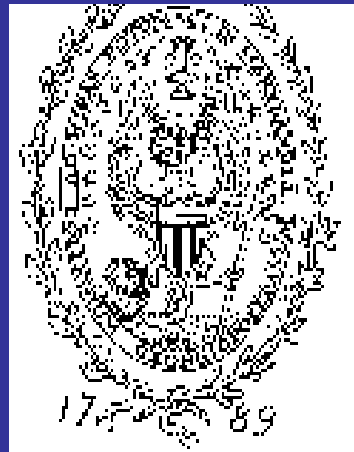


Globalization of Financial Markets: The Changing Competitive Environment

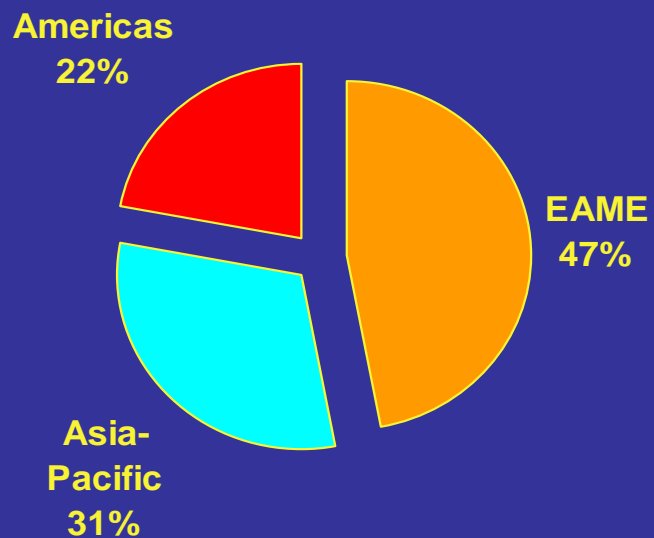


Reena Aggarwal, Georgetown University

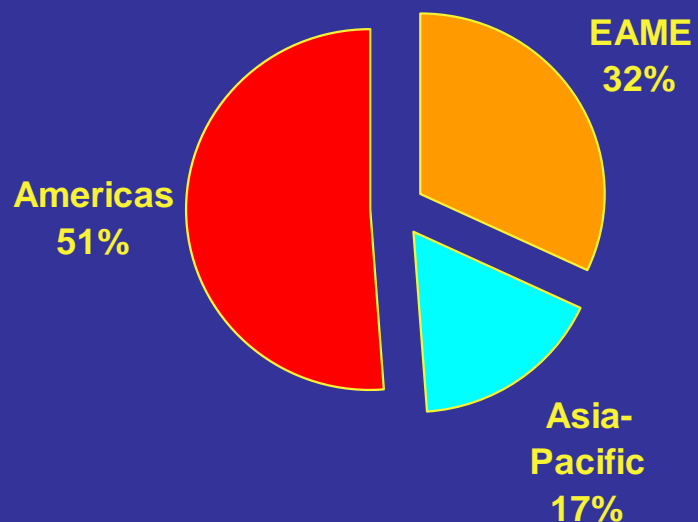
ISSUES

- **Demutualizations and Listings**
- **Performance**
- **Regulatory Issues**
- **Corporate Governance**

EXCHANGES BY REGION



VALUE OF SHARE TRADING BY REGION



Source: WFE (based on WFE membership)

Demutualization

| <u>Major European Exchanges</u> | |
|---------------------------------------|------|
| London Stock Exchange | 2001 |
| Euronext | 2001 |
| Deutsche Boerse | 2001 |
| OMX Group | 1993 |
| Oslo Bors | 2001 |
| <u>Major North American Exchanges</u> | |
| NYSE Group | 2006 |
| Nasdaq | 2002 |
| Toronto Stock Exchange | 2002 |
| Chicago Mercantile Exchange | 2002 |
| CBOT | 2005 |
| CBOE | |
| International Securities Exchange | 2005 |
| <u>Major Asian/Oceania Exchanges</u> | |
| Tokyo Stock Exchange | |
| Hong Kong Exchanges and Cleari | 2000 |
| Australia Stock Exchange | 1998 |

Source: Aggarwal and Dahiya, 2006 and Aggarwal, Ferrell and Katz, 2006)

