

In Defense of Theory in the Study of Corporate Governance

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Presentation at Governance Conference

Rome, Italy – October 2013

In Defense of Theory

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Conclusions

- Corporate governance is about how different actors associated with a firm interact.
- As such, we need to model it using the tools of game theory and contract theory.
- Such analyses often have subtle, at times counter-intuitive, results.
- As valuable & crucial as empirical analyses are, they don't always do well *explaining* what's going on.
- In addition, "off-the-shelf" basic Economics 101 reasoning doesn't always do the job either.

Common Ideas about Governance

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- Better governance causes better firm performance.
- Limiting executives' contingent compensation will lead to worse firm performance.
- But I want to suggest that both ideas, if not wrong, are at least incomplete.

Corollaries

These ideas are critical to policy

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- Better governance causes better firm performance \implies government reforms to improve governance will benefit shareholders.
- Limiting executives' contingent compensation will lead to worse firm performance \implies government reforms to limit compensation will harm shareholders.
- But if, as I wish to suggest, the antecedents are wrong or incomplete, then those policy conclusions are *not* justified.

Arguments I Wish to Put Forward

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- Firms with more **profitable** uses for resources enjoy a greater return from protecting against managerial mismanagement, misallocation, or misappropriation: **it is *potential* profits that drive the level of corporate governance.**
- Furthermore, the quality/amount/strength of governance is the solution to an optimization program that varies across firms (and which may reflect bargaining between owners and managers).
- Hence, externally imposed “improvements” to governance could reduce firm value.

Assessing the Effect of Governance

The "Standard" Regression

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- Regress a measure of firm performance
 - profits
 - firm value
 - Tobin's Q
- on measure of governance
 - %-age of outside directors on board
 - strength of managerial incentives
 - score on an index of governance measures

The Standard Regression: The Data

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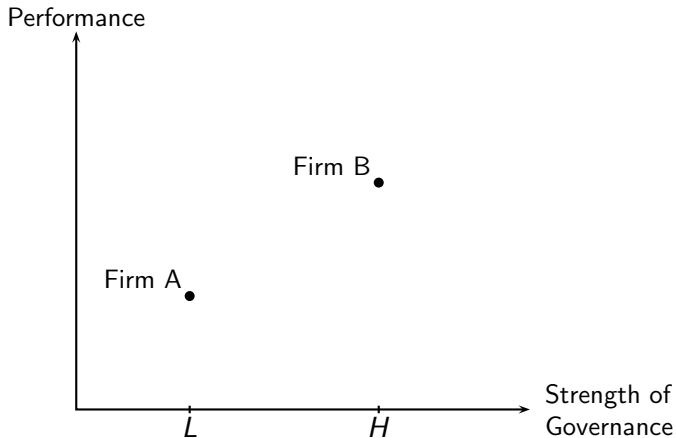
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The Standard Regression

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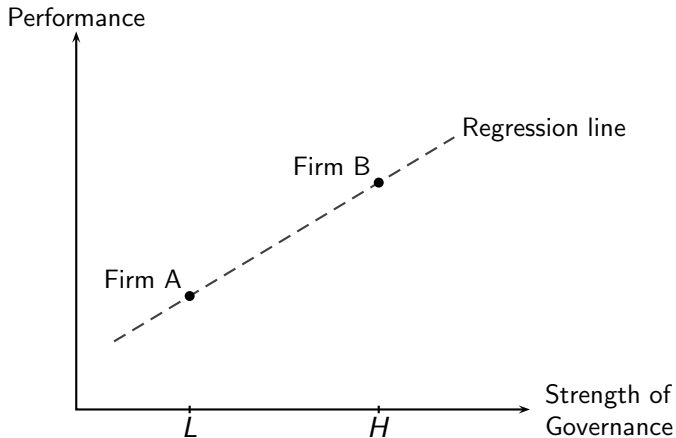
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Of Course, We Don't Think Relationship's Causal

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- If causal, then regression would imply Firm A is behaving suboptimally:
 - A would do better if it emulated B.
 - Firm A appears to be leaving money on the table.

