

# Corporate Governance, Product Market Competition, and Equity Prices

The Journal of Finance

Xavier Giroud

NYU Stern School of Business

Holger M. Mueller

NYU Stern School of Business

NBER, CEPR, & ECGI

October 2009

# Competition and Managerial Slack

- ▶ Product market competition (PMC) mitigates managerial slack:
  - “The best of all monopoly profits is a quiet life” (Hicks, 1935).
  - “Monopoly ... is a great enemy to good management” (Smith, 1776).
- ▶ Stronger (Darwinian) view: Managerial slack cannot exist, or survive, in competitive industries (Alchian, 1950; Friedman 1953; Stigler, 1958).

# Competition and Managerial Slack

- ▶ Scherer (1980): “Over the long pull, there is one simple criterion for the survival of a business enterprise: Profits must be nonnegative. **No matter how strongly managers prefer to pursue other objectives** [...] failure to satisfy this criterion means ultimately that a firm will disappear from the economic scene.”

# Why Does It Matter?

- ▶ Topics that have been studied extensively over the past decades, such as managerial agency problems resulting in deviations from profit-maximizing behavior, might have little bearing on firms in competitive industries.
- ▶ Empirical studies on corporate governance could benefit from interacting governance measures with PMC, or even use PMC as a (relatively exogenous) proxy for “good governance”.

# Why Does It Matter?

- ▶ Policy efforts to improve corporate governance could benefit from focusing on firms in non-competitive industries. Moreover, such efforts could be broadened to include measures aimed at improving an industry's competitiveness, such as deregulation and antitrust laws.

Previous Work:

**“Does Corporate Governance Matter  
in Competitive Industries?”**

# Business Combination Laws

- ▶ Exogenous variation in corporate governance in the form of 30 business combination (BC) laws passed on a state-by-state basis between 1985 and 1991.
- ▶ “The reduced fear of a hostile takeover means that an important disciplining device has become less effective and that corporate governance overall was reduced” (Bertrand and Mullainathan, 2003).

# Empirical Methodology

- ▶ DDD methodology:
  - Before versus after the BC law.
  - States that have passed a BC law (treatment group) versus states that have not (yet) passed a BC law (control group).
  - Competitive versus non-competitive industries.



# Main Results

- ▶ Consistent with the notion that BC laws create more opportunity for managerial slack, we find that the laws' passage causes a drop in ROA of 0.6 percentage points.
  - ROA is 7.4% on average (median is 10.4%). Hence a drop in ROA of 0.6 percentage points implies a drop of 8.1% on average (5.8% for the median firm).

# Main Results

- ▶ The drop in ROA is significantly larger in non-competitive industries.
  - ROA drops by only 0.1 percentage points in the lowest HHI quintile but by 1.5 percentage points in the highest HHI quintile.
- ▶ Firms in highly competitive industries (HHI close to zero) are virtually unaffected by the passage of the BC laws.

Dependent Variable:	ROA
BC Year(-1)	-0.001 (0.17)
BC Year(0)	-0.002 (0.39)
BC Year(1)	-0.000 (0.07)
BC Year(2+)	0.004 (0.74)
BC Year(-1) x HHI	0.001 (0.07)
BC Year(0) x HHI	-0.027** (2.06)
BC Year(1) x HHI	-0.032*** (4.33)
BC Year(2+) x HHI	-0.034*** (4.15)
HHI	0.025** (2.53)

# Event Study Results

	[1]	[2]	[3]	[4]	[5]	[6]
	All Firms	HHI (Low)	HHI (High)	HHI (Low)	HHI (Medium)	HHI (High)
[-40, -2]	0.98 (1.44)	1.25 (1.40)	0.61 (0.49)	1.51 (1.53)	2.11 (1.13)	-0.30 (0.04)
[-30, -2]	0.43 (0.94)	0.83 (1.08)	0.08 (0.07)	0.78 (1.02)	0.52 (0.36)	-0.34 (0.07)
[-20, -2]	0.08 (0.53)	0.15 (0.47)	-0.01 (0.22)	0.33 (0.78)	-0.07 (-0.03)	-0.41 (0.15)
[-10, -2]	0.52 (1.35)	0.44 (1.31)	0.57 (0.54)	0.44 (1.19)	1.15 (1.24)	0.10 (0.21)
[-3, -2]	-0.02 (0.05)	0.22 (0.47)	-0.24 (-0.50)	0.38 (0.75)	0.09 (-0.26)	-0.24 (-0.25)
[-1, 0]	-0.32*** (-2.58)	-0.10 (-1.29)	-0.54** (-2.36)	0.08 (-0.53)	-0.44* (-1.67)	-0.67** (-2.31)
[1, 2]	0.09 (0.37)	-0.03 (0.07)	0.20 (0.45)	0.01 (-0.05)	0.25 (1.02)	0.03 (-0.28)
[1, 10]	-0.07 (-0.08)	0.03 (0.07)	-0.17 (-0.07)	0.30 (0.78)	-0.74 (-0.53)	-0.27 (-0.61)

# Research Question

- ▶ In (previous) paper, we find that broad changes in “corporate governance regime” (BC laws) have little effect on firms in competitive industries.
- ▶ **Is this also true for firm-level corporate governance instruments?**
- ▶ Hypothesis: Firm-level corporate governance instruments matter (for equity prices, firm value, operating performance) only when product market competition is weak.

