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Is the M&A announcement effect different across Europe? More evidences from continental Europe and the UK

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Abstract

The United Kingdom (UK) and Continental Europe (CE) have different market characteristics and these differences are supposed to influence on announcement effect of mergers and acquisitions (M&A). This paper investigates bidders' price reactions of takeover announcement by using 4816 deals in the UK and CE markets from 2011 to 2016. Several deal characteristics are introduced to see their impacts on short-term wealth effects. Method of payment, listing status of target firms, geographical scope, and industry relatedness contribute to significant cumulative abnormal returns, whereas I cannot find supportive evidences for impacts of deal value and information leakage on stock prices of both UK firms and Continental Europe firms. And price determinants' degree of impacts on stock prices are also different for the UK bidders and CE bidders, for example, preference for cross-border is even larger in the UK than in the Continental Europe. In addition, preference for unrelated target firms can only be found in the bidders' behavior in Continental Europe.

I. Introduction

Merging or acquiring with another company has been used as a tool to increase the wealth of long-term shareholders. More specifically, economies of scale and new technologies can be obtained through M&As, although some deals can bring loss to a company. According to McGrath (2011), between 50% and 80% of M&A activities fail to achieve their goals, even after the completion of the deals. Even if managers and the shareholders consider risks and harms that corporate takeovers bring to a company, they have engaged in M&As throughout the world with increasing numbers (Martynova & Renneboog , 2008). Thus, the debate of wealth gains from acquisition has been raised among many researchers. Jensen and Ruback (1983) investigate US takeover activities and conclude that target firms earn a significant abnormal return while bidder firms do not.

Continental European companies have their own characteristics, especially in investor protection system, which is more generous than that of the UK. In addition, overall capital structures are different, including ownership structures (Shleifer & Vishny, 1998; Faccio & Lang, 2002). However, most of previous researches on M&A focus on the US and UK markets and M&A activities in Continental Europe are often ignored. Furthermore, the value creation evidence is ambiguous for acquiring firms, while it is clearly positive for target firms (Ruback & Jensen, 1983). There are studies which report small positive abnormal returns on bidding firms (Jarrell & Poulsen, 1989), while Boone and Mulherin (2000) find significantly negative wealth effect around the deal announcement. Thus this study analyzes the difference of bidders' announcement effect between Continental Europe and the UK using the most recent data from 2010 to 2017. More specifically, the following research questions need to be addressed:

(1) How does the M&A announcement influence the wealth of bidder firm's shareholders?
(2) How do the price determinants influence short-term returns of bidders?
(3) Are these results same for the UK and Continental Europe?

The goal of the research is to define the value creation effect of corporate takeovers to acquiring firms in Continental Europe and the UK. Mergers and acquisitions are important events for both manager and shareholder, allowing various factors to affect bidder's stock prices. Thus, this study provides a comprehensive comparison of stock price reaction between Continental Europe and the UK. Particularly, the study has the following sub-objectives. Firstly, this research can provide the influence of M&A announcements on bidders' abnormal returns in Continental Europe and the UK. Secondly, it is possible to analyze the impact of various price determinants which have a probability of different influence on bidders in Continental Europe and UK. Variables which are considered are the methods of payment, listing status

of the target company, domestic versus cross-border acquisition, industry relatedness, deal size and information leakage. This research also can review current M&A activities and researches in regards to short-term wealth effects. Specifically, there are several studies which find the relationship between deal size and the price reaction, while this study with the most recent data concludes that the relationship is statistically weak.

The result of this study is valuable to the shareholders of acquiring companies as well as managers in providing relationship between stock returns and announcement of takeovers. This paper is structured as follows: Section II presents the relevant literature. Thereafter data and methodology are elaborated in Section III. Section IV describes our main results with each price determinants. Last, I will conclude this paper and provide suggestions for further researches in Section V.

II. Literature Review

The influence of M&A announcements on bidder abnormal returns

Since the early 1970s, a mountain of research has been done by investigators studying merger and acquisition activities. Jensen and Ruback (1983) investigate takeover activities in the US from 1956 to 1981. They find that target company shareholders earn significantly positive abnormal return which is about 20% to 30% through M&A, while shareholders of acquiring company receive insignificant abnormal return. Also the evidence of European M&A market is still insufficient compare to the US and UK markets. However, the effects on stock return are significantly different between Continental Europe and UK. For example, M&A announcements create value for shareholders in Continental European bidding firms, while they destroy value for the UK shareholders (Craninckx & Huyghebaert , 2013). These different results come from different takeover regulations between the UK and Continental Europe. In the UK, target investors protection system is more rigorous than in Continental Europe to assure their rights.

The method of payment: cash, stock or mixed

Compared to cash payment deal, shareholder returns of bidders tend to suffer from stock payment deal. Stock financed acquisition generates significantly negative announcement return, while cash financed acquisition generates small but positive announcement return. A more recent study is worthwhile to acknowledge that in 2009, Savor and Lu (2009) conduct a long-term buy-and-hold abnormal returns event study with stock performance measured in a 3-year buy-and-hold window. Consequently, the paper confirms the underperformance of stock-financing in the long-term. Asymmetric information, arbitrary

short-selling as well as manifested overvaluation of the bidders are often considered as causes that stimulate the negative announcement returns for stock financed transactions (Bruner, 2004; Fuller, Netter, & Stegemoller, 2002). In other words, the payment choice of bidding firm with the superior information is often regarded as a signal of the value of target firm in imperfect market.

Listing status of the target company

Previous studies suggest that the listing status of the target company affects announcement abnormal returns. Private target firm is less likely to be liquid than public firm, and as a result, it makes private firm less attractive to investors. However, bidder can be benefit from this less competitiveness with low competition and premium to pay. Therefore, takeover of unlisted firm should be more profitable and bring larger abnormal returns than listed firm (Fuller, Netter, & Stegemoller, 2002). However, the impact of regional context on this result is still remained unanswered, which makes my comparison between Continental Europe and the UK more interesting.

Domestic versus cross-border acquisitions

Increasing globalization results in significantly growing volume of cross-border acquisitions during recent decades. In 1998, it accounts for 23% of total merger volume and has grown to 45% in 2007 (Shimizu, Hitt, Vaidyanath , & Pisano, 2004). Martynova and Rennenboog (2008) find that shareholders in bidding company which engages in cross-border M&A often suffer from lower abnormal return than the shareholders with domestic M&A. Danbolt and Maciver (2012) find that the UK cross-border acquisitions earn insignificant abnormal returns while domestic acquisitions result in significantly negative abnormal returns. More specific research is conducted by Mateev and Andonov (2016). They compare announcement effects of domestic and cross-border acquisitions between Continental Europe and the UK and report that the effect of cross-border firm bidding on Continental European targets are larger than those for firms acquiring targets in the UK or Ireland.

Industry relatedness

Empirical literatures provide conflicting evidences on how industrial diversification affects announcement abnormal returns. The advantages of acquire less related firms are insurance effect, stable cash flows, and decreased dependence on external finance (Lewellen, 1971; Stein, 1997). There are also other literatures which suggest the cost due to industrial diversification, for example, inefficiency (Rajan, Servaes, & Zingales, 2000). Thus more conclusive investigation on the impact of industry relatedness is needed.

