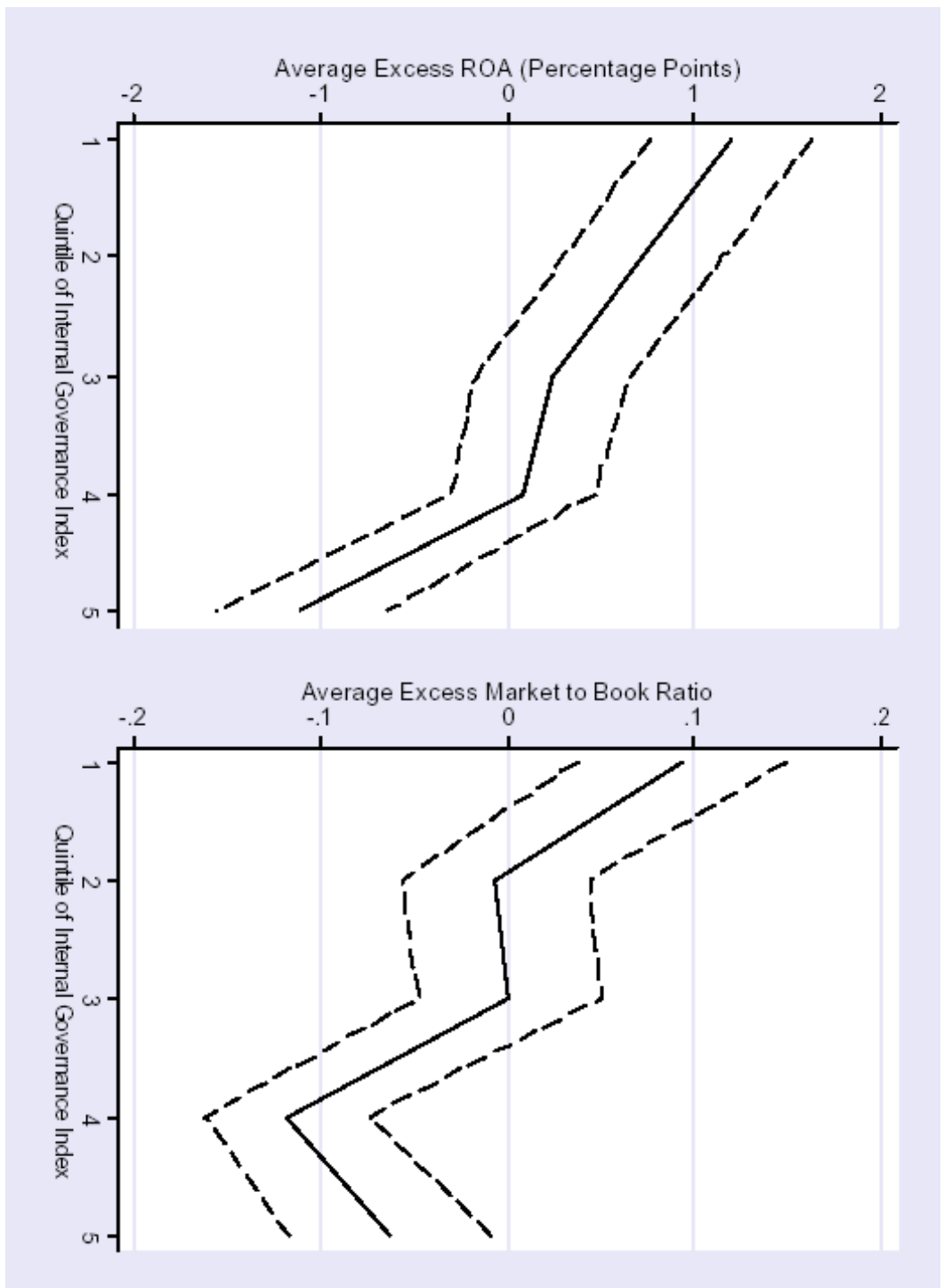Figure 1: Sample Distribution of the Internal Governance Index

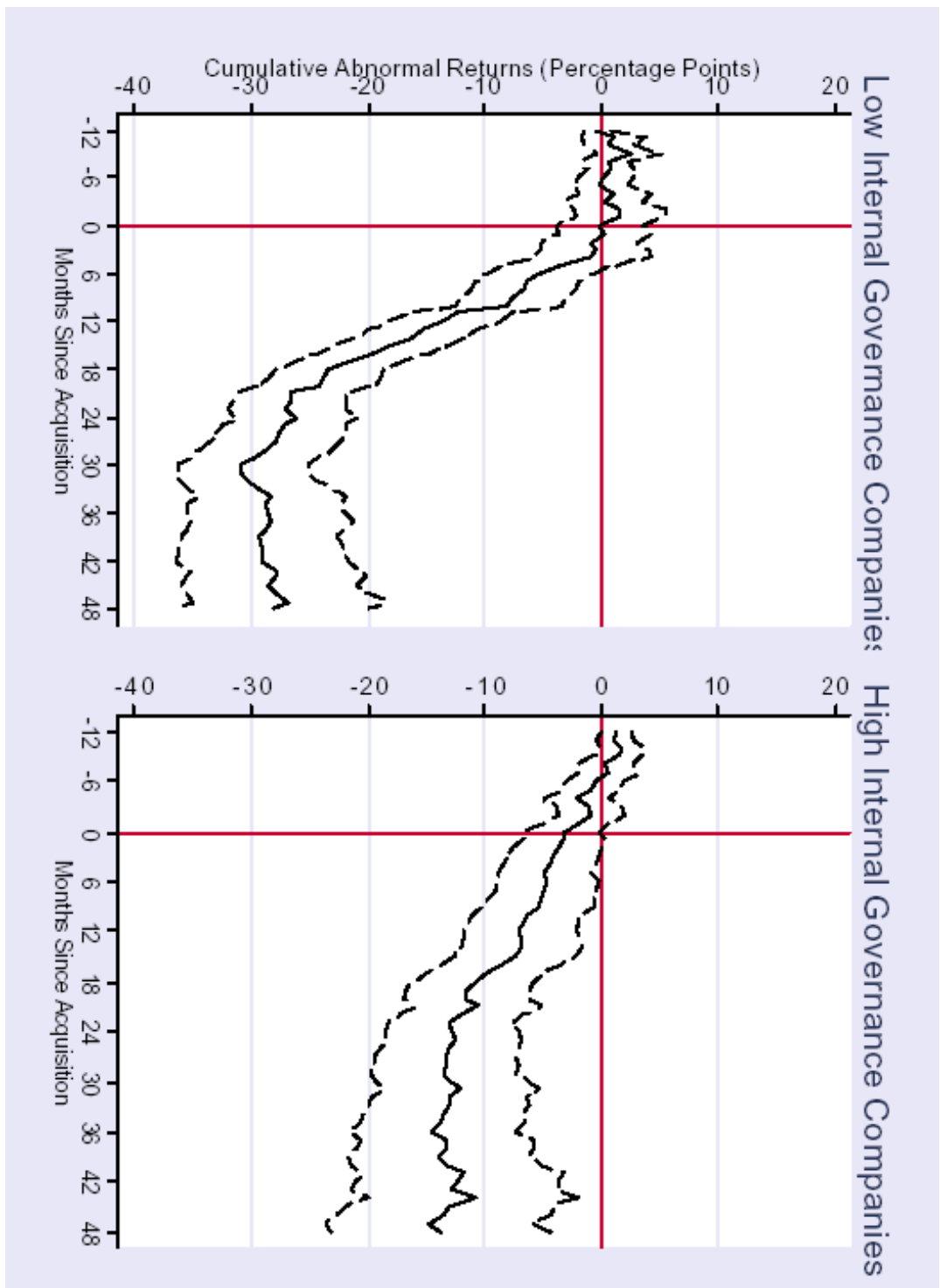Figure 2: Average