Back to New Paper:

**“Corporate Governance,  
Product Market Competition,  
and Equity Prices”**

# Firm-Level Corporate Governance

- ▶ Gompers, Ishii, and Metrick (2003, “GIM”): **Good governance leads to higher equity prices.**
  - G-index: 24 (anti-) corporate governance provisions.
  - “Democracy-Dictatorship hedge portfolio”: long in “Democracy firms” (G-index  $\leq 5$ ) and short in “Dictatorship firms” (G-index  $\geq 14$ ).
  - 1990–1999 = 112 monthly (excess) portfolio returns.
  - (Value-weighted) hedge portfolio earns significant positive alpha of 0.71% monthly ( $\approx 8.5\%$  annually).

# Governance-PMC Hedge Portfolios

- ▶ Sub-divide Democracy and Dictatorship portfolio each into 3 equal-sized portfolios based on HHI terciles. Industry classification: 48 FF industries.
- ▶ For each HHI tercile, construct hedge portfolio that is long in the respective Democracy portfolio and short in the respective Dictatorship portfolio.
- ▶ Same sample period as in GIM: 1990–1999.



# Empirical Relation between the G-index and the HHI

- ▶ Using all firm-year observations from 1990 to 2006, the correlation between the G-index and the HHI is 0.00 (p-value of 0.50).
- ▶ GIM (p. 119): "There is no obvious industry concentration among these top firms [in the Democracy and Dictatorship portfolios]."

*Panel (A): Empirical Distribution of the HHI among Democracy and Dictatorship Firms*

	<i>First HHI Quintile</i>	<i>Second HHI Quintile</i>	<i>Third HHI Quintile</i>	<i>Fourth HHI Quintile</i>	<i>Fifth HHI Quintile</i>
<b>Democracy Firms (<math>G \leq 5</math>)</b>					
<i>Mean HHI</i>	0.02	0.04	0.05	0.07	0.15
<i>Median HHI</i>	0.02	0.04	0.05	0.07	0.11
<i>Range of HHI Values</i>	[0.01, 0.03]	[0.03, 0.04]	[0.04, 0.06]	[0.06, 0.08]	[0.08, 0.58]
<b>Dictatorship Firms (<math>G \geq 14</math>)</b>					
<i>Mean HHI</i>	0.02	0.04	0.05	0.07	0.16
<i>Median HHI</i>	0.02	0.04	0.05	0.07	0.11
<i>Range of HHI Values</i>	[0.01, 0.03]	[0.03, 0.05]	[0.05, 0.06]	[0.06, 0.08]	[0.08, 0.58]

*Panel (B): Empirical Distribution of the G-index across HHI Quintiles*

	<i>First HHI Quintile</i>	<i>Second HHI Quintile</i>	<i>Third HHI Quintile</i>	<i>Fourth HHI Quintile</i>	<i>Fifth HHI Quintile</i>
<i>Mean G-Index</i>	9.22	9.00	9.33	9.25	9.19
<i>Median G-Index</i>	9.00	9.00	9.00	9.00	9.00
<i>Range of G-Index Values</i>	[2, 17]	[2, 17]	[2, 19]	[2, 18]	[2, 17]

# Main Results

- ▶ Alpha is small and insignificant in lowest HHI tercile.
- ▶ Alpha is large and significant in highest HHI tercile.
- ▶ Alpha is monotonically increasing in the HHI.

