

**EARNINGS MANAGEMENT OF TARGET FIRMS AND DEAL PREMIUMS IN  
EUROPE:**

**THE ROLE OF INDUSTRY RELATEDNESS**

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PROPOSAL FOR THE XIV INTERNATIONAL  
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**Abstract:** This paper focuses on the scarcely studied setting of European M&As to analyze the role of industry relatedness on the association between the earnings management practices carried out by the target firm one year before and the deal premium offered by the acquirer. We argue that, due to their familiarity with the accounting practices of the industry, acquirers operating in the same industry than the target (industry related) are more able to see through the target's EM practices. Our results support this thesis since we find that the association between discretionary accruals and the premium offered by the acquirer is significantly negative only when the acquirer belongs to the same industry than the target firm. Our results are robust to the use of several EM measures and industry definitions.

**Keywords:** mergers and acquisitions; earnings management; bid premiums; industry relatedness; Europe.

## 1. INTRODUCTION

Prior literature in mergers and acquisitions (M&A) widely validates that acquirer firms perform earnings management (EM) before stock-for-stock deals to lower their acquisition costs (e.g. Botsari & Meeks, 2008; Erickson & Wang, 1999; Higgins, 2013; Louis, 2004). However, less is known about EM of the target firms before M&A (Anagnostopoulou & Tsekrekos, 2015; Campa & Hajbaba, 2016). Also, this research branch mainly analyzes deals in the US context (Alsharairi, Black, & Hofer, 2015; Ben-Amar & Missonier- Piera, 2008) relegating other relevant markets with comparable growth rates and dimensions, such as Europe (Moschieri & Campa, 2014). This paper aims to tackle those gaps in the literature by investigating the role of industry relatedness on the association between the targets' earnings management practices (prior to M&A) and the deal premiums offered by acquirers in European M&A processes.

Research on M&A reports that deal premiums offered by acquirers are higher for intra-industry (industry related) deals compared to inter-industry (industry unrelated) deals (Walkling & Edmister, 1985). An explanation for this result is that the economies of scale are more prevalent in intra-industry than in inter-industry M&As, and on the higher uncertainty that acquirer firm experiments regarding the target's future cash flow in inter-industry deals. Similarly, other studies find positive share returns for acquirer shareholders in intra-industry compared with inter-industry transactions (e.g., Gregory, 1997; Maquieira, Megginson, & Nail, 1998; Singh & Montgomery, 1987; Walker, 2000). In this setting, intra-industry deals are more clearly associated with potential synergies derived from the M&A than its inter-industry counterparts (Tuch & O'Sullivan, 2007).

We hypothesize that industry relatedness in M&A can help acquirer firms to detect and discount the practices of EM done by the target firm before the M&A. Specifically, we pose that this should be reflected in the deal premiums offered. The literature states that by supporting on their backgrounds and familiarity with the target industry, acquirers in intra-industry M&A, as opposed to the inter-industry case, are better informed to lower the risk of overvaluing the target's assets by properly gauging their growth perspectives (Capron & Shen, 2007; Shen & Reuer, 2005). Therefore, in intra-industry M&As the acquirer may identify some of the possible sources of the target's overvaluation, in this case, income

increasing EM practices carried out before the deal's announcement. Hence, acquirers can perform bids below current market share prices of targets in accordance with the reasonable synergies expected from the M&A. Consequently, intra-industry acquirers will offer lower deal premiums than inter-industry acquirers.

In order to test our predictions, we use a sample of 769 M&As that were announced in Europe between 1999 and 2017. Following prior research (Raman, Shivakumar & Tamayo, 2013; Skaife & Wangerin, 2013) this study explains the changes in the deal premium offered by the acquirer (dependent variable) as a function of several characteristics of the deal and the firms involved that the literature validates as factors determining bid premiums in M&A (such as hostile bids, toehold, size of the deal), as well as of the target's EM practices before the M&A, and other factors that the literature found to be determinants of EM (like sales growth, leverage or profitability). To assess the moderating effect of the industry relatedness on the relation between EM and bid premiums, the model includes the interaction term of the EM measure and an indicator variable that considers if the acquirer and target firms are in the same industry (by comparing the first 2-digits of their SIC codes). To proxy EM we employ signed discretionary accruals estimated using the performance adjusted model proposed by Kothari, Leone, & Wasley (2005).