Deal value

Several researchers have studied the relationship between deal value and stock return after the announcement. According to Boston Consulting Group (2007), deals with large value destroy shareholder value and this destroyed value is twice larger than deals with small value. This result is highly related to the low competition of acquiring a large firm. Large deal size is often followed by takeover of large firm, and the competition is less intense for large firm. As a result, shareholders of this firm are more willing to accept deal with small premium. However, investor protection laws for target shareholders are stronger in the UK than in Continental Europe, which may bring different results. Therefore, investigation of the relationship between announcement effect and deal size is conducted in this paper to test results of the UK and Continental Europe are in line with previous findings.

Information leakage

According to a report from M&A Research Center at Cass Business School (2013), there is an information leakage before the firm officially announces its M&A deal. Many CEOs, lawyers, and investment bankers support that there is a significant information leakage effect with higher premium paid to target firm, and this effect is especially remarkable in the UK market with percentage of leaked deals of 19%. This result comes from higher competition between bidders after the information leakage. By attracting more bidders through information leakage about the acquisition, target shareholders can enjoy higher premium. To demonstrate this result on European mergers and acquisitions, Mateev (2017) investigates abnormal returns of ten days before the announcement. Unexpectedly, this effect is only observed in the UK, not in the Continental Europe. Therefore, I investigate the abnormal returns of two samples (UK and Continental Europe) with the most recent data again, to see the change of result over time.

III. Data and Methodology

A. Data

Lists of European M&A deals are obtained from Zephyr database Bureau van Dijk, which is known as the appropriate data source to study European M&A deals. Several search strategies have been applied: Acquiring firm should be a listed on a European stock exchange and publicly traded; only announced and completed transactions are investigated; time period of the announced deals investigated is from 2011 to 2016; 100,000 euro is the minimum value of the deal.

I focus on deals announced during 2011-2016 to compare the results with the previous study conducted by Mateev(2017). This literature investigates announced deals between 2002 and 2010, so that I can test

whether the most recent data still supports the result of earlier study. Deals are composed of transactions in Continental Europe and the UK. Specifically, domestic and cross-border intra-European takeovers are only involved from 32 European countries, which means the deal with target firm located outside of the Europe is not considered in this study. The sample of Continental Europe (CE) includes not only Western Europe, but also Central and Eastern Europe to fully represent the characteristics of M&A deals in Continental Europe. Transactions without the stock price data of acquiring firm from Thomson Reuters (DataStream database) are excluded.

Table 1 shows how the deals are distributed by the region. The total numbers of deals in both Continental Europe and UK are similar. The most commonly used method of payment in both sub samples is Cash which accounts more than 60% of the total deals. Percentage of cross-border deals exceeds the percentage of domestic deals, which is 65% (CE) 59% (UK) respectively. This can be seen as an evidence of increasing cross-border M&A reported by Shimizu et al. (2004). Industry relatedness is also introduced as a deal characteristic and is judged by using SIC code. If acquiring firm and target firm share at least first two digits of the SIC code, they are considered to be related. This criteria of classifying industries is designed by Fuller et al. (2002). The data reports that more than 70% of the total deals are transactions between related industries in Continental Europe and the UK. Unlisted target deals far exceed listed target deals, accounting to 92% (CE) and 98% (UK). However, the probability of selection bias is still low considering previously conducted studies by Martynova and Renneboog (2008). They report 76% of the total sample is bids for unlisted target companies.

Table 1: Description of the data[1]

Panel A: Distribution of total sample by region (number of deals)		
Deal characteristics	Continental Europe	UK
Total	2457	2359
Mean payment		
Stock	454	288
Cash	1538	1512
Mixed	465	559
Total	2457	2359
Geographical scope		
Domestic	849	957
Cross-border	1608	1402
Total	2457	2359
Industry relatedness		

[1] Each variable represent: MPSC=0, 1 means stocks, and cash payment respectively. LS= 0, 1 means listed and unlisted status of target firm respectively. GS= 0, 1 means domestic and cross-border deal respectively. IR= 0, 1 means industries are related and unrelated respectively.

Related	1762	1755
Unrelated	695	604
Total	2457	2359
Public status		
Unlisted	2262	2299
Unlisted Stock	402	275
Unlisted Cash	1418	1475
Unlisted Mixed	442	549
Listed	176	57
Listed Stock	40	11
Listed Cash	113	36
Listed Mixed	23	10
Total	2438	2356

Panel B: Variable description for UK sub sample

Variable	Obs	Mean	Std. Dev.	Min	Max
CAR (-5, +5)	2359	0.0281	0.2959	-0.7588	10.6951
CAR (-2, +2)	2359	0.0285	0.2702	-0.5521	9.8360
CAR (-1, +1)	2359	0.0280	0.2958	-0.6065	11.0212
CAR (-1, 0)	2359	0.0191	0.2499	-0.6058	11.0230
CAR (-2, +1)	2359	0.0280	0.2833	-0.6075	10.1360
MPMIX	559	1.0000	0.0000	1.0000	1.0000
MPSC	1800	0.8400	0.3667	0.0000	1.0000
LS	2356	0.9758	0.1537	0.0000	1.0000
GS	2359	0.5943	0.4911	0.0000	1.0000
IR	2359	0.2560	0.4365	0.0000	1.0000

Panel B: Variable description for CE sub sample

Variable	Obs	Mean	Std. Dev.	Min	Max
CAR (-5, +5)	2457	0.0247	0.2639	-0.7122	10.6951
CAR (-2, +2)	2457	0.0252	0.2314	-0.3395	9.8360
CAR (-1, +1)	2457	0.0255	0.2518	-0.3766	11.0212
CAR (-1, 0)	2457	0.0192	0.2425	-0.3128	11.0230
CAR (-2, +1)	2457	0.0261	0.2404	-0.3874	10.1360
MPMIX	465	1.0000	0.0000	1.0000	1.0000
MPSC	1992	0.7721	0.4200	0.0000	1.0000
LS	2438	0.9278	0.2589	0.0000	1.0000
GS	2457	0.6545	0.4756	0.0000	1.0000
IR	2457	0.2829	0.4505	0.0000	1.0000

B. Methodology

Standard event study is conducted to investigate announcement effect with abnormal return which is obtained using market model. Since my research classifies samples into two categories (Continental Europe, UK), event study procedures have been done to each category respectively.

(1) Market model: $R_{i,t} = \alpha_i + \beta_i R_{MI,t} + u_{i,t}$, $t \in [-292, -41]$

(2) Normal returns: $R_{i,t}^{*} = \alpha_i^{*} + \beta_i^{*} R_{MI,t}$, $t \in [-10, 5]$

(3) Abnormal returns: $ar_{i,t} = R_{i,t} - R_{i,t}^{*}$, $t \in [-10, 5]$

(4) Cumulative abnormal return: : $CAR_i = \sum_{t=1}^{T} ARt$

(5) Cumulative average abnormal return: : $CAAR_i = \frac{1}{N}\sum_{i-1}^{N} CARi$

$R_{i,t}^{*}$ is the normal return for evaluation period [-10, 5] based on the market model, using estimation period of [-292, -41]. Using normal return and realized return $R_{i,t}$, we can obtain abnormal returns for each periods of time. Next, I compute cumulative abnormal return (CAAR) for different event window. (-1, +1) and (-5, +5) are two main examined event windows for CAAR, as well as a number of additional windows. The statistical significance of these CAAR with different event windows are analyzed using t-test.

