Bachelor thesis

ERASMUS UNIVERSITEIT ROTTERDAM

The difference in bidder returns to M&A announcements domestically, within and outside West-Europe.

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Abstract:

This paper is focused on the difference in acquirer announcement returns between targets situated domestically, within the Eurozone or outside the Eurozone. Using a dataset of 1541 M&A observations containing 764 unique acquiring firms within 12 EU countries. This research controls for deal characteristics: size and relative size while also taking into account target characteristic: public status, payment type and sector relatedness. An event study surrounding an M&A announcement is used and the cumulative abnormal returns are calculated by the CAPM. The findings are that there is no significant difference between within and outside Eurozone targets when looking at the acquirer announcement return. But does find a significant difference between domestic and cross-border targets.

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1. Introduction

In 2007 for the first time in history the total M&A market involving European targets was larger than the M&A activity in the United states, which is historically the larger market. In 2007 the total value of deals in Europe was 2658 bil. Dollars opposed to the American market valued at 2206 bil. Dollars. In part this increase in Europe can be attributed to the economic integration and efforts by the European commission to increase transparency in the M&A market (Moschier & Campa, 2009). 2007 also marked the ending of the sixth merger wave and beginning of the current seventh M&A wave (Alexandridis, Mavrovitis, & Travlos, 2012). Previous research has shown that European M&A market is different to the American market. See for example the sign reversal between payment type when comparing both markets. Goergen and Renneboog (2004) found significantly lower bidder returns when paying with cash compared to stock in the European market. Travlos (1987) found significantly higher bidder returns in the US market when financing with cash. Furthermore, the EU is a special M&A market due to its relatively integrated market between countries. Neary (2007) demonstrated with an economic model that trade liberalization can trigger merger waves internationally. Encouraging the degree of specialization between member states. With a harmonization of the European market one could expect the difficulty and risk involved in Cross-country M&A to decrease. Making it easier for firms to make deals within the EU. When European companies undertake M&A outside the EU, they would not receive these advantages of an integrated market. That is why this research is focused on the difference between acquirer returns for firms whose targets are situated in either the same country, within the Eurozone or outside the Eurozone. The main research question is:

> *Which European acquirers receive higher announcement returns, those who undertake M&A within their own country, within the Eurozone or outside the Eurozone?*

This research question is relevant because it could determine the amount of integration within the EU and its development through time. Which is relevant for policy makers, inhabitants of the EU and investors. In perfect harmonized markets there would be no difference between domestic or within EU M&A targets. Although the EU

market is far from fully harmonized[1], financially the EU member states are strongly bound. Especially EU member states using the Euro as main currency. To answer the main research question an M&A database containing thirteen countries who first adopted the Euro in 2001 will be used. The database contains all Eurozone M&A deals from 1st of January 2001 till 31st of December 2016 within all sectors except the financial sector. The methodology used is an event study, using the abnormal returns surrounding an M&A announcement. The resulting abnormal returns will then be run on the determinants of bidder returns, first grouped by target country type, then as a whole with target country type added as a determinant.

The remainder of this paper is ordered as follows. In section two general concepts are presented to support and explain the main research question. Also determining factors which influence acquirer[2] stock price during an acquisition announcement are discussed and relevant hypothesises established. Section three contains the dataset, summary statistics and methodology applied to answer the hypotheses. Section four contains the empirical results. In the final part of this research conclusions are made and some limitations and recommendations are given.

2. Theoretical framework

2.1 Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) states that all publicly available information is incorporated in a stock price. Thus the stock price established on a publicly traded stock is the correct price established by the market. If an asset is undervalued, investors will notice and buy the asset at a, in their perspective, discounted price until the price anomaly has disappeared (Fama, 1970). The exact opposite analogy can be made for an overvaulted asset.

During a Merger or Acquisition announcement a lot of information is released at once to investors. This information is then incorporated and reflected in the stock prices of the concerning acquiring and target firm. To distinguish which part of the newly released information drives the stock market reaction is hard to do as all information is bundled together and released at once. (Halpern, 1983)

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[1] Think for example the differences: politically, culturally and regulatory within the EU
[2] In the remainder of this paper acquirer and bidder are used interchangeably

By using the properties of the semi-weak form of EMH it is possible to define an announcement date and measure the effects that the release of new information has on a particular stock.

2.2 The European Monetary Union

As of the 1st of January 2002, twelve European countries have started using a single currency. This is all part of the third stage of creating the European Monetary Union (EMU). It has led to a more liquid capital market and created new sources of financing. (Moschier & Campa, 2014)

Also the Euro forces countries using the currency to harmonize their governance and especially commit to a long run integration of markets. Using one common type of currency further eliminates all transaction costs related to currency volatility, thus making M&A more attractive within the one currency union.

As shown by Bekaert, Harvey, Lundblad & Siegel (2013) membership in the EU has led to a higher degree of integration on the equity market. They make this conclusion due to the significantly lowered expected earnings growth differentials and discount rate across countries who joined the EU. However, they find no evidence that adaptation of the Euro led to increased integration as opposed to countries who did not adopt the Euro.

Even though the adaptation of one currency between member states is not the main driver of equity market integration, this research will only focus on countries adopting the Euro. This will help avoid currency fluctuations within the EU distorting the results. The starting date will be set to the same date as the introduction date of Euro coins and notes: 1st of January 2002.

Moschier and Campa (2009) have shown an increase in the amount of M&A deals within the EU in the period 2001 to 2007. Concluding that European firms more often chose to acquire companies within the EU as opposed to domestic deals. The average deal size of cross-border M&A within the EU also rose from $523 million in 2001 to 2.529 billion in 2007 in their research. The total deal value per year of the database used in this research can be found in appendix: chart 1.

2.3 The determining factors of announcement returns

1. Choice of payment

When a bidder undertakes an M&A they are faced with the choice of how to finance the deal. They can make a choice between stock, cash or combination of these two types of payment. Earlier research by Travlos (1987) done on the US stock market has shown that acquiring firms achieve lower announcement returns when financing with stock, opposed to financing with cash. Stock payment can be seen as management perceiving an overvaluation of their own stock. Also preferring payment with stock above cash usually avoids taking on new debt. Travlos reasoned that cash payment shows a firms trust in the acquirer as they expect a surplus in long run value creation. In the UK similar result were found by Draper and Paudyal (1999).

Contrary to Travlos, Draper and Paudyal, researchers Goergen and Renneboog (2004) find that in the European market all-cash financed deals deliver lower bidder returns compared to all-stock financed deals. The researchers argue that management of bidding firms offer a too high premium in cash transactions and that in an all-stock deal the target shareholders share some risk from the acquisition. Spreading the risk of a merger decreases the uncertainty for the bidding firm and can thus have a positive effect on the announcement return for bidders. They also looked at the difference between domestic and cross-border M&A within the EU and concluded that bidders received significantly higher announcement returns if the target was Cross-border opposed to domestic targets. Goergen and Renneboog only used the European M&A market; ignoring all deals where the acquirer was situated inside the EU and the target outside the EU.