Historic Evolution of Major Exchanges



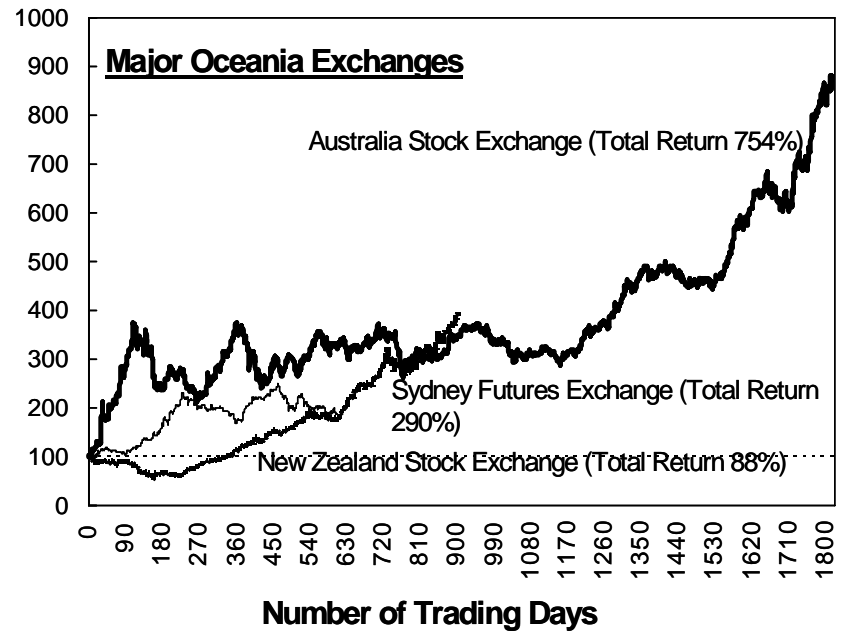
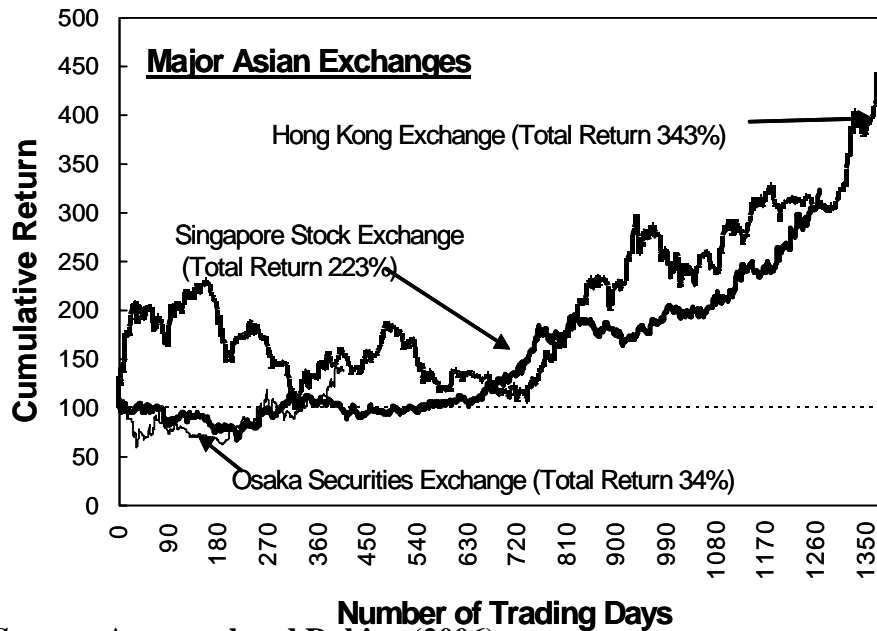
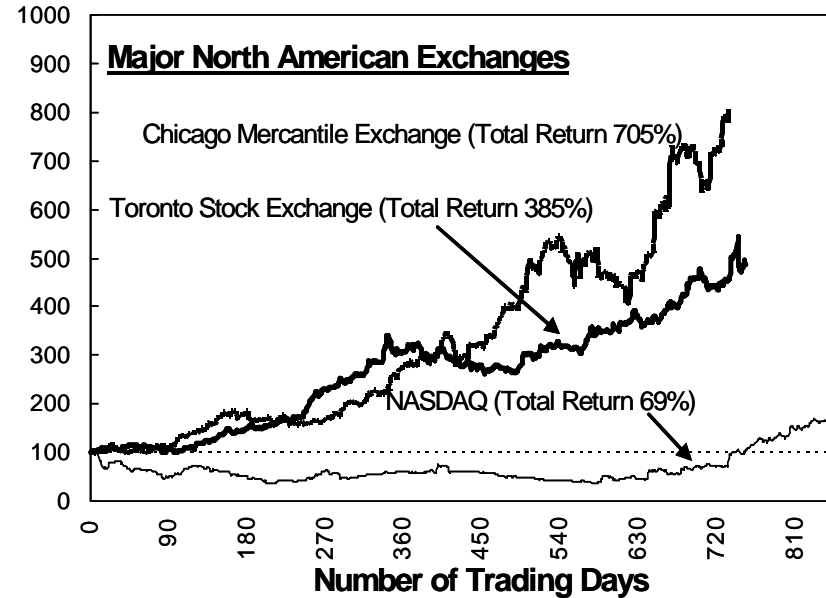
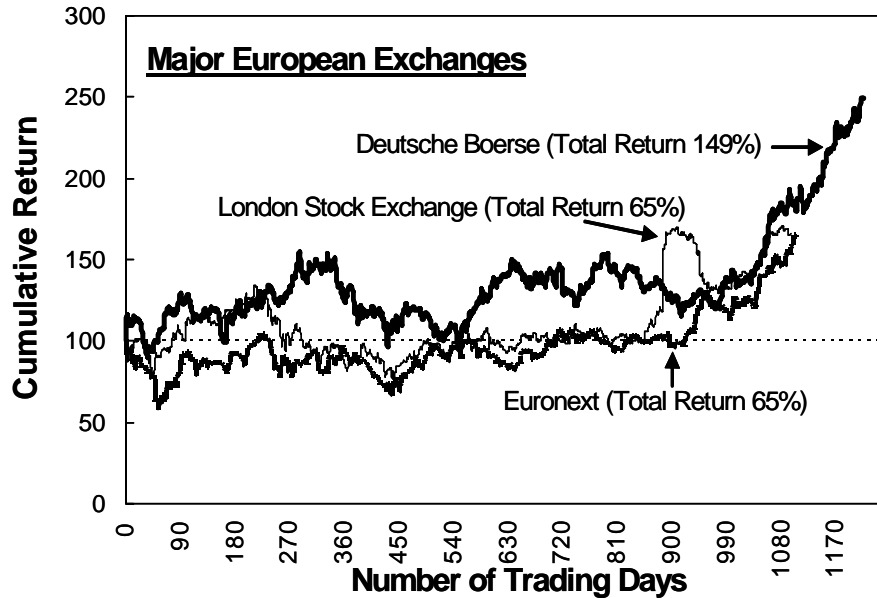
Source: Aggarwal and Dahiya (2006)

PERFORMANCE

| | First Day Return (Offer to Close) | Cumulative Returns Since IPO/Listing to Sept 30, 2005 | | |
|---------------------------------------|--------------------------------------|---|------------------|------------|
| | | Exchange | Comparable Index | Difference |
| Major European Exchanges | | | | |
| Deutsche Boerse | 11.40% | 149.90% | -13.50% | 163.40% |
| Euronext | -8.40% | 65.30% | -14.90% | 80.20% |
| London Stock Exchange | -5.20% | 65.60% | 17.00% | 48.70% |
| Major North American Exchanges | | | | |
| Toronto Stock Exchange | 13.10% | 385.90% | 83.60% | 302.30% |
| Nasdaq | 0.00% | 69.00% | 53.30% | 15.70% |
| Chicago Mercantile Exchange | 22.57% | 705.40% | 41.60% | 663.80% |
| CBOT | 48.70% | | | |
| Archipelago | 6.96% | 224.00% | 17.90% | 206.10% |
| International Securities Exchange | 68.89% | -23.00% | 2.80% | -25.80% |
| Major Asian/Oceania Exchanges | | | | |
| Australia Stock Exchange | | | | |
| Hong Kong Stock Exchange | 3.70% | 753.80% | 151.70% | 602.10% |
| Singapore Stock Exchange | 17.90% | 343.90% | 38.40% | 305.50% |
| Sydney Futures Exchange | 21.80% | 223.50% | 120.70% | 102.80% |
| New Zealand Stock Exchange | -3.02% | 289.80% | 58.10% | 231.70% |
| Philippines Stock Exchange | 16.67% | 88.50% | 65.70% | 22.80% |
| Osaka Stock Exchange | 120.18% | -30.30% | 43.90% | -74.10% |

Source: Aggarwal and Dahiya (2006)

Post Listing Performances of Major Exchanges



Source: Aggarwal and Dahiya (2006)

PERFORMANCE

| | Profitability | | | 5 -Year Growth* | |
|-------------------------------|---------------|--------|------------------|-----------------|------------|
| | ROE | ROA | Operating Margin | Sales | Op. Income |
| Deutsche Boerse | 10.90% | 3.20% | 29.40% | 10.60% | 20.70% |
| Euronext | 9.50% | 6.30% | 23.20% | 10.60% | 20.70% |
| London Stock Exchange** | 20.00% | 14.50% | 32.70% | 8.90% | 16.40% |
| Instinet | 5.30% | 2.80% | 58.70% | 4.50% | -28.00% |
| Toronto Stock Exchange | 39.50% | 15.80% | 51.10% | 13.60% | 45.60% |
| Nasdaq | 11.30% | 0.40% | 1.50% | -3.20% | -42.90% |
| Chicago Mercantile Exch | 31.90% | 5.70% | 50.00% | 29.00% | 123.20% |
| CBOT | 15.40% | 8.90% | 21.80% | -0.30% | -32.00% |
| Archipelago | 15.50% | 11.90% | 13.50% | 23.00% | NM |
| International Securities Exch | 35.40% | 16.80% | 42.90% | 30.70% | 65.40% |
| Australia Stock Exchange | 65.30% | 51.10% | 58.90% | 12.50% | 19.00% |
| Hong Kong Stock Exchange | 21.90% | 5.10% | 47.00% | 5.70% | 14.90% |
| Singapore Stock Exchange | 19.60% | 16.80% | 50.40% | 13.70% | 10.10% |

Compounded Annual Growth Rate (CAGR) for 2000-2004.