Furthermore, determinants with continuous value of acquisition announcement effect and its difference between UK and Continental Europe have been investigated. Multivariate linear on cumulative average abnormal return regression for each sample is constructed and deal size (DS) is the variable of main interest. Besides, method of payment (MP), listing status of target firm (LS), geographical scope of the deal (GS) and industry relatedness (IR) are included as explanatory variables.

(6) Cumulative abnormal return: $CAR_i = \alpha_i + \beta_{i,1}DS_i + \beta_{i,2}MP_i + \beta_{i,3}\mathrm{LS} + \beta_{i,4}GS_i + \beta_{i,5}IR_i + u_{i,t}$

IV. Main Results

I start my analysis by examining the distribution of the data for each sub sample with Wilcoxon rank sum test. Unfortunately, it rejects all null hypotheses for the UK and Continental Europe which assume mean event windows are zero. This means the data is not distributed symmetrically. In table 2, cumulative average abnormal returns for event periods, which are selected to fully reflect the announcement effect on stock prices, are reported with their t-statistics. It shows the cumulative announcement abnormal returns of European bidders by region. T-statistics for every event window are positive and significant at 1% level for the UK (Panel A) and Continental Europe (Panel B). Furthermore, more than 50% of cumulative abnormal returns are positive for each event period in both sub samples. These results indicate that shareholders of acquiring firms perceive merger and acquisition (M&A) announcement positively and it increases the short-term wealth of them. Tests for difference of stock price reactions between the UK and Continental Europe are also conducted and the results are on Panel C. In every event window, higher cumulative abnormal returns are reported for the UK bidders than Continental Europe bidders, except the shortest event window, which is (-1, 0). In this event period, short-term wealth effect is slightly larger for bidders in Continental Europe than in the UK (0.0192 versus 0.0191). However, the cumulative abnormal returns for all event windows are insignificantly different between two sub samples, which confirms that the location does not have noticeable impact on stock price reactions for European bidders.

Same tests are conducted separately for domestic and cross-border deals by region, and the results are presented in Panel D. Larger announcement wealth effects are observed in the UK than in the Continental Europe for all event windows when the target is located in different nation with the bidder. In contrast, the result is reversed for domestic acquisitions. Every cumulative abnormal return is larger in the Continental Europe than in the UK, except for the longest-term period (0.0163% versus 0.0176%, on a 11-day event period). However, considering insignificant difference between two sub samples in either case, it is fair to conclude that announcement effect on the wealth of the bidder is positive but not significantly different in the UK and Continental Europe. The impact of the method of payment on the bidders' abnormal return is reported in the next section.

Table 2: Cumulative announcement abnormal returns by regions[2]

Panel A: UK sub sample (N = 2359)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0281	4.6049***	56.21
(-2, +2)	0.0285	5.1139***	57.48
(-1, +1)	0.0280	4.5939***	59.60
(-1, 0)	0.0191	3.7115***	56.59
(-2, +1)	0.0280	4.8019***	58.63
Panel B: Continental Europe sub sample (N = 2457)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0247	4.6424***	55.11
(-2, +2)	0.0252	5.4054***	57.26
(-1, +1)	0.0255	5.0176***	58.08
(-1, 0)	0.0192	3.9299***	56.29
(-2, +1)	0.0261	5.3832***	58.40
Panel C: Difference between UK and Continental Europe			
Event window	UK (%)	Continental Europe (%)	Difference (t-stat)
(-5, +5)	0.0281	0.0247	0.4127
(-2, +2)	0.0285	0.0252	0.4439
(-1, +1)	0.0280	0.0255	0.3141
(-1, 0)	0.0191	0.0192	-0.0182
(-2, +1)	0.0280	0.0261	0.2499

Panel D: Difference between Cross-border and Domestic by region						
	Cross-border			Domestic		
CAAR	CE (%)	UK (%)	Difference (t-stat)	CE (%)	UK (%)	Difference (t-stat)
(-5, +5)	0.0292	0.0352	0.1976	0.0163	0.0176	0.4826
(-2, +2)	0.0275	0.0350	-0.3758	0.0210	0.0189	0.6627
(-1, +1)	0.0287	0.0352	-0.4035	0.0194	0.0174	0.5190
(-1, 0)	0.0231	0.0259	-0.7752	0.0118	0.0092	0.2436
(-2, +1)	0.0281	0.0355	-0.9439	0.0223	0.0170	0.6218

[2] *, **, *** mean t statistics are statistically significant at 10%, 5%, and 1% respectively

A. The method of payment

Cumulative abnormal returns according to the method of payment for UK sub sample are presented in Table 3A. Cumulative abnormal return of stock deals is 0.0758% and statistically significant at 1% level on a three-day event window (-1, +1), while it is reported only 0.0150% for cash deals (see Panel A and B). Deals with mixed payment shown in Panel C create value between those for stock and cash payment, which is 0.0384. It is also statistically significant. This order in values holds for every event window. Specifically, for the longest event window (-5, +5), cumulative abnormal returns of deals with stock and mixed are 0.0709 and 0.0399, respectively, whereas it is merely 0.0155% for cash deals. Figure 1. Panel A displays daily abnormal returns of a estimation period. I can conclude that abnormal return is highly influenced by the method of payment especially around the announcement date. On an announcement day, stock deals create much higher short-term wealth effect than the deals with mixed payment and cash. This result from the Figure.1 is examined statistically by testing significances of mean differences and the result is reported in Panel D. I can conclude that the value creation powers are significantly different between Stock-Cash, while it is not different for Stock-Mixed and Cash-Mixed in the UK.

Table 3A: Cumulative abnormal returns according to the method of payment: UK sub sample

Panel A: Stock Payment (N=288)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0709	2.4922***	54.17
(-2, +2)	0.0769	2.8263***	55.90
(-1, +1)	0.0758	2.5437***	58.68
(-1, 0)	0.0384	2.5792***	53.47
(-2, +1)	0.0804	2.6965***	59.72
Panel B: Cash payment (N=1512)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0155	7.3017***	56.81
(-2, +2)	0.0161	9.3934***	57.61
(-1, +1)	0.0150	10.1879***	59.39
(-1, 0)	0.0109	9.0042***	56.75
(-2, +1)	0.0152	9.5956***	57.34
Panel C: Mixed payment (N=559)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0399	1.9668**	55.64
(-2, +2)	0.0368	2.0222**	57.96
(-1, +1)	0.0384	1.9031**	60.64
(-1, 0)	0.0313	1.5607*	57.78
(-2, +1)	0.0356	1.9067**	61.54
Panel D: Mean difference in deal characteristics (t-statistics)			
Event window	Stock-Cash	Stock-Mixed	Cash-Mixed
(-5, +5)	1.9411**	-0.6712	-1.1958
(-2, +2)	2.2289**	-0.6614	-1.1305
(-1, +1)	2.0378**	-0.6195	-1.1557

(-1, 0)	1.8408**	-0.6497	-1.0143
(-2, +1)	2.1836**	-0.5575	-1.0889

Table 3B: Cumulative abnormal returns according to the method of payment: CE sub sample

