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The Impact of Cultural Diversity in Corporate Boards on Firm Performance

Helena Címerová Olga Dodd Bart Frijns
Auckland University of Technology



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Motivation

- Boards of directors: *“groups of diverse individuals who have different biases and prejudices and whose behaviour is affected by social constraints and power relations”* (Ferreira, 2010)
- Economic value of cultural diversity?
 - Gender, age, experience, race, etc.
- Our paper: cultural diversity in boards and firm performance



“Diversity is good. Pass it down.”

Outline

- Summary of findings
- Cultural diversity and its measurement
- Data
- Baseline results
- Endogeneity
 - Dynamic specification
 - IV/2SLS
- Robustness results
 - Foreignness
 - Firm operations
 - Alternative culture framework
 - Individual culture dimensions
- Conclusion



Findings

- Cultural diversity (CD) in boards negatively affects firm performance
 - Firms at the 75th percentile of the CD distribution achieve a Tobin's Q that is 0.18 less than firms at the 25th percentile
 - ROA is 1.26% lower for firms at the 75th percentile compared with firms at the 25th percentile
- Robust finding (considerable explanatory power of our CD measure)
- Firm complexity and firms' presence in foreign markets are mitigating factors
- Some cultural dimensions matter more than others

Culture

- *“the collective programming of the mind distinguishing the members of one group or category of people from others”* (Hofstede, 1980)
- Captured by discrete dimensions of cultural values, which are formed during early childhood, remain relatively stable throughout one’s lifetime, and are shared within a nation
- Hofstede framework (1980, 2001)
 - individualism, masculinity, power distance, uncertainty avoidance + pragmatism + indulgence

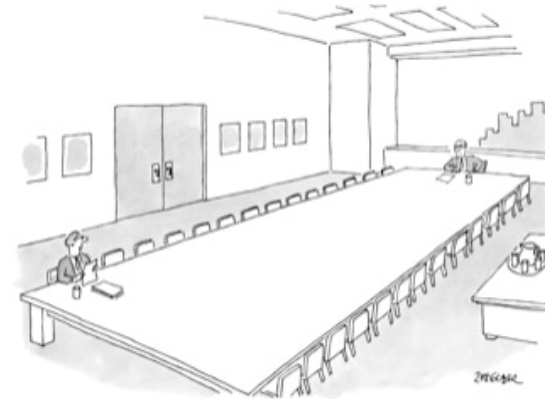


The “double-edged sword” of cultural diversity

- Inherent type of diversity (Maznevski, 1994)
- Advantages
 - *Culture-generic*: worldviews, perceptions, interpretations, etc.
 - *Culture-specific*: knowledge of foreign culture, communication networks, linguistic resources, etc.
- Disadvantages
 - misunderstandings, communication slower and more difficult (attribution of meanings),...
 - most disruptive to group-decision making processes (Adler, 1991)

Measuring cultural diversity

$$CD_{ij} = \sqrt{\sum_{k=1}^4 \{(I_{ki} - I_{kj})^2 / V_k\}} \quad \forall i \neq j$$



$$CD\ BOARD_{nt} = \frac{\sum_{i,j} CD_{ij,nt}}{m(m-1)/2} \quad \forall i < j$$

Data

- UK public companies (95% of mkt cap)
- 2002-2012 biannually, 1,290 firm-year observations
- Firms: Datastream
- Directors (11,185 individuals): Orbis, annual reports

Table 2. Characteristics of Domestic versus Foreign Directors

Nationality	Gender (Male)	Directors' Age	Directors' Independence
All Directors	91.10%	55.31	52.67%
UK	92.20%	54.99	51.48%
Foreign	86.93%	56.53	57.16%
Difference	-5.28%***	1.54***	5.68%***

Tests

- Baseline regressions
- Causality hints:
 - Dynamic model specification
 - IV regression (2SLS w/ UK small town & directors' average age as instruments)
- Robustness:
 - “Foreignness” of board and firm
 - Firm operations – firm complexity and foreign operations
 - Alternative culture frameworks
 - Tang and Koveos (2008), GLOBE – House et al. (2004), Schwartz (2006)
 - Individual culture dimensions