*Value-weighted Democracy-Dictatorship Hedge Portfolios*

	<i>All Firms</i>	<i>Lowest HHI Tercile</i>	<i>Medium HHI Tercile</i>	<i>Highest HHI Tercile</i>
[1] HHI (Compustat, 48 FF)	0.66*** (2.57)	0.30 (0.90)	0.64* (1.70)	1.47*** (3.38)
[2] Top 4 (Compustat, 48 FF)	0.66*** (2.57)	0.15 (0.44)	0.62* (1.71)	1.35*** (3.19)
[3] HHI (Census, Manuf. Ind.)	0.93** (2.43)	0.02 (0.03)	0.69 (1.33)	1.50** (2.46)
[4] Top 4 (Census, Manuf. Ind.)	0.91** (2.39)	0.00 (0.00)	0.60 (1.11)	1.11* (1.93)
[5] E-Index	0.74*** (4.09)	0.02 (0.09)	0.84*** (2.92)	1.53*** (3.42)
[6] ATI	0.29* (1.91)	0.06 (0.25)	0.21 (0.98)	0.64** (2.13)
[7] High Inst. Ownership	0.77*** (3.02)	0.28 (0.84)	0.86** (2.06)	1.60*** (3.36)
[8] Low Inst. Ownership	0.35 (0.94)	0.11 (0.21)	0.17 (0.31)	0.93* (1.70)
[9] Excluding "New Economy"	0.43* (1.71)	0.27 (0.79)	0.41 (1.05)	0.82** (2.04)
[10] 1990-2006	0.24 (1.22)	0.06 (0.21)	0.09 (0.30)	0.99** (2.55)
[11] 2000-2006	-0.21 (0.65)	-0.41 (0.87)	-0.19 (0.41)	0.26 (0.40)

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*Equally-weighted Democracy-Dictatorship Hedge Portfolios*

	<i>All Firms</i>	<i>Lowest HHI Tercile</i>	<i>Medium HHI Tercile</i>	<i>Highest HHI Tercile</i>
[1] HHI (Compustat, 48 FF)	0.48** (2.19)	0.28 (0.85)	0.42 (1.27)	0.72** (2.38)
[2] Top 4 (Compustat, 48 FF)	0.48** (2.19)	0.32 (0.97)	0.55 (1.59)	0.56** (2.08)
[3] HHI (Census, Manuf. Ind.)	0.51* (1.82)	0.31 (0.75)	0.44 (1.12)	0.81* (1.74)
[4] Top 4 (Census, Manuf. Ind.)	0.51* (1.80)	0.41 (0.94)	0.36 (0.80)	0.76* (1.67)
[5] E-Index	0.47*** (3.01)	0.21 (0.89)	0.53** (2.10)	0.68*** (3.10)
[6] ATI	0.33** (2.53)	0.13 (0.63)	0.42** (2.10)	0.44** (2.19)
[7] High Inst. Ownership	0.49* (1.84)	0.02 (0.04)	0.57 (1.41)	0.81** (2.05)
[8] Low Inst. Ownership	0.48 (1.61)	0.28 (0.55)	0.36 (0.86)	0.72 (1.32)
[9] Excluding "New Economy"	0.43** (2.03)	0.24 (0.71)	0.35 (1.10)	0.72** (2.35)
[10] 1990-2006	0.29* (1.77)	0.00 (0.00)	0.12 (0.48)	0.73*** (3.12)
[11] 2000-2006	0.20 (0.76)	-0.36 (0.91)	0.08 (0.19)	0.88** (2.24)

# Interpretation of Results

1. Corporate governance has little effect (on equity prices) in competitive industries.
2. Corporate governance has strong effect in non-competitive industries.
  - In non-competitive industries, effect is greater than in GIM and other papers, who all document the average effect across all industries.
  - Researchers could benefit from interacting governance with PMC. Might find significant results even if the average effect (across all industries) is insignificant.

# Industry Effects

- ▶ It could be that our results are not driven by corporate governance but rather that they reflect a *direct* effect of competition on stock returns.
- ▶ Specifically, the worry is that Democracy and Dictatorship firms cluster along industries with different HHIs.
- ▶ Have already shown that this is not the case.

*Panel (A): Empirical Distribution of the HHI among Democracy and Dictatorship Firms*

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<b>Dictatorship Firms (<math>G \geq 14</math>)</b>					
<i>Mean HHI</i>	0.02	0.04	0.05	0.07	0.16
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<i>Range of HHI Values</i>	[0.01, 0.03]	[0.03, 0.05]	[0.05, 0.06]	[0.06, 0.08]	[0.08, 0.58]

*Panel (B): Empirical Distribution of the G-index across HHI Quintiles*

	<i>First HHI Quintile</i>	<i>Second HHI Quintile</i>	<i>Third HHI Quintile</i>	<i>Fourth HHI Quintile</i>	<i>Fifth HHI Quintile</i>
<i>Mean G-Index</i>	9.22	9.00	9.33	9.25	9.19
<i>Median G-Index</i>	9.00	9.00	9.00	9.00	9.00
<i>Range of G-Index Values</i>	[2, 17]	[2, 17]	[2, 19]	[2, 18]	[2, 17]

# Industry Effects

- ▶ Estimate 5-factor model that includes the Hou-Robinson (2006) “concentration premium” as additional risk factor.
- ▶ If the results are driven by a direct effect of competition on stock returns, we would expect the alpha to become insignificant.
- ▶ Results remain virtually unchanged. This is not surprising. Hedge portfolios are both long and short in firms with virtually identical HHIs. By construction, any direct effect of competition on stock returns should thus “cancel out”.



