



Board industry expertise and strategic change: the impact of institutional differences

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- **Introduction**
 - **Data and Model**
 - **Empirical Results**
 - **Robustness**
 - **Contribution**
 - **Limitation and future Outlook**
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Board capabilities are considered a major source of board function fulfillment

Board Independence

Independent (outside) directors have lower inducements to exert personal benefits

- Baysinger & Butler, 1985
- Booth & Deli, 1996
- Ryan & Wiggins, 2004

Agency perspective on the board

Gerhard Cromme



non-executive board seats:

Thyssen Krupp AG
Siemens AG
Allianz SE
Axel Springer AG
Compagnie de Saint-Gobain

Board Capabilities

Experienced board members are conduits to important information and providers of counsel to management

- Haynes & Hillman, 2010
- Kroll et al., 2008
- Westphal & Fredrickson, 2001

Resource-based view of the board

Understanding the effects of boards on firm performance requires a scope that is more proximal to the influence of directors

General understanding that board capabilities are important sources of corporate outcomes
(Forbes & Milliken, 1999; Kim, 2007; Kor & Sundaramurthy, 2009)

However, little is known about *how* these effects are created
(Johnson, Daily, & Ellstrand, 1996; Zahra, 1989)

To understand how boards effect firm performance, a scope that is more proximal to the scope of boards is required (Stiles, 2001)

**Strategic
Change**

**“change in the fundamental pattern of present
and planned resource deployments”**

(Hofer & Schendel, 1978)

Strategic change is considered a major source of competitive advantage and firm survival



Strategic change is a crucial component of organizational adaptation and firm survival (Mintzberg, 1978)

Topical Research mainly focuses on the effect of executives on strategic change (conformity, deviance)

TMT & Strategic Change

Authors	Journal	Effect of...	Major result
Finkelstein & Hambrick	Administrative Science Quarterly 1990	Managerial tenure on strategic change	Long TMT tenure relates to less change
Boeker	Academy of Management Journal 1997	Managerial characteristics on strategic change	Poor performance, long TMT tenure, and higher diversity of TMT relates to more change
Carpenter	Journal of Management 2000	CEO compensation on strategic change	Positive effect of CEO pay on strategic change when firm performance is low
Quigley & Hambrick	Strategic Management Journal 2012	CEO predecessor retention on strategic change	Predecessor retention relates to less strategic change
Tang, Crossan, & Rowe	Journal of Management Studies 2011	CEO power on strategic change	CEO power relates to more change; powerful boards weaken the effect
Zhang	Strategic Management Journal 2006	Separate COO/president on strategic change	Presence of a separate COO/president relates to more strategic change
Geletkanycz & Hambrick	Administrative Science Quarterly 1997	External ties of top executives on strategic conforms	intraindustry ties are related to strategic conformity; extraindustry ties to strategic deviation

Recently, board characteristics brought to the center of discussion

Boards & Strategic Change

Authors	Journal	Effect of...	Major result
Golden & Zajac	Strategic Management Journal 2001	Board demography on strategic change	Board size, tenure, age, and occupational heterogeneity relate to more change
Haynes & Hillman	Strategic Management Journal 2010	Board (human & social) capital on strategic change	Board capital breadth leads to more change; board capital depth leads to less
Westphal & Fredrickson	Strategic Management Journal 2001	Director experience on strategic change	Board effects on strategic change can be masked by CEO effects
Goodstein, Gautam, & Boeker	Strategic Management Journal 1994	Board size and diversity on strategic change	Board diversity is a constraint on strategic change
Bolton & White	Working Paper 2012	Experience on strategic change during CEO stability	Board strategic experience relates to more strategic change

Industry experiences enhances directors' ability to provide resources to the firm and to monitor executives

Individual experiences acquired through prior work relationships in similar industries enhances the quality of board function fulfilment: **(1) provision of counsel** and **(2) monitoring executives**

Provision of counsel

Industry
experience

- ability to judge on industry-related topics
- understand peculiarities of the market
- challenges, regulations, resource constraints
- creation of additional network ties in industry