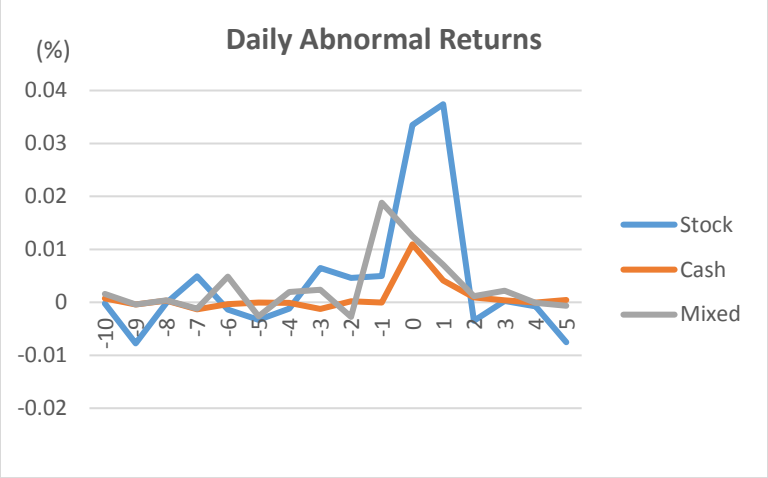
Panel A: Stock Payment (N=454)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0501	3.6752***	50.66
(-2, +2)	0.0537	4.9243***	56.39
(-1, +1)	0.0542	4.8042***	54.19
(-1, 0)	0.0360	3.9064***	54.63
(-2, +1)	0.0601	4.9959***	58.81
Panel B: Cash payment (N=1538)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0122	5.9745***	55.98
(-2, +2)	0.0116	7.4849***	57.02
(-1, +1)	0.0109	8,1410***	57.67
(-1, 0)	0.0077	7.1915***	55.98
(-2, +1)	0.0111	7.6500***	57.09
Panel C: Mixed payment (N=465)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0414	1.7400**	56.56
(-2, +2)	0.0424	1.9655**	58.92
(-1, +1)	0.0456	1.9010**	63.23
(-1, 0)	0.0409	1.7095**	58.92
(-2, +1)	0.0426	1.9204**	62.37
Panel D: Mean difference in deal characteristics (t-statistics)			
Event window	Stock-Cash	Stock-Mixed	Cash-Mixed
(-5, +5)	2.7507***	0.3142	-1,2243
(-2, +2)	3.8198***	0.4668	-1.4231*
(-1, +1)	3.8109***	0.3239	-1.4443*
(-1, 0)	3.0486***	-0.1926	-1.3860*
(-2, +1)	4.0453***	0.6932	-1.4178*

In Table 3B, cumulative abnormal returns according to the method of payment for bidders in Continental Europe are reported. As expected, stock offers tend to create higher cumulative abnormal returns than the other offers. For example, cumulative abnormal returns of stock, cash, mixed offers are 0.0501%, 0.0122% and 0.0414% respectively on event window (-5, +5). However, on a two-day event window (-1, 0), which is the shortest event period, cumulative abnormal return of stock deals is lower than that of mixed deals (0.0360% versus 0.0409%). Figure 1. Panel B illustrates daily abnormal returns on estimation period and shows that they are highly influenced by the method of payment +/- 1 day from an announcement date. Again, the mean difference in method of payment are calculated in Panel D, and I can find that stock reactions are indifferent between stock and mixed payment, while they are strongly different for Stock-Cash. They are also significantly different at 10% level for most event windows in Cash-Mixed results. The

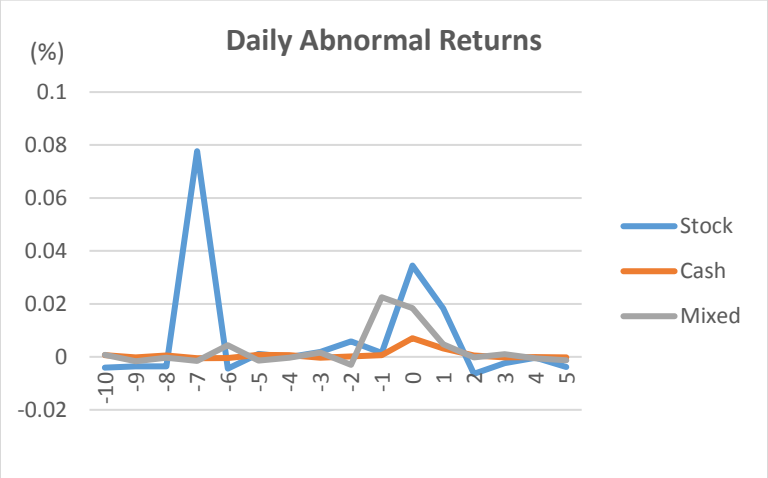
results I find are opposite from the previous study conducted by Savor and Lu (2009), which demonstrates lower performance of stock deals than the cash deals.

Fig 1. Method of payment: cash, stock or mixed

Panel A: UK sample



Panel B: CE sample



B. Listing status of the target companies

Table 4A reports the cumulative abnormal returns by the status of the target companies for the UK bidders. Takeover of the unlisted targets earns significantly positive returns in all event windows, while cumulative abnormal returns of the deal for listed targets are hardly significant and percentages of positive returns are below 50% on every event period. Furthermore, they report negative cumulative average abnormal returns.

On a 4-day event window (-2, +1), which report the negatively significant result at 5% level, cumulative abnormal return is -0.0176 (see Panel B). An opposite effect is observed for the sample of unlisted targets deals on a same event window with the value of 0.0291 (see Panel A). In Figure 2 Panel A, the divergence of unlisted and listed targets can be observed near the announcement day, although it is quite unclear further away from announcement date. When these effects are investigated in more detail across the method of payment in Table 4A Panel C-F, I can see positively significant results for both stock and cash payment in unlisted targets sample, and mostly insignificantly negative cumulative abnormal returns for stock and cash payment in listed targets sample. Difference in cumulative abnormal returns between listed and unlisted targets are significant in all event windows as reported in Panel G. Moreover, unlisted firms show significantly different price reactions according to their methods of payment, especially between stock and cash deals, while listed firms are indifferent between them. We can conclude that UK bidders react differently for the takeover announcement of listed and unlisted targets.

Table 4A: Cumulative abnormal returns according to target public status: UK sub sample

Panel A: Unlisted targets (N=2299)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0289	4.6339***	56.42
(-2, +2)	0.0295	5.1756***	57.85
(-1, +1)	0.0289	4.6227***	59.90
(-1, 0)	0.0198	3.7531***	56.85
(-2, +1)	0.0291	4.8684***	58.98
Panel B: Listed targets (N=57)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	-0.0037	-0.3378	49.12
(-2, +2)	-0.0153	-1.8021	42.11
(-1, +1)	-0.0085	-1.3096*	47.37
(-1, 0)	-0.0076	-1.1948	47.37
(-2, +1)	-0.0176	-2.1721**	42.11
Panel C: Unlisted targets, Stock payment (N=275)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0736	2.4761***	53.82
(-2, +2)	0.0806	2.8290***	56.00
(-1, +1)	0.0787	2.5233***	59.27
(-1, 0)	0.0404	2.5910***	53.45
(-2, +1)	0.0841	2.6944***	60.00
Panel D: Unlisted targets, Cash payment (N=1475)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0161	7.4755***	57.15
(-2, +2)	0.0169	9.7025***	57.97
(-1, +1)	0.0156	10.4333***	59.66

