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Market Reaction to Mandatory Nonfinancial Reporting

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Motivation

- **<u>Large ↑ in voluntary nonfinancial reporting</u>**

  - 50 firms (1990s) to 7,000+ (2019)

- **<u>Mandatory nonfinancial reporting also ↑</u>**

  - E.g. France, Finland, South Africa, China, Denmark, Malaysia, Netherlands

- **<u>Largest mandatory non-financial disclosure regulation to date</u>**

  - Directive 2014/95/EU passed in 2014 & affected 6,000+ companies in the EU.

<u>Our Question</u>

How do investors perceive costs/benefits of mandated nonfinancial disclosures?

Mandated Nonfinancial Reporting in the EU

- Requires disclosure on **policies**, **risks**, **outcomes** relating to **environmental, social, employee, human rights, anticorruption, bribery, BoD diversity**

- **Symbolic?**
  - No specific reporting guidelines
  - Significant flexibility (KPIs, narrative info)
  - No assurance requirement

- **Substantive?**
  - Signaling that companies will be held *accountable* for ESG performance
  - Opposition by business & politicians (EuroChambers, German Business Association, David Cameron) suggests *material impact on business*

Sample Development

Table 1 Panel B. Matching of Treatment and Control firms

	Treatment	Control	Total
Available firms	2,417	9,745	12,162
Less: unmatched from propensity score matching	364	7,692	8,056
Matched Sample: Univariate Analysis	**2,053**	**2,053**	**4,106**
Country-Sector Matching			
Less: missing cross-sectional data information	804	804	1,608
Matching Sample: Cross-sectional Analysis	1,249	1,249	2,498

3 Sample Events:

- Apr 16, 2013 – EU Comm proposes mandatory nonfin'l reporting ("Proposal")

- Feb 26, 2014 – Euro Parliament/EC agree on Proposal

- Apr 15, 2014 – Euro Parliament adopts Proposal (passes related Directive)

Univariate Predictions

<u>Benefits</u>

- ↑ info for valuation
- ↑ info for monitoring
- Operational improvements

<u>Costs</u>

- Preparation, dissemination, and assurance
- Proprietary costs of disclosure
- Political costs

Research Design – Dependent Variable

- Market Reaction measured as Cumulative Abnormal Return (CAR_i)

- Benchmark Return - Assign each treatment firm to control firm matched on

  - ***Country***

  - ***Sector***

  - ***Market capitalization***

  - ***Price-to-book ratio***

- CAR_i = Return (-2,+2)_{Treatment} - Return (-2,+2)_{Control}

  - 5-day abnormal return (-2, +2), aggregated across the 3 events

- Results are robust to 3-day (-1, +1) return

Univariate Analyses

	Before Matching		After Matching			Cross-Sectional Analyses		
	Treatment Sample (N = 2,417)	Control Sample (N = 9,745)	Treatment Sample (N = 2,053)	Control Sample (N = 2,053)	Difference	Treatment Sample (N = 1,249)	Control Sample (N = 1,249)	Difference
	(1)	(2)	(3)	(4)	(5) = (3) − (4)	(6)	(7)	(8) = (6) − (7)
Cumulative 5-day return across 3 events	−0.0256	−0.0260	−0.0250	−0.0171	**−0.0079** **(2.74 **)**	−0.0222	−0.0151	**−0.0071** **(2.60 **)**
Market Capitalization	7,782	1,538	10,009	6,777	3,232 (2.51 **)	12,556	9,279	3,227 (2.77 **)
Market-to-Book	2.16	1.73	2.46	2.38	0.08 (1.13)	2.6700	2.59	0.08 (1.02)

Variable	Predicted Sign	Sample After Matching Coefficient (t-statistic)	Cross-Sectional Analyses Coefficient (t-statistic)
		(1)	(2)
Intercept	?	−0.0714 (1.80 *)	−0.0496 (2.35 **)
Treatment	+ / −	**−0.0101 (2.68 **)**	**−0.0120 (2.72 **)**
Log(MCap)	+ / −	0.0025 (1.72 *)	0.0040 (1.89 *)
MTB	+ / −	0.0010 (2.81 **)	0.0016 (4.93 ***)
N		4,106	2,498
Adj-R2		0.02	0.015

Cross-Sectional Predictions

- **Market participants' decisions reflect firms' ESG performance**

  - Product market setting: **higher sales** for **env-friendly** and **fair-labor products** (Hainmueller & Hiscox 2012a, 2012b)