There are many factors which influence this decision in the financing structure such as a firm's capability of taking on new debt and the existing leverage. Management can also choose to maintain the existing corporate governance structure (Faccio & Masulis, 2005). Faccio and Masulis (2005) find that firms with high leverage are more likely to choose for stock financing. They also note that bidders who buy firms which are not publicly traded use cash more often compared to bidders who buy firms which are publicly listed.

For the long run effect of payment method Loughran and Vijh (1997) find that over a five year period after a M&A, deals paid with cash earn a significant positive excess return of 61.7% over a five year holding period after the merger. This is a

comparable return to a matched firm portfolio, who do not perform a merger. While deals financed with stock earn a significant negative return of -25.0%. It is however hard to establish a robust way of measuring long run performance as the way the benchmark is determined can influence the results. Furthermore it is unclear in which timeframe a merger is expected to be profitable for the acquirer (Gregory, 1997). Lastly as noted by Martynova and Renneboog (2008) the assumption of efficient market hypotheses is used in most research, which implies that all merger effects should be fully absorbed in the announcement returns and not long run abnormal returns. If a long run abnormal return is found, this would only mean the market corrects its initially inefficient prediction. As this research is focused on the European market it is to be expected that the results should be the same as researched by Goergen and Renneboog (2004). However, M&A deals whose target is situated outside the EU could behave more like the American market. Therefore, the hypotheses to payment type is:

Hypothesis 1: All stock-financed deals receive higher announcement returns compared to all cash-financed deals, across all domestic, within- or outside-Eurozone deals.

2. Public status target

As described by Faccio, McConnell and Stolin (2006) the fact that a target is publicly listed earns an insignificant average abnormal return of -0.38%. If a target is not publicly listed, acquiring firms earn a significant abnormal return of 1.48%. They used a West-European sample in the period 1996-2001. The effect was still persistent when adding payment method to the regression. The researchers did not find a suitable economic hypothesis as to why this effect persists. A more recent research by Capron and Shen (2007) in the US market, finds the same results. The general economic thought is that private firms can be bought at a relative discount compared to public firms. Public firms are valued at their true economic value and thus must be bought at a premium. While private firms can be bought at a discount because their true value is unknown as they are per definition not publicly traded. This results in bigger net gains for the acquirer when taking over private targets. In turn this is reflected in the acquirers' stock price by receiving higher announcement returns. As to why bidders turn to private or public firms when acquiring, Capron and Shen (2007) found evidence

that for entering a new market bidders prefer public firms as there is less information asymmetry, while preferring privet targets in known industries. A suitable way to test if the public status effect is also noticeable in this dataset is with the following hypothesis:

Hypothesis 2: Privately held targets create a significant positive announcement return regardless if it was a domestic, within the Eurozone cross-border or outside the Eurozone cross-border

3. Industry relatedness

The fact that an M&A deal occurs within one sector or between two sectors seems to also have an influence on bidder returns (Martynova & Renneboog, 2011). With diversification mergers creating significant lower bidder returns, which supports the hypotheses that diversification on a firm level destroys value in perfect capital markets. Investors themselves are able to diversify their cash allocation on their own more efficiently and can thus determine their own level of risk (Levy & Sarnat, 1970). As argued by Amihund and Lev (1981) risk averse management has an incentive to diversify company sectors, enlarging the agency problem between invertors and management. When bidders acquire a target in a different sector than the one already operating in, investors can anticipate the agency problem that arises and devalue the net gain of the M&A deal. Leading to a lower announcement return for bidding firms acquiring in a different sector. Compared to a deal within one sector. To test this the following hypothesis will be used:

Hypothesis 3: Acquirers announcement returns are higher when an acquisition is made within a sector compared to between sectors

4. Cross-border acquisitions

Moeller and Schlingemann (2005) found a significant negative announcement return 1% for bidders whose target was in a foreign country. In their research they took the US market as domestic market, using a dataset from 1985 till 1995. The negative effect is strongest when a bidder takes over a target in a foreign country and a foreign market, which can be seen as diversifying M&A's. It therefore follows the same economic reasoning as industry relatedness. The more diversifying a merger is the

more value is destroyed in the eyes of investors. Resulting in a lower announcement return for bidders if they announce an M&A with a target situated in a different country. In this paper an extra difference is made to whether the cross-border acquisition takes place within the Eurozone or outside the Eurozone. As the EU is becoming a more integrated market, it would logically follow that the difference between cross-border deals within the Eurozone and the domestic market have become smaller. Therefore the hypothesis is:

Hypothesis 4: There is a significant difference between domestic, within Eurozone and outside Eurozone cross-border acquisitions when looking at bidder announcement returns.

5. Size effects

There is a difference in announcement returns between large and small firms. Small acquiring firms tend to receive higher announcement returns than large firms. An example of this effect can be found in research done by Schwert (2000). Work done by Moeller, Schlingemann and Stulz (2004) focused a great deal on the size effect. Using a dataset from 1980 to 2001 in the US market, they found evidence that large firms receive lower gains due to the fact that firms offer relatively higher acquisition premiums. Resulting in more acquisitions with smaller value synergy gains. Furthermore, they find that large firms have a bigger hubris when acquiring. In part this can be attributed to the fact that incentives for management of small firms is better aligned to investors because management of small firms tend to have more firm ownership. When large firms acquire they tend to overpay thus their stock retunes receive a negative impact. A suitable hypothesis is:

Hypothesis 5: Larger firms receive lower bidder announcement returns, after controlling for relative deal size.

3. Data & Methodology

3.1 Data

The M&A data is collected from the Thomson ONE database. Six restrictions are imposed on the data.

1. The announcement and effective date lie between 01/01/2002 and 01/01/2017. The date 01/01/2002 is chosen as this is the first day the Euro was used as currency in the EU.

2. The acquiring company must be situated in one of the twelve countries imposing the Euro on that date, specifically; Austria, Belgium, Finland, France, Greece, Republic of Ireland, Italy, Luxembourg, The Netherlands, Portugal or Spain.

3. The acquiring company must be public, otherwise an announcement stock return cannot be measured. However, both public and privately owned targets are kept in the sample.

4. Percentage of shares before the transaction must be below 49.99% and above 50.01% after the transaction.

5. All deals with a deal value lower than €5 Million are dropped as to restrict the number of minor deals.

6. Financial firms are dropped as M&A within that sector are ambiguous see for example Chang(1998) or Martynova & Renneboog (2011).

The total number of deals retrieved from the database is 1684. There were 273 cases in which the acquirer market capitalization was not retrievable via Thomson one. 243 of these were found using the Compustat Global Database. The remaining 30 cases were deleted.

Stock price data surrounding the announcement date is then retrieved from DataStream using company sedols. Because some stocks are not found by DataStream, the total number of events drops to 1541 with a total of 764 unique firms.