*Value-weighted Democracy-Dictatorship Hedge Portfolios*

	<i>All Firms</i>	<i>Lowest HHI Tercile</i>	<i>Medium HHI Tercile</i>	<i>Highest HHI Tercile</i>
[1] 4-Factor Model without Industry-adjusted Returns	0.66*** (2.57)	0.30 (0.90)	0.64* (1.70)	1.47*** (3.38)
[2] 5-Factor Model without Industry-adjusted Returns	0.66*** (2.60)	0.30 (0.91)	0.64* (1.69)	1.47*** (3.45)
[3] 4-Factor Model with Industry-adjusted Returns	0.60** (2.10)	0.38 (0.92)	0.49 (1.38)	1.15*** (2.72)
[4] 5-Factor Model with Industry-adjusted Returns	0.60** (2.10)	0.39 (0.93)	0.49 (1.38)	1.15*** (2.76)

# Industry Effects

- ▶ It could be that Democracy and Dictatorship firms cluster along industries with high and low abnormal returns, respectively, where the abnormal industry return is *unrelated* to the HHI. (Not clear why the alpha would then be monotonic in the HHI, though).
- ▶ Use industry-adjusted stock returns.

*Value-weighted Democracy-Dictatorship Hedge Portfolios*

	<i>All Firms</i>	<i>Lowest HHI Tercile</i>	<i>Medium HHI Tercile</i>	<i>Highest HHI Tercile</i>
[1] 4-Factor Model without Industry-adjusted Returns	0.66*** (2.57)	0.30 (0.90)	0.64* (1.70)	1.47*** (3.38)
[2] 5-Factor Model without Industry-adjusted Returns	0.66*** (2.60)	0.30 (0.91)	0.64* (1.69)	1.47*** (3.45)
[3] 4-Factor Model with Industry-adjusted Returns	0.60** (2.10)	0.38 (0.92)	0.49 (1.38)	1.15*** (2.72)
[4] 5-Factor Model with Industry-adjusted Returns	0.60** (2.10)	0.39 (0.93)	0.49 (1.38)	1.15*** (2.76)

# JMS (2009) Critique

- ▶ Johnson, Moorman, & Sorescu (2009): Industry-adjustments should be done using 3- or 4-digit SIC industries, not 48 FF industries.
- ▶ JMS show that GIM's alpha then becomes insignificant.
- ▶ Robustness: Use 4-digit SIC industries instead of 48 FF industries.

# 4-digit SIC Industries

## Value-weighted Democracy-Dictatorship Hedge Portfolios

	All Firms	Lowest HHI Tercile	Medium HHI Tercile	Highest HHI Tercile
[5] 4-Factor Model without Industry Adjustments	0.69*** (2.71)	0.47 (1.49)	0.93** (2.11)	0.98*** (2.65)
[6] 5-Factor Model without Industry Adjustments	0.66*** (2.61)	0.44 (1.41)	0.92** (2.07)	0.92** (2.53)
[7] 4-Factor Model with Industry Adjustments	0.65** (2.37)	0.32 (0.90)	0.61 (1.60)	0.75** (2.11)
[8] 5-Factor Model with Industry Adjustments	0.63** (2.29)	0.29 (0.82)	0.62 (1.61)	0.70** (1.99)

# Explanation?

- ▶ JMS do not use all available firms (Compustat universe) for industry adjustments but only a subset (IRRC universe) => hedge portfolios are much noisier => bias against finding significant results. We use all available firms.

	% Obs. with 0 Control Firms	% Obs. with ≤ 1 Control Firms	% Obs. with ≤ 2 Control Firms	% Obs. with ≤ 3 Control Firms	% Obs. with ≤ 4 Control Firms	% Obs. with ≤ 5 Control Firms
<i>Control Group Constructed from Compustat Universe</i>						
[1] FF	0%	0%	0%	0%	0%	0%
[2] 3-digit SIC	0.19%	1.00%	1.57%	2.69%	4.01%	5.48%
[3] 4-digit SIC	0.66%	1.80%	2.26%	4.36%	7.39%	11.91%
<i>Control Group Constructed from IRRC Universe (Johnson, Moorman, and Sorescu, 2009)</i>						
[4] 3-digit SIC	6.80%	14.35%	14.44%	21.42%	28.11%	34.54%
[5] 4-digit SIC	10.48%	25.05%	27.50%	36.12%	41.93%	48.52%

# Omitted Variable Bias?

- ▶ G-index might be correlated with firm or other risk characteristics that were priced during the sample period but that are not captured by the asset pricing model used to calculate abnormal returns.
- 1. Estimate Fama-MacBeth return regressions with a large number of control variables (all lagged):
  - Firm size, book-to-market, past stock price, past stock returns, NYSE/AMEX trading volume, NASDAQ trading volume, NASDAQ dummy, S&P 500 dummy, dividend yield, past sales growth, institutional ownership, HHI, idiosyncratic volatility (Ferreira-Laux (2007) measure).