Baseline results

Table 6. Cultural Diversity and Firm Performance

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
CD BOARD	-0.23*** (-2.81)	-0.21** (-2.46)	-1.57*** (-2.62)	-1.45** (-2.42)
<i>Board characteristics</i>				
Board size		-0.43* (-1.74)		-2.01 (-1.26)
Gender (male)		-0.29 (-0.52)		2.62 (0.65)
Board independence		-0.12 (-0.31)		-2.23 (-0.99)
Directors' age range		0.16 (0.98)		0.81 (0.59)
Chairman/CEO duality		0.13 (0.65)		0.05 (0.04)
<i>Firm characteristics</i>				
Firm size	0.10** (2.11)	0.14** (2.58)	0.76** (2.31)	1.04*** (2.84)
Leverage	-0.60 (-1.50)	-0.54 (-1.39)	-1.44 (-0.49)	-1.01 (-0.35)
Firm age	-0.15** (-2.54)	-0.15** (-2.44)	-0.28 (-0.72)	-0.21 (-0.51)
Firm complexity	-0.20** (-2.36)	-0.19** (-2.19)	-2.04*** (-3.25)	-1.97*** (-3.11)
Return volatility	-0.06 (-0.98)	-0.05 (-0.81)	-0.96** (-2.57)	-0.89** (-2.35)
Sales growth	0.73*** (3.45)	0.69*** (3.23)	5.21*** (2.79)	4.80** (2.59)
Observations	1,200	1,200	1,200	1,200
R-squared	0.18	0.18	0.11	0.11

Dynamic specification

Table 7. Tobin's Q & ROA: Dynamic Model Specification

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
CD BOARD _{t-2}	-0.18** (-2.38)	-0.20*** (-2.86)	-1.79** (-2.29)	-0.92 (-1.57)
Firm Performance _{t-2}		0.52*** (8.31)		0.46*** (8.02)
Observations	780	765	780	779
R-squared	0.20	0.42	0.11	0.35

IV – 2SLS

Table 8. Instrumental Variables Regressions

	First Stage	Second Stage	
	CD BOARD	Tobin's Q	ROA
	(1)	(2)	(3)
<i>Instrumental variables</i>			
UK small town	-0.22*** (-7.25)		
Directors' average age	0.94*** (3.69)		
CD BOARD		-0.58** (-2.11)	-3.45* (-1.92)
Observations	1,200	1,200	1,200
R-squared	0.30	0.16	0.09
Wu-Hausman $\chi^2(1)$ (p-value)		1.989 (0.1584)	1.2734 (0.2591)
Sargan $\chi^2(1)$ (p-value)		0.7241 (0.3948)	1.5801 (0.2087)

Are we measuring “foreignness”?

- CD only for firms with FDs
- Board-level
 - Foreign directors share
 - Nationalities ratio
 - Foreign independent director (FID) dummy **cf. Masulis et al. (2012)**
 - FID share
- Firm-level
 - Foreign sales
 - Foreign assets
 - NYSE listing
 - Foreign listing

Firm operations

cutoff point
for subsamples =
75th percentile

Table 10. Cultural Diversity, Firm Performance and Firm's Operations

	Tobin's Q		ROA	
<i>Panel A. By Firm Complexity</i>				
	# of business segments ≤4	# of business segments >4	# of business segments ≤4	# of business segments >4
CD BOARD	-0.22** (-2.42)	0.23 (0.88)	-1.31* (-1.94)	-1.69 (-1.61)
Observations	955	273	955	273
R-squared	0.20	0.17	0.09	0.23
<i>Panel B. By Foreign Sales</i>				
	foreign sales ≤75.87%	foreign sales >75.87%	foreign sales ≤75.87%	foreign sales >75.87%
CD BOARD	-0.21** (-2.11)	-0.03 (-0.29)	-1.59** (-2.37)	0.09 (0.09)
Observations	892	308	892	308
R-squared	0.20	0.32	0.13	0.22
<i>Panel C. By Foreign Assets</i>				
	foreign assets ≤51.02%	foreign assets >51.02%	foreign assets ≤51.02%	foreign assets >51.02%
CD BOARD	-0.23** (-2.15)	-0.08 (-0.83)	-1.52** (-2.23)	-0.76 (-0.92)
Observations	893	307	893	307
R-squared	0.20	0.28	0.13	0.22
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES

cf. Anderson et al. (2011)

cf. Masulis et al. (2012)