PERFORMANCE

| | Mkt Cap (\$ mill) | 2006 PE | 2007E PE |
|-----------------------------------|-------------------|---------|----------|
| ITG | 1,983 | 22.1 | 18.7 |
| Knight | 2,221 | 15.3 | 17.4 |
| CME | 19,453 | 47.6 | 37.6 |
| BOT | 8,680 | 47.9 | 40.0 |
| Intercontinental Exchange | 7,177 | 58.5 | 39.8 |
| International Sec Exchange | 1,945 | 35.1 | 27.9 |
| NASDAQ | 5,320 | 47.0 | 22.3 |
| NYX | 17,039 | 65.6 | 48.1 |
| Euronext | 10,676 | 31.0 | 27.3 |
| LSE | 2,738 | 34.7 | 26.2 |
| Deutsche Boerse | 13,959 | 21.9 | 19.9 |
| | | | |
| Median | | 34.9 | 27.2 |
| | | | |

Source: Several sources including analyst reports

WFE GOVERNANCE SURVEY

(38 exchanges responded)

- **29 have a board.**
- **On average, 13 persons sit on the board.**
- **5 operate regulatory and commercial activities in separate legal entities; 28 have “Chinese walls” or distinct organization entity**
- **Common committees include: audit (27), compensation (26), nominating (19), risk management (12), compliance (8).**

REGULATORY ISSUES

- **SRO Function**
- **Market Operations and Regulatory Role**
- **Board and Committee Structure**
- **Limitations on Ownership and Voting**
- **Listing of Affiliated Securities**

- **Global Exchanges**

Treasury Conference on United States Capital Market Competitiveness

What regulatory structure for the financial services industry in the U.S. would be the most effective in strengthening customer and investor protection, enhancing market integrity, and making regulatory compliance more efficient so that the U.S Capital markets remain competitive?

Treasury Conference on United States Capital Market Competitiveness

What is the appropriate balance between principles-based and rules-based regulation? And how should the U.S. achieve this balance?

Treasury Conference on United States Capital Market Competitiveness

What is the appropriate balance between regulatory enforcement and supervision? And how should the U.S. achieve this balance?

***Did New Regulations Target the Relevant
Corporate Governance Attributes?***

**Reena Aggarwal
Rohan Williamson**

**McDonough School of Business
Georgetown University
Washington D.C. 20057**

OBJECTIVE

To examine the relationship between governance attributes targeted by new regulations and firm valuation

Presentation Outline

- **Related Literature**
- **Data**
- **New Regulations**
- **Governance and Firm Value**
- **Governance Sub-categories**
- **New Regulations and Firm Value**
- **Conclusions**

LITERATURE - Governance and Firm Performance

Gompers, Ishii and Metrick (QJE 2003): 24 attributes, IRRC, shareholders rights index, democratic portfolios have higher returns, valued higher

Bebchuk, Cohen and Ferrell (2004): entrenchment index consisting of 6 of the 24 attributes drives the results

Bebchuk and Cohen (forthcoming JFE): staggered boards lower value

Brown and Caylor (2005): ISS data, Gov-7 index explains the relationship between governance and valuation

Others: Denis and McConnell (2003), Cremers and Nair (2004), Core et al. (2005), Litov (2005), Amit and Villalonga (2004), Bergstresser et al. (2004), Christofferson et al. (2004)....

LITERATURE – New Regulations

Cunningham (2003), Ribstein (2002), Romano (2004): argue that new regulations have limited effectiveness

Li, Pincus and Rego (2004), Rezaee and Jain (2005), Chhaochhaira and Grinstein (2004), Zhang (2005): event studies, mixed reaction

Linck, Netter and Yang (2005): costs associated with boards have increased substantially; larger boards; nominating and governance committees more likely to exist

Others: Ge and McVay (2005), De Fanco et al (2005), Asthana et al. (2004), Griffin and Lont (2005), Hoitash et al. (2005), Lai (2005)

DATA

- **Institutional Shareholder Services (ISS)**
- **2001-2005 (quarterly)**
- **2001, 2002 limited sample**
- **> 5000 firms**
- **64 Governance Attributes**
- **8 Categories**

DATA

Eight Categories (64 attributes)

- **Board (22)**
- **Audit (4)**
- **Charter/By Laws (11)**
- **State of Inc/Anti-takeover (7)**
- **Executive & Director Comp (10)**
- **Progressive Practices (6)**
- **Ownership (3)**
- **Director Education (1)**

| Minimally Acceptable Governance Standard | % of firms satisfying standard | | |
|--|---------------------------------------|-------------|----------------|
| | 2003 | 2005 | (05-03) |
| <i>BOARD</i> | | | |
| Board controlled by > 50% ind outside directors | 69.3% | 88.4% | 27.6% |
| Compensation comm. - solely ind outsiders | 62.1% | 75.4% | 21.4% |
| Chairman & CEO separated or there is a lead dir | 52.6% | 73.8% | 40.3% |
| Nominating comm. - solely independent outsiders | 22.6% | 62.2% | 175.4% |
| Governance comm. exists and met in past year | 16.2% | 55.0% | 239.2% |
| Governance guidelines are publicly disclosed | 6.1% | 49.3% | 701.3% |
| | | | |
| <i>AUDIT</i> | | | |
| Consulting fees paid to auditors are less than audit fees paid to auditors | 64.0% | 98.0% | 53.0% |
| Audit comm. - solely of independent outsiders | 70.3% | 86.2% | 22.7% |
| Auditors ratified at most recent annual meeting | 56.4% | 65.5% | 16.2% |
| Policy disclosed regarding auditor rotation | 2.8% | 45.7% | 1548.1% |
| | | | |
| <i>CHARTER</i> | | | |
| Single class, common | 91.9% | 94.1% | 2.5% |
| Majority votes to approve mergers (not supermaj.) | 59.4% | 63.5% | 6.9% |

| | | | |
|---|-------|-------|---------|
| | | | |
| <i>COMPENSATION</i> | | | |
| No option repricing within last three years | 94.3% | 91.6% | -2.8% |
| Directors receive all or portion of fees in stock | 84.5% | 84.7% | 0.2% |
| All stock-incentive plans adopted with shareholder approval | 92.4% | 84.3% | -8.7% |
| No loans to executives for exercising options | 82.0% | 60.9% | -25.8% |
| Repricing prohibited | 15.5% | 31.9% | 105.9% |
| | | | |
| <i>PROGRESSIVE PRACTICES</i> | | | |
| Board has express authority to hire own advisors | 5.3% | 90.7% | 1624.9% |
| Performance of the board is reviewed regularly | 6.8% | 61.0% | 798.8% |
| Board approved succession plan for the CEO | 5.4% | 44.9% | 732.3% |
| Outside directors meet without CEO and disclose number of times met | 1.7% | 42.4% | 2440.6% |
| | | | |
| <i>OWNERSHIP</i> | | | |
| All directors with >1 year of service own stock | 93.1% | 87.2% | -6.3% |
| Officers' and directors' stock ownership is at least 1% but < 30% of total shares outstanding | 69.1% | 72.3% | 4.5% |
| | | | |
| <i>DIRECTOR EDUCATION</i> | | | |
| Majority of directors have participated in a director education program. | 0.1% | 2.2% | 2694.4% |