At first sight, the empirical tests carried out to reveal that EM of target firms one year before the year of M&A announcement does not impact on bid premiums. However, additional tests unveil a negative and statistically significant coefficient for the interaction term between the EM and the industry relatedness variables, which confirms the moderating role of industry relatedness on the association between the target's EM and the bid premium offered by the acquirer. The results are robust to: several model specifications that include control variables that may affect both bid premiums and EM; other determinants of the target's EM practices, like liquidity, price to earnings and the standard deviation of cash flows from operations; considering alternative criteria for the size of cross-section groups to estimate discretionary accruals; considering different parameters for industry grouping; and using alternative models to estimate discretionary accruals.

To the best of our knowledge, this is the first study to analyze the impact of the target's EM on deal premiums in Europe, and more specifically the moderating role of industry

relatedness on such a relation. Related papers comprise studies analyzing the effect of IFRS adoption (in Europe) (Bozos, Ratnaik, & Alsharairi, 2014) as well as financial reporting quality (in the US) on deal premiums (Raman et al., 2013; Skaife & Wangerin, 2013). However, there is no evidence on the effect of the target's EM on the bid premiums offered by acquirer firms, nor on the moderating effect of industry relatedness in the equation. In essence, this study brings evidence in support of the notion that industry familiarity helps the acquirer firm to disentangle the complex mix between the real economic value of synergies and the *noise* of management discretion incorporated in the financial statements of target firms.

The remainder of the study is as follows. The next section explains the methodology. Section 3 shows and discusses our preliminary empirical findings and section 4 presents the robustness tests. Finally, section 5 remarks our tentative conclusions.

## 2. METHODOLOGY

### 2.1. Empirical model

Prior literature shows that the characteristics of the deal and of the target firm determine bid premiums in M&A decisions (Bargeron, Schlingemann, Stulz, & Zutter, 2008; Betton & Eckbo, 2000; Schwert, 2000; Walkling & Edmister, 1985). Following this research, the deal premium can be modeled as a function of some independent variables as expressed in equation (1).

$$\begin{aligned}
 \mathbf{Premium}_t = & \alpha_0 + \alpha_1 EM_{t-1} + \alpha_2 EM_{t-1} * \mathbf{Industry}_t \\
 & + \sum_{i=1}^k \beta_i \mathbf{Deal. Controls}_i + \sum_{j=1}^l \gamma_j \mathbf{Target. Controls}_j + \alpha_m \mathbf{Year dummies} \\
 & + \alpha_n \mathbf{Target nation dummies} + \varepsilon_t
 \end{aligned} \tag{1}$$

Where: the dependent variable (*Premium*) is the ratio of the offer price to the target's share price four weeks before the announcement date minus one; *EM* represents the target's earnings management practices before the deal; *Industry* is an indicator variable that captures

industry relatedness, taking the value 1 when the acquirer and the target firms are in the same industry, and 0 otherwise;<sup>1</sup> and *EM\*Industry* is the interaction between EM and Industry. A negative and significant coefficient of this interaction would be consistent with our expectations.

The empirical model includes two groups of independent variables: i) the characteristics of the deal (*Deal.Controls*), and ii) the characteristics of the target firm (*Target.Controls*). Recent research posits that some of the variables related to the financial situation of target firms, like the market to book ratio, profitability, leverage, growth or the deviation of cash flows can also affect their financial reporting quality (e.g.: Skaife & Wangerin, 2013). We extend this argument to consider control variables related to the target's innate characteristics that can determine their EM practices. Thereby, by including target firm's controls we are also coping with the endogeneity problem of correlated omitted-variables that can bias our results.<sup>2</sup> The model also includes year and country effects. **Table 1** includes the definitions of the control variables.