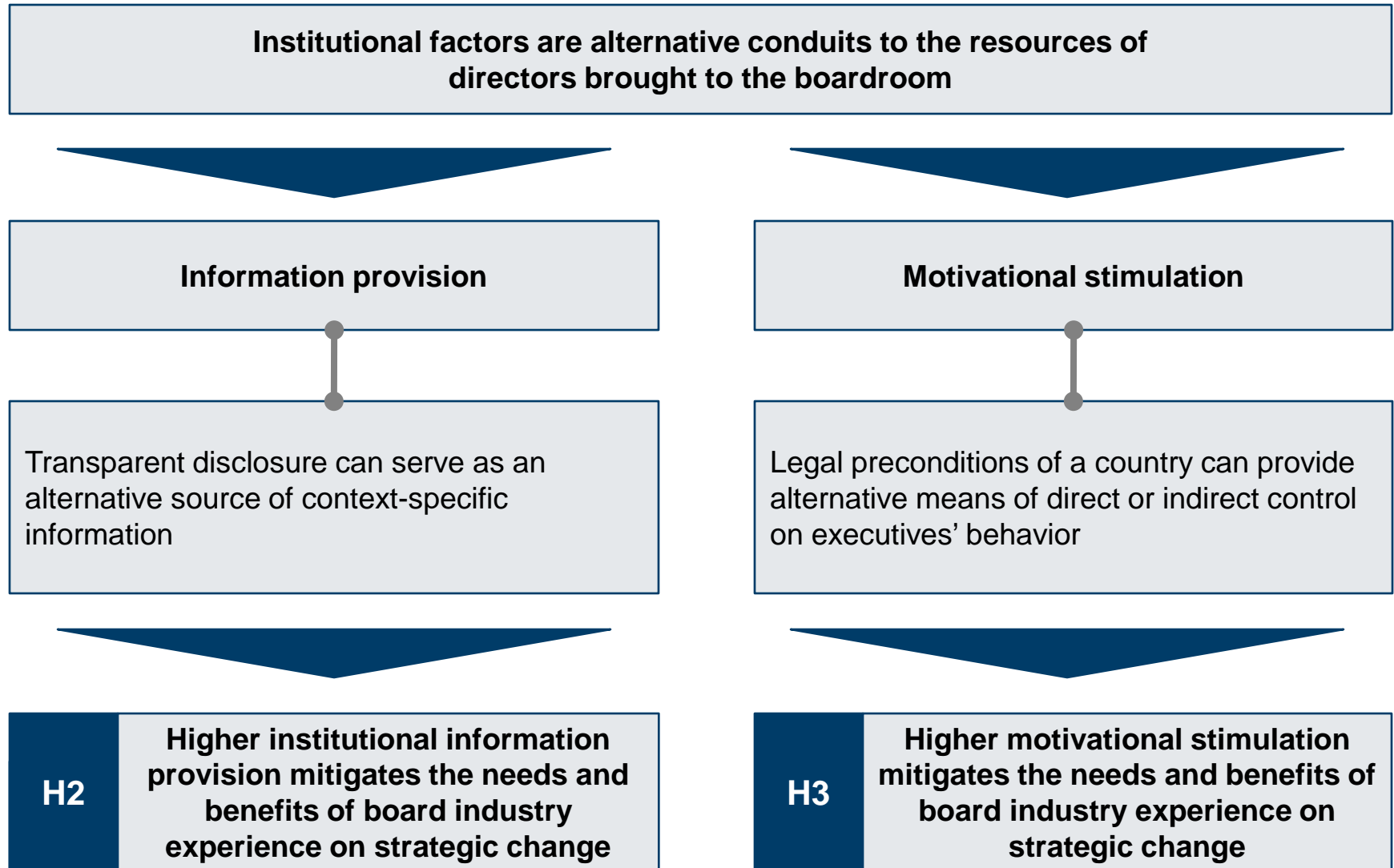
Monitoring executives

Industry
experience

- understanding managerial performance
- ability to recognize managerial misconduct
- detection of deviations from known patterns
- helps to overcome uncertainty and inertia

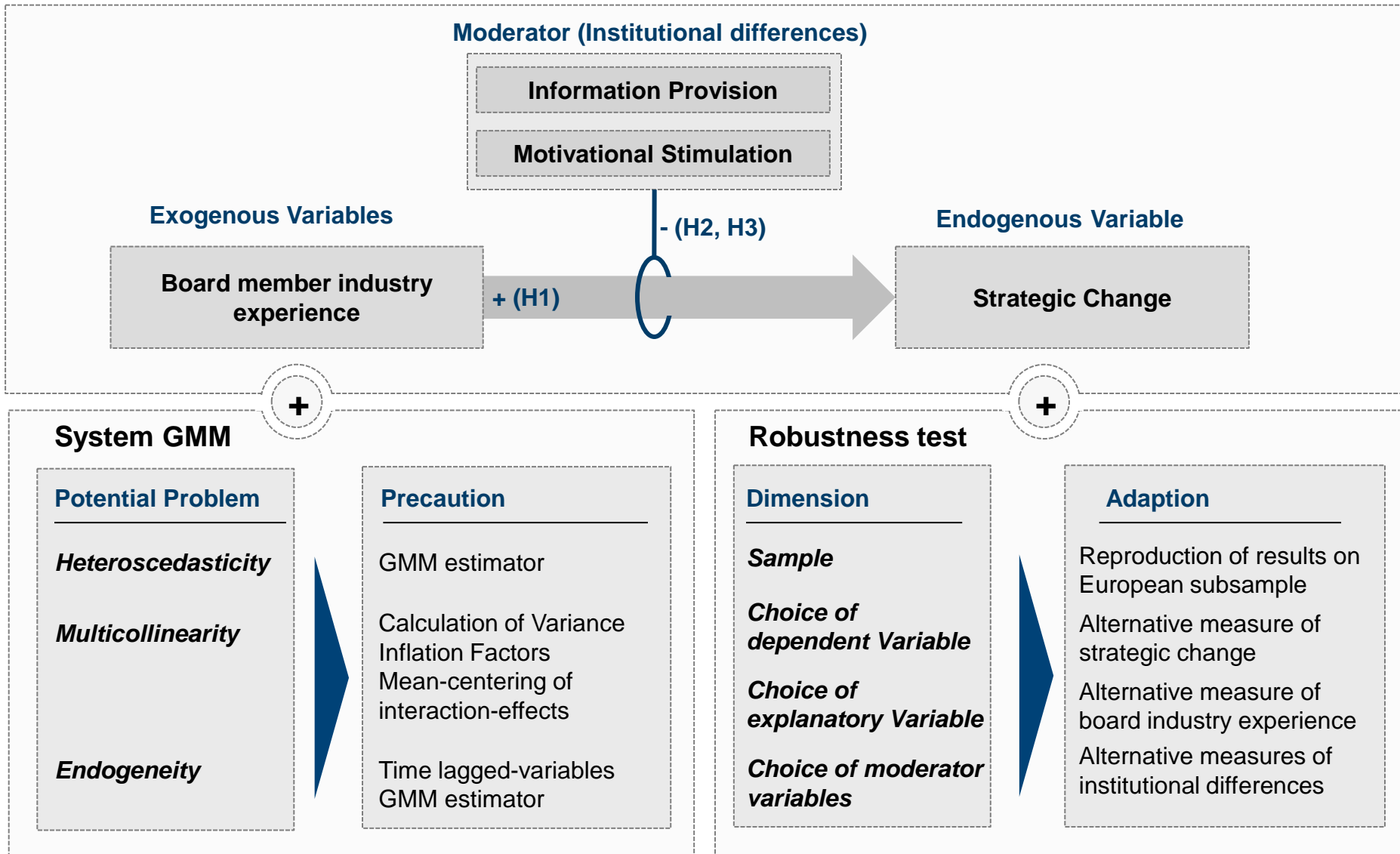
H1 Higher board member industry experience is associated with more strategic change