Individual culture scores

Table 12. Individual Culture Scores

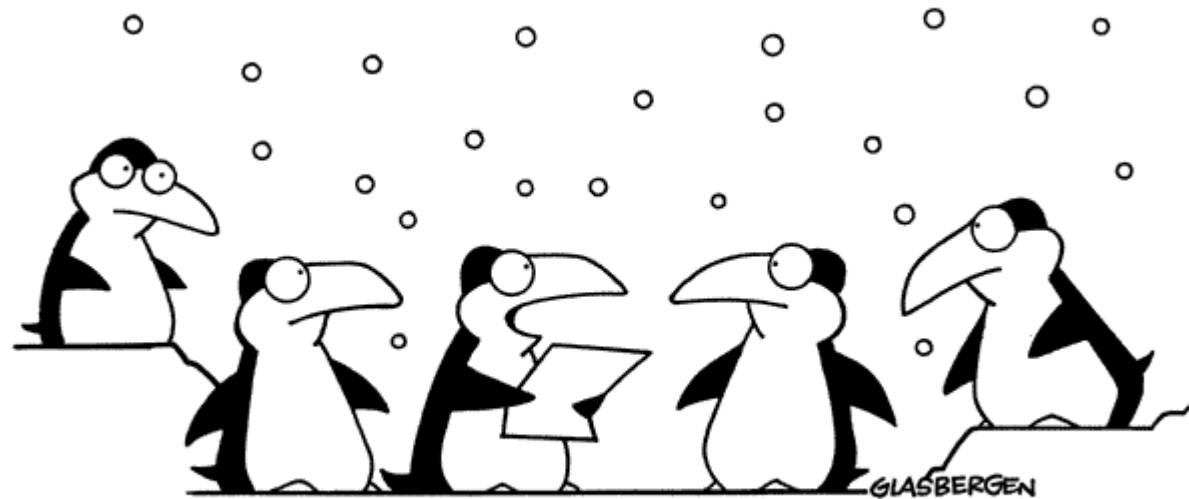
<i>Panel A: Tobin's Q</i>								
	All firms				Firms with FDs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CD BOARD <u>(IDV)</u>	-0.19** (-2.54)				-0.40*** (-3.06)			
CD BOARD <u>(MAS)</u>		-0.15* (-1.91)				-0.30*** (-2.77)		
CD BOARD (PDI)			-0.09 (-1.10)				-0.20* (-1.73)	
CD BOARD (UAI)				-0.02 (-0.32)				-0.06 (-0.67)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200	714	714	714	714
R-squared	0.19	0.18	0.18	0.18	0.18	0.17	0.16	0.15

Conclusions

- CD in boards economically important
- On average, negative relationship btwn CD in boards and firm performance (frictions outweigh advantages)
- But disadvantages of CD mitigated in more complex firms or firms with more foreign operations (match between firms' needs and expertise of foreign directors)
- A more nuanced story of board diversity: “ticking boxes” does not add value to companies

Thank you.

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"They say we're not placing enough emphasis on diversity."

	(-2.81)	(-2.46)	(-2.62)	(-2.42)
<u>Board characteristics</u>				
Board size		-0.43*		-2.01
		(-1.74)		(-1.26)
Gender (male)		-0.29		2.62
		(-0.52)		(0.65)
Board independence		-0.12		-2.23
		(-0.31)		(-0.99)
Directors' age range		0.16		0.81
		(0.98)		(0.59)
Chairman/CEO duality		0.13		0.05
		(0.65)		(0.04)
<u>Firm characteristics</u>				
Firm size	0.10**	0.14**	0.76**	1.04***
	(2.11)	(2.58)	(2.31)	(2.84)
Leverage	-0.60	-0.54	-1.44	-1.01
	(-1.50)	(-1.39)	(-0.49)	(-0.35)
Firm age	-0.15**	-0.15**	-0.28	-0.21
	(-2.54)	(-2.44)	(-0.72)	(-0.51)
Firm complexity	-0.20**	-0.19**	-2.04***	-1.97***
	(-2.36)	(-2.19)	(-3.25)	(-3.11)
Return volatility	-0.06	-0.05	-0.96**	-0.89**
	(-0.98)	(-0.81)	(-2.57)	(-2.35)
Sales growth	0.73***	0.69***	5.21***	4.80**
	(3.45)	(3.23)	(2.79)	(2.59)
Constant	2.10***	2.49**	14.31***	11.94
	(4.32)	(1.49)	(4.00)	(1.55)
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200
R-squared	0.18	0.18	0.11	0.11