**Table 1.** Control-variable definitions

<b>Variable</b>	<b>Definition</b>
<u>Deal characteristics</u>	
<i>Hostile</i>	When the deal is classified as hostile or unsolicited takes the value of 1 (0: o.w.)
<i>Multibid</i>	Takes the value of 1 if there are multiple bidders (0: o.w.)
<i>Toehold</i>	% of common shares outstanding held by the acquirer at the date of announcement
<i>Tender</i>	When a tender offer is launched for the target takes the value of 1 (0: o.w.)
<i>Stock</i>	Takes the value of 1 for transactions in which the only consideration offered is stock (0: o.w.)
<i>Cash</i>	Takes the value of 1 for transactions in which the only consideration offered is cash (0: o.w.)
<i>Public-Bidder</i>	When acquiring firm is a public company takes the value of 1 (0: o.w.)
<i>Domestic</i>	Takes the value of 1 if acquirer and target countries are the same (0: o.w.)
<i>Industry</i>	Takes the value of 1 if acquirer and target industries are the same (using the first 2 digits of their SIC codes) (0: o.w.)
<i>Size</i>	natural log of the market capitalization (target firm) in year t-1

<sup>1</sup> Following Skaife and Wangerin (2013), we compare the industry filiation of the acquirer and the target firms using the first two digits of their SIC codes.

<sup>2</sup> Nonetheless, the work of Skaife and Wangerin (2013) does not properly relate targets persistence of cash flows from operations (*SD.CFO*) with the deal premiums offered by acquirers firms. We will come to this point in the analysis of our preliminary results.

### Target characteristics

<i>MTB</i>	market to book ratio in year t-1
<i>ROE</i>	return on equity ratio in year t-1
<i>Growth</i>	natural log of the ratio between sales in year t-1 and sales in year t-2
<i>Leverage</i>	ratio between long-term debt and common equity in year t
<i>Liquidity</i>	ratio between the working capital (current assets - current liabilities) over assets in year t-1
<i>P/E</i>	price to earnings ratio in year t-1
<i>SD.CFO</i>	standard deviation of the cash flows from operating activities over sales for years t-1, t-2, and t-3

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**Note:** *t* stands for year of the deal announcement.

## 2.2. Earnings management measure

Most of the extant studies analyzing EM in the M&A setting consider measures of accrual manipulation to proxy for EM. In particular, most of the studies analyzing EM before stock-for-stock deals employ discretionary accruals (*DA*) estimated from the adjusted performance model proposed by Kothari et al. (2005) (e.g., Anagnostopoulou & Tsekrekos, 2015; Anilowski, Macias, & Sanchez, 2009; Baik, Cho, Choi, & Kang, 2015; Baik, Kang, & Morton, 2007; Francoeur, Ben Amar, & Rakoto, 2012; Gong, Louis, & Sun, 2008; Higgins, 2013; Louis, 2004; Pungaliya & Vijh, 2009; Vasilescu & Millo, 2016). Also, recent related research on financial reporting quality of target firms and deal premiums use the performance adjusted model (e.g., Skaife & Wangerin, 2013). Following these studies, we measure EM practices carried out by the target firm in the year *t-1* (one year before the year of the deal announcement) by estimating the model in equation (2) for each combination of industry (2 digit SIC code) and year, and requiring a minimum of 10 observations.<sup>3</sup>

$$\begin{aligned} TA_{it-1}/Assets_{it-2} & & (2) \\ &= \beta_0 + \beta_1(1/Assets_{it-2}) + \beta_2\Delta Rev_{it-1}/Assets_{it-2} \\ &+ \beta_3PPE_{t-1}/Assets_{it-2} + \varepsilon_{it} \end{aligned}$$

Where: *TA* stands for total accruals (net income – cash flows from operations);  $\Delta Rev$  is the change in net sales; *PPE* is the level of property, plant, and equipment; and *Assets* is the total assets.

