

How Corporate Governance Affects Firm Value

: Evidence on Channels from Korea

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Motivation

Motivation

- ❖ Prior work in emerging markets provides evidence of an association between corporate governance and firm market value
 - Limited evidence of a causal relationship, though
 - Exceptions: BJK (2006) and BK (2008)

- ❖ Very little evidence on the channels through which governance may affect value
 - Evidence on channels make the CG-Value linkage more convincing
 - What channels? Better performance or reduced diversion?

What Do We Mean by Channels?

Channels

Channels	Methodologies
Less tunneling	RPT RPT-firm value relationship Industry - firm shock relationship Voting premium
Better investment	Capex Profitability - Capex relationship Profitability - asset sale relationship Tobin's q - Capex relationship
Higher profitability	Profitability Sales growth Tobin's q - profitability relationship
Better distribution	Dividend Profit-dividend relationship Value of cash

What Do We Test?

What Do We Test?

- ❖ Linking corporate governance to firm market value
 - When testing channels, we need to use an index that explains firm market value
 - Firm fixed effects
 - In case of board structure, 2SLS + regression discontinuity analysis
- ❖ Channels through which governance effects firm value
 - Related-Party Transactions
 - Tunneling
 - Investment
 - Sales Growth
 - Growth Opportunity and Profitability
 - Board Structure and Lagged Profitability
 - Dividends

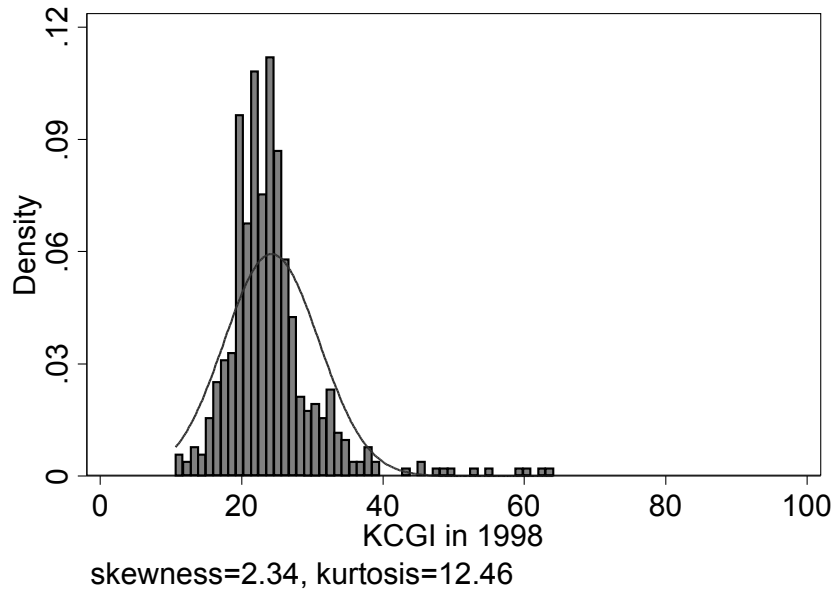
Data

- ❖ Korea corporate governance data from 1998 to 2004 covering the vast majority of public companies listed on the Korea stock exchange

Indices	Scores
Board structure	0 ~ 20
Ownership parity	0 ~ 20
Disclosure	0 ~ 20
Shareholders rights	0 ~ 20
Board procedure	0 ~ 20
KCGI	0 ~ 100

- ❖ Source: surveys conducted by KSE & CGS, KLCA publications, hand-collected data
 - Two surveys in mid 2001 and year-end 2001: eight time points, not seven

- ❖ Various ways to reduce the cost of hand-collection
 - Element extrapolation over multiple years
 - * If $A=0$ in year $t+1$, $A=0$ in year t
 - * If $A=1$ in year $t-1$, $A=1$ in year t
 - Element extrapolation over one year (A is available only in one adjacent year)
 - * If A is missing in year t , equal to the value of A in year $t-1$ or $t+1$ (innocuous since we use clustered SE; add noise, but no bias)
 - Element interpolation (A is available in both adjacent years)
 - * If A is missing in year t , equal to the average of A in year $t-1$ and $t+1$
 - Firm interpolation (the firm is available in both adjacent years)
 - * If a firm is missing in year t , the value of year t element equals the average of year $t-1$ and $t+1$ elements
 - Assume firms comply with legal requirements