Country-specific factors moderate the effect of board industry experience on strategic change

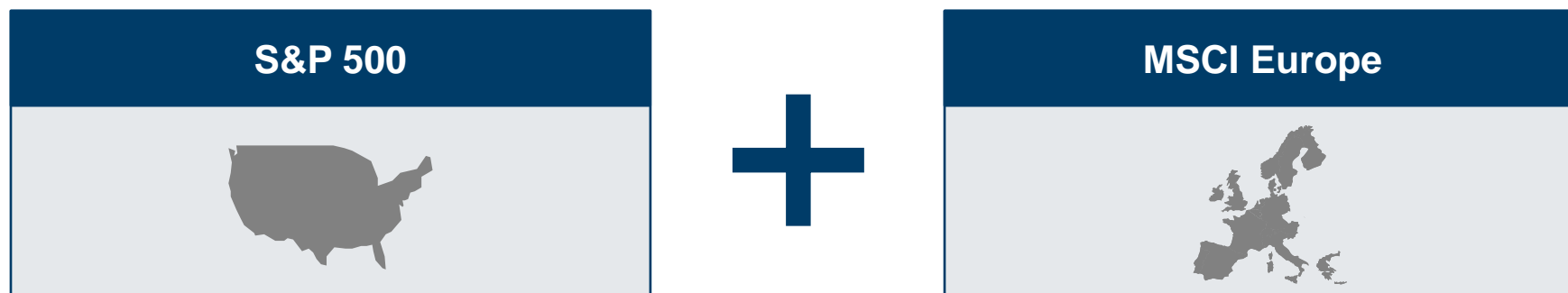


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The research design includes considerations of potential challenges as well as several robustness tests



The sample covers firms listed in the S&P 500 and MSCI Europe Index in the period of 2005 – 2010 (2,995 firm-year observations)



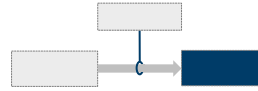
Equity securities listed in MSCI Europe and S&P500 (2005-2010)	1,526	} cross-sectional perspective
- Double listings	133	
- Financial institutions	275	
<hr/> Number of firms in dataset	1,118	
Maximum observations for sample period (6 years × 1,118 firms)	6,708	} firm-year perspective
- Observations without listing in MSCI Europe or S&P500	1,848	
- Data restrictions*	1,865	
<hr/> Number of firm-year observations included in final sample	2,995	

**Multinational including 17 countries from Europe and the U.S.
2,995 observations across 6 years**

* reduction of sample size mainly attributable to restrictive calculation of dependent variable (if all resource allocation items available)

Strategic change is measured as the annual change across 4 resource allocation ratios (Hambrick & Finkelstein, 1990)

Dependent Variable



Resource allocation ratios per firm year

Plant & equipment newness

**net PE/
gross PE**

Non-productive overhead

**SG&A/
sales**

General level of inventories

**inventory/
sales**

Financial leverage

**total debt/
equity**

Absolute value of differences between subsequent years

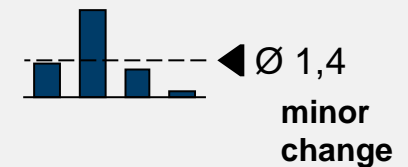
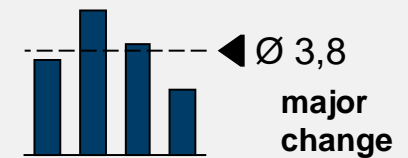
e.g. :

$$\Delta \text{ PE newness} = | \text{PE newness}_t - \text{PE newness}_{(t-1)} |$$

standardized by year across all firms
(mean = 0; standard deviation = 1)

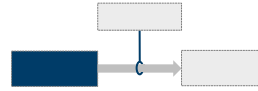
Composite Measure "Strategic Change"

Average across the standardized values of differences across all resource allocation ratios (e.g. Zhang, 2006; Quigley & Hambrick, 2012)



Board level industry experience is calculated as the proportion of industry experts on the board

Explanatory Variable



List of companies listed in **MSCI Europe** and **S&P500** Index between 2005 - 2010



List of all **(non-executive) directors** of the corporate board per company



Individual employment record of board seats for each director across all BoardEx firms (last 4 years)



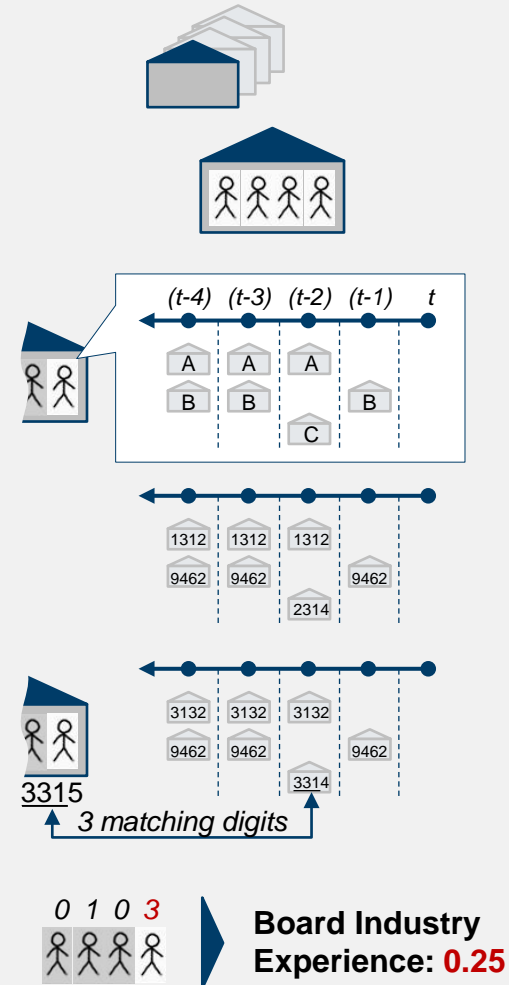
Assignment of primary **Industry Classification Code (SIC)** to each entry of employment record