New Regulations

SOX - late 2002, new rules for accounting firms, financial analysts, corporate officers, directors; increased penalties for fraud; enhanced disclosures and internal control

Exchange Rules – Nov. 2003; majority independent boards; audit, compensation and nominating committee can only have independent directors; elaborate definition of independent; board must have executive sessions without management; implementation for most by firms by *end of 2004*

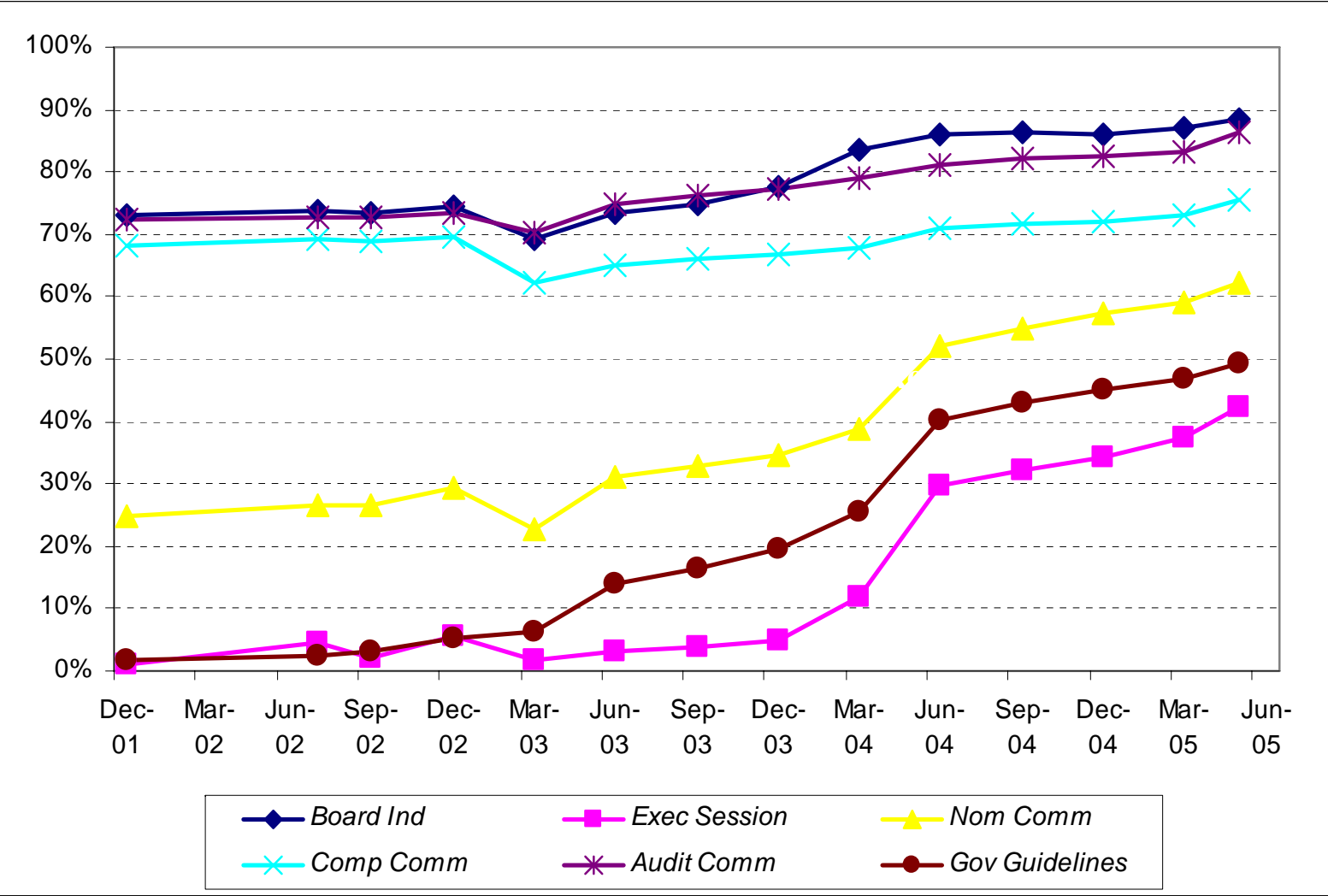
Governance Attributes Associated with New Regulations in ISS Data (2002-2003)

1. Board – Majority independent directors
2. Non-management directors must have executive session without management
3. Nominating Comm must have only ind directors
4. Compensation Comm must have only ind directors
5. Audit Comm must have a min of 3 ind members
6. Must adopt corporate governance guidelines

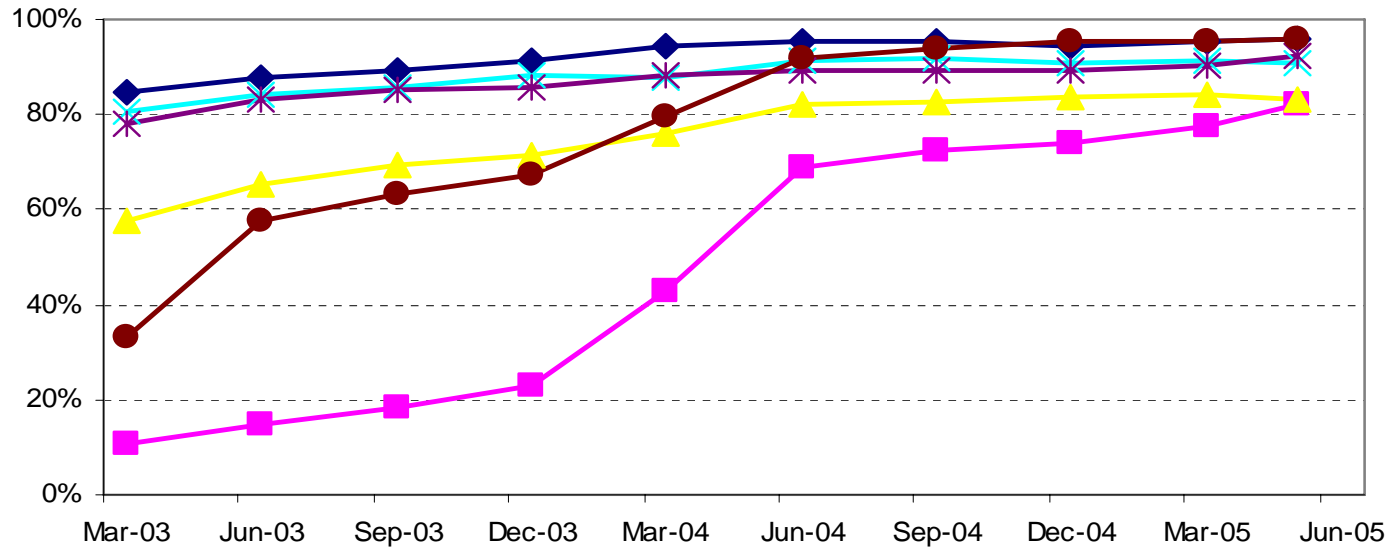
Methodology

1. Composite Governance:
Gov₆₄ (64 dummies)
2. Measures for each of the eight sub-categories
3. $Q = f(\text{log assets, ind dummies, Gov})$
 $Q = f(\text{log assets, S\&P500, yield, sales growth, ind dummies, Gov})$
4. Also use Q_{adj} where Q is adjusted for industry median Q