3.2 Creation of independent variables

First a categorical variable is created called *Target country type.* It contains three categories: domestic, cross-border within Eurozone and cross-border outside Eurozone. *Domestic* consists of all deals in which targets and acquirer are in the same country. *Cross-border within Eurozone* is for all deals in which a target is situated in one of the remaining eleven Euro countries and is not situated in the same country as

the acquirer. The last category *Cross-border outside Eurozone* consists of all deals where the target situated outside the Eurozone. For the remainder of the paper, this deal characteristic will be referred to as Target country type.

To test the effects of *Payment type*, four categories are defined. *Cash* consists of firms who paid with 100% cash. *Stock* is for firms which paid 100% stock. *Mixed* is all firms which used a combination of cash and payments or used other financing structures. The last category *Unknown* is made up for all deals in which the payment type is unknown. These categories will be implemented by running them as four dummy variables. Due to multicollinearity Cash will not be included in the regressions.

To define the industry of a firm, 14 macro-level industries are defined using SIC Codes. A dummy is added called *Same sector* which is set to 1 if the Marco-level industry of the acquirer and target are the same and 0 if they are not. Recall that all financial firms are dropped.

The status of a company can be either *Public* or *Private*. A target company is defined as public if it is classified as a public firm by the Thomson one M&A database. A dummy will be used, which will be set to 1 if it is a public company and 0 if it is a private company.

Controlling for size effects, two variables are created. First is *Size*. Which is the natural logarithm of the acquirers' market size four weeks prior to the M&A announcement. This should control for the difference in returns between big and small firms. A logarithm is taken to compensate for skewness in the market sizes of bidders. The second variable is *Relative deal size*. It is calculated dividing the deal value by the market value of the acquirer 4 weeks prior to the M&A announcement. Relative deal size should compensate magnitude effects. These magnitude effects can best be described by an example: If a firm takes over an equally sized firm the market reaction is expected to be bigger than a large firm taking over a relatively small firm. Taking this approach opposed to dividing relative market values of acquirer and target, helps avoid biases as the market value of private companies is unknown. Furthermore, using both variables simultaneously should proxy the magnitude and size effect well.

3.3 Summary statistics
Per country

The summary statistics per country for the dataset can be found in table 1. The distribution of observations among countries is not very even. From 19 observations in Portugal to 338 in France. The largest part of the dataset contains public firms taking over private firms. 96% of the deals are friendly and there are only 7 observations of hostile takeovers. Making conclusions about neutral/hostile takeovers is therefore not possible with this dataset[3]. Of the known payment types cash is most common while the dataset also includes 38% cases in which the payment type is unknown. In 68% of the observations a merger takes place within one sector. This is roughly the same distribution when looking at a country specific level. Luxembourg is different to the sample as it has relatively many mergers outside the Eurozone and 1 merger domestically. In part this can be attained to the fact that a company's country is defined by its registration place and not the country in which most of its operations are. 17% of mergers take place in a country other than their own but within the 12 countries in the dataset. When looking at average deal values, Belgium has by far the highest mean. This is because the largest deal value in the used dataset of €92 billion took place in Belgium. Removing it would cause the mean to drop to a more average €710 million.

Trends throughout the dataset

Looking at the distribution of observations per year in appendix: chart 2 it is clear to see a run up in the amount of deals leading up to the 2008 financial crisis. With the largest drop in the category of Cross-Border within Eurozone, going from 43 to 10 deals in 2007 to 2009. All the observations per year can be found in table 2. The ratio of private and public target mergers is fairly steady throughout the sample ranging between the 33% and 18%. On average 26% of targets are public companies. The distribution of Same sector is also fairly constant when looking throughout the years. There is no perceivable trend in the data.

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[3] Adding deal attitude to the models does not change the significance of any variables and deal attitude it's self is not significant. Thus with no significant effect and very few observations, deal attitude is excluded from this research.

Table 1: Number of observations per country

		AT	BE	FI	FR	DE	GR	IE	IT	LU	NE	PT	ES	Total
Total number of observations		34	89	131	338	237	26	141	176	25	168	19	157	1541
Status	Public	9	15	25	132	77	11	24	39	3	44	17	30	411 26.67%
	Private	25	74	106	206	160	15	117	137	22	124	2	127	1,130 73.33%
Attitude	Friendly	34	86	128	327	229	26	140	165	23	162	17	146	1483 96,24%
	Neutral	-	2	2	8	7	-	1	11	2	6	2	10	51 3.31%
	Hostile	-	1	1	3	1	-	-	-	-	-	-	1	7 0.45%
Payment type	Cash	8	22	47	93	69	10	36	50	8	40	3	41	427 27.71%
	Other/ Mixed	8	23	33	96	55	5	37	47	5	41	10	36	396 25.7%
	Stock	5	11	15	25	18	1	10	14	2	11	1	14	127 8.24%
	Unknown	13	33	36	124	95	10	58	65	10	76	5	66	591 38.35%
Target country type	Domestic	12	39	46	144	86	13	19	92	1	30	11	75	568 36.86%
	Cross-border within Eurozone	8	27	23	44	36	1	10	31	7	39	4	28	258 16.74%
	Cross-border outside Eurozone	14	23	62	150	115	12	112	53	17	99	4	54	715 46.40%
Sector	Same sector	23	57	81	233	167	19	90	117	15	112	15	115	1,044 67.75%
	Different sector	11	32	50	105	70	7	51	59	10	56	4	42	497 32.25%
Deal size	Average deal size in Mln. €	185	1739	246	651	684	88	627	218	170	928	83	604	623.51
	Relative Deal size	0.11	0.23	0.21	0.27	0.29	0.17	0.14	0.23	0.08	0.37	0.14	0.18	0.24

[1]Country abbreviations can be found in appendix: table 4.

Table 2: Number of observations per year

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of Observations		83	84	135	163	184	133	71	91	101	81	62	87	107	78	81
Status	Public	23	23	26	43	46	51	32	15	21	22	23	19	29	24	14
	Private	58	60	58	92	117	133	101	56	70	79	58	43	58	83	64
Attitude	Friendly	78	80	79	131	156	176	128	69	88	101	78	57	80	105	77
	Neutral	3	2	3	3	7	7	5	2	3	-	3	5	5	2	1
	Hostile	-	1	2	1	-	1	-	-	-	-	-	-	2	-	-
Payment type	Cash	21	23	21	34	59	51	29	18	25	26	22	23	23	35	17
	Other/Mixed	20	19	26	33	30	47	45	23	20	25	24	15	16	30	23
	Stock	9	4	9	12	15	19	9	5	8	8	6	6	6	5	6
	Unknown	31	37	28	56	59	67	50	25	38	42	29	18	42	37	32
Target country type	Domestic	26	37	37	48	61	66	49	27	35	32	34	20	32	36	28
	Cross-border Within Eurozone	18	12	8	23	32	32	20	10	14	16	14	10	16	19	14
	Cross-border Outside Eurozone	37	34	39	64	70	86	64	34	42	53	33	32	39	52	36
Sector	Same sector	55	55	61	102	97	126	93	51	59	55	56	39	66	73	56
	Different sector	26	28	23	33	66	58	40	20	32	46	25	23	21	34	22
Deal size	Average deal size in Mln. €	350	176	828	578	796	508	492	264	432	185	218	346	865	2396	433
	Relative Deal size	0.27	0.17	0.32	0.29	0.20	0.23	0.14	0.13	0.20	0.15	0.28	0.18	0.43	0.17	0.61