Table 7. Tobin's Q & ROA: Dynamic Model Specification

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
CD BOARD _{t-2}	-0.18** (-2.38)	-0.20*** (-2.86)	-1.79** (-2.29)	-0.92 (-1.57)
Firm Performance _{t-2}		0.52*** (8.31)		0.46*** (8.02)
<i>Board characteristics</i>				
Board size	-0.52* (-1.96)	-0.37* (-1.86)	-1.49 (-0.85)	-1.09 (-0.86)
Gender (male)	-0.58 (-0.93)	-0.23 (-0.53)	0.86 (0.19)	1.40 (0.42)
Board independence	-0.20 (-0.47)	-0.13 (-0.38)	-1.07 (-0.39)	-0.25 (-0.13)
Directors' age range	0.13 (0.77)	0.04 (0.31)	-0.28 (-0.21)	-0.65 (-0.75)
CEO/Chairman duality	0.30 (1.04)	0.05 (0.28)	1.46 (0.84)	1.00 (0.86)
<i>Firm characteristics</i>				
Firm size	0.09 (1.55)	0.10** (2.01)	0.97** (2.24)	0.57* (1.95)
Leverage	-0.34 (-0.73)	-0.30 (-1.06)	0.61 (0.16)	0.19 (0.08)
Firm age	-0.14** (-2.29)	-0.03 (-0.62)	-0.36 (-0.76)	-0.17 (-0.52)
Firm complexity	-0.19** (-2.18)	-0.08 (-1.40)	-1.81*** (-2.73)	-0.97* (-1.88)
Return volatility	-0.18*** (-2.89)	-0.10* (-1.82)	-0.99** (-2.17)	-0.93** (-2.39)
Sales growth	0.62*** (2.98)	0.12 (0.57)	4.58** (2.09)	4.93** (2.53)
Constant	4.31*** (3.76)	2.36*** (2.89)	17.72** (2.01)	12.10** (2.13)
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES

Table 8. Instrumental Variables Regressions

	First Stage		Second Stage	
	CD BOARD	Tobin's Q	ROA	
	(1)	(2)	(3)	
<i>Instrumental variables</i>				
UK small town	-0.22*** (-7.25)			
Directors' average age	0.94*** (3.69)			
CD BOARD		-0.58** (-2.11)		-3.45* (-1.92)
<i>Board characteristics</i>				
Board size	0.30*** (3.93)	-0.32 (-1.59)		-1.41 (-1.17)
Gender (male)	0.08 (0.46)	-0.25 (-0.61)		2.87 (1.05)
Board independence	0.19* (1.62)	-0.04 (-0.16)		-1.81 (-1.26)
Directors' age range	0.03 (0.40)	0.18* (1.67)		0.92 (1.10)
CEO/Chairman duality	-0.08 (-1.58)	0.12 (0.94)		-0.03 (-0.04)
<i>Firm characteristics</i>				
Firm size	0.07*** (4.99)	0.18*** (3.77)		1.24*** (4.06)
Leverage	0.11 (1.24)	-0.50* (-1.76)		-0.82 (-0.42)
Firm age	-0.06*** (-3.58)	-0.17*** (-4.33)		-0.32 (-1.29)
Firm complexity	-0.07*** (-2.61)	-0.21*** (-3.74)		-2.09*** (-5.12)
Return volatility	0.04** (2.08)	-0.03 (-0.49)		-0.79** (-2.35)
Sales growth	0.14 (1.56)	0.73*** (3.43)		5.03*** (3.11)
Constant	-3.91***	2.29***		10.87**

