Financial Transparency and Cross-Border Mergers and Acquisitions in the Extractives Industries

Şevkat Özgür Speitmann, PhD Student, University of Vienna, Faculty of Business, Economics and Statistics, (former) Chair of Industry, Energy and Environment, Oskar-Morgenstern-Platz 1, 1090, Vienna, Austria +436648385906, sevkato25@univie.ac.at

Raffael Speitmann, PhD, Vienna University of Economics and Business, Welthandelsplatz 1, 1020 Vienna, Austria and European Commission, Joint Research Centre, Seville, Spain +436801304532, raffael.speitmann@ec.europe.eu

Overview

This paper investigates the effect of a targeted transparency regulation on the cross-border mergers and acquisitions (M&A) activity of multinational extractive firms. Proponents of greater transparency in the extractive sector argue that financial transparency as a policy tool can help increase payments to host governments, mitigate the corruption prevalent in the sector, and generally help stakeholders better monitor corporate behavior. Over the past two decades, several important international transparency regulations have emerged. Inspired by the frequent observation of a negative association of wealth and resource abundance (Sachs and Warner, 1995, 1999) and the fact that revenues from natural resource extraction often represent the bulk of government income (Calder, 2014, p.2), the Extractive Industries Transparency Initiative (EITI) was founded. EITI member countries commit to publishing comprehensive information on the extractive sector and financial flows between governments and extracting firms. A central feature of the EITI is to bring together revenue data from host country governments and to verify the figures using audited data from extractive firms (Calder 2014, p.56). This mechanism is mainly designed to counterfeit illegal kickback payments from extractive firms to host country government officials.

To complement the EITI, the European Union (EU) and Canada adopted a transparency legislation requiring large multinational extractive firms to disclose key financial and tax information data disaggregated at the country-level in which the firms have activities, also better known as public Country-by-Country Reporting (public CbCR).[1] Policymakers view this regulation as an important means of combating the pervasive corruption in the extractive industries (European Commission, 2013; OECD, 2014). The transparency regime introduces a new obligation for listed and large non-listed extractive firms to report payments to governments broken down by country and by project. The following information has be provided on an annual basis: production entitlements; taxes levied on the income, production or profits; royalties, dividends, signature, discovery and production bonuses; licence fees, rental fees, entry fees and other considerations for licences and/or concessions; payments for infrastructure improvements. The implementation of the regulation happened in a staggered way with different implementation dates for different countries between 2015 and 2017. Table 1 shows the general structure of public CbC-reports by illustrating parts of the CbCR of TotalEnergies in 2018.

We study the effect of public CbCR on firms' cross-border M&A activity as increasing transparency likely changes the cost-benefit equilibrium of venturing abroad. On the one hand, firms under the scope of public CbCR may benefit from being more transparent, e.g. due to lower costs of capital, and increase their investments abroad. On the other hand, disclosing firms may suffer from additional costs. Johannessen and Larsen (2016) find large negative

[1] Chapter 10 of EU Accounting Directive (2013/34/EU).

effects of public CbCR on the firm value of extracting firms, suggesting that the transparency legislation is expected to indirectly impose additional costs via reduced tax evasion and avoidance possibilities and additional reputational costs imposed by stakeholders (Dyreng, Hoopes and Wilde, 2016; Eberhartinger, Speitmann and Sureth-Sloane, 2021). Furthermore, Rauter (2020) shows that public CbCR results in higher fiscal payments of extracting firms to host governments and lower marginal investments in host countries. Because of these ambiguous predictions, the direction of the effect of greater financial transparency on firms' cross-border M&A behavior is unclear ex-ante and therefore represents an empirical question.

To assess our main research question whether public CbCR changes firms' M&A behavior, we exploit the staggered implementation of the regulation in the EU and Canada and compare the number of cross-border M&A deals of disclosing versus non-disclosing firms in a difference-in-difference (DiD) design. The preliminary results of our main test show a negative and weakly significant reduction of cross-border acquisitions in some model specification. However, we find a more negative and strongly significant decline in cross-border acquisitions for large disclosing firms, suggesting that large multinational enterprises (MNEs), which are in the focus of media and regulatory attention are the most affected.

Methods

Our research design exploits the staggered implementation of the transparency regulation in the EEA and Canada and the fact that firms from all other countries do not fall under the scope of public CbCR. Accordingly, we compare the number of completed outbound M&A acquisitions of disclosing firms (treatment group) relative to non-disclosers (control group) over time in a difference-in-difference design. As illustrated in Figure 1, TotalEnergies serves as an example of the identification strategy. TotalEnergies, the global ultimate owner (GUO) entity, is headquartered in France and thus must dislcose public CbC reports of its worldwide activities for fiscal years 2016 onwards. ExxonMobile, headquartered in the United States, serves as an example for control firms as this firm does not fall under the disclosure regime.