(-1, 0)	0.0114	9.2057***	57.08
(-2, +1)	0.0159	9.9319***	57.69

Panel E: Listed targets, Stock payment (N=11)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0230	0.7705	63.64
(-2, +2)	-0.0069	-0.3475	54.55
(-1, +1)	0.0090	0.5717	45.45
(-1, 0)	-0.0019	-0.0895	54.55
(-2, +1)	-0.0058	-0.3192	45.45

Panel F: Listed targets, Cash payment (N=36)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	-0.0083	-0.7174	44.44
(-2, +2)	-0.0148	-1.4213*	41.67
(-1, +1)	-0.0094	-1.2390	47.22
(-1, 0)	-0.0062	-1.2649	44.44
(-2, +1)	-0.0147	-1.4941*	41.67

Panel G: Mean difference in deal characteristics (t-statistics)			
Event window	Listed-Unlisted	UnlistedStock-Cash	ListedStock-Cash
(-5, +5)	-2.6066***	1.9288**	0.9778
(-2, +2)	-4.3784***	2.2326**	0.3559
(-1, +1)	-4.1490***	2.0209**	1.0545
(-1, 0)	-3.3118***	1.8558**	0.1925
(-2, +1)	-4.6397***	2.1827**	0.4330

Cumulative returns of CE bidders by the public status of the target firms are presented in Table 4B. Similar with the result of UK bidders, unlisted target deals in Panel A create positively significant short-term wealth effect, while listed target deals in Panel B do not. For example, on a three-day event window (-1, +1), bidding firms engaging in unlisted target deals earn higher cumulative abnormal return (0.0275) than those undertaking listed target deals (0.0010). Moreover, the mean difference in the CAARs of the two samples is significantly different for the all estimation period (see Panel G). Figure 2. Panel 2 also shows this divergence clearly and it is more noticeable just around the announcement day. Next, I investigate the influence of the method of payment on abnormal returns for bidders of listed and unlisted targets. The stock price performance is significantly positive for either stock and cash payment in unlisted targets sample, whereas it is hardly significant for either case in listed targets sample. However, the mean difference between stock and cash deals for listed firms shows higher significant level in Continental Europe than in the UK, which are significant at least 10% level, except the event window (-1, 0). Thus, can conclude that unlisted target acquisition create significantly larger wealth effect for bidders than listed target acquisition also in Continental Europe.

Table 4B: Cumulative abnormal returns according to target public status: CE sub sample

Panel A: Unlisted targets (N=2262)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0265	4.6169***	55.61
(-2, +2)	0.0275	5.4558***	58.31
(-1, +1)	0.0275	5.0000***	58.44
(-1, 0)	0.0208	3.9177***	56.72
(-2, +1)	0.0285	5.4239***	59.20

Panel B: Listed targets (N=176)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0044	0.5703	47.73
(-2, +2)	-0.0021	-0.3595	44.32
(-1, +1)	0.0010	0.1895	47.73
(-1, 0)	0.0001	0.1956	51.70
(-2, +1)	-0.0024	-0.4237	46.59

Panel C: Unlisted targets, Stock payment (N=402)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0524	3.4635***	50.50
(-2, +2)	0.0574	4.7299***	57.21
(-1, +1)	0.0581	4.6262***	54.98
(-1, 0)	0.0389	3.7768***	55.22
(-2, +1)	0.0651	4.8527***	58.71

Panel D: Unlisted targets, Cash payment (N=1418)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0137	6.3743***	56.56
(-2, +2)	0.0132	8.1036***	58.04
(-1, +1)	0.0121	8.5120***	58.32
(-1, 0)	0.0084	7.3174***	56.21
(-2, +1)	0.0125	8.1745***	57.97

Panel E: Listed targets, Stock payment (N=40)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0404	1.4994*	47.50
(-2, +2)	0.0277	1.3809	45.00
(-1, +1)	0.0248	1.2048	42.50
(-1, 0)	0.0140	1.0097	47.50
(-2, +1)	0.0222	1.1111	52.50

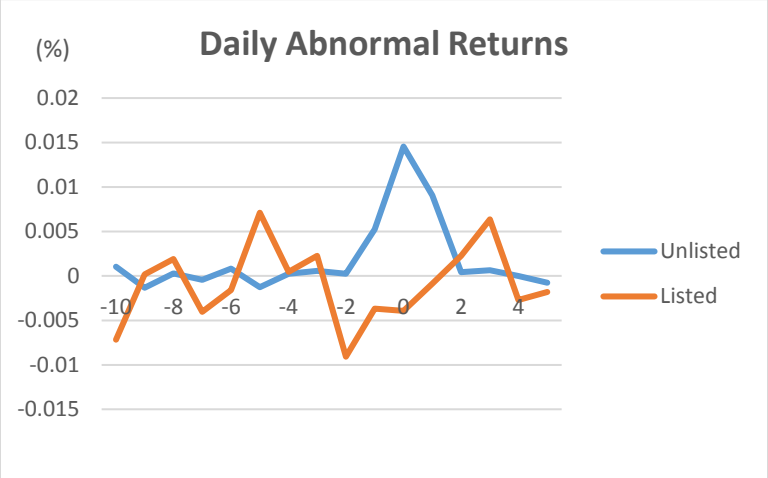
Panel F: Listed target, Cash payment (N=113)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	-0.0051	-0.8164	48.67
(-2, +2)	-0.0071	-1.4855*	46.02
(-1, +1)	-0.0037	-1.1272	50.44
(-1, 0)	0.0002	0.0985	53.10
(-2, +1)	-0.0061	-1.5231*	44.25

Panel G: Mean difference in deal characteristics (t-statistics)			
Event window	Listed-Unlisted	UnlistedStock-Cash	ListedStock-Cash
(-5, +5)	-2.2885**	2.5333***	1.6445*
(-2, +2)	-3.8093***	3.6071***	1.6862**
(-1, +1)	-3.4315***	3.6379***	1.3667*

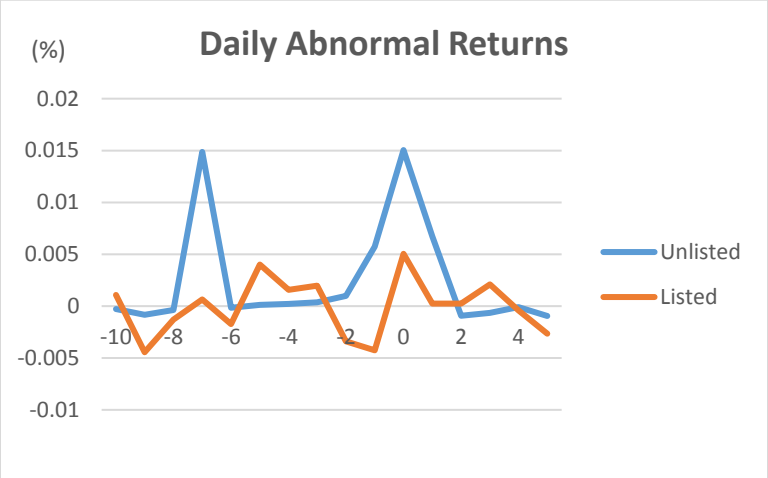
(-1, 0)	-3.0225***	2.9454***	0.9768
(-2, +1)	-4.0178***	3.8941***	1.3881*