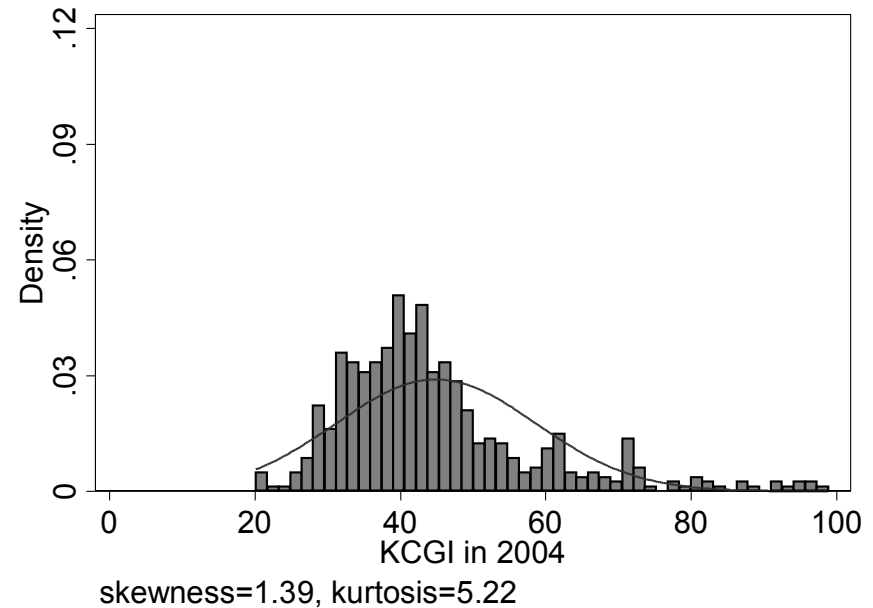


1998

Mean = 24.23
Median = 23.33
SD = 6.72

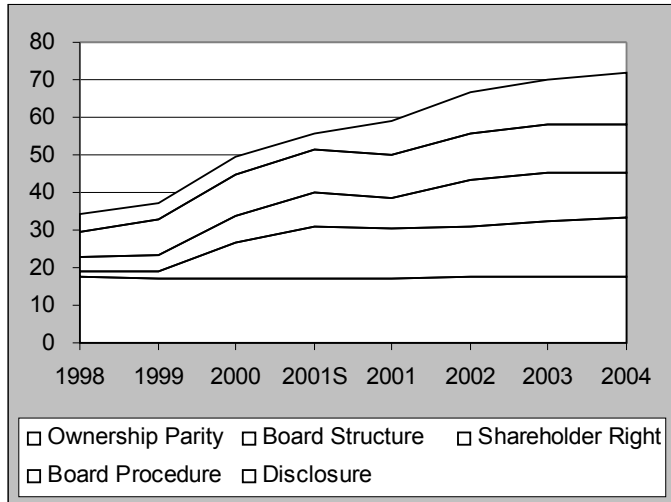
2004

Mean = 44.89
Median = 42.03
SD = 13.74

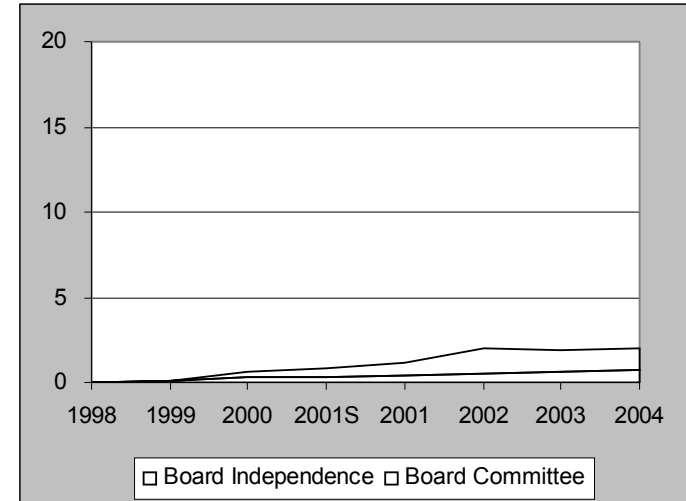
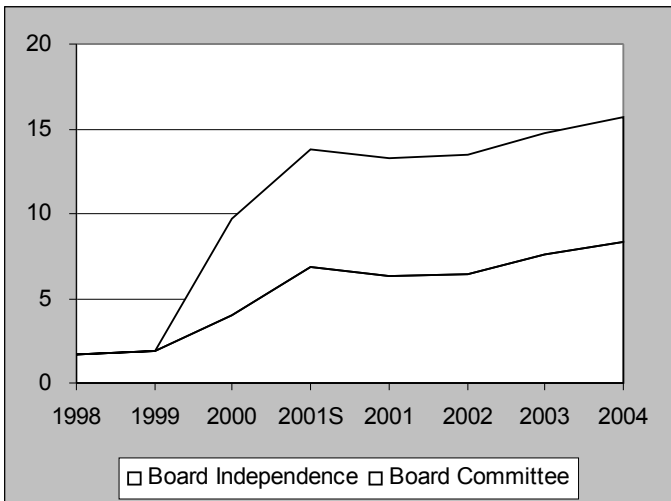
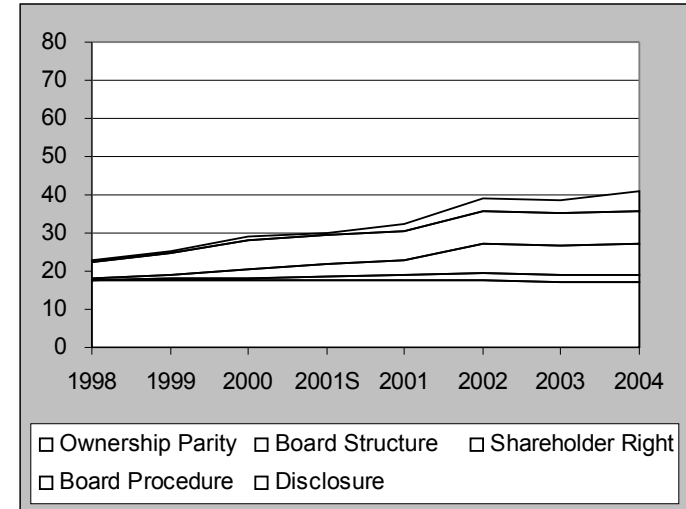


KCGI & Sub-indices

Large Firms



Small Firms



Results

**Linking
Corporate Governance to
Firm Market Value**

CG-Value Relationship

❖ Single stage regressions

- Panel regression with firm fixed effects or firm random effects
- Clustered SE at firm-level and year fixed effects
- Lots of controls (23 + 4-digit industry dummies)

❖ Two-stage regressions

- Instrumental variable: IV 1999 (= 1 if firm is large and year is 1999 or later, 0 otherwise)
- Correlation with governance: governance reform targeting large firms became known to public in the 2nd half of 1999
- Exogenous: post-crisis governance reform was exogenous
- No direct correlation with firm value: regression discontinuity analysis (separately control for firm size)

CG-Value Relationship

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable	<i>ln</i> (Tobin's <i>q</i>)					Board Structure	<i>ln</i> (Tobin's <i>q</i>)