Individual industry experience as the maximum of **coinciding SIC-digits** between focal firm and employment record

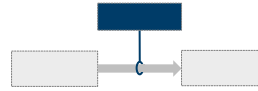


Level of board industry experience as the **proportion of directors** on the board with individual experience levels >2



Information provision is approximated by the disclosure requirements index;
motivational stimulation is approximated by the anti-self-dealing index

Moderator Variable



Disclosure Requirements Index (dri)

- Introduced by La Porta et al. (2006)
- Index that captures legal requirements on firm financial data disclosure

Anti-Self-Dealing Index (asd)

- Introduced by Djankov et al. (2008)
- strength of minority shareholder protection against self-dealing of controlling shareholders

asd dri

	asd	dri
Austria	0.21	0.25
Belgium	0.54	0.42
Denmark	0.46	0.58
Finland	0.46	0.50
France	0.38	0.75
Germany	0.28	0.42
Greece	0.22	0.33
Ireland	0.79	0.67
Italy	0.42	0.67
Netherlands	0.20	0.50
Norway	0.42	0.58
Portugal	0.44	0.42
Spain	0.37	0.50
Sweden	0.33	0.58
Switzerland	0.27	0.67
Great Britain	0.95	0.83
United States	0.65	1.00

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Results (1/3) – board industry experience has positive and significant effect on strategic change

	Model 1			Model 2		
Method	System GMM			System GMM		
Sample	Full Sample			Full Sample		
<i>Dependent Variable</i>						
STRATEGIC CHANGE	coeff.	S.E.		coeff.	S.E.	
<i>Explanatory Variables</i>						
EXPERIENCE				0.1528	0.0667	**
INFO (DRI)						
CONTROL (ASD)						
EXPERIENCE × DRI						
EXPERIENCE × ASD						
<i>Control Variables</i>						
STRATEGIC CHANGE _(t-1)	0.2693	0.0292	***	0.2569	0.0300	***
PERF_ROE _(t-1)	-0.0004	0.0002	*	-0.0004	0.0002	
PERF_TOBINQ _(t-1)	-0.0190	0.0075	**	-0.0209	0.0076	***
SIZE _(t-1)	0.0156	0.0231		0.0119	0.0238	
LEVERAGE _(t-1)	0.1098	0.0810		0.1390	0.0831	*
RISK _(t-1)	0.0028	0.0014	**	0.0025	0.0013	*
SALES_GROWTH _(t-1)	-0.0117	0.0253		-0.0065	0.0256	
DIVERSIFICATION	-0.0335	0.0282		-0.0386	0.0285	
FREE_FLOAT	-0.0008	0.0005		-0.0007	0.0005	
BOARD_SIZE	0.0143	0.0051	***	0.0153	0.0050	***
BOARD_AGE	-0.2177	0.2921		-0.3315	0.3161	
BOARD_TENURE	0.0312	0.0403		0.0250	0.0402	
CEO_AGE	0.0720	0.0986		0.1073	0.0981	
CEO_TENURE	0.0078	0.0164		0.0039	0.0166	
CEO_POWER	-0.0035	0.0035		-0.0032	0.0037	
HIGH_TECH	-0.0569	0.1251		-0.1104	0.1278	
Constant	0.3715	1.2890		0.7209	1.3790	

H1

Higher board member industry experience is associated with more strategic change



Results (2/3) – the positive effect of board industry experience is mitigated by the degree of institutional quality

	Model 3			Model 4		
Method	System GMM			System GMM		
Sample	Full Sample			Full Sample		
<i>Dependent Variable</i>						
STRATEGIC CHANGE	coeff.	S.E.		coeff.	S.E.	
<i>Explanatory Variables</i>						
EXPERIENCE	1.1439	0.4022	***	0.5909	0.2366	**
INFO (DRI)	-0.0206	0.1699				
CONTROL (ASD)				0.0319	0.2943	
EXPERIENCE × DRI	-1.0625	0.4233	**			
EXPERIENCE × ASD				-0.6891	0.3446	**
<i>Control Variables</i>						
STRATEGIC CHANGE _(t-1)	0.2527	0.0283	***	0.2473	0.0285	***
PERF_ROE _(t-1)	-0.0004	0.0002	*	-0.0003	0.0002	
PERF_TOBINQ _(t-1)	-0.0206	0.0076	***	-0.0217	0.0075	***
SIZE _(t-1)	-0.0020	0.0212		-0.0049	0.0216	
LEVERAGE _(t-1)	0.1418	0.0816	*	0.1443	0.0804	*
RISK _(t-1)	0.0023	0.0013	*	0.0024	0.0013	*
SALES_GROWTH _(t-1)	0.0043	0.0242		-0.0036	0.0243	
DIVERSIFICATION	-0.0440	0.0259	*	-0.0499	0.0269	*
FREE_FLOAT	-0.0002	0.0004		-0.0006	0.0004	
BOARD_SIZE	0.0181	0.0051	***	0.0138	0.0046	***
BOARD_AGE	-0.2380	0.3150		-0.3415	0.3024	
BOARD_TENURE	0.0249	0.0391		0.0043	0.0374	
CEO_AGE	0.0796	0.0966		0.0605	0.0970	
CEO_TENURE	0.0002	0.0162		0.0003	0.0165	
CEO_POWER	-0.0016	0.0037		-0.0019	0.0037	
HIGH_TECH	-0.1114	0.1276		-0.0957	0.1241	
Constant	0.5963	1.3758		1.2168	1.3220	

H2

Higher institutional information provision mitigates the needs and benefits of board industry experience on strategic change



H3

Higher motivational stimulation mitigates the needs and benefits of board industry experience on strategic change