Table 9. Alternative Measures of 'Foreignness' of Board and Firm

	Tobin's Q												
	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)	(1.8)	(1.9)	(2.1)	(2.2)	(2.3)	(2.4)
<i>Panel A. 'Foreignness' of Board</i>													
Foreign directors share		-1.10*** (-2.96)	-0.56 (-1.06)								-2.07 (-0.81)	1.85 (0.58)	
Nationalities ratio				-1.10* (-1.74)	0.29 (0.30)								-5.15 (-1.21)
FID dummy						-0.19 (-1.14)	-0.06 (-0.37)						
FID share								-1.16** (-2.19)	-0.37 (-0.57)				
CD BOARD	-0.37*** (-2.92)		-0.28* (-1.66)		-0.40** (-2.14)		-0.36*** (-2.75)		-0.33** (-2.24)	-1.71** (-2.17)		-2.01** (-2.10)	
Control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FEs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FEs	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	714	714	714	714	714	714	714	714	714	714	714	714	714
R-squared	0.18	0.17	0.18	0.16	0.18	0.15	0.18	0.16	0.18	0.15	0.13	0.15	0.14
<i>Panel B. 'Foreignness' of Firm</i>													
Foreign sales		-0.00 (-1.31)	-0.00 (-0.82)								-0.01 (-0.54)	0.00 (0.07)	
Foreign assets				-0.66*** (-3.45)	-0.60*** (-3.18)								-2.99** (-2.37)
NYSE listing						0.13 (0.59)	0.17 (0.73)						
Foreign listing								-0.06 (-0.43)	-0.03 (-0.21)				
CD BOARD			-0.18** (-2.24)		-0.14* (-1.79)		-0.21** (-2.47)		-0.20** (-2.40)			-1.46** (-2.40)	
Control variables		YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES
Industry FEs		YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES
Year FEs		YES	YES	YES	YES	YES	YES	YES	YES		YES	YES	YES
Observations		1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200		1,200	1,200	1,200
R-squared		0.18	0.19	0.20	0.20	0.18	0.19	0.18	0.19		0.10	0.11	0.11

Table 10. Cultural Diversity, Firm Performance and Firm's Operations

	Tobin's Q		ROA	
<i>Panel A. By Firm Complexity</i>				
	# of business segments <=4	# of business segments >4	# of business segments <=4	# of business segments >4
CD BOARD	-0.22** (-2.42)	0.23 (0.88)	-1.31* (-1.94)	-1.69 (-1.61)
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	955	273	955	273
R-squared	0.20	0.17	0.09	0.23
<i>Panel B. By Foreign Sales</i>				
	foreign sales <=75.87%	foreign sales >75.87%	foreign sales <=75.87%	foreign sales >75.87%
CD BOARD	-0.21** (-2.11)	-0.03 (-0.29)	-1.59** (-2.37)	0.09 (0.09)
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES
Observations	892	308	892	308
R-squared	0.20	0.32	0.13	0.22
<i>Panel C. By Foreign Assets</i>				
	foreign assets <=51.02%	foreign assets >51.02%	foreign assets <=51.02%	foreign assets >51.02%
CD BOARD	-0.23** (-2.15)	-0.08 (-0.83)	-1.52** (-2.23)	-0.76 (-0.92)
Control variables	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES