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<sup>3</sup> As the procedure used by Kothari et al. (2005).

Our proxy for earnings management is calculated as follows:

- The residuals of the OLS estimations performed are the non-adjusted discretionary accruals ( $DA_{na}$ ).
- We form ten portfolios for each cross-section group based on the decile rankings of the targets' return on assets ( $ROA$ ) in year  $t$ .
- Performance adjusted discretionary accruals ( $DA_{pa}$ ) are obtained by subtracting from each observation the median  $DA_{na}$  of the corresponding ROA decile.
- Finally,  $EM$  is the correspondent decile rank (1-10) for each  $DA_{pa}$  observation.

### 2.3. Sample

We employ the Thomson One Banker (*TIB*) M&A database and collect all the deals (completed and withdrawn) that were announced between 1999 and 2017. The transactions included in the sample meet the following criteria:

1. Target and acquirer firms are both domiciled in the European Union (the group of 28).
2. Neither the target nor the acquirer belongs to the financial sector.
3. Target companies must be public companies (in order to get the information about their financial statements from Worldscope).
4. The deal value of the transaction must be higher than 1 \$Million.
5. Acquirer firms seek to get the control of the target firm at the completion of the deal (i.e., to own at least the 50% of the ownership of target firms)

After the aforementioned eliminations the sample includes 769 observations, its construction process is indicated in **Table 2**. **Table 3** provides details on the year and country of the target firm of the sample we use. **Table 4** shows the industry filiation of target firms in the final sample.

**Table 2.** Sample construction

<b>Filters</b>	<b>Obs.</b>
Public targets	196,701
Acquirer firms obtaining the control of target firms	-147,227
Deals completed and withdrawn	-10,557
Target and acquirer nation in the EU	-31,403
Deal Value >= \$ 1 Mil	-1,649
Acquirer and target firms not belong to financial sector	-3,907
Required variables for equation 1 and 2	-1,189
<b>Final sample</b>	<b>769</b>

**Table 3.** Sample distribution by year of the deal announcement and country of the target firm

<i>Panel A. Deal announcement year</i>				<i>Panel B. Target nation</i>			
<b>Year</b>	<b>Freq.</b>	<b>Percent</b>	<b>Cum.</b>	<b>Country</b>	<b>Freq.</b>	<b>Percent</b>	<b>Cum.</b>
1999	75	9.75	9.75	United Kingdom	392	50.98	50.98
2000	63	8.19	17.95	France	103	13.39	64.37
2001	41	5.33	23.28	Sweden	68	8.84	73.21
2002	21	2.73	26.01	Netherlands	49	6.37	79.58
2003	43	5.59	31.60	Italy	28	3.64	83.22
2004	39	5.07	36.67	Poland	23	2.99	86.22
2005	43	5.59	42.26	Finland	21	2.73	88.95
2006	62	8.06	50.33	Denmark	20	2.60	91.55
2007	59	7.67	58.00	Belgium	19	2.47	94.02
2008	50	6.50	64.50	Ireland-Rep	11	1.43	95.45
2009	30	3.90	68.40	Austria	7	0.91	96.36
2010	28	3.64	72.04	Greece	7	0.91	97.27
2011	36	4.68	76.72	Spain	7	0.91	98.18
2012	27	3.51	80.23	Hungary	4	0.52	98.70
2013	18	2.34	82.57	Luxembourg	4	0.52	99.22
2014	39	5.07	87.65	Portugal	4	0.52	99.74
2015	31	4.03	91.68	Czech Republic	1	0.13	99.87
2016	33	4.29	95.97	Malta	1	0.13	100.00
2017	31	4.03	100.00	<i>Total</i>	<i>769</i>	<i>100</i>	
<i>Total</i>	<i>769</i>	<i>100</i>					