	[1]	[2]	[3]	[4]
G-Index	-0.04 (1.28)			
G-Index x HHI (Low)		-0.02 (0.21)		
G-Index x HHI (Medium)		-0.02 (0.59)		
G-Index x HHI (High)		-0.12* (1.93)		
Democracy			0.77** (2.43)	
Democracy x HHI (Low)				0.24 (0.60)
Democracy x HHI (Medium)				1.00* (1.72)
Democracy x HHI (High)				1.77** (2.52)



# Omitted Variable Bias?

## 2. Include additional risk factors (5-factor models):

- Concentration premium (Hou and Robinson, 2006)
- Co-skewness factor (Harvey and Siddique, 2007)
- Aggregate volatility factor (Ang et al., 2006)
- Downside risk factor (Ang, Chen, and Xing, 2006)
- Liquidity factor (Pastor and Stambaugh, 2003)
- Takeover factor (Cremers, Nair, and John, 2009)

Value-weighted Democracy-Dictatorship Hedge Portfolios

	All Firms	Lowest HHI Tercile	Medium HHI Tercile	Highest HHI Tercile
[1] Market Model	0.48* (1.74)	0.17 (0.49)	0.49 (1.34)	1.17** (2.51)
[2] French's Momentum Factor	0.47* (1.82)	0.10 (0.29)	0.61 (1.56)	1.13*** (2.56)
[3] Co-skewness Factor	0.65** (2.52)	0.30 (0.89)	0.65* (1.74)	1.42*** (3.33)
[4] Aggregate Volatility	0.72*** (2.77)	0.27 (0.78)	0.76** (2.02)	1.59*** (3.61)
[5] Downside Risk	0.69** (2.08)	0.22 (0.51)	1.07** (2.22)	1.58*** (2.81)
[6] Liquidity Factor	0.57** (2.31)	0.26 (0.77)	0.61 (1.62)	1.32*** (3.15)
[7] Takeover Factor	0.31 (1.04)	-0.05 (0.12)	0.23 (0.50)	1.41*** (2.75)

# What is Driving GIM's Alpha?

## ▶ Two explanations:

1. Omitted variable bias. GIM and this paper find no evidence.
2. Weak governance gives rise to agency costs ( $\Rightarrow$  lower operating performance) whose magnitude was underestimated by investors.
  - GIM and Core, Guay, and Rusticus (2006, CGR): Weak governance is associated with lower operating performance.
  - CGR: However, investors were **not** surprised!

# Were Investors Surprised?

- ▶ Core, Guay, and Rusticus (2006):
  - Test whether the stock market underperformance of weak governance firms is due to investor surprise about the poor operating performance of these firms.
  - Using analysts' earning forecasts to proxy for investors' earnings expectations, CGR find no significant relation between Democracy dummy and forecast errors (= actual minus forecasted EPS).
  - (Investor surprise story predicts positive coefficient.)

*Panel (A): Mean Forecast of EPS*

	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>
	[1]	[2]	[3]	[4]	[5]	[6]
Democracy	0.57*	0.48	0.09			
	(1.66)	(1.25)	(0.68)			
Democracy x HHI (Low)				0.15	0.20	-0.05
				(0.23)	(0.29)	(0.19)
Democracy x HHI (Medium)				0.10	0.09	0.01
				(0.17)	(0.16)	(0.06)
Democracy x HHI (High)				1.52**	1.13*	0.39*
				(2.39)	(1.81)	(1.80)

Panel regression with year- and industry-fixed effects and s.e. clustered at the industry level. Controls: book-to-market, firm size, HHI dummies (all lagged).

*Panel (A): Mean Forecast of EPS*

	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>
	[1]	[2]	[3]	[4]	[5]	[6]
Democracy	0.57* (1.66)	0.48 (1.25)	0.09 (0.68)			
Democracy x HHI (Low)				0.15 (0.23)	0.20 (0.29)	-0.05 (0.19)
Democracy x HHI (Medium)				0.10 (0.17)	0.09 (0.16)	0.01 (0.06)
Democracy x HHI (High)				1.52** (2.39)	1.13* (1.81)	0.39* (1.80)

*Panel (A): Mean Forecast of EPS*

	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>
	[1]	[2]	[3]	[4]	[5]	[6]
Democracy	0.57*	0.48	0.09			
	(1.66)	(1.25)	(0.68)			
Democracy x HHI (Low)				0.15	0.20	-0.05
				(0.23)	(0.29)	(0.19)
Democracy x HHI (Medium)				0.10	0.09	0.01
				(0.17)	(0.16)	(0.06)
Democracy x HHI (High)				1.52**	1.13*	0.39*
				(2.39)	(1.81)	(1.80)