Empirical strategy

Equation I shows the empirical DiD design of the main test.

$$(I) \qquad M\&A\text{-}Deals_{it} = \beta_0 + \beta_1\, pCbCR * POST + \beta_k\, CONTROLS_{it} + \alpha_i + \gamma_t + \varepsilon_{it}$$

The depended variable *M&A-Deals* is the number of cross-border acquisitions of parent firm i in year t. *pCbCR* is an indicator variable taking unity if a firm is headquartered in the EAA or Canada and 0 otherwise. *POST* is an indicator variable taking unity for years when pCbCR legislation is effective and 0 otherwise. Our coefficient of interest is β_1 measuring the effect of the transparency regulation on treated firms relative to a group of unaffected control firms. Further, we include firm-specific control variables to account for time-varying firm characteristics that might be correlated with M&A activity such as size, profitability, leverage, intangible assets, the effective tax rate and loss firms. Appendix A shows all variable definitions. Also, we include a set of firm (α) and year (γ) fixed effects. These dummy variables control for time-invariant firm-specific factors such as the language or legal system of the headquarter country and year specific events. Finally, ε represents the usual error term.

We apply two types of fixed effects models, taking into account that our dependent variable is count data in panel form that take non-negative integer values and is unlikely to be normally distributed. First, we estimate Equation (I) using a Poisson fixed effects approach following Cameron and Trivedi (2013). In an alternative estimation, we

follow Allison and Waterman (2002) and Greene (2007) and use a negative-binomial regression that accounts for possible overdispersion in the data with a full set of firm-specific indicator variables.

Data

Our empirical design focuses on the acquirer side and analyzes the outbound M&A behavior of firms that disclose CbC-reports relative to non-disclosing firms. We start the data collection and obtain M&A deal data from the Bureau van Dijk Zephyr data base and download all completed M&A transactions in the 2010-2019 period. We exclude prior years to avoid that effects of the financial crisis impact our results and end the sample period in the year before the outbreak of the COVID-19 pandemic. As public CbCR applies to all firms headquartered in the EEA and Canada, we match all acquirer firms with their respective global ultimate owner (GUO) and keep only consolidated financial statements, as public CbC reports are generally disclosed in the parent's consolidated financial statements. We then aggregate all M&A deals at the level of the GUO and merge this data with GUO financial statement and industry information from the Bureau van Dijk ORBIS database. We define M&A deals as new acquisitions of M&A targets and thus exclude other deal types, e.g. changes in minority stakes or joint ventures. Since this study focuses on the impact of financial transparency on new M&A investments, we also exclude M&A deals that include an acquisition increase and acquisitions of an unknown stake. Furthermore and consistent with pCbCR legislations, we only keep listed or large unlisted firms.[2]

Finally, we restrict the sample to GUOs from the extractive industries with two-digit NAICS2017 codes “21” (oil and gas) and three-digit NAICS2017 codes “324” (mining) and limit the sample period to +- 3 years relative to the year when public CbCR was implemented for each disclosing firm. Our final sample consists of consists of 1,124 observations, corresponding to 399 cross-border acquisitions.

Table 1 shows descriptive statistics of the dependent and control variables for firm characteristics of the total sample. In line with prior studies, all independent variables except *etr* and *loss* are winsorized at the 1% and 99% levels to reduce the effect of outliers on our analyses. In line with the tax literature, *etr* is censored between 0 and 1.

Results

Table 2 shows results of our main test of Equation (I) estimated by a Poisson and Negative-binominal model for the complete sample of treatment and control firms. The results in the strictest specifications in columns (2) and (4) including control variables indicate a negative and weakly significant effect of cross-border acquisitions on treated firms relative to the control group. These results present evidence that increased financial transparency raised the costs of cross-border investments of extractive firms that must disclose CbC-reports and thus reduces their M&A activity abroad relative to a group of firms without the reporting obligation.

Recent studies suggest that the costs of financial transparency are unlikely distributed equally across disclosing firms (e.g. Dyreng, Hoopes and Wilde, 2016; Eberhartinger, Speitmann and Sureth-Sloane, 2021; Andreicovici, Hombach and Sellhorn, 2022). For instance, Andreicovici, Hombach and Sellhorn (2022) show that stock prices of firms with greater reputational risk react more negative to the announcement of new transparency rules as these firms are more vulnerable to public pressure.