  - Labor market setting: stronger ESG associated with
    - **employer attractiveness** (Turban & Greening 1997)
    - **lower salary** and **higher motivation** (Burbano 2016)

  - Capital market setting: stronger ESG associated with
    - **lower capital constraints** (Cheng et al. 2014)
    - **decreased cost of capital** (Dhaliwal et al. 2011)

Cross-Sectional Predictions

- **Mandatory disclosure regulation increases** the **propensity** that market participants will use **ESG** information in **decision-making**:

    1. forces (more) companies to disclose (more) information

    2. enhances salience/perceived importance of ESG information

    3. signals likely future regulations to hold firms accountable for ESG perf

Cross-Sectional Predictions

- Investors perceive firms with **strong** pre-regulation **ESG <u>performance & disclosure</u>** will incur a **competitive advantage**, because peers with <u>weak ESG performance</u> & <u>disclosure</u> incur:

    - Higher costs of maintaining weak ESG perf. (e.g. penalties, fines)

    - Higher costs to improve ESG performance

    - Higher costs to prepare/disseminate disclosure

    - Higher proprietary and political costs of disclosure

- **Hypothesis**:

    - <u>Stock price reactions</u> to <u>events</u> increasing the likelihood of <u>mandated nonfinancial disclosure</u> are ***positively*** associated with <u>ESG disclosure</u> scores and <u>ESG performance</u> ratings.

Cross-Sectional Predictions - Model

Multivariate Model

$$CAR_i = \alpha_1 + \overset{+}{\boxed{\beta_1 ESG\_Discl\_Score_i}} + \overset{+}{\boxed{\beta_2 GovScore_i}} +$$

$$\overset{+}{\boxed{\beta_3 SocScore_i}} + \overset{+}{\boxed{\beta_4 EnvScore_i}} + controls + Industry\ Fixed$$

$$Effects + Country\ Fixed\ Effects + \varepsilon_i$$

Cross-Sectional Analyses

Matching:	(1) Country-sector		(2) Country-sector		(3) Country-sector		(4) Country-industry		(5) Country-sector		(6) Country-sector	
					50% sales in primary industry				Size difference minimization			
Sample:	Full cross-sectional		EU domiciled only				Full cross-sectional				Without replacement	
Variable	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	−0.0629	4.10***	−0.1127	3.63***	−0.0569	5.21***	−0.0505	2.05*	−0.0564	1.50	−0.0286	0.84
EnvScore (+)	0.0018	1.30	0.0033	2.30**	0.0022	2.98***	0.0022	2.36**	0.0022	1.23	0.0014	2.19**
SocScore (+)	0.0003	0.40	0.0012	0.37	0.0029	1.51	−0.0010	0.37	0.0002	0.36	0.0007	0.33
GovScore (+)	0.0035	2.37**	0.0054	4.68***	0.0027	1.85*	0.0004	0.40	0.0026	1.99*	0.0047	2.34**
ESG_Discl (+)	0.0003	2.41**	0.0004	2.23**	0.0004	2.09*	0.0004	4.47***	0.0003	2.31**	0.0003	2.41**
Fixed effects	Country, industry		Country, industry		Country, industry		Country, industry		Country, industry		Country, industry	
N	1,249		491		793		857		746		390	
Adjusted R^2	6.7%		11.4%		4.0%		5.2%		6.7%		3.6%	

Significant 6/6 regressions

Cross-Sectional Analyses

Matching:	(1) Country-sector		(2) Country-sector		(3) Country-sector		(4) Country-industry		(5) Country-sector		(6) Country-sector	
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Adjusted R^2	6.7%		11.4%		4.0%		5.2%		6.7%		3.6%	

SocScore: significant 0/6 regressions

GovScore: significant 5/6 regressions

EnvScore: significant 4/6 regressions

Cross-Sectional Predictions – Materiality of ESG issues

Multivariate Model

$$CAR_i = \alpha_1 + \beta_1 ESG\_Discl\_Score_i + \beta_2 GovScore_i + \beta_3 SocScore_i$$

$$+ \beta_4 EnvScore_i + \boxed{\beta_5 GovScore_i \times GovMateriality_i}^{+}$$

$$\boxed{+ \beta_6 SocScore_i \times SocMateriality_i}^{+}$$

$$\boxed{+ \beta_7 EnvScore_i \times EnvMateriality_i}^{+}$$

$$+ \text{controls} + \text{Industry Fixed Effects} + \text{Country Fixed Effects} + \varepsilon_i$$