Stage (for 2SLS)						1st stage	2nd stage
Fixed or random effects	Fixed	Fixed (balanced)	Random	Fixed	Random	Fixed	Fixed
<i>KCGI</i>	0.0035***	0.0032***	0.0044***				
	(5.27)	(3.74)	(7.23)				
<i>Board Structure</i>				0.0093***	0.0099***		
				(6.63)	(7.50)		
<i>Instrumented Board Structure</i>							0.0143***
							(3.31)
<i>Ownership Parity</i>				0.0008	0.0053**	0.0485	0.0005
				(0.27)	(2.29)	(1.14)	(0.17)
<i>Disclosure</i>				0.0033**	0.0039***	0.0680***	0.0028*
				(2.23)	(2.87)	(2.62)	(1.86)
<i>Board Procedure</i>				0.0014	0.0021	0.0484	0.0011
				(0.63)	(1.08)	(1.34)	(0.47)
<i>Shareholder Rights</i>				0.0007	-0.0003	0.0563**	-0.0011

Economic significance: worst-to-best change in *KCGI* predicts a 96% increase in share price

**Channels through which
Governance Affects
Firm Value**

Related-Party Transactions

❖ Related-party transactions

related - party sales and purchases of goods and services
total sales

❖ We investigate whether

- RPTs lower firm value
- Governance mitigates the negative impact of RPT
- Which sub-index is contributing?
- Does the result hold in 2SLS (using IV 1999)?