Results (3/3) – regressions fulfill all components of system GMM requirements

	Model 1	Model 2	Model 3	Model 4
Method	System GMM	System GMM	System GMM	System GMM
Sample	Full Sample	Full Sample	Full Sample	Full Sample
Year effects	Included	Included	Included	Included
Industry effects	Included	Included	Included	Included
Country effects	Included	Included	Included	Included
<i>Model Fit</i>				
Wald χ^2 -statistic	292.23 (66)	336.22 (67)	331.42 (68)	369.97 (68)
Arellano-Bond Test (<i>III</i>)	-6.18 [0.000]	-6.12 [0.000]	-6.02 [0.000]	-5.94 [0.000]
Arellano-Bond Test (<i>II2</i>)	-1.19 [0.235]	-1.27 [0.205]	-1.29 [0.198]	-1.30 [0.192]
Hansen J-statistics	80.49 [0.432]	92.78 [0.240]	97.65 [0.378]	101.21 [0.287]
Observations	2995	2995	2995	2995



χ^2	<ul style="list-style-type: none"> • Check of model misspecification • Explanatory power of regression 	✓
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η_1	<ul style="list-style-type: none"> • Test of first-order serial correlation • Needs to be significant 	✓
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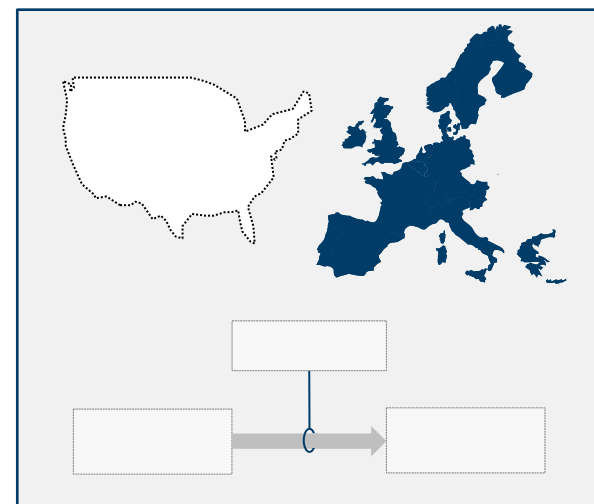
Hansen J	<ul style="list-style-type: none"> • Test of over-identifying restrictions • Needs to be non-significant 	✓
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η_2	<ul style="list-style-type: none"> • Test of second-order serial correlation • Needs to be non-significant 	✓
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Robustness (1/4) – European subsample regressions reveals qualitatively same result

	Model R1.1			Model R1.2			Model R1.3		
Method	System GMM			System GMM			System GMM		
Sample	Europe			Europe			Full Sample		
Dependent Variable									
STRATEGIC CHANGE	coeff.	S.E.		coeff.	S.E.		coeff.	S.E.	
Explanatory Variables									
EXPERIENCE	0.4183	0.0852	***	1.2323	0.4405	***	0.7784	0.1690	***
INFO (DRI)				-0.2690	0.2417				
CONTROL (ASD)							-0.7645	0.6408	
EXPERIENCE × DRI				-1.0556	0.6197	*			
EXPERIENCE × ASD							-0.4956	0.2495	**
Control Variables									
STRATEGIC CHANGE _(t-1)	0.2058	0.0245	***	0.1990	0.0237	***	0.1929	0.0232	***
PERF_ROE _(t-1)	0.0001	0.0002	*	0.0002	0.0002		0.0003	0.0002	
PERF_TOBINQ _(t-1)	0.0227	0.0125		0.0268	0.0125	**	0.0269	0.0116	**
SIZE _(t-1)	-0.0362	0.0230		-0.0418	0.0194	**	-0.0411	0.0204	**
LEVERAGE _(t-1)	0.1093	0.0907		0.1098	0.0825		0.0799	0.0831	
RISK _(t-1)	-0.0007	0.0023		-0.0025	0.0023		-0.0019	0.0023	
SALES_GROWTH _(t-1)	0.0977	0.0307	***	0.0898	0.0273	***	0.1102	0.0275	***
DIVERSIFICATION	-0.0240	0.0347		-0.0096	0.0241		-0.0074	0.0275	
FREE_FLOAT	0.0006	0.0005		0.0003	0.0005		0.0007	0.0005	
BOARD_SIZE	0.0280	0.0083	***	0.0353	0.0067	***	0.0325	0.0075	***
BOARD_AGE	-0.1378	0.2949		-0.1461	0.2666		-0.1128	0.2736	
BOARD_TENURE	-0.0165	0.0381		-0.0003	0.0356		-0.0232	0.0358	
CEO_AGE	-0.2595	0.1184	**	-0.1565	0.1013		-0.2915	0.1051	***
CEO_TENURE	0.0002	0.0187		0.0040	0.0185		0.0023	0.0186	
CEO_POWER	-0.0067	0.0060		-0.0073	0.0057		-0.0066	0.0054	
HIGH_TECH	0.1764	0.1219		0.1402	0.1217		0.1458	0.1187	
Constant	2.0917	1.2606		1.7124	1.1260		2.2851	1.1131	
Year effects	Included			Included			Included		
Industry effects	Included			Included			Included		
Country effects	Included			Included			Included		
Model Fit									
Wald χ^2 -statistic	415.23 (63)			439.99 (64)			441.88 (64)		
Arellano-Bond Test (I1)	-3.08 [0.002]			-3.04 [0.002]			-3.04 [0.002]		
Arellano-Bond Test (I2)	-0.60 [0.548]			-0.66 [0.508]			-0.61 [0.541]		
Hansen J-statistics	86.89 [0.393]			93.78 [0.487]			95.27 [0.444]		
Observations	1059			1059			1059		

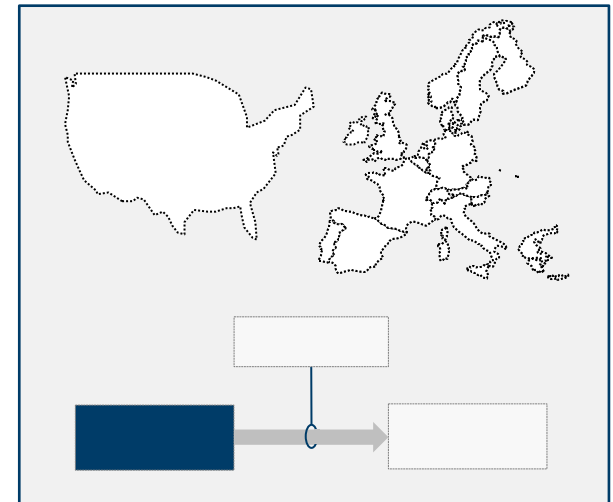


Subsample regressions (Europe only) reveals similar results

Results not driven by U.S. firms which are over-represented in the full sample

Robustness (2/4) – alternative measure for explanatory variable reveals qualitatively same result