Cross-Sectional Results – Materiality of ESG issues

Matching:	Country-Sector		Country-Sector		Country-Sector		Country-Industry		Country-Sector		Country-Sector	
Sample:	Full Cross-Sectional		EU-Domiciled Only		50% Sales in Primary Industry		Full Cross-Sectional		Size Difference Minimization		Without Replacement	
Variable	Coeff	*t*-stat	Coeff	*t*-stat	Coeff	*t*-stat	Coeff	*t*-stat	Coeff	*t*-stat	Coeff	*t*-stat
	(1)		(2)		(3)		(4)		(5)		(6)	
Intercept	−0.0568	6.05 ***	−0.0837	3.14 ***	−0.0435	5.97 ***	−0.0648	2.85 **	−0.0338	2.30 **	−0.0301	1.42
ESG_Discl_Score (+)	0.0003	2.62 **	0.0003	2.50 **	0.0004	2.31 **	0.0004	3.77 ***	0.0003	2.39 **	0.0003	2.37 **
GovScore (+)	0.0038	2.49 **	0.0061	3.84 ***	0.0027	2.05 **	−0.0001	0.15	0.0029	2.16 **	0.0042	2.28 **
SocScore (+)	0.0016	1.54	0.0008	0.23	0.0021	1.97 *	−0.0017	0.68	−0.0008	1.36	0.0008	0.39
EnvScore (+)	0.0015	1.18	0.0026	1.06	0.0010	1.56	0.0020	2.65 **	0.0012	0.39	0.0012	0.88
GovScore x *GovMat* (+)	0.0012	2.14 **	0.0018	2.39 **	0.0025	2.22 **	0.0013	1.89 *	0.0013	2.22 **	0.0025	1.91 *
SocScore x *SocMat* (+)	0.0007	1.52	0.0010	2.52 **	0.0022	1.35	0.0033	2.45 **	0.0028	4.50 ***	0.0001	1.44
EnvScore x *EnvMat* (+)	0.0020	2.25 **	0.0010	1.89 *	0.0044	3.82 ***	0.0023	2.38 **	0.0020	2.41 **	0.0051	2.37 **
Fixed Effects	Country, Industry		Country, Industry		Country, Industry		Country, Industry		Country, Industry		Country, Industry	
N	1,249		491		793		857		746		390	
Adjusted-R^2	6.1%		9.9%		3.4%		5.3%		5.4%		3.2%	

GovScore x GovMat: significant 6/6 regressions
EnvScore x EnvMat: significant 6/6 regressions
SocScore x SocMat: significant 3/6 regressions

Market Reaction Condition on Firm Type

		Pre-Regulation ESG Performance and Disclosure					
		Low Performance – Low Disclosure			High Performance – High Disclosure		
		Treatment	Control	Difference	Treatment	Control	Difference
Abnormal Returns	**Sample after matching (N = 2,053)**	–0.0268	–0.0119	–0.0149 (2.46) ** (N = 580)	–0.0250	–0.0299	0.0049 (2.10) ** (N = 576)
Abnormal Returns	**Sample for cross-sectional analyses (N = 1,249)**	–0.0234	–0.0080	–0.0154 (2.78) ** (N = 353)	–0.0229	–0.0281	0.0052 (2.39) ** (N = 348)

Conclusion

(1) Announcement of mandated nonfinancial disclosure is **economically significant**, generating a reaction from investors

- Equity investors expect nonfinancial disclosure regulation to have real cash flow and/or cost-of-capital implications

(2) Equity market perceives **<u>mandating of nonfinancial information as having net costs</u>** (on average)

- Costs are concentrated in firms with **<u>weaker</u>** pre-regulation ESG perf/disc.

(3) Predictable **<u>cross-sectional variation</u>** in this average return

- ***<u>more positive</u>*** for firms with

  - **<u>Higher levels of pre-mandate ESG disclosures</u>**

  - **<u>Higher levels of pre-mandate ESG performance</u>**

- ***<u>stronger results</u>*** for firms with

  - **<u>Financially material governance and environmental issues</u>**

Thank you!

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Appendix

Sensitivity Analyses

- **Include firm-specific control variables that may affect market reaction**

  - % shares held by asset owners; indicator for high growth; indicator for small

  - <u>Results are robust</u>

- **Placebo test using non-event dates**

  - Follow Armstrong et al. (2010)

  - <u>Event date coefficients consistently differ from those for non-event dates (all sig at 1%)</u>

- **Market-model CAR**

  - Cumulative return less corresponding country's market index return

  - <u>Results are robust</u>