*Panel (A): Mean Forecast of EPS*

	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>	<i>Actual</i>	<i>Forecast</i>	<i>Error</i>
	[1]	[2]	[3]	[4]	[5]	[6]
Democracy	0.57*	0.48	0.09			
	(1.66)	(1.25)	(0.68)			
Democracy x HHI (Low)				0.15	0.20	-0.05
				(0.23)	(0.29)	(0.19)
Democracy x HHI (Medium)				0.10	0.09	0.01
				(0.17)	(0.16)	(0.06)
Democracy x HHI (High)				1.52**	1.13*	0.39*
				(2.39)	(1.81)	(1.80)



# Corporate Governance and Firm Value

## ► Gompers, Ishii, and Metrick (2003):

- Year-by-year cross-sectional regressions of industry-adjusted Tobin's Q on the G-index and control variables.
- Control variables: firm size, age, S&P 500 dummy, Delaware dummy.
- Sample period is from 1990-1999.
- G-index is always negative and significant in 9 out of 10 years.
- Fama-MacBeth coefficient on G-index is -0.043: Increase in G-index by one index point (= one governance provision) associated with decrease in firm value of 4.3%.

# Corporate Governance and Firm Value

## ► This paper:

- Extend sample period until 2006. Include HHI as a control.
- G-index is always negative and significant in 15 out of 17 years. Fama-MacBeth coefficient is -0.040.
- G-index is small and insignificant in the lowest HHI tercile in all 17 years.
- G-index is always negative, economically large, and almost always (in 16 out of 17 years) significant in the highest HHI tercile.
- G-index is monotonic across HHI terciles in 13 out of 17 years.

Year	<i>All Firms</i>	<i>Lowest HHI Tercile</i>	<i>Medium HHI Tercile</i>	<i>Highest HHI Tercile</i>
	[1]	[2]	[3]	[4]
1990	-0.019** (2.26)	-0.004 (0.31)	-0.024 (1.60)	-0.031** (2.03)
1991	-0.031** (2.46)	-0.012 (0.59)	-0.024 (1.04)	-0.061*** (2.71)
1992	-0.031*** (2.99)	-0.013 (0.73)	-0.027 (1.44)	-0.055*** (2.96)
1993	-0.042*** (3.65)	-0.020 (1.01)	-0.030 (1.52)	-0.071*** (3.46)
1994	-0.034*** (3.67)	-0.008 (0.53)	-0.034** (2.14)	-0.059*** (3.56)
1995	-0.035*** (2.81)	-0.020 (0.96)	-0.017 (0.79)	-0.077*** (3.36)
1996	-0.030** (2.28)	-0.012 (0.54)	-0.015 (0.68)	-0.068*** (2.82)
1997	-0.013 (0.97)	-0.006 (0.24)	0.006 (0.27)	-0.049** (2.07)
1998	-0.069*** (3.69)	-0.028 (0.88)	-0.068** (1.98)	-0.112*** (3.50)
1999	-0.116*** (4.41)	-0.025 (0.56)	-0.163*** (3.43)	-0.182*** (4.01)
2000	-0.091*** (3.52)	-0.021 (0.49)	-0.094** (2.09)	-0.157*** (3.44)
2001	-0.033** (2.28)	0.014 (0.58)	-0.067*** (2.64)	-0.051** (1.99)
2002	-0.017 (1.60)	0.029 (1.61)	-0.037* (1.83)	-0.054*** (2.96)
2003	-0.046*** (3.26)	0.036 (1.56)	-0.105*** (4.18)	-0.078*** (3.19)
2004	-0.028** (2.27)	-0.000 (0.02)	-0.026 (1.25)	-0.058*** (2.56)
2005	-0.032** (2.53)	0.004 (0.17)	-0.050** (2.24)	-0.053** (2.25)
2006	-0.019 (1.52)	0.011 (0.50)	-0.025 (1.17)	-0.031 (1.39)
Fama-MacBeth	-0.040*** (6.10)	-0.004 (1.01)	-0.047*** (4.66)	-0.073*** (7.36)

# Corporate Governance and Firm Value

- ▶ Petersen (2009): Fama-MacBeth s.e. are biased downwards if both the LHS and RHS variables are persistent.
  - Q and G-index are both persistent.
  - t-statistics of Fama-MacBeth estimates in previous table (and in GIM) are arguably high.
- ▶ Estimate panel regression with fixed effects and s.e. clustered at industry level.