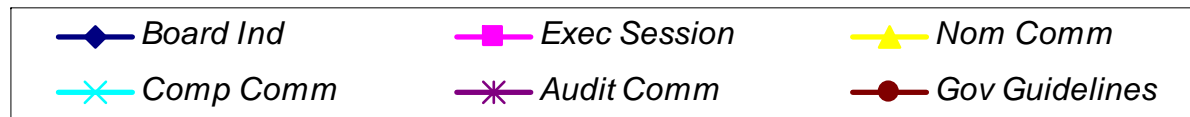
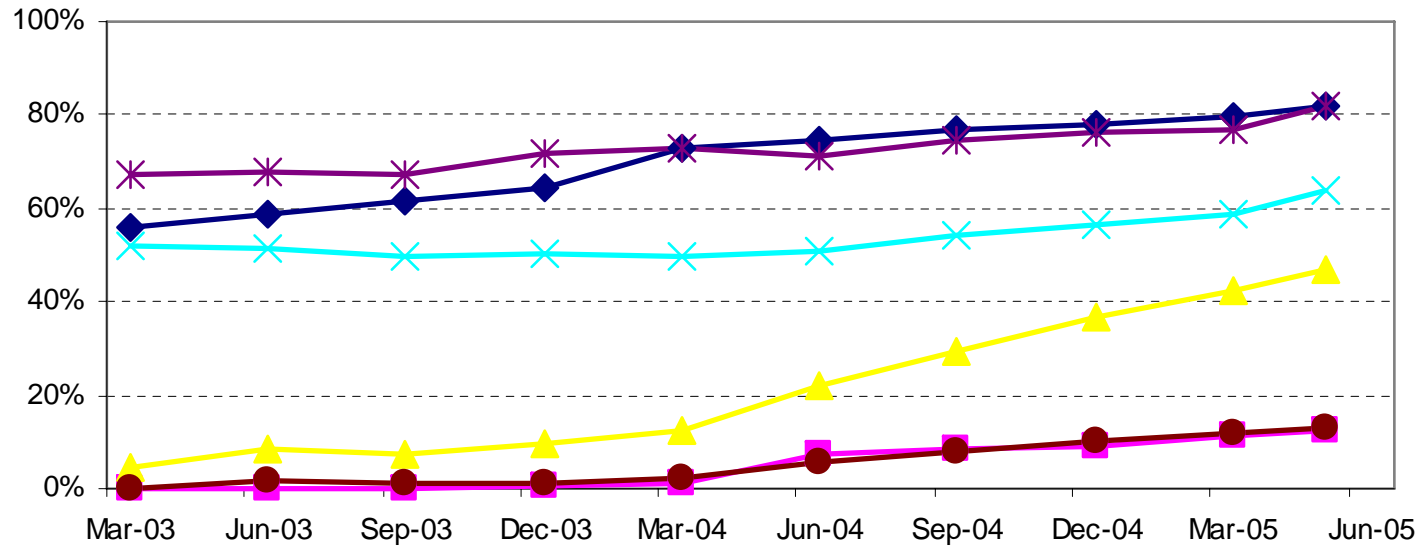
Figure 1
Percentage of Firms Meeting the Six New Regulations



LARGEST



SMALLEST



Smaller firms have lower governance scores

| | <i>Gov₆₄</i> | <i>t-stat</i> |
|-----------------|-------------------------|---------------|
| <i>Smallest</i> | 26.54 | -28.61*** |
| <i>Size 2</i> | 28.04 | -20.75*** |
| <i>Size 3</i> | 29.15 | -13.98*** |
| <i>Size 4</i> | 29.86 | -9.46*** |
| <i>Size 5</i> | 31.19 | -2.97*** |
| <i>Size 6</i> | 31.97 | 0.76 |
| <i>Size 7</i> | 33.34 | 7.00*** |
| <i>Size 8</i> | 34.41 | 11.19*** |
| <i>Size 9</i> | 35.66 | 17.49*** |
| <i>Largest</i> | 37.86 | 32.04*** |
| <i>Total</i> | 31.34 | |

Governance scores by industry

| | <i>N</i> | <i>Gov₆₄</i> | <i>t-stat</i> |
|-----------------------------------|----------|-------------------------|---------------|
| <i>Automobiles & Compo.</i> | 77 | 30.92 | -0.56 |
| <i>Banks</i> | 599 | 30.66 | -3.44*** |
| <i>Capital Goods</i> | 380 | 31.92 | 1.93* |
| <i>Commercial Services</i> | 224 | 30.75 | -1.45 |
| <i>Consumer Durables</i> | 237 | 30.88 | -1.18 |
| <i>Diversified Financials</i> | 110 | 32.04 | 1.25 |
| <i>Energy</i> | 195 | 32.24 | 2.13** |
| <i>Food & Staples Retail</i> | 45 | 32.60 | 1.58 |
| <i>Food Bev & Tobacco</i> | 109 | 31.05 | -0.44 |
| <i>Health Care</i> | 433 | 30.71 | -2.48** |
| <i>Hotels Rest. & Leisure</i> | 148 | 30.62 | -1.5 |
| <i>Household & Personal</i> | 47 | 30.00 | -1.57 |
| <i>Insurance</i> | 118 | 33.10 | 3.03*** |
| <i>Materials</i> | 236 | 32.63 | 3.23*** |
| <i>Media</i> | 133 | 30.95 | -0.86 |
| <i>Pharma. & Biotech.</i> | 314 | 31.29 | -0.17 |
| <i>Real Estate</i> | 210 | 33.59 | 5.55*** |
| <i>Retailing</i> | 235 | 31.30 | -0.09 |
| <i>Semiconductors</i> | 149 | 32.15 | 1.94* |
| <i>Software & Services</i> | 530 | 29.76 | -7.63*** |
| <i>Technology</i> | 436 | 30.92 | -1.59 |
| <i>Telecomm. Services</i> | 97 | 29.76 | -2.94*** |
| <i>Transportation</i> | 82 | 32.37 | 1.58 |
| <i>Utilities</i> | 115 | 37.07 | 10.71*** |

So Far

1. Major changes have taken place in certain governance attributes.
2. Many firms were already satisfying some of the standards imposed by new regulations.
3. There are significant differences in governance based on firm size and industry.

Governance and Valuation, 2004 (Col 1 & 2 with ind dummies)

| | Q | Q | Q_{adj} | Q_{adj} |
|--------------------------------|----------|----------|------------------------|------------------------|
| <i>GOV₆₄</i> | 0.05*** | 0.04*** | 0.04*** | 0.03*** |
| <i>SIZE</i> | -0.38*** | -0.46*** | -0.34*** | -0.39*** |
| <i>SP500</i> | | 1.37*** | | 1.19*** |
| <i>YIELD</i> | | -1.25 | | 0.56 |
| <i>SGrowth</i> | | 0.01 | | 0.01 |
| <i>Obs.</i> | 4133 | 4046 | 4133 | 4046 |
| <i>R-sq</i> | 0.23 | 0.25 | 0.12 | 0.14 |
| <i>F test</i> | 58.71 | 51.43 | 103.85 | 45.65 |

Next replace *GOV₆₄* with each subcategory

Subcategories and Firm Valuation, 2004

| | <i>Q_{adj}</i> |
|---|------------------------|
| <i>Board</i> | *** |
| <i>Audit</i> | *** |
| <i>Charter</i> | <i>Not sig</i> |
| <i>State</i> | *** |
| <i>Executive & Dir Compensation</i> | *** |
| <i>Progressive Practices</i> | *** |
| <i>Ownership</i> | * |
| <i>Director Education</i> | <i>Not sig</i> |