Fig2: Listing status of the target company

Panel A: UK sample



Panel B: CE sample



Panel A: Domestic (N=957)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0176	3.8819***	56.11
(-2, +2)	0.0189	5.4529***	56.32
(-1, +1)	0.0174	5.3788***	59.46
(-1, 0)	0.0092	3.6919***	56.64
(-2, +1)	0.0170	4.9820***	56.11
Panel B: Cross-border (N=1402)			

Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0352	3.5996***	55.85
(-2, +2)	0.0350	3.8611***	57.77
(-1, +1)	0.0352	3.5171***	59.20
(-1, 0)	0.0259	3.0480***	56.06
(-2, +1)	0.0355	3.7257***	59.84
Panel C: Mean difference between cross-border and domestic			
Event window	Cross-border deals (%)	Domestic deals (%)	Difference(t-stat)
(-5, +5)	0.0352	0.0176	-1.6252*
(-2, +2)	0.0350	0.0189	-1.6542**
(-1, +1)	0.0352	0.0174	-1.6889**
(-1, 0)	0.0259	0.0092	-1.8866**
(-2, +1)	0.0355	0.0170	-1.8248**

Table 5A: Cumulative abnormal returns according to geographic scope: UK sub-sample

Panel A: Domestic (N=849)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0163	3.0764***	52.30
(-2, +2)	0.0210	4.9164***	54.18
(-1, +1)	0.0194	5.2038***	54.53
(-1, 0)	0.0118	5.0223***	53.95
(-2, +1)	0.0223	5.0770***	56.30
Panel B: Cross-border (N=1608)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0292	3.8190***	55.91
(-2, +2)	0.0275	4.0595***	58.15
(-1, +1)	0.0287	3.8220***	59.20
(-1, 0)	0.0231	3.1380***	56.78
(-2, +1)	0.0281	3.9961***	58.77
Panel C: Mean difference between cross-border and domestic			
Event window	Cross-border deals (%)	Domestic deals (%)	Difference(t-stat)
(-5, +5)	0.0292	0.0163	-1.3888*
(-2, +2)	0.0275	0.0210	-0.8102
(-1, +1)	0.0287	0.0194	-1.1061
(-1, 0)	0.0231	0.0118	-1.4589*
(-2, +1)	0.0281	0.0223	-0.7058

Table 5B: Cumulative abnormal returns according to geographic scope: CE sub-sample

C. Domestic vs cross-border M&As

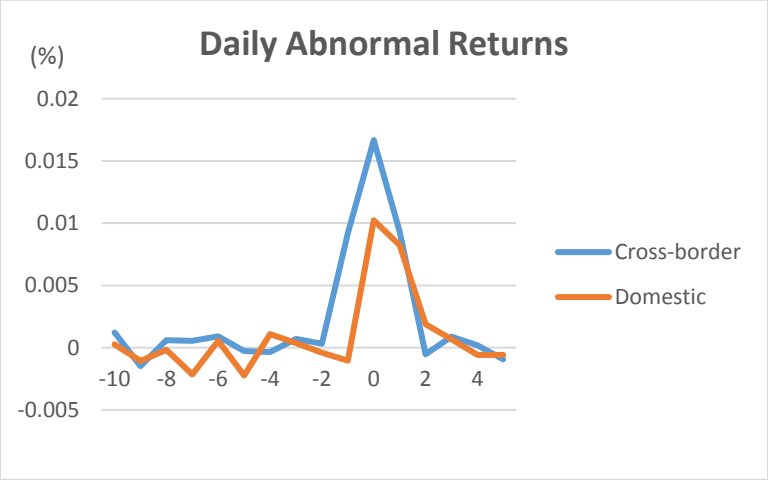
The CAARs for the UK sample across the geographical scope are reported in Table 5A. I can observe both domestic and cross-border deals create positively significant wealth effect for bidders in the UK. For example, cumulative abnormal return is 0.0174% for domestic deal and 0.0352% for cross-border deal on a three-day event window (-1, +1) (see Panel A). One noticeable fact in Table 5A is that positive price reactions are always larger for cross-border deals than for domestic deals in all event periods. This divergence also can be seen in Figure 3. Panel A. To statistically confirm this difference between two types of takeovers, tests of mean difference between cross-border deals and domestic deals are conducted and the results are presented in Panel C. I find that the mean differences are positively significant at 5% level for

most of the event windows, and can conclude that bidders in the UK earn higher cumulative abnormal returns by involving in cross-border deals than in domestic deals.

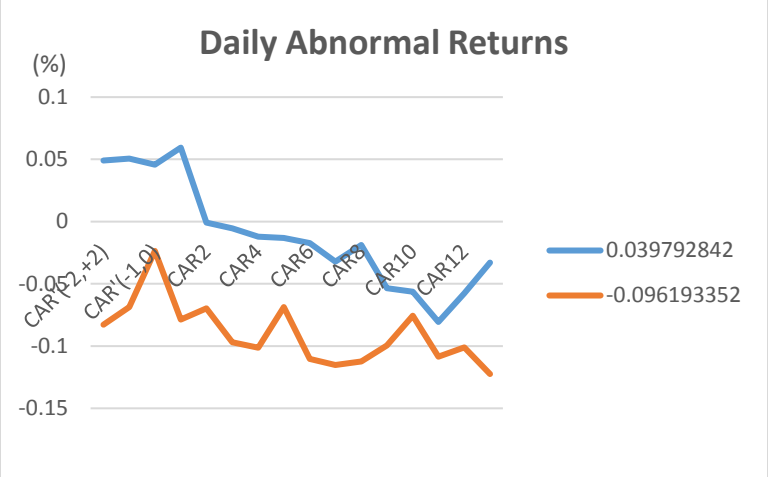
Table 5B displays the cumulative abnormal returns for the CE sample according to location of the target company. Bidders in the Continental Europe perceive both domestic and cross-border M&A announcements positively. Specifically, cumulative abnormal returns are 0.0194% and 0.0287% for domestic and cross-border acquisitions respectively on a three-day event window (-1, +1) (see Panel A and B). Moreover, all estimated CAARs are significant at 1% level. Figure 3. Panel B illustrates daily abnormal returns for a CE sample. Panel C presents test statistics of the mean difference between cross-border and domestic takeovers. Unlike the results of the same test for the UK sample, they tend to show insignificant differences. Therefore, it is fair to conclude that bidders in Continental Europe are indifferent between cross-border and domestic deals.

Fig 3. Geographical scope: cross-border vs domestic deals

Panel A: UK sample



Panel B: CE sample



D. Industry relatedness

Cumulative abnormal returns of mergers and acquisition announcements on related and unrelated industries for the UK bidders are reported in Table 6A Panel A and B respectively. I can observe that the announcement of business diversification create significantly positive short-term wealth effect for every event window. This also holds for the announcement of business expansion, although the effects are always larger for business diversification than for expansion. For example, on a three-day event window (-1, +1), the announcement of deals involving bidders and targets from related industries reports 0.0225% for CAARs, whereas announcement of business diversification does 0.0440% for CAARs. However, this difference is turned out to be statistically insignificant at usual level in most of the event periods (see Panel C), which means bidders in the UK are indifferent between related and unrelated target firms.

Table 6B reports cumulative abnormal returns according to industry relatedness for CE sub sample. These results indicate that bidders involved in both business expansion deals and diversification deals earn significantly positive cumulative abnormal returns in all event windows. And also the mean differences between related and unrelated are significant in the Continental European sample. Based on significant test statistics of mean differences, we can conclude that bidders in the Continental Europe earn more by involving in unrelated industries deal rather than in related industries deal. Daily abnormal returns for deals of related and unrelated industries are illustrated in Figure 4. for the two samples respectively. Divergence between business expansion and business diversification is clear around the announcement date in either sample.