**Table 4.** Sample distribution by the target industry<sup>4</sup>

<b>Description</b>	<b>Freq.</b>	<b>Percent</b>	<b>Cum.</b>
Consumer NonDurables -- Food, Tobacco, Textiles, Apparel, Leather, Toys	78	10.14	10.14
Consumer Durables -- Cars, TV's, Furniture, Household Appliances	20	2.60	12.74
Manufacturing -- Machinery, Trucks, Planes, Off Furn, Paper, Com Printing	105	13.65	26.40
Oil, Gas, and Coal Extraction and Products	14	1.82	28.22
Chemicals and Allied Products	27	3.51	31.73
Business Equipment -- Computers, Software, and Electronic Equipment	195	25.36	57.09
Telephone and Television Transmission	34	4.42	61.51
Utilities	20	2.60	64.11
Wholesale, Retail, and Some Services (Laundries, Repair Shops)	61	7.93	72.04
Healthcare, Medical Equipment, and Drugs	52	6.76	78.80
Other	163	21.20	100.00
<i>Total</i>	<i>769</i>	<i>100</i>	

**Table 5** contains descriptive statistics of the research variables. In accordance with definitions in **Table 1**, dummy variables are taken directly from *TIB* while remaining variables are collected from *Worldscope*.

**Table 5.** Descriptive statistics

<b>Deal characteristics</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>Premium</i>	769	0.350	0.407	(0.740)	2.208
<i>Hostile</i>	769	0.073	0.260		
<i>Multibid</i>	769	0.129	0.335		
<i>Toehold*</i>	769	0.044	0.107	-	0.450
<i>Tender</i>	769	0.635	0.482		
<i>Stock</i>	769	0.165	0.372		
<i>Cash</i>	769	0.482	0.500		
<i>Public-Bidder</i>	769	0.623	0.485		
<i>Domestic</i>	769	0.744	0.437		
<i>Industry</i>	769	0.601	0.490		
<i>Size</i>	769	11.858	1.983	7.343	18.749
<b>Target characteristics*</b>					
<i>MTB</i>	769	2.600	3.394	(7.460)	25.648
<i>ROE</i>	769	0.010	0.468	(3.839)	1.942
<i>Growth</i>	769	0.091	0.267	(0.976)	1.917
<i>Leverage</i>	767	0.345	0.653	(2.983)	4.102

<sup>4</sup> As the 12 industry classification groups of Fama and French (1997)

<i>Liquidity</i>	764	0.154	0.217	(0.422)	0.822
<i>P/E</i>	761	11.541	52.523	(234.259)	269.500
<i>SD.CFO</i>	657	0.218	0.872	0.006	8.485
<b>Earnings management</b>					
<i>EM</i>	769	5.518	2.841	1	10
<i>DA<sub>pa</sub>*</i>	769	-0.0031	0.126	-0.418	0.352

\* All continuous variables are winsorized at 1%.

### 3. PRELIMINARY RESULTS

We perform three different regression analysis to test our hypothesis. The rationale behind this is to examine the statistical significance of the moderating effect of industry relatedness, *EM\*Industry* term, to gradually more complex model specifications that control not only for deal premiums but also for EM determinants. In that sense, first **Table 6** gives the results of the regression of bid premiums on *EM* and *EM\*Industry* controlling for those characteristics related to the deals (*Deal.Controls*). Second, **Table 7** implements the same setting as before but complements it with control variables of target firms' characteristics (*Target.Controls*) without *SD.CFO*. Third, **Table 8** includes all the target firms' characteristics. We split the analysis of target control variables in two groups with and without *SD.CFO* (**Table 7** and **Table 8** respectively), due to this variable is more related to targets *EM* than to deals premiums offered by acquirers; besides the fact that, because of dataset restrictions, by including *SD.CFO* as independent variable our sample drops to 644 from the 769 observations in **Table 6**. In all cases, column (1) shows estimation results for the base model (without *EM*), while columns (2) and (3) include *EM* and *EM\*Industry* respectively.