Looking per Target country type

With the dataset split into the three types of Target country it is possible to examine difference between the groups. The results can be seen in table 3. Domestic and outside Eurozone deals consist roughly on the same amount of public targets at respectively 27% and 29%. While Public targets are less popular within the Eurozone at 21%. Cash payment is steadily increasing when looking at domestic, within and outside Eurozone. With the most significant difference between domestic (21%) and outside Eurozone (35%). In contrast share payment is relatively popular in domestic deals at 14% and uncommon outside the Eurozone at 4% of the deals. This trend is also found in other European M&A research see Monshier and Campa (2009). Interesting to note is the fact that relative deal size of outside Eurozone deals is higher than domestic deals. An interpretation of this is that domestic acquirers are on average 6-7 times larger than their target while acquirers who do outside Eurozone deals are only 3 times larger. Furthermore, the average deal size when a target is situated outside the Eurozone is 26% larger than domestic deals.

Table 3: observations grouped by Target country type

		Domestic	Within-Eurozone	Outside-Eurozone
Number of Observations		568	258	715
Status	Public	154	53	204
	Private	414	205	511
Attitude	Friendly	541	245	697
	Neutral	22	13	16
	Hostile	5	0	2
Payment type	Cash	117	63	247
	Other/Mixed	139	67	190
	Stock	80	15	32
	Unknown	232	113	246
Sector	Same sector	376	178	490
	Different sector	192	80	225
Deal size	Average deal size in Mln. €	579.38	433.85	727.02
	Relative Deal size	0.15	0.23	0.32

3. 4 Methodology
1. Establishing Cumulative Abnormal Returns as dependent variable

As is customary with an event study, we first need to define the Cumulative Abnormal Returns (CAR). A similar method described by Van der Sar (2015) will be used. To be able to do an event study we first define three non-overlapping periods:

Control period day [-170; -70]

Run-up period day [-69; -6]

Event period day [-5; 5]

A Run-up period is needed to minimize estimation biases and is the time window in which company market value can be retrieved. It also prevents any stock price run-up momentum distorting CAPM beta estimations. Next an approximation of the returns as if the announcement of a M&A did not occur must be made. For estimating these returns the CAPM will be used:

$$R_{it} = \alpha_t + \beta_t * r_{Mt} + \varepsilon_{it} \quad (1)$$

R_{it} =Daily stock return of company i over day t.

r_{Mt} =Daily return on the market index

$\beta_t = cov(r_{it}, r_{Mt})/var(r_{Mt})$

α_t =Expected value of $(r_i - \beta_t * r_{Mt})$

ε_{it} =Error term of stock i over day t, with expected return = 0

The parameters α_t, β_t are estimated during the control period [-170; -70], before the M&A announcement date for each individual stock. For the market index, each stock uses a relevant MSCI country index[4]. Each MSCI country index covers approximately 85 % of the total free float-adjusted market capitalization. The index codes can be found in appendix: table 4.The estimated values are then used to estimate the abnormal return (AR). An assumption has to be made that α_t and β_t are stationary when going into the event date period [-5,5].

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i r_{Mt}) \quad (2)$$

AR_{it} =Daily abnormal stock return of company i over day t in test period

R_{it} =Daily stock return of company i over day t in test period

$\hat{\alpha}_i$ =Estimated company alpha

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[4] An exception is Luxemburg as there is no MSCI index for this country. Luxemburg uses the MSCI European index instead.

$\hat{\beta}_i$ =Estimated company beta

r_{Mt} =Daily market returns over day t in test period

Then the individual abnormal returns per firm will be merged into the daily AR, as average of all firm M&A announcement returns.

$$AR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \quad (3)$$

AR_t = Daily abnormal stock return over day over day t in test period

AR_{it} =Daily abnormal stock return of company i over day t in test period

N =Number of firms in the dataset

The last step is choosing a significant CAR period. Equation (4) will be used to calculate the CAR period. It is possible that a CAR is established with days prior to the announcement date. This has mainly to do with the event date uncertainty.

$$CAR_{t_1,t_2} = \sum_{t=t_1}^{t_2} AR_t \quad (4)$$

CAR_{t_1,t_2} = Cumulative abnormal return over days $[t_1; t_2] - 5 \leq t_1 \leq t_2 \leq 5$

AR_t = Daily abnormal stock return over day t in test period

2. Regressing on CAR per Target country type

Once a suitable CAR window is found, the dataset will be split into the three Target country types: Domestic, Cross-border within Eurozone and Cross-border outside Eurozone. Robust standard errors will be used in all regressions to take heteroscedasticity in to account.

$$CAR_c = \alpha_i + \beta_1 X_i + \beta_2 X_i + \cdots \beta_n X_i + \varepsilon_i \quad (5)$$

CAR_c =Cumulative abnormal return over days $[t_1; t_2]$ per Target country type c

α_i =Constant term

β_i =Coefficient of variable

x_i =Either dummy or continuous variable

ε_i =Error term = 0

The dummy variables which will be used as x_i are: Payment type, Target public status and Same sector. For continuous variables: Size and relative deal size. This part of the research will answer hypothesis 1 and 2

3. Target country type as explanatory variable

After looking at the explanatory power of the variables per Target country type the dataset is merged and dummies are added for the Domestic, Cross-border within Eurozone and Cross-border outside Eurozone deal characteristics. Due to multicollinearity not all dummies can be run at the same time therefore Cross-border within Eurozone will not be run. Each bidder will have a country dummy term to compensate for differences between countries and making it possible to run all countries within one regression per group. The same formula as (5) will be used. The dummy variables as x_i are: Payment type, Target public status, Target country type, Same sector and Acquirer country. For continuous variables: Size and relative deal size. This part of the research will answer hypothesis 3, 4 & 5

4. Results

AR results

The AR results are presented in table 5. It is clear that the most suitable CAR window is [0,1] as these are the two significant days surrounding the announcement date. The spike in abnormal returns is more clearly seen when drawn in a graph, see appendix: graph 1. With CAR set to a window of [0,1], the average equally weighted announcement returns for acquirers 0.96% and significantly different from zero at a 1% significance level. Not all countries in the dataset have a significant CAR [0,1]. See table 6. When looking at the CAR [0,1] grouped by Target country type in table 7, outside-Eurozone targets are characterized with the highest bidder return. While in the group of Domestic targets no significant CAR is present. The difference between within and outside Eurozone targets is not significant.