Table 6A: Cumulative abnormal returns according to industry relatedness: UK sub sample

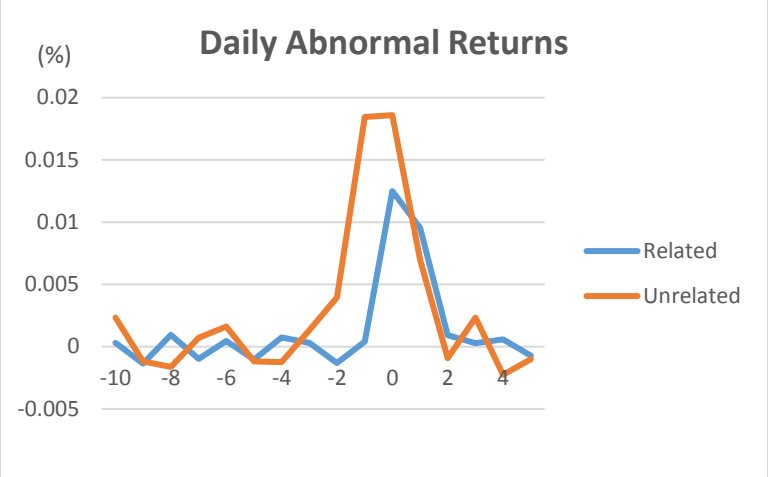
Panel A: Related industries (N=1755)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0222	4.7301***	56.35
(-2, +2)	0.0221	5.0864***	57.38
(-1, +1)	0.0225	4.8699***	60.28
(-1, 0)	0.0129	6.8355***	56.52
(-2, +1)	0.0211	4.6034***	58.80
Panel B: Unrelated industries (N=604)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0450	2.3102**	54.80
(-2, +2)	0.0470	2.6579***	56.62
(-1, +1)	0.0440	2.2395**	56.46
(-1, 0)	0.0370	1.9172**	55.63
(-2, +1)	0.0480	2.5991***	56.95
Panel C: Mean difference between related and unrelated			
Event window	Related (%)	Unrelated (%)	Difference (t-stat)
(-5, +5)	0.0222	0.0450	-1.1377
(-2, +2)	0.0221	0.0470	-1.3704*
(-1, +1)	0.0225	0.0440	-1.0674
(-1, 0)	0.0129	0.0370	-1.2427
(-2, +1)	0.0211	0.0480	-1.4100*

Table 6B: Cumulative abnormal returns according to industry relatedness: CE sub sample

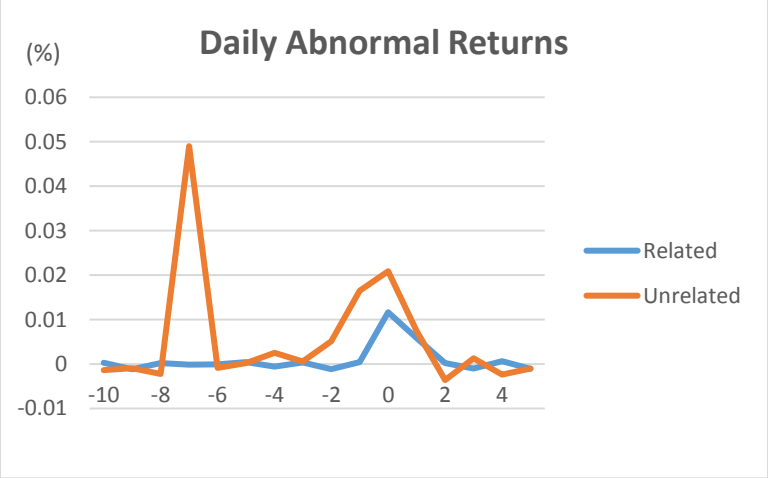
Panel A: Related industries (N=1762)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0157	5.9035***	55.73
(-2, +2)	0.0169	8.7816***	56.98
(-1, +1)	0.0179	9.4511***	58.91
(-1, 0)	0.0121	7.4968***	56.87
(-2, +1)	0.0167	9.0075***	58.91
Panel B: Unrelated industries (N=695)			
Event window	CAAR (%)	t-stat	% of positive (%)
(-5, +5)	0.0475	2.7055***	51.94
(-2, +2)	0.0463	2.9385***	56.26
(-1, +1)	0.0447	2.5875***	54.24
(-1, 0)	0.0373	2.2229**	53.09
(-2, +1)	0.0499	3.0282***	55.40
Panel C:Mean difference between related and unrelated			
Event window	Related (%)	Unrelated (%)	Difference (t-stat)
(-5, +5)	0.0157	0.0475	-1.7877**
(-2, +2)	0.0169	0.0463	-1.8486**
(-1, +1)	0.0179	0.0447	-1.5435*
(-1, 0)	0.0121	0.0373	-1.4966*
(-2, +1)	0.0167	0.0499	-1.9980**

Fig 4. Industry relatedness

Panel A: UK sample



Panel B: CE sample



E. Deal Value

Table 7 shows the results of regression that has bidders' cumulative abnormal return as dependent variable and price determinants and categorical variables as independent variables. All variables, except the continuous variable deal value (DS), are categorical variables. In my analysis, main explanatory variable is deal value and it is shown in thousands euro. Panel A reports result of the UK sample. In all event windows,

Table 7: Multivariate regressions-dependent variable: CAR of each event window

Panel A: UK sub sample					
Explanatory variables	CAR (-5, +5)	CAR (-2, +2)	CAR (-1, +1)	CAR (-1, 0)	CAR (-2, +1)
DS	-0.0001	0.0000	0.0000	0.0000	-0.0001

	(-0.39)	(-0.34)	(-0.31)	(-0.45)	(-0.45)
MPSC	-0.0579	-0.0622	-0.0626	-0.0284	-0.0668
	(-4.31***)	(-4.93***)	(-4.62***)	(-3.99***)	(-4.90***)
LS	0.0333	0.0464	0.0382	0.0245	0.0463
	(1.06)	(1.58)	(1.21)	(1.47)	(1.46)
GS	0.0132	0.0109	0.0123	0.0077	0.0138
	(1.30)	(1.15)	(1.20)	(1.44)	(1.34)
IR	-0.0056	0.0019	-0.0037	0.0018	0.0025
	(-0.5)	(0.18)	(-0.33)	(0.31)	(0.22)
Intercept	0.0343	0.0258	0.0337	0.0103	0.0277
	(1.01)	(0.81)	(0.99)	(0.57)	(0.81)
R-squared	0.0114	0.0151	0.0129	0.0109	0.0151

