CORPORATE ENVIRONMEANTAL RESPONSIBILITY AND FIRM PERFORMANCE IN THE FINANCIAL SERVICES SECTOR

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By employing a unique environmental data set covering 29 countries, we find that the lowering of environmental costs takes at least one or two years before enhancing return on assets (ROA). Lowering environmental costs has a more immediate and substantial effect on the performance of financial services firms in well-developed financial markets than in less-developed financial markets.

Motivation

- Recently, increasing number of financial firms spend a lot to cope with climate change and reduce green house gas (GHG).
- Corporate Environmental Responsibility (CER) has become an integral part of Corporate Social Responsibility (CSR) and plays an increasingly important role in the corporate landscape in recent years.

Hypothesis

- Hypothesis 1. To the extent that the social impact and reputation-building hypothesis is valid in the financial services sector and/or to the extent that the CER lowers the borrowing costs in the financial services sector, we expect a positive association between investing in CER and CFP.[1]
- Hypothesis 2. To the extent that CER is viewed as a trade-off and negative synergy, we expect a negative association between CER investing and CFP.
- Hypothesis 3. To the extent that CER is viewed as a positive synergy, we expect CER investing to positively affect CFP while CFP positively influences CER investing.[2]

Data Description

- 4,924 firm-year observations for 29 countries (2002 ~ 2011)
- Asia Pacific(1,783), Europe(1,836), North America(1,305)
- Environmental cost data: Trucost Database
- Financial data: Worldscope and S&P Capital IQ
- Financial Market Development: World Economic Forum

Regression Model

- Two-way fixed effect model with firm clusters, Arellano-Bond GMM, System GMM, First-difference regression, Granger causality test

- $ROA_{it} = \beta 0 + \beta 1\ Ln\ Total\ Environmental\ Costs_{it-1} + \beta 2\ Ln\ Total\ Environmental\ Costs_{it-2} + \beta 3\ Market\ to\ Book + \beta 4\ Ln\ Total\ Assets + \beta 5\ Stock\ Return\ Volatility + \beta 6\ Capital\ to\ Assets + \beta 7 Expenses\ to\ Revenues + \beta 8\ Asset\ Growth\ Rate + Year\ effects + Firm\ effects + \varepsilon_{it},$