Results on CAR per Target country type

Next are the regressions of independent variables on CAR [0,1] per Target country type. Comparing the results between the Target country type in table 8 we can see that all significant variables are same directional. Looking at payment type we must reject hypothesis 1: All stock-financed deals receive higher announcement returns compared to all cash-financed deals, across all domestic, within- or outside-Eurozone deals. The effect of stock payment is positive in all cases but not significantly different from cash payment. Most surprising is the positive effect public status of a target has

Table 5: AR results

Day	AR
-5	-0,0007
	(-1.17)
-4	0,0006
	(1.11)
-3	-0,0003
	(-0.52)
-2	0,0009
	(1.52)
-1	0,0005
	(0.84)
0	0,0074***
	(5.62)
1	0,0022***
	(2.90)
2	-0,0008
	(-1.36)
3	-0,0002
	(-0.37)
4	-0,0004
	(-0.67)
5	-0,0004
	(-0.68)

*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.

Table 6: CAR per country

	Country[1]												Total
	AT	BE	FI	FR	DE	GR	IE	IT	LU	NE	PT	ES	
CAR[0,1]	.0112*	.0167***	.0066	.0063*	.0171**	.0019	.0077**	.0096	-.0046	.0161*	.0054	.0024	.0096***

[1]Country abbreviations can be found in appendix: table 4.
*, ** and *** indicate 10%, 5% and 1% significance respectively

Table 7: CAR per Target country type

	Target country type		
	Domestic	Within-Eurozone	Outside-Eurozone
CAR[0,1]	.0003	.0120 ***	.0161 ***

*, ** and *** indicate 10%, 5% and 1% significance respectively

on the CAR [0,1]. In both cross border cases it has an effect not found in previous research. This is the opposite effect as what was hypothesized in hypothesis 2: Privately held targets create a significant positive announcement return regardless if it was a domestic, within Eurozone cross-border or outside Eurozone cross-border. Therefore it is rejected, publicly traded targets create a significant positive effect on an acquirers announcement return. Capron and Shen (2007) & Faccio, McConnell and Stolin (2006) both found negative effects on bidder stock price return when a target was public. A closer look to the sample of this research shows that: of the 50 highest CAR's, 43 were with public targets. This skewness in distribution could contribute to the unexpected results. The sector of a target does not have a significant effect. Moving on to Deal size, both size and relative size have the same effect as expected. With larger deals creating significantly lower bidder returns.

Target country type as explanatory variable
These results can be found in table 12. Looking at model 6 we again see that stock payment has a positive relationship with the announcement return. However, it is not significant at a 5% significance interval. Furthermore, target public status is significantly positive as in the previous regressions. When comparing model 3 to model 6 it is apparent that all significance of same sector disappears by adding the other variables. Hypothesis 3: Acquirers announcement returns are higher when an acquisition is made within a sector compared to between sectors, is therefore rejected. As the significance of variable same sector is gone in model 6. We can see in model 5 and 6 that Domestic deals earn significant negative returns. This part can answer hypothesis 4: There is a significant difference between domestic, within Eurozone and outside Eurozone cross-border acquisitions when looking at bidder announcement returns. As there is a significant difference between Domestic and Cross-border within Eurozone & Domestic and Cross-border outside Eurozone. However, the difference between Cross-border within and outside Eurozone is not significant. Therefore, we must reject the hypothesis. We can conclude on the basis of model 6 a negative effect of -0.8% for Domestic deals on acquirers return compared to within Eurozone deals. It is interesting to note that the effect is reversed to research done by Moeller and Schilngemann (2005). With the Cross-border deals relating to a 1% decrease of bidders' announcement return. Their research was focused on the American market

as domestic market. Moving on to Deal size we can see that size has a significant negative coefficient indicating that larger firms receive lower announcement returns. While relative size is positively significant. Meaning, the bigger the relative deal size is the larger the positive announcement return is. We can thus accept hypothesis 5: Larger firms receive lower bidder announcement returns, after controlling for relative size.

Table 8: Regressions per Target country type

		Domestic[1]	Cross-border within Eurozone[2]	Cross-border outside Eurozone[3]
Constant		0.023**	-0.004	0.001
		(2.52)	(-0.26)	(0.13)
Payment type	Cash	-	-	-
	Other/Mixed	-.0.003	0.015**	0.006
		(-0.64)	(2.22)	(1.57)
	Stock	0.003	0.005	0.007
		(0.70)	(0.52)	(1.16)
	Unknown	0.000	0.009*	0.002
		(0.03)	(1.67)	(0.57)
Status	Public	0.005	0.014**	0.017***
		(1.35)	(1.96)	(4.21)
	Private	-	-	-
Sector	Same sector	0.002	0.007	0.001
		(0.90)	(1.43)	(0.24)
	Different sector	-	-	-
Deal size	Size	-0.005***	-0.004***	-0.003***
		(-6.32)	(-2.72)	(-4.86)
	Relative size	0.063***	0.058***	0.043***
		(15.90)	(6.01)	(6.55)
Observations		568	258	715
R²		0.42	0.56	0.74

[1]See appendix: table 9 for univariate recessions in Domestic Target country type
[2]See appendix: table 10 for univariate recessions in Cross-border within EU Target country type
[3]See appendix: table 11 for univariate recessions in Cross-border outside EU country type
*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.

Table 12: regressions with Target country type as explanatory variable

		Model					
		(1)	(2)	(3)	(4)	(5)	(6)
Constant[1]		0.017***	-0.005	0.006	0.043***	0.015**	0.000
		(3.00)	(-0.89)	(0.98)	(5.62)	(2.39)	(0.962)
Payment type	Cash	-					-
	Other/ Mixed	-0.001					0.005*
		(-0.18)					(1.85)
	Stock	0.005					0.006*
		(0.94)					(1.67)
	Unknown	-					0.001
		0.017***					(0.65)
		(-5.74)					
Status	Public		0.045***				0.017***
			(10.02)				(4.65)
	Private		-				-
Sector	Same sector			0.009***			0.003
				(3.16)			(1.62)
	Different sector			-			-
Deal size	Size				-		-0.000***
					0.005***		(-5.64)
					(-7.47)		
	Relative size				0.047***		0.047***
					(6.37)		(6.41)
Target country type	Domestic					-0.011***	-0.008***
						(-3.06)	(-2.85)
	Cross-border within EU					-	-
	Cross-border outside EU					0.004	-0.001
						(1.11)	(-0.26)
Observations		1541	1541	1541	1541	1541	1541
R²		0.03	0.12	0.06	0.62	0.02	0.63

[1]All country constants can be found in appendix: table 13, Austria is incorporated into the constant term
*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.