An Equilibrium Interpretation: I

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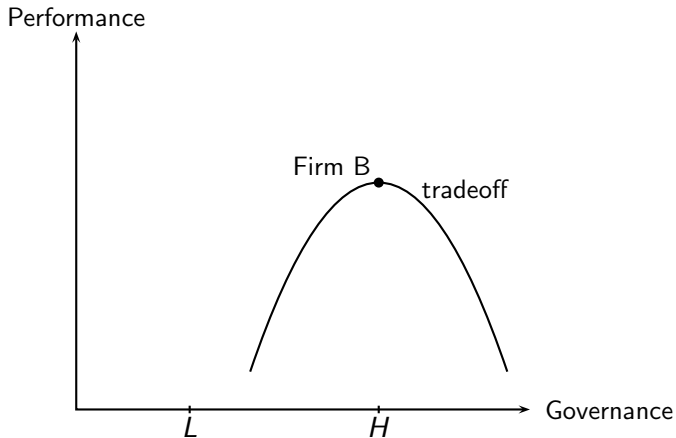
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An Equilibrium Interpretation: II

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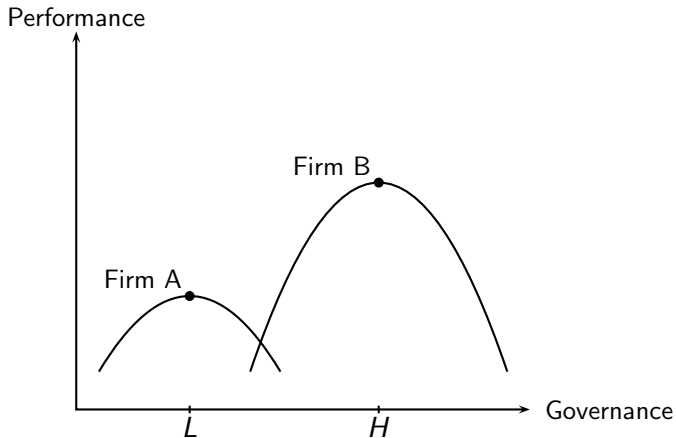
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An Equilibrium Interpretation: III

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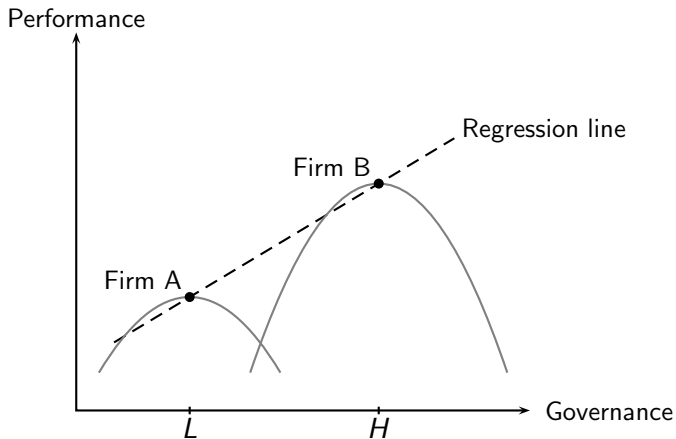
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What's Being Tested?

Heterogeneity Not the End of the Story: Doesn't Explain Slope!

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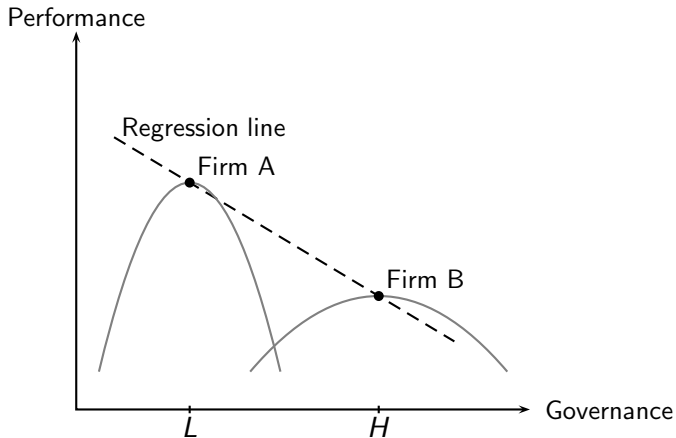
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What's Required of Theory?