On average, models estimated explain more than the 16% of the changes in the bid premiums of the sample.<sup>5</sup> Regarding the control variables, estimation results for *Multibid*, *Toehold*, *Stock*, and *Size* results are in line with prior literature (Betton & Eckbo, 2000; Schwert, 2000; Skaife & Wangerin, 2013; Walkling & Edmister, 1985). Moreover, results reveal that when including the variables of interest, *EM*, and *EM\*Industry* the predictive power of the models increases (see Adj-R2). As expected, the coefficients for *EM\*Industry* term are negative and statistically significant (at 5%) in columns (3). At this regard, estimation results reveal that

<sup>5</sup> For **Table 6** models have a coefficient of determination of 0.179 on average while **Table 7** and **Table 8** shows 0.184 and 0.169 respectively.

the overall effect of the intra-industry variable (*Industry*) on the relation between *EM* and the dependent variable is negative.<sup>6</sup> We interpret these results as that industry relatedness moderates the impact of targets' EM on bid premiums offered by acquirers consistently. Furthermore, the effect of intra-industry M&A does not rely on factors determining targets EM practices such as leverage, growth, MTB, ROE (*Table 7*) or SD.CFO (*Table 8*).

In sum, our empirical results validate that acquirers in intra-industry, as opposite to inter-industry transactions, are more able to detect and discount from bid offers the EM practices performed by target firms the year before the year of the M&A announcement.

**Table 6.** Regression analysis of deal premiums and earnings management moderated by industry relatedness including controls for deal characteristics

Dependent variable:			
<i>Deal premiums</i>	(1)	(2)	(3)
Independent variables:	b/t	b/t	b/t
<i>EM * Industry</i>			-0.01498** [-2.26]
<i>EM</i>		-0.00508 [-0.98]	0.01223 [1.56]
<i>Industry</i>	0.02067 [0.73]	0.02158 [0.76]	0.16993*** [2.85]
<i>Hostile</i>	-0.02082 [-0.52]	-0.01892 [-0.47]	-0.01735 [-0.43]
<i>Multibid</i>	0.09443*** [2.72]	0.09378*** [2.70]	0.09805*** [2.77]
<i>Toehold</i>	-0.27513** [-2.08]	-0.26101* [-1.95]	-0.28857** [-2.14]
<i>Tender</i>	0.00405 [0.13]	0.00575 [0.18]	0.00693 [0.22]
<i>Stock</i>	-0.11515** [-2.36]	-0.11487** [-2.35]	-0.11078** [-2.28]
<i>Cash</i>	-0.05279 [-1.55]	-0.05267 [-1.55]	-0.0488 [-1.44]
<i>Public-Bidder</i>	-0.04474 [-1.37]	-0.04540 [-1.38]	-0.04734 [-1.45]
<i>Domestic</i>	-0.09650*** [-2.85]	-0.09582*** [-2.83]	-0.09809*** [-2.90]

<sup>6</sup> Even in column (3) of *Table 7* where the resulting effect of *EM* moderated by *Industry* is still negative (-0.01632+0.01364) in line with our argument (not to mention the fact that the significance of the term *EM* is too weak (10%)).

<i>Size</i>	-0.01823**	-0.01815**	-0.01853**
	[-2.22]	[-2.21]	[-2.26]
<i>Constant</i>	2.48757***	2.50997***	0.61311***
	[17.96]	[17.81]	[3.89]
Year dummies	Included	Included	Included
Target nation dummies	Included	Included	Included
Sample size	769	769	769
R2	0.1697	0.1709	0.1789
Adj-R2	0.1181	0.1181	0.1253

Note: Coefficients for dummy variables are omitted for brevity. Standard errors are clustered by firm. \*, \*\*, \*\*\* denotes significance at 10%, 5% and 1% respectively. See **Table 1** for variable definitions.