	[1]	[2]	
G-Index	-0.036*** (3.46)		Fama- MacBeth:
G-Index x HHI (Low)	Fama-MacBeth: -0.040*** (6.10)	-0.003 (0.32)	-0.004 (1.01)
G-Index x HHI (Medium)		-0.044** (2.03)	-0.047*** (4.66)
G-Index x HHI (High)		-0.067*** (3.37)	-0.073*** (7.36)

Panel regression with year- and industry-fixed effects and s.e. clustered at the industry level. Controls: firm size, age, S&P 500 dummy, Delaware dummy, HHI dummies.

	<i>All Firms</i>	<i>Lowest HHI Tercile</i>	<i>Medium HHI Tercile</i>	<i>Highest HHI Tercile</i>
	[1]	[2]	[3]	[4]
[1] HHI (Compustat, 48 FF)	-0.036*** (3.46)	-0.003 (0.32)	-0.044** (2.03)	-0.067*** (3.37)
[2] Top 4 (Compustat, 48 FF)	-0.036*** (3.46)	-0.005 (0.43)	-0.044* (1.83)	-0.061*** (3.26)
[3] HHI (Census, Manuf. Ind.)	-0.047*** (3.24)	-0.015 (1.06)	-0.041** (2.12)	-0.092** (2.14)
[4] Top 4 (Census, Manuf. Ind.)	-0.047*** (3.24)	-0.013 (1.03)	-0.038** (2.19)	-0.092*** (2.57)
[5] E-Index	-0.103*** (4.70)	-0.040 (1.23)	-0.130*** (2.59)	-0.148*** (4.40)
[6] ATI	-0.089*** (3.15)	-0.022 (0.47)	-0.122** (1.99)	-0.135*** (2.72)
[7] Excluding "New Economy"	-0.031*** (3.42)	-0.001 (0.16)	-0.041** (2.07)	-0.058*** (3.49)
[8] Non-industry-adjusted Tobin's Q	-0.035*** (3.40)	-0.003 (0.22)	-0.044* (1.87)	-0.068*** (3.43)
[9] Firm-Fixed Effects	-0.021* (1.75)	0.003 (0.30)	-0.018 (0.91)	-0.052*** (2.91)
[10] Median Regression	-0.007** (p=0.02)	-0.001 (p=0.97)	-0.013* (p=0.07)	-0.022*** (p=0.00)

Panel regression with year- and industry-fixed effects (except row [9]) and s.e. clustered at the industry level (except row [10]). Controls: firm size, age, S&P 500 dummy, Delaware dummy, HHI dummies.

# Corporate Governance and Operating Performance


- ▶ Gompers, Ishii, and Metrick (2003):
  - Negative relation between G-index and Net Profit Margin (NPM), Return on Equity (ROE) and Sales Growth. All performance measures are industry-adjusted. Relation between G-index and ROE is not significant.
- ▶ Core, Guay, and Rusticus (2006):
  - Negative relation between G-index and industry-adjusted ROA.

	ROA		NPM		ROE	
	[1]	[2]	[3]	[4]	[5]	[6]
G-Index	-0.071*** (p=0.00)		-0.078*** (p=0.00)		-0.015 (p=0.56)	
G-Index x HHI (Low)		-0.006 (p=0.97)		-0.031 (p=0.61)		0.005 (p=0.68)
G-Index x HHI (Medium)		-0.109*** (p=0.00)		-0.094* (p=0.08)		-0.032 (p=0.63)
G-Index x HHI (High)		-0.140*** (p=0.00)		-0.117*** (p=0.00)		-0.085* (p=0.08)

Median regressions with year- and industry-fixed effects and block-bootstrapped s.e. Controls: firm size, age, book-to-market (lagged), S&P 500 dummy, Delaware dummy, HHI dummies.



Increase in G-index by one index point decreases ROA by 0.071 percentage points.  
 Switch from Dictatorship to Democracy ( $\approx 10.22$  index points) decreases ROA by  
 $0.071 \times 10.22 \approx 0.73$  percentage points.



	ROA		NPM		ROE	
	[1]	[2]	[3]	[4]	[5]	[6]
G-Index	-0.071*** (p=0.00)		-0.078*** (p=0.00)		-0.015 (p=0.56)	
G-Index x HHI (Low)		-0.006 (p=0.97)		-0.031 (p=0.61)		0.005 (p=0.68)
G-Index x HHI (Medium)		-0.109*** (p=0.00)		-0.094* (p=0.08)		-0.032 (p=0.63)
G-Index x HHI (High)		-0.140*** (p=0.00)		-0.117*** (p=0.00)		-0.085* (p=0.08)

	ROA		NPM		ROE	
	[1]	[2]	[3]	[4]	[5]	[6]
G-Index	-0.071*** (p=0.00)		-0.078*** (p=0.00)		-0.015 (p=0.56)	
G-Index x HHI (Low)		-0.006 (p=0.97)		-0.031 (p=0.61)		0.005 (p=0.68)
G-Index x HHI (Medium)		-0.109*** (p=0.00)		-0.094* (p=0.08)		-0.032 (p=0.63)
G-Index x HHI (High)		-0.140*** (p=0.00)		-0.117*** (p=0.00)		-0.085* (p=0.08)

# Nature of the Agency Problem?

- ▶ Gompers, Ishii, and Metrick (2003): Weak governance firms have higher Capex and make more acquisitions.
  - Interpretation: higher agency costs.
- ▶ Masulis, Wang, and Xie (2007): Weak governance firms make more value-destroying acquisitions.
  - Lower CARs around dates of acquisition announcements.