Related-Party Transactions

Dependent var.: $\ln(\text{Tobin's } q)$	(1)	(2)	(3)	(4)
2SLS regression	no	no	no	yes
<i>KCGI</i>		0.0017*		
		(1.89)		
x RP Transactions/sales		0.0036**		
		(2.28)		
Board Structure Subindex			0.0061**	
			(2.27)	
x RP Transactions/sales			0.0067	
			(0.95)	
Instrumented Board Structure Subindex				0.0076
				(1.60)
x RP Transactions/sales				0.0271***
				(2.71)
RP Transactions/sales	-0.074***	-0.206**	-0.160	0.005
If $KCGI > 57$, related-party transaction on average improves firm value	(2.54)	(3.22)	(1.23)	(0.03)
x $\ln(\text{assets})$				-0.0159
				(0.75)

Tunneling

- ❖ Bertrand, Mehta, and Mullainathan (QJE, 2002)
 - Measure the responsiveness of firm profitability to shocks to industry profitability
 - Low responsiveness suggests that insiders extract more (fewer) potential profits as the firm does better (worse)

- ❖ Industry profitability
$$\frac{\text{EBITDA summed across all other firms in the industry}}{\text{assets summed across all other firms in the industry}}$$

- ❖ We investigate whether
 - Governance improves the responsiveness of firm profitability to industry profitability
 - Which sub-index? Does it hold when using 2SLS (using IV 2000)?

Tunneling

Dependent var.: EBITDA/Assets	(1)	(2)	(3)	(4)
2SLS regression	no	no	no	yes
<i>KCGI</i>		-0.0002 (1.27)		
x Industry EBITDA/assets		0.0042*** (3.59)		
Board Structure Subindex			-0.0004 (1.14)	
x Industry EBITDA/assets			0.0121** (2.33)	
Instrumented Board Structure Subindex				-0.0006 (1.02)
x Industry EBITDA/assets				0.0206*** (3.29)
Industry EBITDA/assets	0.0972*** (3.70)	-0.0495 (0.99)	0.0068 (0.04)	-0.1365 (0.70)
Other subindices of KCGI	Y	N	Y	Y
Other subindices x Industry EBITDA/assets	N	N	Y	Y
<i>ln</i> (assets)	Y	Y	Y	Y
Corporate Governance, Channels, and Value	N	N	N	Y

❖ Overinvestment problem in pre-crisis period

- Shin and Park (JCF, 1999) and Hong, Lee, and Lee (JWE, 2007)
- Average Tobin's q of 0.86...drops with firm size

❖ We investigate whether

- Governance limits capital expenditure
- Governance improves the sensitivity of capital expenditure to profitability
- Governance improves the sensitivity of capital expenditure to growth opportunity

Investment

Dependent var.: Capex/Assets	(1)	(2)	(7)	(8)
Fixed or random effects	fixed	random	fixed	random
<i>KCGI</i>	-0.0002** (2.00)	-0.0002** (2.58)	-0.0005*** (2.88)	-0.0005*** (3.40)
x EBIT/Sales			0.0005** (2.03)	0.0005** (2.39)
x Tobin's <i>q</i>			0.0003** (1.99)	0.0003** (2.31)
EBIT/Sales	-0.0002 (0.49)	0.0004 (1.25)	-0.0217** (2.03)	-0.0200** (2.33)
Tobin's <i>q</i>	0.0033 (1.36)	0.0043** (2.15)	-0.0076 (1.22)	-0.0069 (1.26)
Constant, other control variables	Y	Y	Y	Y
No. of observations	3986	3986	3986	3986
No. of firms	695	695	695	695
Pseudo R ²	0.0367	0.2986	0.0402	0.3019
Hausman test <i>p</i> -value		0.9631		0.8312
Worse-to-best change in KCGI predicts a 0.016 drop in Capex/assets (median = 0.025)				
If KCGI > 43, Capex - profitability relationship becomes positive				

Sales Growth

- ❖ Overexpansion problem in pre-crisis period
- ❖ We investigate whether
 - Governance limit sales growth
 - Which sub-index is driving the result?
 - Does the result hold in 2SLS (using IV 2000)?

Sales Growth

Dependent var.: Sales Growth	(1)	(2)	(3)	(4)	(5)	(6)
2SLS regression	no	no	no	yes	no	yes
<i>KCGI</i>	-0.0023**	-0.0024**				
	(2.41)	(2.45)				
x EBIT/Sales		0.0032				
		(0.42)				
Board Structure Subindex			-0.0029		-0.0047**	
			(1.36)		(2.00)	
x EBIT/ Sales					0.0329*	
					(1.95)	
Instrumented <i>Board Structure</i>				-0.0049		-0.0105*
				(1.30)		(1.94)
x EBIT/ Sales						0.1052**
						(1.98)
<i>Ownership Parity</i>			-0.0091***	-0.0090***	-0.0081**	-0.0086**
			(2.63)	(2.61)	(2.44)	(2.57)
Worse-to-best change in KCGI predicts a 0.184 drop in sales growth					(median = 0.06)	
x EBIT/ Sales					0.0188***	0.0201**
					(3.06)	(2.06)