---

[2] EEA and Canadian headquartered unlisted extractive firms fall under the transparency regime if they meet two of the following financial thresholds: they report at least € (C$) 20 million in assets, generated at least € (C$) 40 million in revenue and employed an average of at least 250 employees.

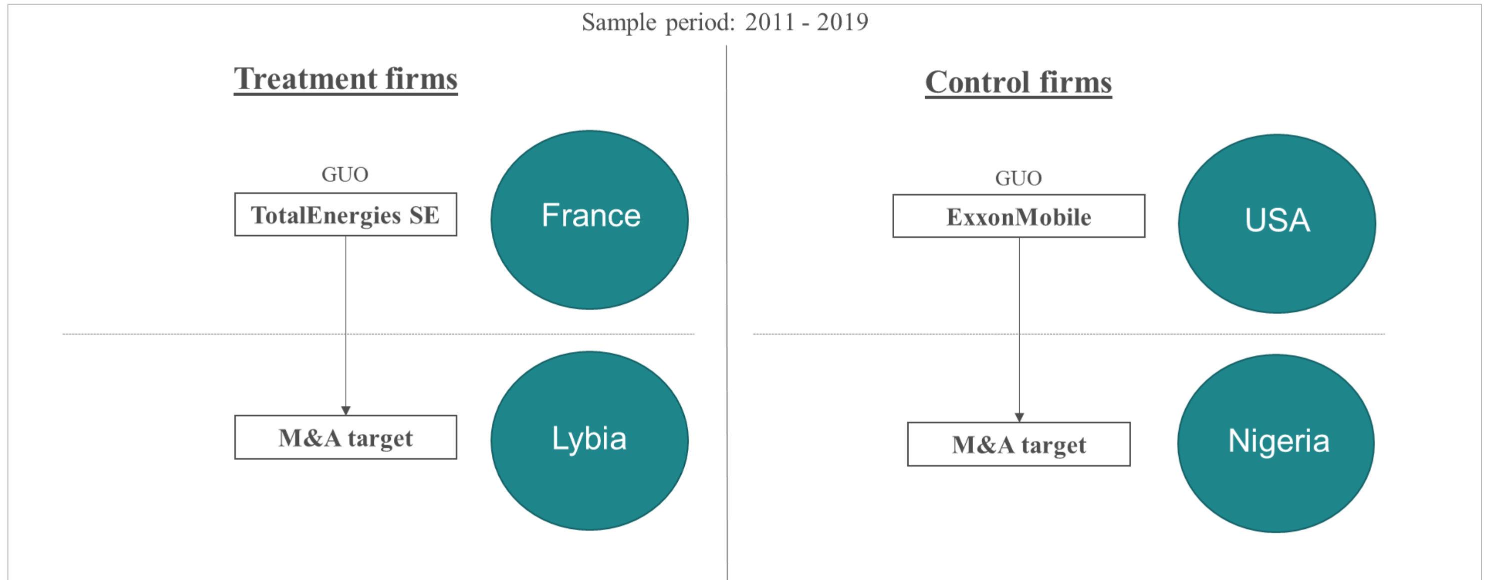
Related to our study, we expect that large extractive firms with well-established brands will anticipate higher costs to financial transparency than smaller competitors that are less subject to public scrutiny. Consequently, larger firms may face higher costs and reduce their cross-border acquisitions more strongly. In order to test this expectation, we run our DiD estimation within the treatment firms only and split the group of CbCR disclosing firms into large and small firms according to the median of treatment firms' total assets. In line with the expectation that larger firm that reduce their cross-border M&A activity more strongly, table 3 reports a negative and significant coefficient of the interaction term in most model specifications. These results suggest that larger extractive firms that are in the focus of public attention, for instance by the media or activist NGO groups, are most affected by the transparency regime.

Conclusions

We study the effect of an increase of mandatory financial transparency on the cross-border M&A activity of multinational extractive firms. European and Canadian legislators require extractive firms to disclosure key financial information broken down at the country level to inform stakeholders about their global payments to host governments ('Public Country-by-Country Reporting'). Proponents of more transparency in the extractive sector argue that the disclosure helps to curb corruption, foster investor protection and eventually nudge firms towards socially desirable behavior triggered by higher public scrutiny. As a result of more public scrutiny, firms are expected to face higher costs that may change their investment behavior abroad.