SIX NEW REGULATIONS

| | 2002 | | 2005 | |
|--|-----------------------|----------------------------|-----------------------|----------------------------|
| <i># of New Regulations Met</i> | <i># Firms</i> | <i>% Cumulative</i> | <i># Firms</i> | <i>% Cumulative</i> |
| 0 | 562 | 13.27 | 81 | 1.91 |
| 1 | 559 | 26.48 | 166 | 5.83 |
| 2 | 856 | 46.69 | 324 | 13.48 |
| 3 | 1,358 | 78.77 | 496 | 25.19 |
| 4 | 680 | 94.83 | 1,044 | 49.85 |
| 5 | 175 | 98.96 | 773 | 68.1 |
| 6 | 44 | 100 | 1,351 | 100 |

Governance Attributes Associated with New Regulations in ISS Data (2002-2003)

1. Board – Majority independent directors
2. Non-management directors must have executive session without management
3. Nominating Comm must have only ind directors
4. Compensation Comm must have only ind directors
5. Audit Comm must have a min of 3 ind members
6. Must adopt corporate governance guidelines

Variables Related to New Regulations

- REG – index of six governance attributes, can have min value of 0 and max of 6
- $GOV_{58} = (GOV_{64} - REG)$
- $NREG = (1+REG)$...needed so that GAP can be created
- $GAP = (7-NREG)/NREG$

New Governance Regulations and Firm Valuation

| | 2002 | | 2003 | | 2004 | |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | <i>Col. 1</i> | <i>Col. 2</i> | <i>Col. 3</i> | <i>Col. 4</i> | <i>Col. 5</i> | <i>Col. 6</i> |
| <i>Gov₅₈</i> | | 0.01 | | 0.03*** | | 0.04*** |
| <i>Reg</i> | 0.06*** | 0.02* | 0.11*** | 0.07*** | 0.05*** | 0.01 |
| <i>SIZE</i> | -0.06*** | -0.11*** | -0.21*** | -0.28*** | -0.30*** | -0.39*** |
| <i>SP500</i> | | 0.74*** | | 0.98*** | | 1.19*** |
| <i>YIELD</i> | | -0.67** | | -0.39 | | 0.48 |
| <i>SGROWTH</i> | | 0.14** | | 0.02*** | | 0.01 |
| Observations | 3742 | 3702 | 3938 | 3891 | 4553 | 4046 |
| R-squared | 0.02 | 0.07 | 0.08 | 0.10 | 0.12 | 0.14 |
| F test | 18.70 | 26.49 | 51.415.64 | 36.13 | 69.37 | 38.09 |

New Governance Regulations and Firm Valuation

| | 2002 | | 2003 | | 2004 | |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | <i>Col. 1</i> | <i>Col. 2</i> | <i>Col. 3</i> | <i>Col. 4</i> | <i>Col. 5</i> | <i>Col. 6</i> |
| <i>Gov₅₈</i> | | 0.01** | | 0.02*** | | 0.04*** |
| <i>GAP</i> | -0.02*** | 0 | -0.06*** | -0.05*** | -0.02 | -0.01 |
| <i>SIZE</i> | -0.06*** | -0.11*** | -0.19*** | -0.28*** | -0.28*** | -0.39*** |
| <i>SP500</i> | | 0.74*** | | 0.98*** | | 1.19*** |
| <i>YIELD</i> | | -0.67** | | -0.39 | | 0.48 |
| <i>SGROWTH</i> | | 0.14** | | 0.02** | | 0.01 |
| Observations | 3742 | 3702 | 3938 | 3891 | 4133 | 4046 |
| R-squared | 0.01 | 0.06 | 0.07 | 0.10 | 0.11 | 0.14 |
| F test | 13.35 | 25.95 | 70.27 | 35.46 | 98.25 | 37.98 |

New Governance Regulations and Firm Valuation

| | Pooled | | Fixed Effects | |
|-------------------------|-----------------|-----------------|----------------------|-----------------|
| | <i>Col. 1</i> | <i>Col. 2</i> | <i>Col. 3</i> | <i>Col. 4</i> |
| <i>Gov₅₈</i> | 0.04*** | 0.01** | 0.01* | 0.01* |
| <i>GAP</i> | -0.02*** | -0.03*** | -0.02*** | -0.02*** |
| <i>SIZE</i> | -0.22*** | -0.27*** | -0.55*** | -0.54*** |
| <i>SP500</i> | | 1.01*** | | |
| <i>YIELD</i> | | -0.38* | | -0.12 |
| <i>SGROWTH</i> | | 0.02** | | 0.02** |
| Observations | 11813 | 11639 | 11813 | 11639 |
| R-squared | 0.08 | 0.10 | 0.03 | 0.03 |
| F test | 118.11 | 80.63 | 70.01 | 40.29 |

Pre- and Post- New Regulations

| | Pooled | | Fixed Effects | |
|-------------------------|-----------------|-----------------|----------------------|-----------------|
| | <i>Col. 1</i> | <i>Col. 2</i> | <i>Col. 3</i> | <i>Col. 4</i> |
| <i>REG</i> | 0.08*** | | 0.04*** | |
| <i>GAP</i> | | -0.03*** | | -0.02*** |
| <i>DPOST</i> | 0.33*** | 0.11*** | 0.32*** | 0.15*** |
| <i>DPOST*GAP</i> | | 0.02 | | 0.02** |
| <i>DPOST*REG</i> | -0.07*** | | -0.05*** | |

Other Tests

Replace Reg_1 (Board) dummy that uses a 50% cutoff with dummies for more detailed cutoffs.

- Pre-regulation: 50% & 67% cutoff are positive and significant
- Post-regulation: 67% & 90% cutoff are positive and significant

Conclusions

- Corporate governance standards have improved
- Major differences based on firm size and industry
- Positive relationship between governance and valuation
- New regulations did target governance provisions that were relevant from a market perspective

BUT

The market was already recognizing firms with better governance so it is not clear that regulation was needed and is a more effective mechanism



Difference in Governance Practices
between U.S. and Foreign Firms:
Measurement, Causes, and Consequences

**Reena Aggarwal, Isil Erel, René Stulz,
and Rohan Williamson**



Questions

- Do firms abroad invest less in internal governance than U.S. firms?
- If yes, why?
- Are differences in internal governance relative to the U.S. related to firm value?
- If yes, what does such a relation mean?