	Model R2.1			Model R2.2			Model R2.3		
Method	System GMM			System GMM			System GMM		
Sample	Full Sample			Full Sample			Full Sample		
<i>Dependent Variable</i>									
STRATEGIC CHANGE	coeff.	S.E.		coeff.	S.E.		coeff.	S.E.	
<i>Explanatory Variables</i>									
EXPERIENCE_AVG	0.0421	0.0236	*	0.4027	0.1421	***	0.2415	0.1009	**
INFO (DRI)				0.0750	0.1675				
CONTROL (ASD)							0.1430	0.2899	
EXPERIENCE_AVG × DRI				-0.3850	0.1481	***			
EXPERIENCE_AVG × ASD							-0.3248	0.1517	**
<i>Control Variables</i>									
STRATEGIC CHANGE _(t-1)	0.2567	0.0300	***	0.2488	0.0288	***	0.2522	0.0283	***
PERF_ROE _(t-1)	-0.0003	0.0002		-0.0004	0.0002		-0.0003	0.0002	
PERF_TOBINQ _(t-1)	-0.0213	0.0076	***	-0.0210	0.0076	***	-0.0207	0.0075	***
SIZE _(t-1)	0.0041	0.0236		-0.0056	0.0209		-0.0040	0.0212	
LEVERAGE _(t-1)	0.1479	0.0838	*	0.1880	0.0835	**	0.1461	0.0805	*
RISK _(t-1)	0.0022	0.0013	*	0.0022	0.0013	*	0.0023	0.0013	*
SALES_GROWTH _(t-1)	-0.0159	0.0256		-0.0018	0.0246		-0.0109	0.0240	
DIVERSIFICATION	-0.0494	0.0287	*	-0.0501	0.0266	*	-0.0590	0.0272	**
FREE_FLOAT	-0.0006	0.0005		-0.0002	0.0004		-0.0005	0.0004	
BOARD_SIZE	0.0142	0.0050	***	0.0168	0.0050	***	0.0115	0.0047	**
BOARD_AGE	-0.3445	0.3149		-0.3391	0.3267		-0.3128	0.3012	
BOARD_TENURE	0.0236	0.0403		0.0333	0.0392		0.0045	0.0378	
CEO_AGE	0.0857	0.0983		0.0490	0.0986		0.0504	0.0978	
CEO_TENURE	0.0053	0.0167		-0.0041	0.0162		-0.0005	0.0164	
CEO_POWER	-0.0019	0.0038		0.0001	0.0038		-0.0007	0.0037	
HIGH_TECH	-0.1395	0.1259		-0.1229	0.1249		-0.1191	0.1235	
Constant	0.9469	1.3576		1.1014	1.3928		1.0822	1.2967	
Year effects	Included			Included			Included		
Industry effects	Included			Included			Included		
Country effects	Included			Included			Included		
<i>Model Fit</i>									
Wald χ^2 -statistic	341.45 (67)			316.69 (68)			346.54 (68)		
Arellano-Bond Test (I1)	-6.14 [0.000]			-5.98 [0.000]			-5.92 [0.000]		
Arellano-Bond Test (I2)	-1.26 [0.209]			-1.30 [0.195]			-1.25 [0.211]		
Hansen J-statistics	92.57 [0.245]			96.09 [0.421]			98.79 [0.348]		
Observations	2995			2995			2995		

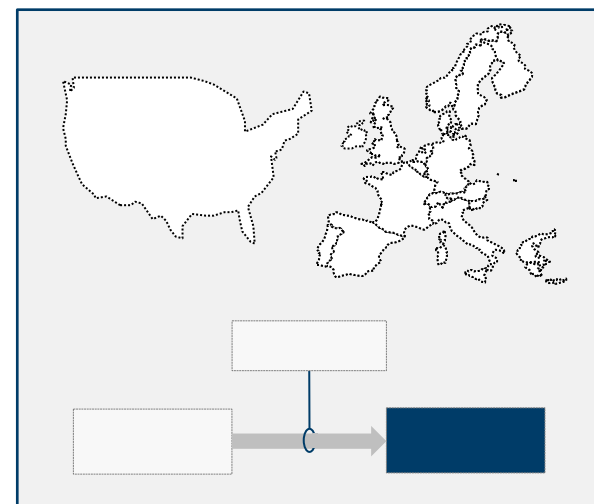


**EXPERIENCE_AVG as the average
of directors' individual level of
industry experience across the
board**

**Results replicable with alternative
measure of explanatory variable**

Robustness (3/4) – alternative measure for dependent variable reveals qualitatively same result