In the analysis of this paper, we exploit the staggered implementation of public CbCR in Canada and the EEA and test the effects of higher financial transparency on the cross-border M&A activity in a difference-in-difference design. The preliminary results suggest a negative and statistically significant effect of public CbCR on cross-border M&A deals of disclosing firms relative to a group unaffected control firms. In additional tests, we show that the effect is centered around large disclosing firms, thus suggesting higher regulatory and reputational costs for these firms. In light of the recent decision of the European Union to extend public CbCR to large firms in all industries, our results are policy relevant as we inform regulators about potential spillover effects of mandatory financial transparency on foreign investments of affected firms.

Figure 1: Identification strategy



Note: This figure present the identification strategy. Our treatment firms are headquartered in Canada and EEA countries and must disclose public CbC-reports. Public CbCR legislation has been implemented in a staggered way between 2015-2017. In contrast, our control group consists of firms that are headquartered elsewhere and these firms do not fall under the disclosure regime.

Table 1

Form and structure of public Country-by-Country Reporting in the extractive sector

Panel A

9.3.1 Reporting by country and type of Payment

(in k$)	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
EUROPE AND CENTRAL ASIA	**1,063,539**	**-**	**25,154**	**799**	**-**	**10,442**	**100,560**	**1,200,494**
Bulgaria	-	-	169	-	-	-	-	169
Denmark	265,034	-	5,098	-	-	-	-	270,132
Greece	-	-	258	295	-	-	-	553
Italy	59	-	336	-	-	36	-	431
Kazakhstan	41,081	-	-	504	-	10,406	52,838	104,829
Netherlands	(37,600)[(a)]	-	1,271	-	-	-	-	(36,329)
Norway	567,885	-	7,567	-	-	-	-	575,452
Russia	20,382	-	74	-	-	-	47,722	68,178
United Kingdom	206,698	-	10,381	-	-	-	-	217,079
AFRICA	**3,139,947**	**-**	**56,002**	**152,318**	**6,188**	**66,343**	**2,274,817**	**5,695,615**
Angola	840,918	-	12,521	151,794	-	-	2,159,257	3,164,490
Côte d'Ivoire	-	-	1,590	-	-	-	-	1,590
Democratic Republic of the Congo	-	-	900	-	-	340	-	1,240
Gabon	224,365	-	6,008	425	6,188	21,749	-	258,735
Kenya	-	-	403	-	-	108	-	511
Mauritania	-	-	2,987	-	-	-	-	2,987
Mozambique	-	-	2,184	-	-	-	-	2,184
Namibia	-	-	105	-	-	-	-	105
Nigeria	1,372,888	-	3,523	-	-	44,146	111,132	1,531,689
Republic of the Congo	701,776	-	26,400	99	-	-	4,428	732,703
Senegal	-	-	2,396	-	-	-	-	2,396
South Africa	-	-	274	-	-	-	-	274
Uganda	-	-	(3,289)[(b)]	-	-	-	-	(3,289)

Panel B

9.3.2 Reporting of Payments by Project and by type of Payment, and by Government and by type of Payment

(in k$)	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
ALGERIA								
Payments per Project								
Tin Fouyé Tabankort	62,806 [a]	-	-	-	-	-	186,293 [b]	249,099
Timimoun	3,338	-	-	3,059	-	-	-	6,397
Groupement Berkine	331,342 [c]	-	-	-	-	-	-	331,342
Tin Fouyé Tabankort II	13,754	-	311	-	-	-	-	14,065
Organisation Orhoud	66,728 [d]	-	-	-	-	-	-	66,728
TOTAL	**477,968**	**-**	**311**	**3,059**	**-**	**-**	**186,293**	**667,631**
Payments per Government								
Direction Générale des Impôts, Direction des Grandes Entreprises c/o Sonatrach	460,876 [e]	-	-	-	-	-	-	460,876
Direction Générale des Impôts, Direction des Grandes Entreprises	7,552	-	311	-	-	-	-	7,863
Agence Nationale pour Valorisation des Ressources en Hydrocarbures (ALNAFT)	9,540	-	-	-	-	-	-	9,540
Sonatrach	-	-	-	3,059	-	-	186,293 [f]	189,352
TOTAL	**477,968**	**-**	**311**	**3,059**	**-**	**-**	**186,293**	**667,631**

Note: This table shows parts of an example public CbCR report from TotalEnergeis SE in 2018. Panel A shows financial information disaggregated at the county-level in which TotalEnergies has activities. Panel B shows this information broken down at the project and government agency level for Algeria. In total, Total's 2018 public CbCR consists of 17 pages and discloses detailed payments information for 45 countries.