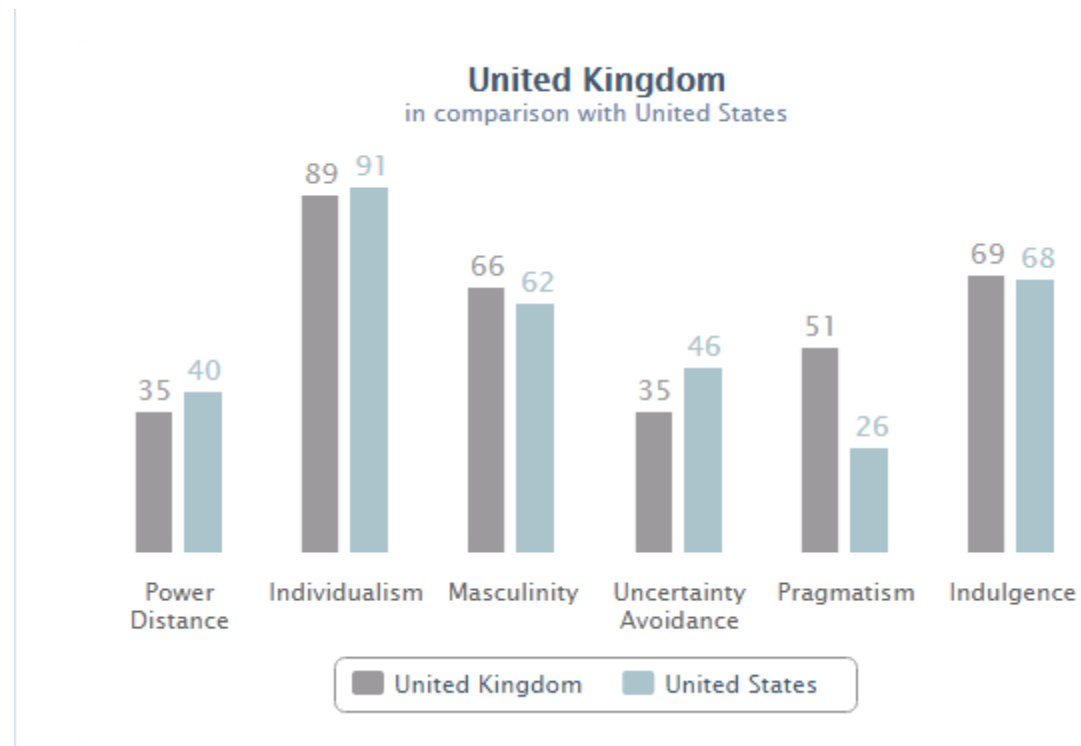
Table 11. Alternative Cultural Frameworks

<i>Panel A: Tobin's Q</i>						
	Tang & Koveos		GLOBE		Schwartz	
	All firms	Firms with FDs	All firms	Firms with FDs	All firms	Firms with FDs
CD BOARD	-0.21** (-2.40)	-0.43*** (-2.86)	-0.12* (-1.70)	-0.32*** (-2.76)	-0.33 (-1.24)	-0.95** (-2.24)
Control variables	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES
Observations	1,155	669	1,123	637	1,081	595
R-squared	0.19	0.18	0.19	0.17	0.19	0.17
<i>Panel B: ROA</i>						
	Tang & Koveos		GLOBE		Schwartz	
	All firms	Firms with FDs	All firms	Firms with FDs	All firms	Firms with FDs
CD BOARD	-1.67*** (-2.63)	-2.05** (-2.11)	-1.08** (-2.27)	-1.44** (-2.00)	-2.89* (-1.73)	-4.48* (-1.90)
Control variables	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES
Observations	1,155	669	1,123	637	1,081	595
R-squared	0.11	0.14	0.11	0.12	0.11	0.14