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- It must explain why governance matters;
- It must explain why there is **variation** in governance across firms; **and**
- It must also explain why we observe the **slopes** that we do.

But Why Do Firms Face Different Situations?

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- One answer: Firm B's potential profitability exceeds A's, so B's returns to governance are different than A's.
- Nice feature of this explanation: it also explains the slope of the regression line!

A First Model

Assumptions

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- Let R denote the firm's gross resources.
- Let D denote the amount of resources the manager diverts to uses he desires, but which are unproductive from the firm's perspective. (So net productive resources are $N = R - D$.)
- Let g be a measure of the strength or effectiveness of governance.
- Governance matters: higher level of governance (g), less manager diverts.
- Equivalently, higher g means higher N : $N'(g) > 0$.

The Preferences of the Owners

The Nature of Returns

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- Corporation's returns, r , are distributed $F(\cdot|N, \tau) : [\underline{r}, \infty) \rightarrow [0, 1]$, $\underline{r} > -\infty$.
- $\tau \in \mathbb{R}$ is the corporation's *type*.
- Via integration by parts, expected returns can be written

$$\mathbb{E}\{r|N, \tau\} = \underline{r} + \int_{\underline{r}}^{\infty} S(r|N, \tau) dr,$$

where $S(r|N, \tau) \equiv 1 - F(r|N, \tau)$ is the survival function.

More on Returns

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- Assume more net resources utilized, the better the distribution of returns in the sense of strict first-order stochastic dominance:

$$\frac{\partial S(r|N, \tau)}{\partial N} > 0$$

for all N , $r \in (\underline{r}, \infty)$, and τ .

- Definition of type, τ : marginal expected return from an increase in net resources utilized is greater for higher-type corporations than lower-type corporations.

Firm Types

Assume $\tau > \tau'$ (i.e., the former is a higher-type firm than latter)

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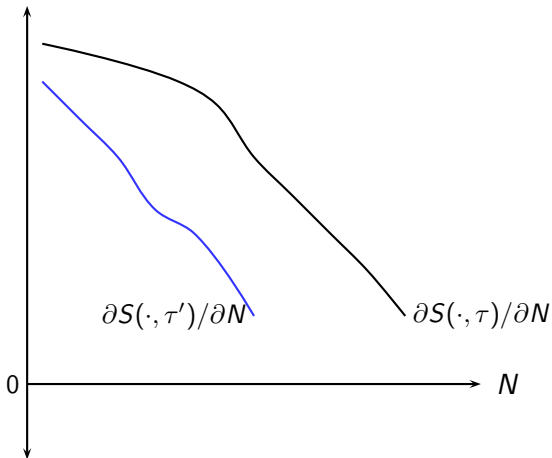
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The Owners' Problem

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- Profit of corporation is return less governance cost, $C(g)$.
- Owners'/investors' choice of governance solves

$$\max_g \underline{r} + \int_{\underline{r}}^{\infty} S(r|N(g), \tau) dr - C(g). \quad (\text{Investor Obj})$$

- Cross-partial derivative of (Investor Obj) with respect to g and τ is

$$\int_{\underline{r}}^{\infty} \frac{\partial^2 S(r|N(g), \tau)}{\partial N \partial \tau} N'(g) dr > 0,$$

where the inequality follows from the definition of type and because $N(\cdot)$ is increasing.

- Last expression and usual comparative statics imply ...