Industry Adjusted Performance As A Function of Internal Governance

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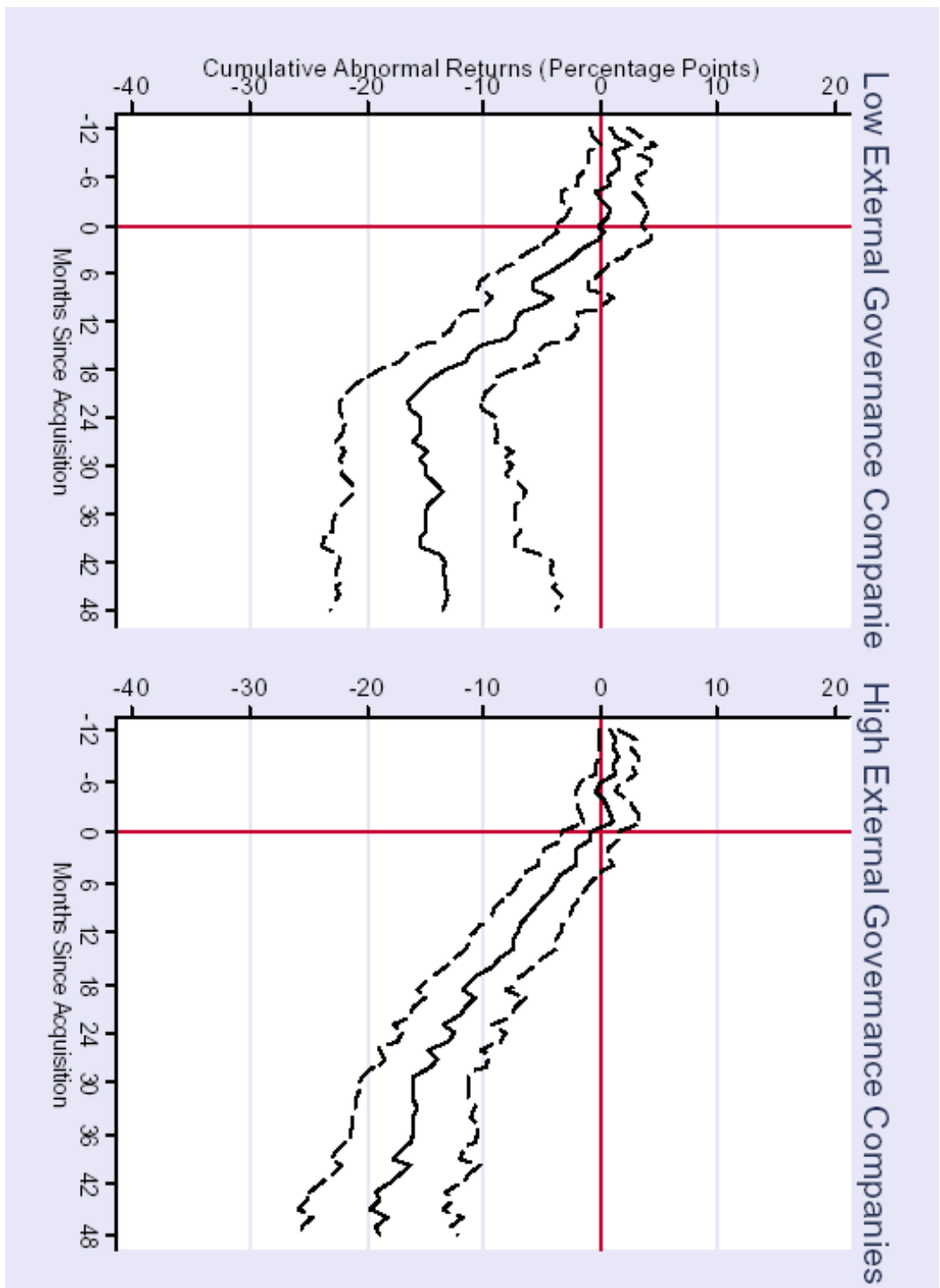Figure 3: Long Run Returns of Acquisitions: High Versus Low Internal Governance

Figure 4: Long Run Returns of Acquisitions: High Versus Low External Governance