5. Conclusion

The main research question of this paper is: Which European acquirers receive higher announcement returns, those who undertake M&A within their own country, within the Eurozone or outside the Eurozone? In short this research finds that on average deals in which a company is acquired outside the Eurozone receive the highest abnormal announcement return of 1,61%. However, when controlling for payment type, deal size effects, public status and sector of the target Cross-border within the Eurozone has the highest announcement return. Note that the difference between within and outside Eurozone M&A in this model is not significant. Not all effects were as hypothesized or similar to that found in other research. Payment type turned out to be insignificant at a 5% confidence level. The effects of public status of the target are reversed when compared to previous work. Also the fact that bidder and target were in the same macro sector turned out to be of no significance when combined in a multivariate model. All categories of the target country type are dependent on the same factors i.e. there are no sign reversals.

Limitations and recommendations

First of all, this dataset contained some anomalies when compared to previous research. Especially the sign reversal in public status of a target in the models stood out. The paper by Faccio, McConnell and Stolin (2006) who also used a West-European sample found exactly the opposite effect. Of course this research also suffers from some biases as there is always the problem of omitted variable bias and dependence on the quality of the dataset retrieved from institutions. The definition of the variable industry relatedness could also be improved. Looking at the SIC codes of the target and acquirer may be over simplistic. Lastly firms which had a relatively small deal size could have been dropped to avoid noise in the data [5]. As for recommendations, the EU is an ever developing single market. Looking for the steps towards long-term integration is important so the EU can see which markets are relatively well integrated and which markets need a change in legislation to make them a fairer, more open, market place. Also this research uses the Eurozone not the entire

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[5] E.g. A large multinational buying a very small startup will have a negligible effect on the stock price

European Union to answer the research question. Even though, broadening its perspective to the entire EU may reveal a lager distinction for bidder returns between within EU targets and outside EU target. Countries who joined the Eurozone later than 2002 are not added in this paper. Lastly, this research does not look at the determinants behind the independent variables and can thus not conclude to why companies/managers make certain choices. More research could be done to examine the relationship as to why companies choose within Eurozone or outside Eurozone target companies.

Bibliography

Alexandridis, G., Mavrovitis, C., & Travlos, N. (2012). How have M&As changed? Evidence from the sixth merger wave. *The European Journal of Finance, 18*(8), 663-688.

Amihud, Y., & Lev, B. (1981). Risk reduction as a managerial motive for conglomerate mergers. *The Bell Journal of Economics, 12*(2), 605-617.

Bekaert, G., Harvey, C., Lundblad, C., & Siegel, S. (2013). The European Union, the Euro, and equity market integration. *Journal of Financial Economics, 109*(3), 583-603.

Capron, L., & Shen, J. (2007). Acquisitions of private vs. public firms: Private information, target selection, and acquirer returns. *Strategic Management Journal*, 891-911.

Chang, S. (1998). Takeovers of Privately Held Targets, Methods of Payment, and Bidder Returns. *The Journal of Finance, 53*(2), 773-784.

Draper, P., & Paudyal, K. (1999). Corporate Takeovers: Mode of Payment, Returns and Trading Activity. *Journal of Business Finance & Accounting, 25*(5&6), 521-557.

Faccio, M., & Masulis, W. (2005). The Choice of Payment Method in European Mergers and Acquisitions. *The journal of finance, 60*(3), 1345-1388.

Faccio, M., McConnell, J., & Stolin, D. (2006). Returns to Acquirers of Listed and Unlisted Targets. *Journal of Financial and Quantitative Analysis, 41*(1), 197-220.

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance, 25*(2), 383-417.

Goergen, M., & Renneboog, L. (2004). Shareholder Wealth Effects of European Domestic and Cross-border Takeover Bids. *European Financial Management, 10*(1), 9-45.

Gregory, A. (1997). An examination of the long run performance of UK acquiring firms. *Journal of Business Finance & Accounting, 24*(7-8), 971-1002.

Halpern, P. (1983). Corporate Acquisitions: A Theory of Special Cases? A Review of Event Studies Applied to Acquisitions. *The Journal of Finance, 38*(2), 297-317.

Lang, L., Stulz, R., & Walkling, R. (1989). Managerial performance, Tobin's Q, and the gains from successful tender offers. *Jounal of financial Economics, 24*(1), 137-154.

Levy, H., & Sarnat, M. (1970). Diversification, Portfolio Analysis and the Uneasy Case for Conglomerate Mergers. *The Journal of Finance, 25*(4), 795-802.

Loughran, T., & Vijh, A. (1997). Do Long-Term Shareholders Benefit From Corporate Acquisitions? *The Journal of Finance, 52*(5), 1765-1790.

Martynova, M., & Renneboog, L. (2008). A Century of Corporate Takeovers: What Have We Learned and Where Do We Stand. *Jounal of Banking & Finance, 32*(10), 2148-2177.

Martynova, M., & Renneboog, L. (2011). The performance of the European market for corporate control: Evidence from the fifth takeover wave. *European Financial Management, 17*(2), 208-259.

Moeller, S., & Schlingemann, F. (2005). Global diversification and bidder gains: A comparison between cross-border and domestic acquisitions. *Jounal of Banking & Finance, 29*(3), 533-564.

Moeller, S., Schlingemann, F., & Stulz, R. (2004). Firm size and the gains from acquisitions. *Journal of Financial Economics, 73*(2), 201-228.

Moschier, C., & Campa, J. (2009). The European M&A Industry: A Market in the Process of Construction. *Academy of Management Perspectives, 23*(4), 71-87.

Moschier, C., & Campa, J. M. (2014). New trends in mergers and acquisitions: Idiosyncrasies of the European market. *Journal of Business Research, 67*(7), 1478-1485.

Neary, P. (2007). Cross-Border Mergers as Instruments of Comparative Advantage. *The Review of Economic Studies, 74*(4), 1229-1257.

Schwert, G. (2000). Hostility in Takeovers: In the Eye of Beholder? *Journal of Finance, 55*(6), 2599–2640.

Travlos, N. (1987). Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns. *The Journal of Finance, 42*(4), 943-963.

Van der Sar, N. (2015). *Stock Pricing and Corporate Events.* Rotterdam: Unknown.