	Capex		Acquisition Likelihood		CAR(-2, +2)	
	[1]	[2]	[7]	[8]	[9]	[10]
G-index	0.032** (2.35)		2.256*** (4.48)		-0.074* (1.67)	
G-index × HHI (Low)		0.019 (0.96)		1.362 (0.98)		-0.060 (0.78)
G-index × HHI (Medium)		0.025 (0.97)		2.603** (2.00)		-0.043 (0.44)
G-index × HHI (High)		0.053** (2.08)		2.832** (2.26)		-0.124* (1.74)
Year-Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Regression Type	OLS	OLS	Probit	Probit	OLS	OLS
Observations	17,355	17,355	20,208	20,208	4,426	4,426
Adj./Pseudo R-squared	0.08	0.08	0.05	0.05	0.02	0.02

	Sales		Costs of Goods Sold		Wages	
	[1]	[2]	[3]	[4]	[5]	[6]
G-index	-0.012*** (3.66)		0.236** (2.47)		0.066 (1.61)	
G-index × HHI (Low)		-0.008 (1.35)		0.140 (1.14)		0.051 (0.84)
G-index × HHI (Medium)		-0.014** (2.51)		0.228 (1.28)		0.059 (1.27)
G-index × HHI (High)		-0.015*** (2.91)		0.361** (2.49)		0.090 (1.42)
Year-Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,387	17,387	17,699	17,699	2,254	2,254
Adj. R-squared	0.16	0.16	0.11	0.11	0.78	0.78

# Dynamics of Corporate Governance

- ▶ Why do shareholders allow firms in non-competitive industries to have weak governance if in these industries weak governance is detrimental to equity prices, firm value, and operating performance?
- ▶ Does the inefficiency get corrected over time?
- ▶ And if so, how?

# Dynamics of Corporate Governance

- ▶ Brav et al. (2008): Activist hedge funds data. Over 1,000 hedge fund-target pairs from 2001 to 2006.
- ▶ Merge with Compustat/IRRC sample: 2.14% of the 10,134 firm-year observations are targeted by hedge fund activists in the following year.
- ▶ How does likelihood of being targeted in the following year depend on G-index and HHI?

*Panel (B): Percentage of Firms Targeted by Activist Hedge Funds*

	Lowest HHI Tercile	Medium HHI Tercile	Highest HHI Tercile	Diff. in Means (Highest - Lowest)
G-index > 9	1.90%*** (0.000)	2.93%*** (0.000)	3.14%*** (0.000)	1.24%** (0.029)
G-index ≤ 9	1.51%*** (0.000)	1.78%*** (0.000)	1.85%*** (0.000)	0.34% (0.140)
Diff. in Means	0.49% (0.387)	1.15%** (0.026)	1.29%** (0.016)	



*Panel (B): Percentage of Firms Targeted by Activist Hedge Funds*

	Lowest HHI Tercile	Medium HHI Tercile	Highest HHI Tercile	Diff. in Means (Highest - Lowest)
G-index > 9	1.90%*** (0.000)	2.93%*** (0.000)	3.14%*** (0.000)	1.24%** (0.029)
G-index ≤ 9	1.51%*** (0.000)	1.78%*** (0.000)	1.85%*** (0.000)	0.34% (0.140)
Diff. in Means	0.49% (0.387)	1.15%** (0.026)	1.29%** (0.016)	

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Diff. in Means	0.49% (0.387)	1.15%** (0.026)	1.29%** (0.016)	

# Dynamics of Corporate Governance

- ▶ Do activist hedge funds bring about a reduction in the G-index?
- ▶ Compute  $\Delta G$  before and after hedge fund activism, adjusted for average  $\Delta G$  in that year.

*Panel (C): Subsequent Change in G-index for Firms Targeted by Activist Hedge Funds*

	Lowest HHI Tercile	Medium HHI Tercile	Highest HHI Tercile	Diff. in Means (Highest - Lowest)
G-index > 9	0.168 (0.303)	-0.104 (0.242)	-0.264* (0.054)	-0.432* (0.073)
G-index ≤ 9	0.146 (0.529)	-0.009 (0.887)	-0.104 (0.726)	0.250 (0.522)
Diff. in Means	0.022 (0.935)	-0.095 (0.401)	-0.160 (0.606)	

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