Main Proposition

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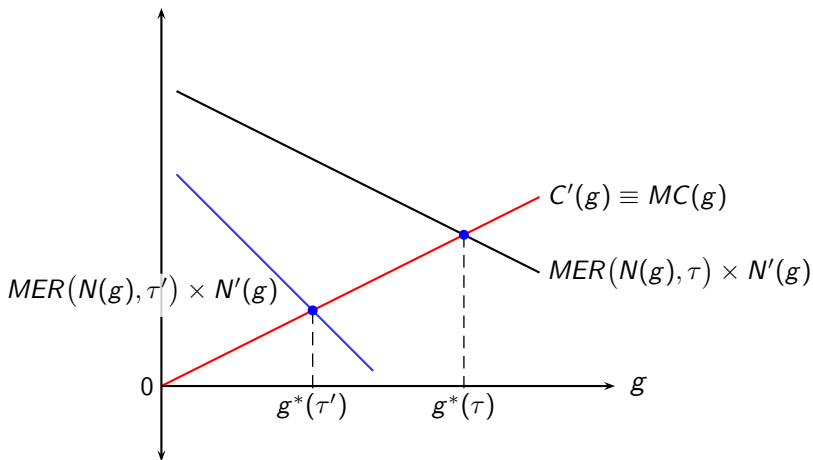
Conclusions

Proposition

The level of governance a corporation has is non-decreasing in its type (i.e., in its marginal expected return from net resources).

The Main Proposition Graphically

$\tau > \tau'$ (i.e., former is higher type than latter); MER = marginal expected return



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Deriving Implications for Empirical Work

More Analysis

- Reasonable to assume a corporation that employs no net resources will enjoy a zero return (one rarely gets something for nothing). This implies

$$\frac{\partial S(r|0, \tau)}{\partial \tau} \equiv 0.$$

- Combined with the definition of type that implies

$$\begin{aligned} \frac{\partial S(r|N, \tau)}{\partial \tau} &= \frac{\partial S(r|N, \tau)}{\partial \tau} - \frac{\partial S(r|0, \tau)}{\partial \tau} \\ &= \int_0^n \frac{\partial^2 S(r|x, \tau)}{\partial \tau \partial N} dx > 0. \end{aligned}$$

- In words: *an increase in type, holding resources constant, means better returns* in the sense of first-order stochastic dominance.

Deriving Implications

Analysis continued

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- Let $g^*(\tau)$ be solution to program (Investor Obj). Envelope theorem implies

$$\begin{aligned} \frac{d}{d\tau} \left(\underline{r} + \int_{\underline{r}}^{\infty} S(r|N(g^*(\tau)), \tau) dr - C(g^*(\tau)) \right) \\ = \int_{\underline{r}}^{\infty} \frac{\partial S(r|N(g^*(\tau)), \tau)}{\partial \tau} dr > 0, \end{aligned}$$

where the inequality follows from previous slide.

- In words: *higher-type firms have greater expected profits in equilibrium. This explains "data" for firm A and B.*

Implication for Empirical Work

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Proposition

In this model, in which all corporations are making optimal decisions, there will be a positive correlation between level of governance and corporate profits.

- Note path of causation: a corporation with a high marginal return to net resources—which will therefore be, *ceteris paribus*, a corporation with greater profits on average—is a corporation with a higher marginal cost of agency. It therefore puts in place a higher level of governance than a corporation with a low marginal return to net resources (low marginal cost of agency).

▶ [Jump to Conclusions](#)

Limits on Executive Compensation

Preliminary Results from Ongoing Research with Peter Cebon

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Conclusions

- In the popular press and among many politicians, high levels of executive compensation are viewed with mistrust.
- There have been numerous calls to limit pay.
- The Economics 101 response: “bad idea—state regulation of prices causes welfare-reducing distortions.”
- Slightly more sophisticated response: “bad idea—shareholders could limit pay if they wanted; by revealed preference they don’t want limits.”
- **Yet shareholders and their advocates often leading proponents of limits** (e.g., recent “say-on-pay” legislation and referenda).

Basic Idea

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- Basic insight from agency theory: principal (e.g., shareholders/board) would rather reward agent (e.g., CEO) on basis of **what he does** rather than on a performance measure that is a **noisy signal** of what he did.
- Suppose board of directors, acting on behalf of shareholders, can **observe**, but **not verify**, what CEO does.
- In a one-shot game, can't contract on CEO's action—stuck contracting on performance.
- *But in repeated game, it might be possible to use a relational contract that effectively permits contracting on what the CEO does.*

Basic Idea

But the rub is . . .