Table 12. Individual Culture Scores

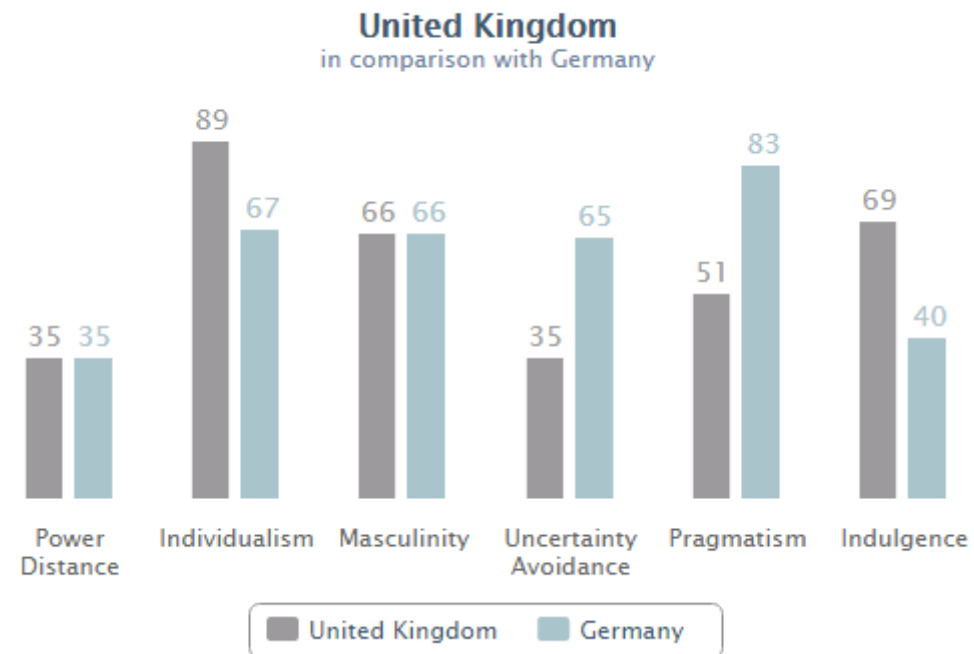
<i>Panel A: Tobin's Q</i>								
	All firms				Firms with FDs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CD BOARD (IDV)	-0.19** (-2.54)				-0.40*** (-3.06)			
CD BOARD (MAS)		-0.15* (-1.91)				-0.30*** (-2.77)		
CD BOARD (PDI)			-0.09 (-1.10)				-0.20* (-1.73)	
CD BOARD (UAI)				-0.02 (-0.32)				-0.06 (-0.67)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200	714	714	714	714
R-squared	0.19	0.18	0.18	0.18	0.18	0.17	0.16	0.15
<i>Panel B: ROA</i>								
	All firms				Firms with FDs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CD BOARD (IDV)	-1.45*** (-2.75)				-1.88** (-2.39)			
CD BOARD (MAS)		-1.15** (-2.24)				-1.49** (-2.24)		
CD BOARD (PDI)			-0.84 (-1.48)				-0.68 (-1.010)	
CD BOARD (UAI)				-0.63 (-1.19)				-0.43 (-0.65)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Industry fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,200	1,200	1,200	1,200	714	714	714	714

Cultural distances (UK vs US)



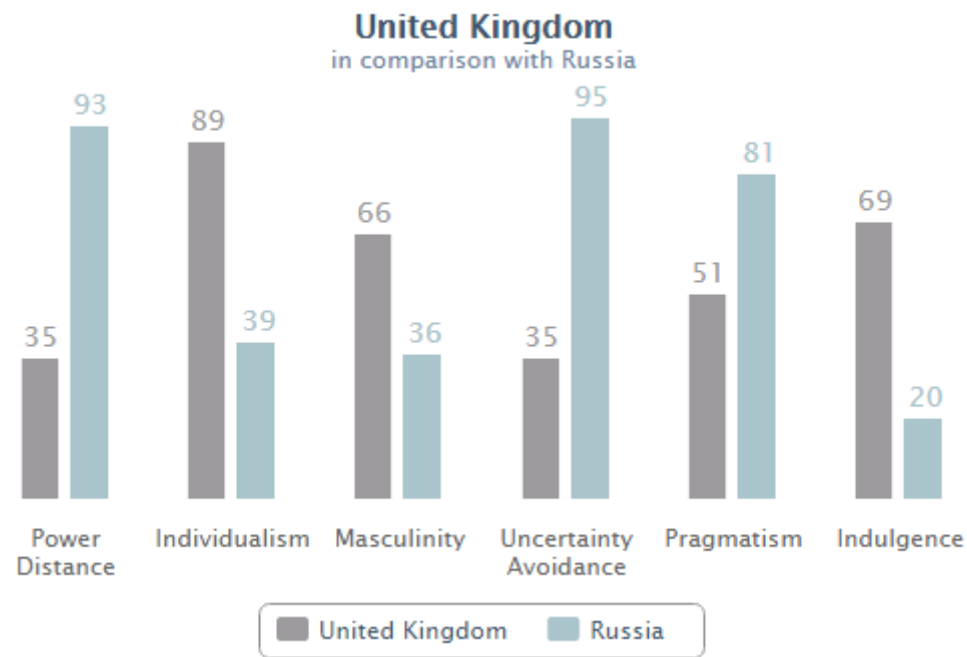
Source: geert-hofstede.com

Cultural distances (UK vs Germany)



Source: geert-hofstede.com

Cultural distances (UK vs Russia)



Source: geert-hofstede.com