Growth Opportunity and Profitability

- ❖ Hutchinson and Gul (JCF, 2004)
 - In poorly governed firms, there exists a negative relationship between growth opportunity and profitability
 - Firms with high growth opportunity have greater room for discretionary expenditure...need closer monitoring

- ❖ We investigate whether
 - Governance mitigates the negative relationship between growth opportunity and profitability
 - Which sub-index is driving the result?
 - Does the result hold in 2SLS (using IV 2000)?

Growth Opportunity and Profitability

Dependent var.: EBIT/assets	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2SLS regression	no	no	no	no	no	yes	yes
<i>KCGI</i>		-0.0001	-0.0010***				
		(0.53)	(2.91)				
x Tobin's <i>q</i>			0.0010***				
			(3.06)				
Board Structure Subindex				0.0001	-0.0036***		
				(0.38)	(3.13)		
x Tobin's <i>q</i>					0.0038***		
					(3.15)		
Instrumented Board Structure						0.0004	-0.0044***
						(0.85)	(2.78)
x Tobin's <i>q</i>							0.0049***
							(2.97)
Tobin's <i>q</i>	0.0122***	0.0122***	-0.0213**	0.0121***	0.0049	0.0120**	0.0245
If <i>KCGI</i> > 21, Tobin's <i>q</i> - profitability relationship becomes positive	(2.61)	(2.60)	(2.34)	(2.60)	(0.24)	(2.58)	(0.83)
Other subindices of <i>KCGI</i>	N	N	N	Y	Y	Y	Y
Other subindices x Tobin's <i>q</i>	N	N	N	N	Y	N	Y
<i>ln</i> (assets)	Y	Y	Y	Y	Y	Y	27Y
Corporate Governance, Channels, and Value	Y	Y	Y	Y	Y	Y	Y

BS and Lagged Profitability

❖ Black and Kim (2008)

- In DiD analysis, we found that large firms' profitability rises relative to small firms beginning in 2003, some time after the 1999 reform

❖ We investigate whether

- Governance improves firm profitability with a lag
- Which sub-index is driving the result?
- Does the result hold in 2SLS (using IV 2000)?

BS and Lagged Profitability

Dependent variable: EBIT/assets	(1)	(2)	(3)
Board Structure Subindex (t-2)	0.0010***		
	(2.94)		
Instrumented Board Structure Subindex (t-2)		0.0012**	
		(2.15)	
(KCGI – Board Structure Subindex) (t-2)	-0.0002	-0.0003	
	(1.23)	(1.32)	
Board Independence Subindex (t-2)			0.0018***
			(3.30)
(KCGI – Board Independence Subindex) (t-2)			-0.0001
			(0.77)
<i>ln</i> (assets)	Y	Y	Y
Constant, other control variables	Y	Y	Y
Observations	3698	3698	3694
Number of firms	667	667	667
within R ²	0.0862	0.0842	0.0854

Dividend Policy

- ❖ Low dividend in pre-crisis period
- ❖ We investigate whether
 - Governance increases dividend
 - Governance improves the sensitivity of dividend to profits
 - Which sub-index is driving the result?

Dividend Policy

Dependent var.: Dividends/Sales	(1)	(2)	(3)	(4)
KCGI	0.00008**	0.0000		
	(2.21)	(1.20)		
x EBIT/sales		0.0007***		
		(4.98)		
Board Structure Subindex			-0.0000	-0.0000
			(0.20)	(0.26)
x EBIT/sales				-0.0001
				(0.34)
Ownership Parity Subindex			0.0001	0.0001
			(0.99)	(0.75)
x EBIT/sales				0.0005**
				(2.06)
Disclosure Subindex			0.0003***	0.0002**
Worse-to-best change in KCGI predicts a 0.006 increase in dividend (median = 0.005)			(0.24)	(2.16)
x EBIT/sales				0.0012***
				(4.50)

Contributions

Contributions

- ❖ Provide evidence on the channels through which governance affects firm market value
 - Not just using any governance index, but using the one that is likely to cause higher firm value
 - Very little evidence on this in the existing literature

- ❖ Provide evidence on nature of firm value increase
 - Evidence on related-party transactions and tunneling → wealth transfer
 - Evidence on investment, sales growth, profitability, dividend → overall firm value increase