Table 2
Summary Statistics

Variables	**Count**	**Mean**	**Sd**	**Min**	**Max**	**P25**	**P50**	**P75**
ma_deals_cross_border	1,124	0.35	0.67	0.00	6.00	0.00	0.00	1.00
tot_as	1,124	19.79	3.24	12.80	24.87	17.24	19.98	22.54
prof	1,124	-0.23	0.67	-3.35	0.39	-0.22	-0.03	0.06
lev	1,124	0.23	0.21	0.00	0.94	0.03	0.21	0.35
intang_int	1,124	0.07	0.15	0.00	0.77	0.00	0.00	0.07
etr	1,124	0.17	0.24	0.00	1.00	0.00	0.04	0.26
loss	1,124	0.57	0.50	0.00	1.00	0.00	1.00	1.00

Note: This table shows descriptive statistics based on the sample of the main test. All variables are defined in Appendix A.

Table 2
Public CbCR and cross-border M&A activity

	(1)	(2)	(3)	(4)
VARIABLES	Poisson	Poisson	Negative-Binominal	Negative-Binominal
pCbCR * POST	-0.260	-0.381*	-0.254	-0.372*
	(0.189)	(0.205)	(0.200)	(0.216)
tot_as		0.241*		0.119
		(0.123)		(0.0981)
prof		-0.154		-0.0903
		(0.160)		(0.157)
lev		-2.515***		-2.798***
		(0.711)		(0.758)
intang_int		-1.228		-0.654
		(0.830)		(0.772)
etr		-0.330		-0.190
		(0.315)		(0.328)
loss		-0.451**		-0.402**
		(0.184)		(0.193)
Constant			0.0131	-1.526
			(1.110)	(2.388)
Observations	1,307	1,124	1,307	1,124
Firm and year FE	yes	yes	yes	yes

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Note: This table shows regression results based on Equation (I). *M&A-Deals* is the number of cross-border acquisitions of parent firm i in year t. *pCbCR* is an indicator variable taking unity if a firm is headquartered in the EAA or Canada and 0 otherwise. POST is an indicator variable taking unity for years when pCbCR legislation is effective and 0 otherwise. Our coefficient of interest is $\beta 1$ measuring the effect of the transparency regulation on treated firms relative to a group of unaffected control firms. All control variables are defined in Appendix A.

Table 3
Public CbCR and cross-border M&A activity of small vs. large firms

	(1)	(2)	(3)	(4)
VARIABLES	Poisson	Poisson	Negative-Binominal	Negative-Binominal
Large Firms*POST	-0.532**	-0.433	-0.621**	-0.544*
	(0.246)	(0.273)	(0.269)	(0.293)
tot_as		0.376**		0.134
		(0.190)		(0.132)
prof		-0.295		-0.136
		(0.247)		(0.235)
lev		-3.646***		-4.102***
		(1.146)		(1.185)
intang_int		-0.971		-0.641
		(1.155)		(1.084)
etr		-0.627		-0.383
		(0.443)		(0.468)
loss		-0.705***		-0.546**
		(0.249)		(0.266)
Constant			-0.186	-1.668
			(1.109)	(3.098)
Observations	712	573	712	573
Firm and year FE	yes	yes	yes	yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows regression results based on Equation (I) within the group of treated firms. *M&A-Deals* is the number of cross-border acquisitions of parent firm i in year t. *Large Firms* is an indicator variable taking unity if a firm is headquartered in the EAA or Canada with total assets above the median. The indicator takes 0 if a firm is headquartered in the EAA or Canada with total assets below the median. *POST* is an indicator variable taking unity for years when pCbCR legislation is effective and 0 otherwise. The coefficient of interest is $\beta 1$ measuring the effect of the transparency regulation on large treated firms relative to small treated firms. All control variables are defined in Appendix A.

Appendix A
Variable definitions

Variable name	Definition and data source
ma_deals_cross_border	The absolute number of cross-border acqusitions (Zephyr)
tot_as	The natural logarithm of total assets, lagged by one period (Orbis)
prof	Profit/loss before tax divided by total assets, lagged by one period (Orbis)
lev	Non-current liabilities divided by total assets, lagged by one period (Orbis)
intang_int	Intangible assets divided by total assets, lagged by one period (Orbis)
etr	Tax expense divided by total assets, lagged by one period (Orbis)
loss	Indicator variable taking unity if profit/loss before tax is lower than 0, lagged by one period and 0 otherwise (Orbis)

Note: This table shows the variable definitions.

Note

References will be updated with the full paper submission.