**Table 7.** Regression analysis of deal premiums and earnings management moderated by industry relatedness including controls for the deal and target characteristics (without SD.CFO)

Dependent variable:			
<i>Deal premiums</i>	(1)	(2)	(3)
Independent variables:	b/t	b/t	b/t
<i>EM * Industry</i>			-0.01632** [-2.41]
<i>EM</i>		-0.00553 [-1.03]	0.01364* [1.66]
<i>Industry</i>	0.02556 [0.89]	0.02581 [0.90]	0.18948*** [3.08]
<i>Hostile</i>	-0.02975 [-0.72]	-0.02774 [-0.66]	-0.02791 [-0.67]
<i>Multibid</i>	0.09003** [2.50]	0.08988** [2.50]	0.09493*** [2.59]
<i>Toehold</i>	-0.25747* [-1.88]	-0.23967* [-1.73]	-0.26944* [-1.92]
<i>Tender</i>	-0.00408 [-0.13]	-0.00211 [-0.07]	-0.00203 [-0.06]
<i>Stock</i>	-0.10908** [-2.18]	-0.10923** [-2.19]	-0.10501** [-2.11]
<i>Cash</i>	-0.05262 [-1.52]	-0.05263 [-1.53]	-0.04774 [-1.39]
<i>Public-Bidder</i>	-0.04364 [-1.33]	-0.04412 [-1.34]	-0.04612 [-1.41]
<i>Domestic</i>	-0.09457*** [-2.74]	-0.09379*** [-2.71]	-0.09541*** [-2.77]
<i>Size</i>	-0.01581* [-1.58]	-0.01556* [-1.55]	-0.01534* [-1.53]

	[-1.86]	[-1.83]	[-1.82]
<i>MTB</i>	-0.00564	-0.00601	-0.00638
	[-1.08]	[-1.13]	[-1.23]
<i>ROE</i>	-0.01739	-0.01611	-0.01651
	[-0.51]	[-0.48]	[-0.50]
<i>Growth</i>	0.03403	0.03097	0.03045
	[0.52]	[0.47]	[0.47]
<i>Leverage</i>	-0.01168	-0.01163	-0.01254
	[-0.57]	[-0.56]	[-0.61]
<i>Liquidity</i>	0.09661	0.10561	0.11236*
	[1.44]	[1.60]	[1.70]
<i>P/E</i>	-0.00030	-0.00030	-0.00037
	[-1.18]	[-1.18]	[-1.44]
<i>Constant</i>	0.33020*	0.37274*	0.59138***
	[1.76]	[1.95]	[3.58]
Year dummies	Included	Included	Included
Target nation dummies	Included	Included	Included
Sample size	754	754	754
R2	0.1727	0.1741	0.1835
Adj-R2	0.1126	0.1128	0.1217

Note: Coefficients for dummy variables are omitted for brevity. Standard errors are clustered by firm. \*, \*\*, \*\*\* denotes significance at 10%, 5% and 1% respectively. See *Table 1* for variable definitions.

**Table 8.** Regression analysis of deal premiums and earnings management moderated by industry relatedness including controls for the deal and target characteristics (with SD.CFO)

Dependent variable:			
<i>Deal premiums</i>	(1)	(2)	(3)
Independent variables:	b/t	b/t	b/t
<i>EM * Industry</i>			-0.01411**
			[-1.98]
<i>EM</i>		-0.00561	0.00936
		[-0.97]	[1.02]
<i>Industry</i>	0.00804	0.00764	0.13581**
	[0.26]	[0.25]	[2.01]
<i>Hostile</i>	-0.02200	-0.02040	-0.02302
	[-0.49]	[-0.45]	[-0.50]
<i>Multibid</i>	0.09656**	0.09684**	0.10126**
	[2.41]	[2.40]	[2.51]
<i>Toehold</i>	-0.24883	-0.23294	-0.24902
	[-1.64]	[-1.52]	[-1.61]