- A relational contract is dependent on parties not renegeing on their promises.
- The board is tempted not to pay the CEO the amount promised for taking the desired action (recall can't be **legally** obliged to do so).
- Part of how tempted it is depends on the consequence if it gives into temptation: what happens next?
- If next is a formal contract contingent on (noisy) performance and if that contract isn't too bad, then the temptation to renege is high.
- Because board cannot commit not to resort to such formal contracts in the future, it might require help from the state to "lash it to the mast."

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A Bit of Formalism

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Conclusions

- Let π^* denote expected *per-period* profits under a relational contract (*i.e.*, an implicit promise by board to reward the CEO appropriately if he acts appropriately).
- Let π_{FC} denote expected *per-period* profits under a formal contract (*i.e.*, one in which CEO compensation tied to realized performance).
- Because of usual inefficiencies in latter type of contracting $\pi^* > \pi_{FC}$.
- Let $\delta \in (0, 1)$ be the relevant discount factor.
- Board can be trusted to honor promise (relational contract) if

$$\underbrace{\frac{\delta}{1-\delta}\pi^*}_{\text{PDV of rel. contracts}} \geq \underbrace{\text{COMP}}_{\text{what board saves if reneges}} + \underbrace{\frac{\delta}{1-\delta}\pi_{FC}}_{\text{PDV if no credibility}}$$

Is Relational Contracting Credible?

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- Rearranging last expression and letting $w = \text{COMP}$, credible if

$$\delta \geq \frac{w}{\pi^* - \pi_{\text{FC}} + w}.$$

- Righthand side is increasing in π_{FC} , which means harder to sustain relational contracting the more profitable is formal contracting.
- If inequality reversed, then firm stuck with formal contracting even though always true that $\pi_{\text{FC}} < \pi^*$.
- Board may wish, in that case, to be lashed to the mast: desires restrictions on contingent compensation that *reduce* π_{FC} .

Making Formal Contracting Worse—Lashing to Mast

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- Suppose, under *formal* contracting, CEO gets bonus b if firm does well.
- Bigger is b , the more effort CEO puts in.
- Optimal tradeoff between increased odds of firm doing well and cost of compensation: there is a b^* that maximizes π_{FC} .
- If restrict $b < b^*$, then π_{FC} will be lower and sustaining relational contracting easier.

Conclusions: Part 1

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Conclusions

- Firms have better governance when there is a reason for them to have better governance; that reason is arguably profit potential, which explains much of the empirical correlation.
- A naïve causal explanation for empirical results must be wrong by the “leaving-money-on-the-table” critique.
- More importantly, such regressions cannot tell us governance matters.
- A good theory must explain (i) why governance matters; (ii) why it varies across firms; and (iii) why we see the slopes in the data that we do.

Conclusions: Part 2

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- Governance is necessarily second best: parties are optimizing given the constraints they face.
- Hence, dangerous to look at outcomes and argue for regulation (e.g., a regression that shows a positive correlation between outsiders on board and firm performance doesn't necessarily justify restrictions on board composition).
- On other hand, can't conclude that a "hands-off" approach always best: the literature recognizes that there are situations in which externally imposed restrictions are beneficial (e.g., when one party wants to be lashed to the mast).
- More generally, understanding governance requires subtle game-theoretic analysis; that is, theory is essential.

Conclusions: Additional Reading

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- Anyone interested in governance should obtain a copy of *The Handbook of Organizational Economics*, edited by Robert Gibbons & John Roberts, Princeton University Press, 2013.
- Chapter 18 of said volume goes into the first model presented here in greater depth.
- For a general survey that deals with when state interference in private contracting is or isn't likely warranted, see B. Hermalin, A. Katz, and R. Craswell, "Contract Law" in *The Handbook of Law and Economics*, edited by A. Mitchell Polinsky & Steven Shavell, North Holland, 2007.
- I hope to be able to circulate a version of the paper with P. Cebon (the 2nd model) sometime later this fall. Send me an email in a month or so's time if you want a copy.