Appendix
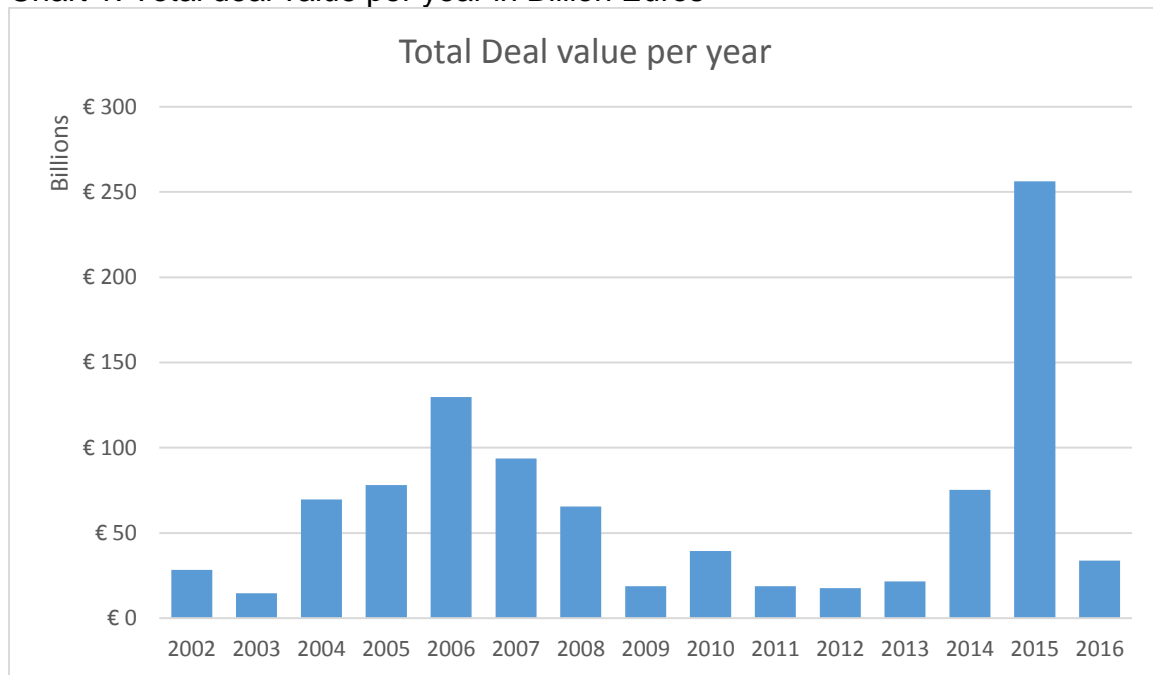
Chart 1: Total deal value per year in Billion Euros

Total Deal value per year

Chart 2: Distribution of M&A deals per year by Target country type

Amount of M&A deals per year

Domestic   Cross-Border within EU   Cross-Border outside EU
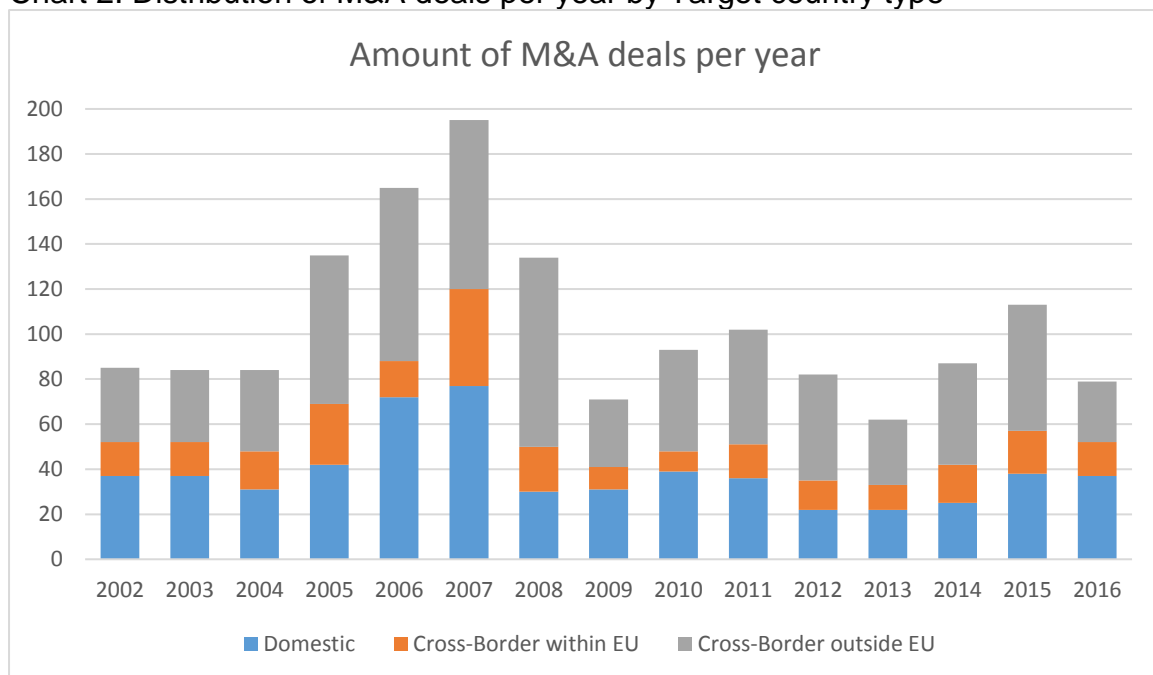
Graph 1: AR and stander deviation form days -5 to 5
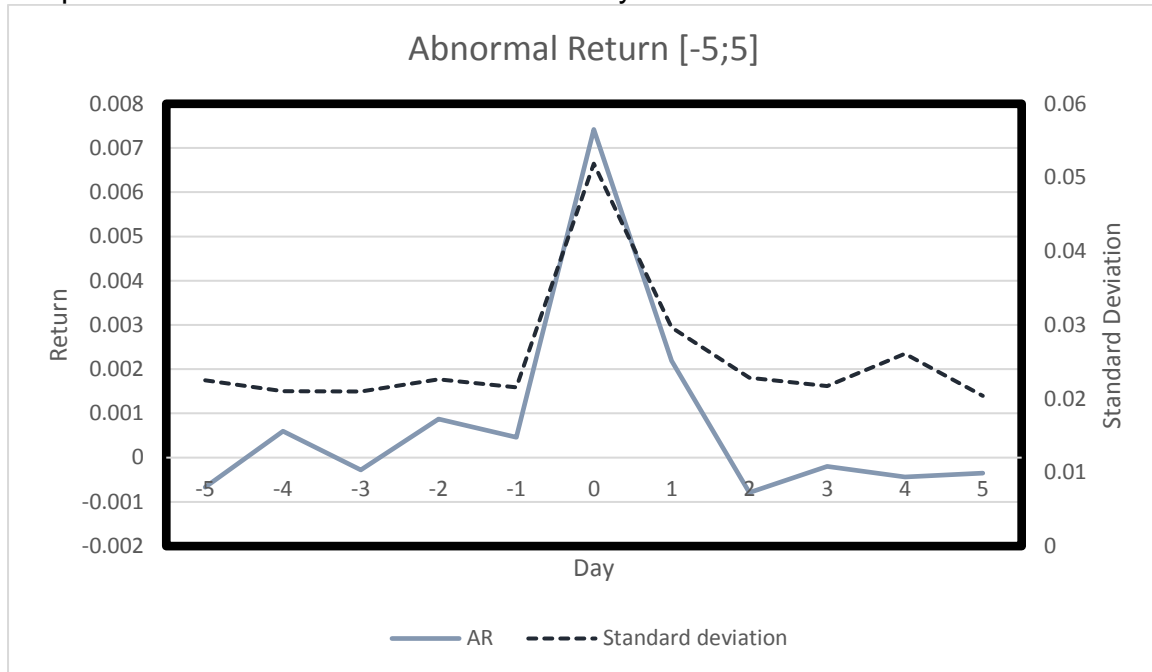
Table 4: Respective Index market per country