	Model R3.1			Model R3.2			Model R3.3		
Method	System GMM			System GMM			System GMM		
Sample	Full Sample			Full Sample			Full Sample		
Dependent Variable									
STRATEGIC CHANGE (R&D)	coeff.	S.E.		coeff.	S.E.		coeff.	S.E.	
Explanatory Variables									
EXPERIENCE	0.0492	0.0208	**	0.3380	0.1238	***	0.3030	0.0878	***
INFO (DRI)				-0.0227	0.0693				
CONTROL (ASD)							-0.1173	0.1160	
EXPERIENCE × DRI				-0.3210	0.1337	**			
EXPERIENCE × ASD							-0.4058	0.1405	***
Control Variables									
STRATEGIC CHANGE (R&D) _(t-1)	0.0609	0.0217	***	0.0701	0.0201	***	0.0604	0.0209	***
PERF_ROE _(t-1)	0.0000	0.0002		0.0000	0.0002		0.0000	0.0002	
PERF_TOBINQ _(t-1)	-0.0239	0.0071	***	-0.0255	0.0067	***	-0.0232	0.0069	***
SIZE _(t-1)	0.0549	0.0178	***	0.0454	0.0173	***	0.0536	0.0172	***
LEVERAGE _(t-1)	0.2021	0.0821	**	0.1973	0.0763	**	0.2126	0.0772	***
RISK _(t-1)	0.0008	0.0008		0.0007	0.0008		0.0003	0.0008	
SALES_GROWTH _(t-1)	-0.0057	0.0243		0.0049	0.0226		0.0102	0.0227	
DIVERSIFICATION	-0.0578	0.0264	**	-0.0602	0.0241	**	-0.0585	0.0245	**
FREE_FLOAT	-0.0004	0.0004		-0.0003	0.0003		-0.0002	0.0003	
BOARD_SIZE	0.0091	0.0039	**	0.0107	0.0037	***	0.0111	0.0036	***
BOARD_AGE	0.0214	0.3184		-0.1617	0.3125		-0.0830	0.3090	
BOARD_TENURE	-0.0152	0.0378		0.0193	0.0356		-0.0153	0.0354	
CEO_AGE	0.2054	0.1102	*	0.1673	0.0990	*	0.1589	0.1020	
CEO_TENURE	-0.0434	0.0141	***	-0.0415	0.0139	***	-0.0497	0.0140	***
CEO_POWER	-0.0001	0.0041		0.0007	0.0037		0.0019	0.0038	
HIGH_TECH	0.0140	0.1281		0.0989	0.1198		0.0980	0.1207	
Constant	-1.5200	1.5056		-0.6155	1.4396		-0.9111	1.4055	
Year effects	Included			Included			Included		
Industry effects	Included			Included			Included		
Country effects	Included			Included			Included		
Model Fit									
Wald χ^2 -statistic	275.80 (62)			283.73 (63)			287.76 (63)		
Arellano-Bond Test (I1)	-4.29 [0.000]			-4.31 [0.000]			-4.18 [0.000]		
Arellano-Bond Test (I2)	-1.23 [0.217]			-1.24 [0.215]			-1.26 [0.206]		
Hansen J-statistics	80.71 [0.581]			87.10 [0.680]			86.69 [0.691]		
Observations	2080			2080			2080		



STRATEGIC CHANGE (R&D) as the average across 5 standardized values of resource allocation rations (including R&D intensity)

Results replicable with alternative measure of dependent variable

Correlations – Strength of securities regulation and strength of investor protection (sip) used as alternative measures for institutional differences

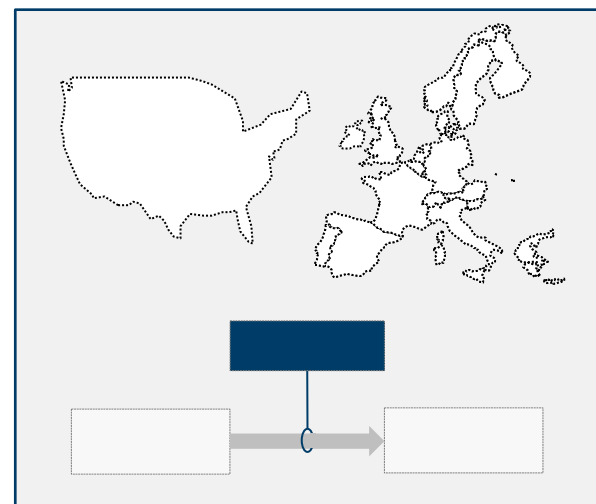
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 STRATEGIC CHANGE	1.00																	
2 EXPERIENCE	0.04*	1.00																
3 INFO (DR1)	-0.02	0.05**	1.00															
4 CONTROL (ASD)	0.04*	0.00	0.67***	1.00														
5 PERF ROE	0.08***	-0.07***	-0.01	0.05**	1.00													
6 PERF TOBINO	0.00	0.06***	0.12***	0.07***	0.35***	1.00												
7 SIZE	-0.10***	-0.01	-0.04*	-0.09***	-0.10***	-0.30***	1.00											
8 LEVERAGE	0.12***	-0.07***	0.00	0.03	0.03	-0.22***	0.14***	1.00										
9 RISK	0.05**	0.00	-0.08***	-0.05**	-0.03	-0.05*	0.00	0.01	1.00									
10 SALES GROWTH	-0.03	0.07***	-0.06***	-0.07***	0.06**	0.14***	-0.01	-0.11***	0.00	1.00								
11 DIVERSIFICATION	-0.02	-0.10***	-0.13***	-0.11***	0.00	-0.21***	0.21***	0.05*	0.05*	-0.06***	1.00							
12 FREE FLOAT	0.01	0.01	0.12***	0.08***	0.01	-0.05**	0.17***	0.02	-0.02	0.07***	0.06***	1.00						
13 BOARD SIZE	-0.06**	-0.01	0.09***	-0.15***	-0.05*	-0.17***	0.50***	0.12***	0.03	-0.06**	0.10***	0.08***	1.00					
14 BOARD AGE	-0.05**	0.04*	0.26***	0.03	-0.07***	-0.08***	0.20***	0.00	-0.01	-0.03	0.00	0.13***	0.21***	1.00				
15 BOARD TENURE	-0.11***	-0.06**	0.21***	-0.05**	0.06**	0.12***	-0.05*	-0.08***	-0.06***	-0.01	-0.02	0.04*	0.10***	0.40***	1.00			
16 CEO AGE	-0.10***	-0.02	0.05**	-0.08***	-0.04	-0.07***	0.20***	-0.01	0.01	-0.04*	0.06**	0.04*	0.21***	0.24***	0.11***	1.00		
17 CEO TENURE	-0.06***	-0.11***	0.10***	0.01	0.09***	0.10***	0.02	-0.04*	-0.08***	0.01	0.04*	0.06***	0.00	0.14***	0.39***	0.23***	1.00	
18 CEO POWER	-0.02	0.02	0.28***	0.10***	0.02	0.00	0.05**	0.04*	-0.02	-0.02	0.00	0.02	0.09***	0.10***	-0.05**	0.29***	0.34***	1.00
19 HIGH TECH	-0.03	0.21***	0.08***	-0.01	-0.03	0.11***	-0.09***	-0.19***	0.00	0.05*	-0.04*	0.01	-0.09***	-0.08***	-0.01	-0.11***	-0.02	0.00