Panel B: CE sub sample					
Explanatory variables	CAR (-5, +5)	CAR (-2, +2)	CAR (-1, +1)	CAR (-1, 0)	CAR (-2, +1)
DS	0.0000	0.0000	0.0000	0.0000	0.0000
	(-0.27)	(-0.21)	(-0.25)	(-0.28)	(-0.42)
MPSC	-0.0429	-0.0446	-0.0472	-0.0315	-0.0521
	(-4.90***)	(-6.43***)	(-6.77***)	(-5.55***)	(-7.00***)
LS	0.0139	0.0212	0.0181	0.0105	0.0227
	(1.04)	(2.01**)	(1.71*)	(1.21)	(2.01**)
GS	0.0153	0.0075	0.0105	0.0094	0.0094
	(1.98**)	(1.22)	(1.71*)	(1.88*)	(1.44)
IR	0.0080	0.0084	0.0039	0.0031	0.0109
	(1.04)	(1.37)	(0.62)	(0.63)	(1.65*)
Intercept	0.0292	0.0291	0.0328	0.0220	0.0325
	(1.99**)	(2.49**)	(2.80***)	(2.31**)	(2.60***)
R-squared	0.0140	0.0245	0.0250	0.0170	0.0289

coefficients of deal size are almost near zero and test statistics prove that these coefficients are insignificant. For example, on a 11-day event window (-5, +5) and a 3-day event window (-1, +1), estimated coefficients of deal size are 0.0000% and -0.0001% respectively. Results are similar in Continental Europe (see Panel B). Estimated coefficients of deal size in all event periods are insignificant and very close to zero. Also on the same event windows, given as examples for the UK sample, these coefficients are 0.0000% with t statistics -0.27 and -0.25. These values are much smaller than the estimated coefficients of methods of payments (MPSC), which show significantly positive value in the same event windows. Thus, I may conclude that the deal value does not influence the short-term price reaction of the M&A announcement for the UK and Continental European bidders. This result conflict with earlier findings of Boston Consulting Group (2007), which reports that deals with large value destroy more shareholder wealth than the small value deals do.

F. Information leakage before the announcement day

Table 7 shows the daily abnormal returns around the announcement day (-10, +5) for the UK and CE bidders. Information leakage before the announcement day is inferred by testing sign and significance of abnormal returns. According to Mateev (2017), the significantly positive abnormal return two days before the announcement day, for example, indicates that some market participants with the information about the deal before the official announcement contribute to the stock price increases. And this price reaction lead to insignificant abnormal return on a day before the announcement because leaked information is already incorporated to stock price. In panel A, the price behavior of the UK bidders is reported. Only three abnormal returns are significant before the announcement, which are t = -10, t= -9 and t = -5. Only on a day t = -10, abnormal return is positively significant at 10% level, but this is not followed by an insignificant abnormal return on a day t = -9. This short-term wealth effect is similar for bidders in Continental Europe. On a day t = -9, the abnormal return is significant at 10% level and also followed by insignificant abnormal returns afterwards. However, this is not expected to be a sign of information leakage, because its value is negative. Unexpectedly, I cannot find the any supportive evidence of information leakage effect for deal announcements in both samples. On the contrary, several negatively significant abnormal returns before the announcement day and significantly positive abnormal returns on an announcement day and one day after the announcement are reported in the samples. Significantly positive abnormal returns for day 0 and day 1 are also reported in previous studies of Isa and Lee (2011).

Table 7: Daily abnormal returns around the announcement day

Panel A: UK sub sample (N=2359)			
Event window	AR (%)	t-stat	CAR (%)
-10	0.0008	1.3270*	0.0008
-9	-0.0013	-2.0951**	-0.0005
-8	0.0003	0.3984	-0.0002
-7	-0.0005	-0.7696	-0.0007
-6	0.0008	1.2467	0.0000
-5	-0.0011	-1.9141**	-0.0010
-4	0.0003	0.2530	-0.0008
-3	0.0006	0.6948	-0.0002
-2	0.0000	0.0400	-0.0002
-1	0.0050	1.0639	0.0049
0	0.0141	6.8583***	0.0189
+1	0.0089	2.7517***	0.0278
+2	0.0004	0.6134	0.0282
+3	0.0008	1.0889	0.0290
+4	-0.0001	-0.1927	0.0289
+5	-0.0008	-1.3969*	0.0281
Panel B: CE sub sample (N=2457)			
Event window	AR (%)	t-stat	CAR (%)
-10	-0.0002	-0.2890	-0.0002
-9	-0.0011	-1.6382*	-0.0013

-8	-0.0004	-0.6045	-0.0017
-7	0.0137	1.0298	0.0120
-6	-0.0003	-0.4356	0.0171
-5	0.0004	0.5829	0.0121
-4	0.0003	0.4335	0.0124
-3	0.0004	0.4836	0.0128
-2	0.0006	0.6313	0.0135
-1	0.0050	1.0898	0.0184
0	0.0143	7.6849***	0.0327
+1	0.0063	5.2043***	0.0389
+2	-0.0009	-1.2339	0.0380
+3	-0.0004	-0.4760	0.0377
+4	-0.0002	-0.2626	0.0375
+5	-0.0011	-1.7759**	0.0364

V. Conclusion

This paper reports short-term stock price reaction of mergers and acquisitions announcement in Europe. I divide sample into two sub samples, which are the UK and Continental European bidders to see how much the wealth effects differ in two samples. Deal characteristics, for example, method of payment, listing status of the target firms, geographic scope, and industry relatedness, deal value and information leakage are also considered and their impacts on stock price performances are investigated. Although there are no significant different on cumulative abnormal returns between two samples, shareholders of the acquiring companies react differently in two markets, when each element is taken into account.

Payment method has significant effect in each sample. In the UK and the Continental European markets, every payment method has significant impact on cumulative abnormal returns at usual level. However, most significant mean differences can be only found between Stock-Cash, not in Cash-Mixed or Stock-Mixed. Listing status of the target company also has significant effect on shareholders' price reaction. In both sub samples, acquiring shareholders show significantly positive price reaction to the acquisition of the unlisted targets, while there is no significant positive or negative effect on listed targets. Also significantly larger stock returns of unlisted target deals than listed target deals are found. Geographical scope of mergers and acquisitions is also considered as a major deal characteristic in previous literatures. Both cross-border and domestic deals have significant positive cumulative abnormal returns in the UK and Continental European markets. However, only the UK shareholders significantly prefer cross-border deals at usual level in all event windows. Business diversification and extension have significantly positive effects on short-term price reaction of acquiring company, while significance level of mean difference is different in the UK and the Continental Europe. In all event windows, the mean difference between related and unrelated deals tend to be significantly different at 5% level in the Continental Europe, while they are negatively

significant at most 10% level in the UK. In addition, I cannot find any evidences for the significant effect of the deal value and the information leakage on the price performance of the bidders.

These results have some parts which contradict with the results of Mateev (2017). The short-term wealth effects of listed target and unlisted target takeover announcement do not differ significantly in Continental Europe from previous research of Mateev, while they report significantly different price reaction in Continental Europe from this research which uses the recent data. Mean difference between cross-border and domestic deals and related and unrelated deals also show significant different in the UK and in CE respectively with the recent data, unlike the insignificant differences in previous study. Furthermore, I cannot find the evidence of information leakage which have lead abnormal price reaction before the announcement in Mateev's research. Thus, we can conclude that there are several changes in M&A markets which have changed the impact of deal characteristics on bidders' price reactions.

Several improvements to this research can be found in the usage of more divers deal characteristics and test methods. More specifically, relative firm size and the attitude to the deal can reflect price reactions of the bidding firms' shareholders in more detail. Also I can add more explanatory power if more test methods, such as Patell and the BMP(t) tests, show the result in accordance with the result of this literature. Thus, introducing more diverse data and methods is required for the future research.

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