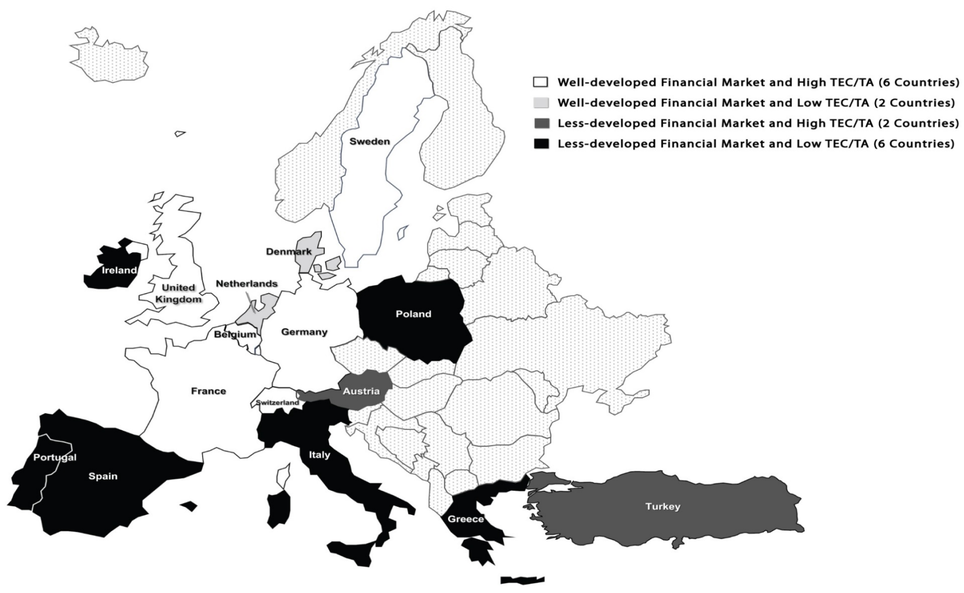

Figure 1. Financial Market Development and Environmental Costs in Europe

Table 1. Dynamic GMM Regressions of ROA on Environmental Costs

Dependent Variable	ROA			
Methods	Arellano-Bond GMM		System GMM	
Equations	(1)	(2)	(3)	(4)
ROA t-1	-0.136	-0.207**	-0.050	-0.091
	(-1.58)	(-2.10)	(-0.71)	(-1.12)
Inc. Total Env. Costs Dummy	0.058**		0.011	
	(2.56)		(0.78)	
Dec. Total Env. Costs Dummy		-0.025		0.005
		(-0.95)		(0.29)
Ln Total Env. Costst-1	-0.110***	-0.173***	-0.088***	-0.124***
	(-2.85)	(-3.54)	(-3.47)	(-3.96)
Ln Total Env. Costst-2	-0.069***	-0.088***	-0.065***	-0.077***
	(-2.77)	(-3.03)	(-3.38)	(-3.36)
Market to Book	0.079***	0.090***	0.089***	0.092***
	(3.93)	(3.93)	(5.24)	(5.00)
Ln Total Assets	0.065***	0.100***	0.065***	0.085***
	(2.98)	(3.32)	(4.02)	(4.01)
Stock Return Volatility	-0.026	-0.013	-0.027*	-0.017
	(-1.48)	(-0.61)	(-1.81)	(-1.03)
Capital to Assets	0.084*	0.110*	0.054	0.072
	(1.82)	(1.69)	(1.60)	(1.56)
Expenses to Revenues	-0.001*	-0.001	-0.001	-0.001
	(-1.86)	(-1.22)	(-1.09)	(-0.75)
Asset Growth Rate	-0.001	0.001	-0.001	0.001
	(-1.31)	(0.01)	(-0.61)	(0.31)
AR(1) test (p-value)			0.006	0.042
AR(2) test (p-value)			0.694	0.962
Hansen test of overidentification (p-value)			0.139	0.201
Diff-in-Hansen test of exogeneity (p-value)			0.395	0.518
Number of Obs.	2,469	2,469	2,469	2,469

Table 2. Regressions of ROA on Environmental Costs by Financial Market Development

Dependent Variable	**ROA**					
Market	**Well-developed Financial Market**			**Less-developed Financial Market**		
Equations	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Ln Total Env. Costs$_{t-1}$	**-0.010*** **		**-0.010** **	**-0.003**		**-0.002**
	(-3.21)		**(-2.50)**	**(-1.45)**		**(-0.72)**
Ln Total Env. Costs$_{t-2}$		**-0.008** **	**-0.004**		**-0.005** **	**-0.004* **
		(-2.52)	**(-1.06)**		**(-2.39)**	**(-1.68)**
Market to Book	0.074***	0.075***	0.073***	0.042***	0.051***	0.051***
	(16.12)	(14.46)	(13.59)	(5.46)	(5.05)	(5.00)
Ln Total Assets	0.013***	0.012**	0.013***	0.003	0.005	0.006
	(3.25)	(2.56)	(2.69)	(0.97)	(1.37)	(1.54)
Stock Return Volatility	-0.019**	-0.015*	-0.015*	-0.021***	-0.018***	-0.018***
	(-2.47)	(-1.73)	(-1.68)	(-4.06)	(-2.84)	(-2.78)
Capital to Assets	-0.056***	-0.037	-0.034	0.010	0.027	0.028
	(-2.90)	(-1.50)	(-1.38)	(0.53)	(1.31)	(1.31)
Expenses to Revenues	0.001	0.001	0.001	0.001	0.001	0.001
	(0.10)	(0.09)	(0.11)	(0.13)	(0.46)	(0.47)
Asset Growth Rate	0.001	0.001	0.001	0.016***	0.018***	0.018***
	(0.94)	(0.82)	(0.64)	(6.05)	(5.54)	(5.38)
Constant	-0.066	-0.164*	-0.183*	-0.071	-0.115*	-0.130*
	(-0.68)	(-1.85)	(-1.85)	(-1.32)	(-1.72)	(-1.85)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.62	0.60	0.59	0.64	0.62	0.62
Number of observations	2,304	1,923	1,896	1,515	1,259	1,222

References

(1) Miles, M. P., & Covin, J. (2000). Environmental marketing: A source of reputational, competitive, and financial advantage. *Journal of Business Ethics, 23(3)*, 299-311.
(2) Waddock, S. A., & Graves, S. M. (1997). The corporate social performance-financial performance link. *Strategic Management Journal, 18(4)*, 303–319.