*** p<1 %
 ** p<5 %
 * p<10%



Robustness (4/4) – alternative measure for institutional differences reveals qualitatively same result

	Model R4.1			Model R4.2			Model R4.3		
Method	System GMM			System GMM			System GMM		
Sample	Full Sample			Full Sample			Full Sample		
<i>Dependent Variable</i>									
STRATEGIC CHANGE	coeff.	S.E.		coeff.	S.E.		coeff.	S.E.	
<i>Explanatory Variables</i>									
EXPERIENCE	0.1528	0.0667	**	3.4184	1.2522	***	0.9211	0.3387	***
INFO (SECREG)				0.1202	0.9744				
CONTROL (SIP)							-0.0032	0.0301	
EXPERIENCE × SECREG				-3.3639	1.2862	***			
EXPERIENCE × SIP							-0.0988	0.0430	**
<i>Control Variables</i>									
STRATEGIC CHANGE _(t-1)	0.2569	0.0300	***	0.2696	0.0273	***	0.2566	0.0285	***
PERF_ROE _(t-1)	-0.0004	0.0002		-0.0004	0.0002	*	-0.0003	0.0002	
PERF_TOBINQ _(t-1)	-0.0209	0.0076	***	-0.0210	0.0073	***	-0.0210	0.0074	***
SIZE _(t-1)	0.0119	0.0238		-0.0008	0.0225		-0.0008	0.0213	
LEVERAGE _(t-1)	0.1390	0.0831	*	0.1169	0.0842		0.1597	0.0798	**
RISK _(t-1)	0.0025	0.0013	*	0.0022	0.0013	*	0.0023	0.0013	*
SALES_GROWTH _(t-1)	-0.0065	0.0256		0.0061	0.0238		0.0022	0.0245	
DIVERSIFICATION	-0.0386	0.0285		-0.0380	0.0273		-0.0460	0.0265	*
FREE_FLOAT	-0.0007	0.0005		-0.0007	0.0004		-0.0003	0.0004	
BOARD_SIZE	0.0153	0.0050	***	0.0178	0.0053	***	0.0165	0.0049	***
BOARD_AGE	-0.3315	0.3161		-0.3050	0.3194		-0.2767	0.3073	
BOARD_TENURE	0.0250	0.0402		0.0441	0.0413		0.0181	0.0380	
CEO_AGE	0.1073	0.0981		0.0926	0.0922		0.0731	0.0966	
CEO_TENURE	0.0039	0.0166		-0.0005	0.0164		0.0001	0.0165	
CEO_POWER	-0.0032	0.0037		-0.0017	0.0037		-0.0014	0.0037	
HIGH_TECH	-0.1104	0.1278		-0.0993	0.1239		-0.0916	0.1254	
Constant	0.7209	1.3790		0.6526	1.7090		0.8015	1.3396	
Year effects	Included			Included			Included		
Industry effects	Included			Included			Included		
Country effects	Included			Included			Included		
<i>Model Fit</i>									
Wald χ^2 -statistic	336.22	(67)		419.86	(68)		379.69	(68)	
Arellano-Bond Test (I11)	-6.12	[0.000]		-6.22	[0.000]		-5.98	[0.000]	
Arellano-Bond Test (I12)	-1.27	[0.205]		-1.17	[0.242]		-1.27	[0.205]	
Hansen J-statistics	92.78	[0.240]		109.43	[0.132]		100.61	[0.302]	
Observations	2995			2995			2995		



SECREG and SIP as alternative measures for information provision and motivational stimulation

Results replicable with alternative measure of institutional moderators

-
- **Introduction**
 - **Data and Model**
 - **Empirical Results**
 - **Robustness**
 - **Contribution**
 - **Limitation and future Outlook**
-

Summary of results and main contributions

Conclusions

- Board members' individual set of industry-specific experiences **important driver of strategic change** across countries
- Strength of the effect, however, **subject to the quality of institutional differences**:
 - higher institutional transparency is a **substitute to board provision of counsel**
 - higher motivational stimulation is a **substitute to board monitoring** function

Contributions

- Contribution to the **understanding of boards in the context of strategic change** (Answer to the question **whether** industry experience is needed to induce change)
- Advancement of board function fulfillment from the firm- to the **institutional level** to answer the question **when** board industry experience is needed
- First empirical analysis to demonstrate the **interactive nature of agency-theory and resource-based view** in this context; combination of resource-based, institutional, and agency-perspectives
- Consideration of a general call for more **context-adapted analyses** of institutional contingencies; derivation of a **mutually exclusive set of institutional dimensions** adapted to the subject of strategic change

-
- **Introduction**
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 - **Limitation and future Outlook**
-

Most limitations are shared across topical studies

Limitations

- Measure of strategic change: not possible to derive plausibility towards the **quality of the change** pursued; not able to judge on whether or not the change was undertaken in the **correct direction**
- Framework of institutional contingencies: thus far **restriction to formal aspects of institutional differences**; integration of informal aspects (group thinking, elite thinking, perception of conformity, hierarchy,...) of governance eligible

Future outlook

- Increase of sample size: inclusion of **all firms as listed in BoardEX** instead of focus on MSCI Europe and S&P 500 only
- Implementation of additional robustness tests: **alternative measures of strategic change**, detached from dimensions of resource deployments (corporate diversification; M&A behavior, etc.)
- Integration of additional dimension of institutional levers: **consideration of informal factor** (e.g. hierarchy, uncertainty avoidance (Hofstede, 1984; Schwartz, 1994)) as measures of adherence to the status quo

Thank you for your attention