The Governance Rating

- IRRC (Gompers, Ishii, Metrick (2003); CLSA and S&P's Transparency and Disclosure (Durnev and Kim (2005); **Institutional Shareholder Services (ISS)**
- We aggregate governance scores from ISS at the firm level into an index, which we call GOV
- Does aggregation provide a useful perspective?
- We also use individual attributes



Hypotheses

- Substitution hypothesis: Better country-level governance leads to less investment in internal investment
- Complementarity hypothesis: Better country-level governance leads to more investment in internal investment
- Controlling shareholder hypothesis: Because of private benefits, controlling shareholders find it optimal to invest less in governance and firm value is lower as a result



Main Results

- Foreign firms invest less in governance than U.S. firms (exceptions mostly in common law countries)
- Firm value increases with governance gap (foreign firm governance minus a matching U.S. firm governance)
- Strong support for complementarity hypothesis and controlling shareholder hypothesis



Data

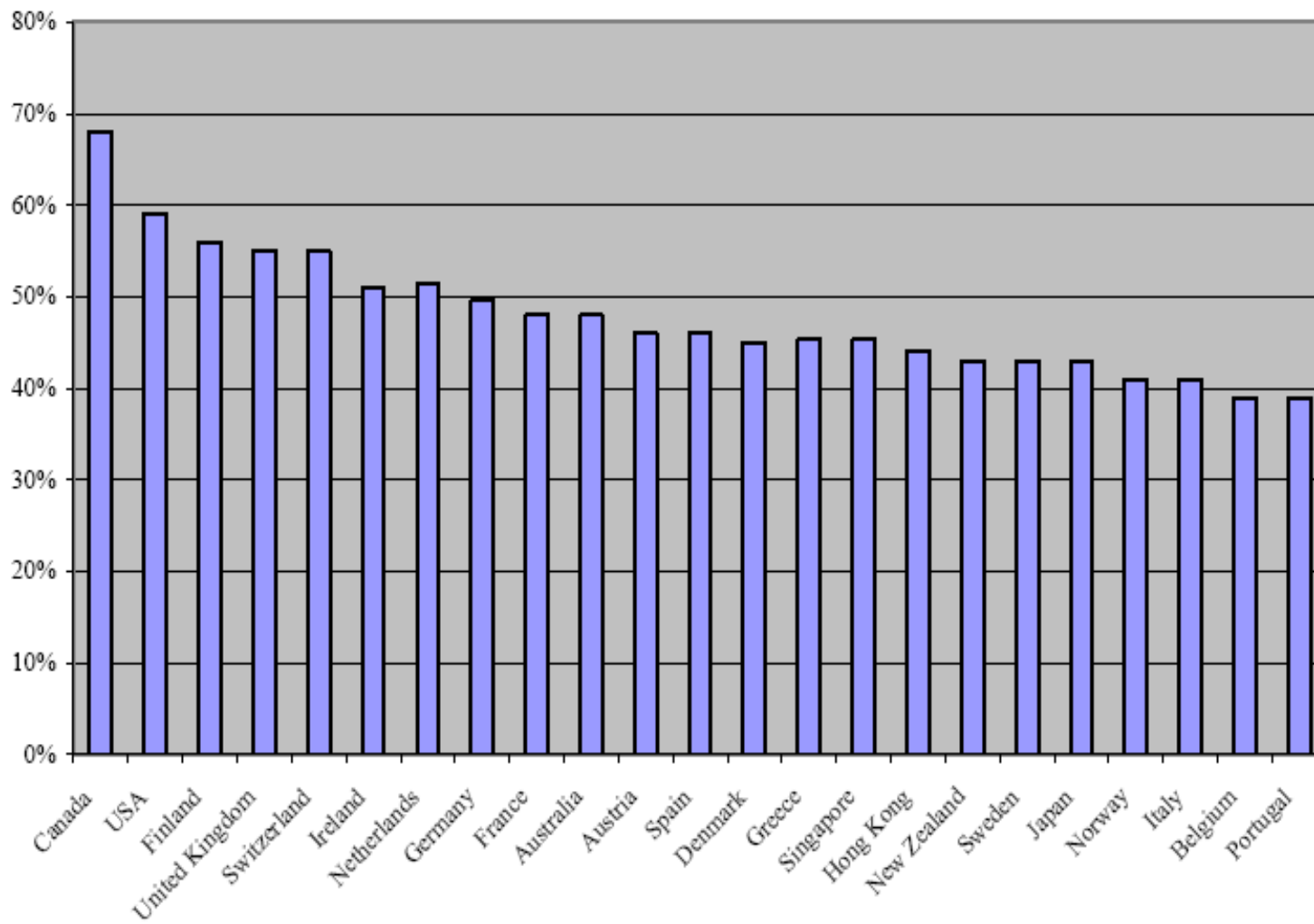
- Governance attributes are from ISS; foreign firm-level data is from Worldscope and Datastream while U.S. data comes from CompuStat
- ISS uses these attributes in computing its Corporate Governance Quotient (CGQ)
- ISS examines firms' regulatory filings, annual reports, and website; evaluates whether a firm's governance attribute meets its minimally acceptable threshold
- Firms do not pay to get rated but can check for accuracy
- 5,296 U.S. companies and 2,234 foreign firms in 22 developed countries are covered in 2005



GOV INDEX: *GOV*

- Index is expressed as a percentage
- Adds up attributes (like GIM)
- Includes 44 attributes:
 - 25 attributes related to functioning of the **board** of directors
 - 3 attributes related to **audit** indep. and role of auditors
 - 6 attributes related to **anti-takeover** provisions, single/dual class structure, poison pills, etc.
 - 10 attributes related to **compensation and ownership** of directors and how they are determined/monitored

Cross-Country Comparison





U.S. vs. Foreign

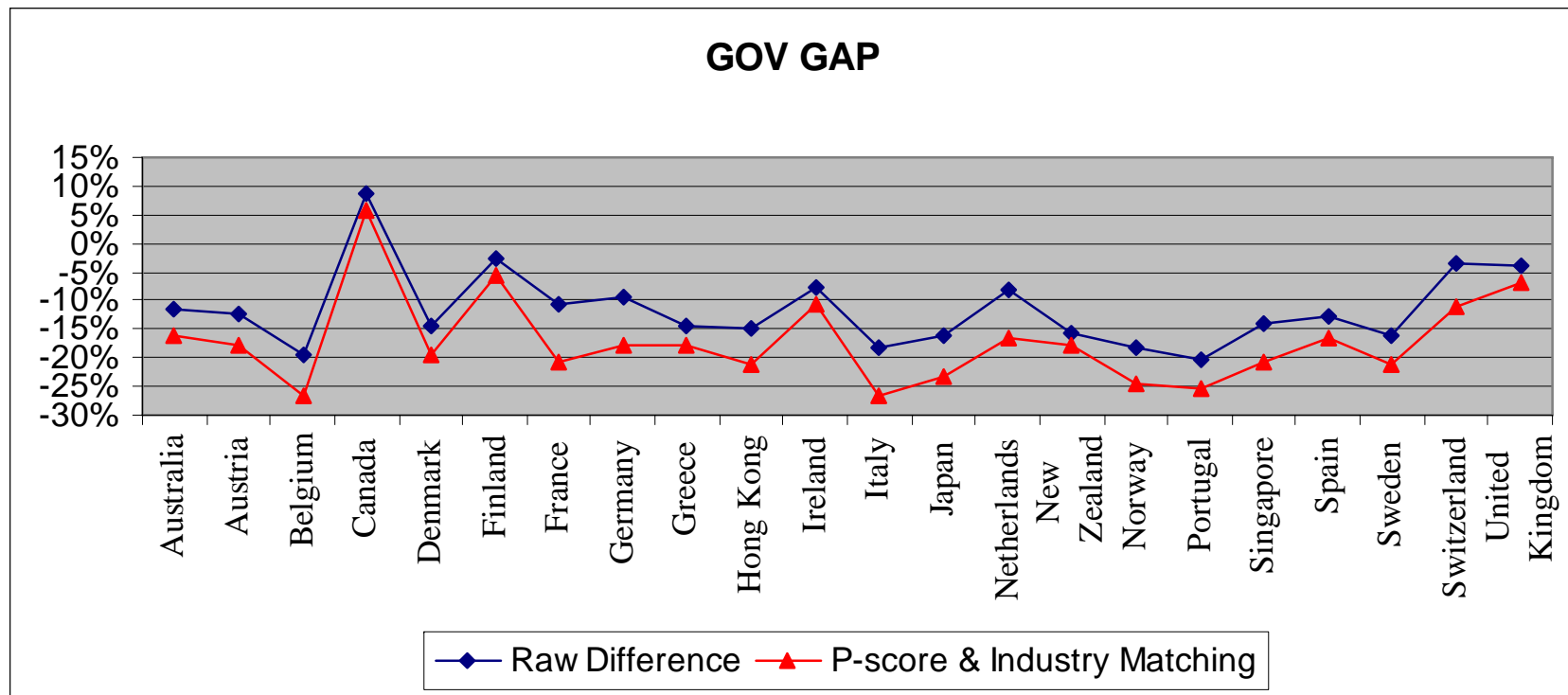
- Average *GOV* is 50% for non-U.S. and 59% for U.S. firms
- Every country except for Canada has a lower average index than U.S.!
- Countries with the lowest index: Portugal (39%) and Belgium (39%)
- Countries with the highest index: Canada (68%) and Finland (56%)