<i>Tender</i>	-0.01136 [-0.33]	-0.00850 [-0.25]	-0.00767 [-0.23]
<i>Stock</i>	-0.05350 [-0.97]	-0.05259 [-0.96]	-0.05107 [-0.93]
<i>Cash</i>	-0.02198 [-0.60]	-0.02220 [-0.61]	-0.02092 [-0.57]
<i>Public-Bidder</i>	-0.04119 [-1.15]	-0.04280 [-1.19]	-0.04403 [-1.23]
<i>Domestic</i>	-0.09875*** [-2.96]	-0.09767*** [-2.94]	-0.09874*** [-2.97]
<i>Size</i>	-0.01712* [-1.87]	-0.01691* [-1.85]	-0.01672* [-1.84]
<i>MTB</i>	-0.00169 [-0.31]	-0.00201 [-0.36]	-0.00284 [-0.51]
<i>ROE</i>	0.00770 [0.21]	0.00950 [0.26]	0.00867 [0.24]
<i>Growth</i>	0.03993 [0.58]	0.03868 [0.56]	0.03473 [0.51]
<i>Leverage</i>	-0.02284 [-1.08]	-0.02283 [-1.07]	-0.0219 [-1.03]
<i>Liquidity</i>	0.13238* [1.80]	0.13884* [1.90]	0.14417* [1.97]
<i>P/E</i>	-0.00042 [-1.59]	-0.00042 [-1.60]	-0.00047* [-1.76]
<i>SD.CFO</i>	-0.03577* [-1.89]	-0.03319* [-1.74]	-0.03129 [-1.61]
<i>Constant</i>	0.31087* [1.69]	0.35566* [1.86]	0.63829*** [3.67]
Year dummies	Included	Included	Included
Target nation dummies	Included	Included	Included
Sample size	644	644	644
R2	0.1615	0.1628	0.1687
Adj-R2	0.0892	0.0892	0.0940

**Note:** Coefficients for dummy variables are omitted for brevity. Standard errors are clustered by firm. \*, \*\*, \*\*\* denotes significance at 10%, 5% and 1% respectively. See *Table 1* for variable definitions.

#### 4. ROBUSTNESS TESTS

To corroborate the strong nature of our findings, we repeat the analysis of the previous section considering the following arguments:

- i. EM estimates depend on the:
  - a. models used to estimate  $DA$
  - b. minimum number of observations ( $n$ ) in the cross-section groups to estimate  $DA$
- ii. Industry relatedness can be proxy by other industry classifications.

Thus, we employ other models explored in the EM literature about stock-for-stock M&A to estimate  $DA$ : 1) *Jones* (Jones, 1991), 2) *Modified Jones* (Dechow, Sloan, & Sweeney, 1995), and 3) *Teoh* (Teoh, Welch, & Wong, 1998). Besides, to cope with the issue of the minimum observations of cross-section groups to estimate  $DA_{pa}$ , we set that threshold to stricter criteria,  $n=15$  and  $n=20$ , as recent literature in EM (Roychowdhury, 2006) and bid premiums (Raman et al., 2013; Skaife & Wangerin, 2013). Last but not least, we also define intra-industry M&A based on the 48 industry classification of Fama and French (1997) of acquirer and target firms. In essence, un-tabulated estimations expose that our results remain qualitative the same to these additional set of robustness tests.

#### 5. TENTATIVE CONCLUSIONS

This paper includes EM of target firms as an explanatory variable of deal premiums in M&A, which is in line with prior US studies that look at the impact of financial reporting quality (FRQ) over such premiums but focuses on the European market of M&A. Furthermore, it also introduces the industry relatedness as a moderator factor that might explain such premiums.

This paper suggests that EM practices of target firms one year before the year of M&A announcement does not impact on bid premiums. However, additional tests unveil a negative and statistically significant coefficient for the interaction term between the EM and the industry relatedness variables, which confirms the moderating role of industry relatedness on

the association between the target's EM and the bid premium offered by the acquirer. The results are robust to several model specifications.

The lack of research on the European M&A market opens future lines of research, such as the influence of the aforementioned variables, including EM, in the likelihood of completing the transactions. Furthermore the richness of the European setting allows us to dig into the characteristics, and the impact on the transaction deals, of cross-border M&A, among other idiosyncrasies of the European context.

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