Country	Market index Code	DataStream Code	Abbreviation in tables
Austria	MSCI Austria	MSASTRL	AT
Belgium	MSCI Belgium	MSBELGL	BE
Finland	MSCI Finland	MSFINDL	FI
France	MSCI France	MSFRNCL	FR
Germany	MSCI Germany	MSGERML	DE
Greece	MSCI Greece	MSGREEL	GR
Ireland-Rep	MSCI Ireland Republic	MSEIREL	IE
Italy	MSCI Italy	MSITALL	IT
Luxemburg[1]	MSCI Europe	MSEURIL	LU
Netherlands	MSCI Netherlands	MSNETHL	NE
Portugal	MSCI Portugal	MSPORDL	PT
Spain	MSCI Spain	MSSPANL	ES

[1]Luxemburg uses the MSCI Europe index as there is no MSCI index available for Luxemburg

Table 9: Regressions where target country type is Domestic

		Model				
		(1)	(2)	(3)	(4)	(5)
Constant		0.058	-0.041***	-0.004	0.032***	0.023**
		(1.32)	(-6.56)	(-1.52)	(5.35)	(2.52)
Payment type	Cash	-				-
	Other/Mixed	-0.008				-.0.003
		(1.19)				(-0.64)
	Stock	0.009				0.003
		(1.47)				(0.70)
	Unknown	-0.12 **				0.000
		(-2.16)				(0.03)
Status	Public		0.033***			0.005
			(6.49)			(1.35)
	Private		-			-
Sector	Same sector			0.007*		0.002
				(1.78)		(0.90)
	Different sector			-		-
Deal size	Size				-0.006***	-0.005***
					(-6.68)	(-6.32)
	Relative size				0.065***	0.063***
					(15.37)	(15.90)
Observations		568	568	568	568	568
R²		0.02	0.09	0.00	0.42	0.42

*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.

Table 10: Regressions where target country type is Cross-border within Eurozone

		Model				
		(1)	(2)	(3)	(4)	(5)
Constant		0.007	-0.048***	-0.003	0.028***	-0.004
		(1.20)	(-4.46)	(-0.55)	(2.82)	(-0.26)
Payment type	Cash	-				-
	Other/Mixed	0.014				0.015**
		(1.55)				(2.22)
	Stock	0.043*				0.005
		(1.73)				(0.52)
	Unknown	-0.003				0.009*
		(-0.37)				(1.67)
Status	Public		0.050***			0.014*
			(5.13)			(1.96)
	Private		-			-
Sector	Same sector			0.021***		0.007
				(3.48)		(1.43)
	Different sector			-		-
Deal size	Size				-0.005***	-0.004***
					(-3.07)	(-2.72)
	Relative size				0.062***	0.058***
					(7.06)	(6.01)
Observations		258	258	258	258	258
R²		0.05	0.16	0.04	0.54	0.56

*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.

Table 11: Regressions where target country type is Cross-border outside Eurozone

		Model				
		(1)	(2)	(3)	(4)	(5)
Constant		0.023***	-0.053***	0.012***	0.031***	0.001
		(6.76)	(-6.55)	(4.23)	(4.60)	(0.13)
Payment type	Cash	-				-
	Other/Mixed	0.003				0.006
		(0.32)				(1.57)
	Stock	-0.001				0.007
		(-0.07)				(1.16)
	Unknown	-0.022***				0.002
		(-5.41)				(0.57)
Status	Public		0.054***			0.017***
			(7.03)			(4.21)
	Private		-			-
Sector	Same sector			0.005		0.001
				(1.20)		(0.24)
	Different sector			-		-
Deal size	Size				-	-0.003***
					0.004***	(-4.86)
					(-5.23)	
	Relative size				0.044***	0.043***
					(6.43)	(6.55)
Observations		715	715	715	715	715
R²		0.03	0.13	0.00	0.73	0.74

*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.

Table 13: All country constants associated the models reported in table 12

Country[2]	Model					
	(1)	(2)	(3)	(4)	(5)	(6)
AT[1]	0.017***	-0.005	0.006	0.043***	0.015**	0.000
	(3.00)	(-0.89)	(0.98)	(5.62)	(2.39)	(0.962)
BE	0.005	0.011*	0.005	-0.002	0.003	0.002
	(0.78)	(1.69)	(0.69)	(-0.35)	(0.37)	(0.34)
FI	-0.006	-0.002	-0.05	-0.012*	-0.005	-0.007
	(-0.92)	(-0.26)	(-0.67)	(-1.95)	(-0.76)	(-1.17)
FR	-0.005	-0.001	-0.005	-0.011*	-0.006	-0.008
	(-0.77)	(-0.14)	(0.71)	(-1.88)	(-1.01)	(-1.55)
DE	0.007	0.008	0.005	-0.002	0.005	0.001
	(0.93)	(1.18)	(0.71)	(-0.41)	(0.66)	(0.19)
GR	-0.009	-0.007	-0.011	-0.016	-0.012	-0.012
	(-0.80)	(-0.69)	(-0.96)	(-1.54)	(-1.08)	(-1.21)
IE	-0.003	0.002	-0.004	-0.003	-0.005	-0.001
	(-0.43)	(0.26)	(-0.64)	(-0.63)	(-0.83)	(-0.14)
IT	-0.001	0.001	-0.003	-0.009*	-0.004	-0.006
	(-0.24)	(0.18)	(-0.40)	(-1.73)	(-0.73)	(-1.26)
LU	-0.015*	-0.009	-0.016*	-0.007	-0.015*	-0.004
	(-1.90)	(-1.10)	(-1.97)	(-1.00)	(-1.88)	(-0.62)
NE	0.006	0.01	0.005	-0.004	0.003	-0.003
	(0.70)	(1.19)	(0.49)	(-0.60)	(0.35)	(-0.47)
PT	-0.07	0.000	-0.008	-0.10	-0.005	-0.005
	(-0.67)	(0.07)	(0.78)	(1.17)	(-0.54)	(-0.50)
ES	-0.007	-0.004	-0.009	-0.008	-0.011*	-0.008
	(-1.23)	(-0.71)	(-1.33)	(-1.42)	(-1.73)	(-1.44)

[1]Austria is incorporated into the constant term and is reported here.
[2]Country abbreviations can be found in appendix: table 4.
*, ** and *** indicate 10%, 5% and 1% significance respectively
Heteroscedasticity-corrected t-statistics are in parentheses.