Comparison Using Matched Pairs: P-score & Industry Matching

- Matches a foreign firm with a U.S. firm based on industry and closest propensity score (p-score)
- P-score: probability that a firm is a foreign firm given its characteristics (Size, 2-year ave. sales growth, 2-year ave. R&D/Sales, Cash/Assets, Capex/Assets, PPE/Sales, EBIT/Sales, Debt/Sales, and Industry Dummies)

Governance GAP: Difference in *GOV* of the foreign firm and its matched U.S. firm





Results with Matching

- Across 22 developed countries, 87.32% of firms invest less in internal governance than matching U.S. firms
- 14 (out of 22) countries have at least one firm with positive GAP
- Only three countries (Canada, Finland, and U.K.) have more than five firms with positive GAP



How do Firms With Positive GAP Differ? *Median Difference Test*

- Have higher q (1.57 versus 1.28)
- Smaller
- Sales Growth, R&D to Sales, Cash/Assets, Debt/Assets are greater
- Capex is lower
- Come from countries with better institutions
 - Greater stock market cap/GDP, with common law, with better judicial system, and with better laws and regulations to curb self-dealing by insiders



How do Firms With Positive GAP Differ? *Probit Regressions*

- Firm characteristics (except for size and leverage) do not seem to be important
- Measures of investor protection are consistently significant and common law dummy explains more than firm characteristics



Value and Governance

- Higher q for firms with positive GAP
- Is it higher GAP that causes higher q ? Not so fast
- GAP could be optimal, could be correlated with (observable or not) omitted firm characteristics, could be explained by country characteristics
- Optimal for whom?



GOV GAP has Significant Positive Coefficient

| | (1) | (2) | (3) |
|--------------|---------------------|---------------------|---------------------|
| GOV_US | 2.023 (4.48)*** | 2.031 (4.55)*** | 1.777 (2.85)*** |
| GOV GAP | 1.307 (3.91)*** | | 1.114 (1.80)* |
| NEGATIVE GAP | | 1.358 (3.53)*** | |
| POSITIVE GAP | | 1.063 (0.98) | |
| SIZE | -0.161 (5.92)*** | -0.161 (5.92)*** | -0.171 (8.71)*** |

Regression (3) instruments GOV GAP. All regressions use clustering at the industry level and (if not using country-level variables) at the country level.

Controlling for firm Characteristics

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| GOV_US | 2.023 (4.48)*** | 2.031 (4.55)*** | 1.777 (2.85)*** | 0.959 (2.15)** | 0.967 (2.23)** | 0.806 (1.27) |
| GOV GAP | 1.307 (3.91)*** | | 1.114 (1.80)* | 1.235 (3.70)*** | | 1.046 (1.82)* |
| NEGATIVE GAP | | 1.358 (3.53)*** | | | 1.283 (3.51)*** | |
| POSITIVE GAP | | 1.063 (0.98) | | | 1.009 (1.10) | |
| SIZE | -0.161 (5.92)*** | -0.161 (5.92)*** | -0.171 (8.71)*** | -0.085 (3.37)*** | -0.085 (3.36)*** | -0.107 (5.78)*** |

Regressions (4), (5), and (6) control for firm characteristics. (6) instruments GOV GAP.



Rajan and Zingales Test

| | (1) | (2) | (3) |
|--------------|--------------------|--------------------|--------------------|
| GOV_US | 0.911 (2.08)** | 0.910 (2.13)** | -0.358 (1.72)* |
| GOV GAP | 1.279 (3.76)*** | | |
| NEGATIVE GAP | | 1.273 (3.55)*** | |
| CLOSELY HELD | 0.217 (1.76)* | 0.217 (1.75)* | 0.181 (1.36) |
| ADR | 0.172 (2.58)** | 0.172 (2.57)** | 0.181 (2.87)*** |

These regressions control for closely-held shares as well as for ADR in addition to firm characteristics.



Country Characteristics

| | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| GOV_US | 0.520 (1.11) | 0.562 (1.37) | 0.224 (0.41) | 0.267 (0.55) | 0.386 (0.80) | 0.437 (1.08) |
| GOV GAP | 0.872 (2.48)** | | 0.542 (1.34) | | 0.727 (1.98)* | |
| NEGATIVE GAP | | 1.031 (3.56)*** | | 0.694 (2.27)** | | 0.911 (3.91)*** |
| POSITIVE GAP | | 0.243 (0.23) | | -0.025 (0.02) | | 0.021 (0.02) |
| GDPPC | -0.439 (3.72)*** | -0.438 (3.81)*** | -0.413 (3.17)*** | -0.410 (3.21)*** | -0.402 (3.37)*** | -0.400 (3.44)*** |
| MarketCap/GDP | 0.000 (0.08) | 0.000 (0.06) | -0.000 (1.02) | -0.000 (1.03) | -0.000 (0.04) | -0.000 (0.02) |
| COMMON LAW | -0.126 (1.38) | -0.127 (1.40) | | | | |
| Rule-of-law*Anti-Director | | | 0.002 (0.38) | 0.002 (0.33) | | |
| Anti-Self-Dealing | | | | | -0.194 (1.28) | -0.206 (1.40) |



Results

- Q is positively related to GOV_US and to GOV GAP
- Firm (country) characteristics do not affect (reduce) coefficient on GOV GAP
- Foreign firms that would require larger investment in governance in U.S. are valued less abroad



Conclusion: Results

- Typically, U.S. firms invest more in governance (exceptions are mostly in common law countries)
- GOV GAP is related to value, so that foreign firms farther away from the firm-level governance of their matching U.S. firm are worth less



Conclusion: What does it mean

- Foreign firms suffer a value loss from not finding it optimal to adopt internal governance practices comparable to U.S. matching firm
- Evidence is consistent with the view that minority investors would benefit from increases in investment in internal governance
- Support for complementarity hypothesis and controlling shareholder hypothesis



Individual Governance Attributes

- CEO/Chairman of the board separation is not value relevant
- Stock classes attribute is not value relevant
- Board independence gap is value relevant
- Audit committee independence gap is value relevant