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FEP FACULDADE DE ECONOMIA UNIVERSIDADE DO PORTO

ACQUISITION PREMIUM IN NORTH AND SOUTH EUROPEAN COUNTRIES IN THE BANKING SECTOR DURING THE FINANCIAL CRISIS

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Dissertation

Master in Finance

Supervised by

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2019/2020

ACKNOWLEDGMENTS

I would like to first thank my mother and my father, Maicon dos Santos Bastos, and my mother, Vanda Alves de Oliveira, for always supporting my dreams. My sweet nephews, Edgar and Theodoro, for teaching me so much about love.

ABSTRACT

The financial crisis of 2007-2011 unsettled the global economy, and in Europe the impact was quite big as well, especially in the countries in the South, such as Portugal, Spain, Greece and Italy. In these countries the national banking system ownership changed very heavily over the years of the crisis. This study aims to identify if there was a difference between the acquisition premium of companies in the banking sector in South European and North European countries, during the crisis. In other to obtain the results, we analyzed the acquisition premium from the mergers and acquisitions that occurred before, during and after the financial crisis (2002-2018), in both South and North European Countries. We found an overall negative impact of the financial crisis on the M&A premia paid but a positive impact of the crisis on the Southern European countries' targets premia, which can be linked to undervaluation of these targets during the crisis.

Key-words: mergers and acquisitions**,** acquisition premium, financial crisis, banking sector

RESUMO

A crise financeira de 2007-2011 desestabilizou a economia global, e na Europa o impacto também foi bastante grande, especialmente nos países do Sul, como Portugal, Espanha, Grécia e Itália. Nesses países, a propriedade do sistema bancário nacional mudou muito ao longo dos anos da crise. Este estudo tem como objetivo identificar se houve diferença entre o prêmio de aquisição de empresas do setor bancário nos países do Sul e do Norte da Europa, durante a crise. Para obter os resultados, analisamos o prêmio de aquisição das fusões e aquisições ocorridas antes, durante e depois da crise financeira (2002-2018), tanto nos países do Sul como do Norte da Europa. Encontramos um impacto geral negativo da crise financeira nos prêmios de M&A pagos, mas um impacto positivo da crise nos prêmios de metas dos países do Sul da Europa, que pode estar relacionado à desvalorização das empresas localizadas nesses países durante a crise.

Palavras-chave: fusões e aquisições, prêmio de aquisição, crise financeira, setor bancário

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1. INTRODUCTION

In 2008, the financial crisis unsettled the financial markets and economies around the world. According to the European Commission (2009), the worldwide trade reduced drastically throughout 2008, especially in the last quarter of the year, a result of a downfall in business investment and demand for durable goods, which are heavily dependent on credit.

The banking sector was very much impacted by the crisis, as it faced difficulties to rollover its short-term debt, culminating in lack of liquidity. According to Micu and Micu (2016), the financial crisis, along the course of 2008 and 2011, changed the expansion and investment strategies of the European banking sector.

The financial crisis also had a huge impact on national banking system ownership. In the economies more affected by the crisis, this effect was especially greater. The banking industry is fragmented in across the emerging countries in Europe, which allows great opportunities for banking M&A. At the same time, bigger and more innovative European and non-European banks need more capital and influence to facilitate their growth. This means that European banking industry is prone to consolidation activities (Micu, Micu, 2016).

Also, for many big banks the financial crisis can be seen as an opportunity to increase their market share and profitability, hence buying buy competitors at a lower price (Berger and Bouwman, 2009). In this way, the financial crisis represents a reduction in the number of potential bidders and an increase in the number of potential targets.

For sure the financial crisis affected the whole Europe, but the impact was more devastating in Southern Europe, countries such as Portugal, Greece, Spain and Italy. The magazine The Economist (2009) named these four Southern Europe countries plus Ireland as 'the profligate five'. By the beginning of the year 2009, Greece, Spain and Portugal had their international credit ratings downgraded.

It is possible to see in figures 1 and 2 the Central Government Debt (as percentage of the Gross Domestic Product) in six European countries (Germany, Greece, Italy, Portugal,

Spain and Sweden). Figure 1 exhibits the values for the year 2000 (before the financial crisis), and figure 2 for the year 2010 (during the crisis).

In figure 1, one can observe that Germany, a Central European country, during 2000 had a ratio of central government debt of 38.4% of GDP, in 2010, figure 2, this value increased to 6%, going to reaching 44.4%. In Sweden, according to figure 1, a Northern European country, the value in 2000, was actually higher than during the crisis in 2010, reaching according to figure 2, 56.9% and 33.8% respectively.

At the same time in South European countries, Greece and Portugal had very worrying results. Greece's Central Government Debt increasing from 108.9% in 2000, which is quite worrying by itself, to 147.8% in 2010, an increase of 38.9%. In Portugal, the increase was also quite high, 35.9%, from 52.1% in 2000 to 88% of GPD in 2010.

Spain had a ratio of 49.9% in figure 1, and 51.7% in figure 2. While Italy went from 103.6% in 2000 (figure 1), to 109% in 2010 (figure 2). These values are a good showcase of Southern Europe vulnerability during the 2008 financial crisis.

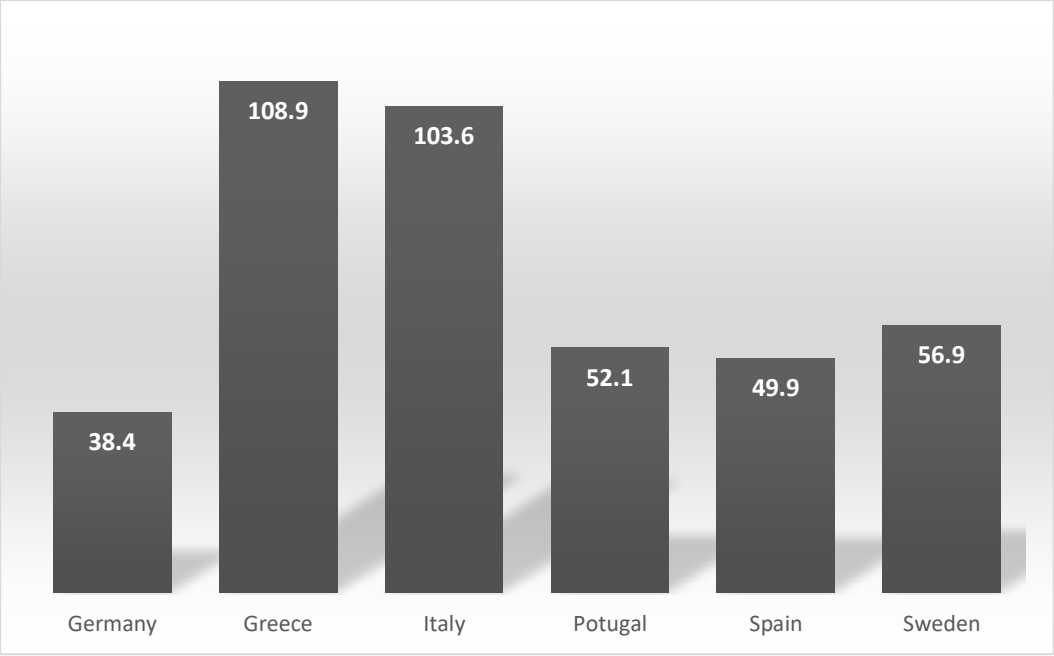


Figure 1: Central Government Debt in European Countries, as percentage of the Gross Domestic Product. (Germany, Greece, Italy, Portugal, Spain and Sweden) in

2000.

Source: OECD Stats.

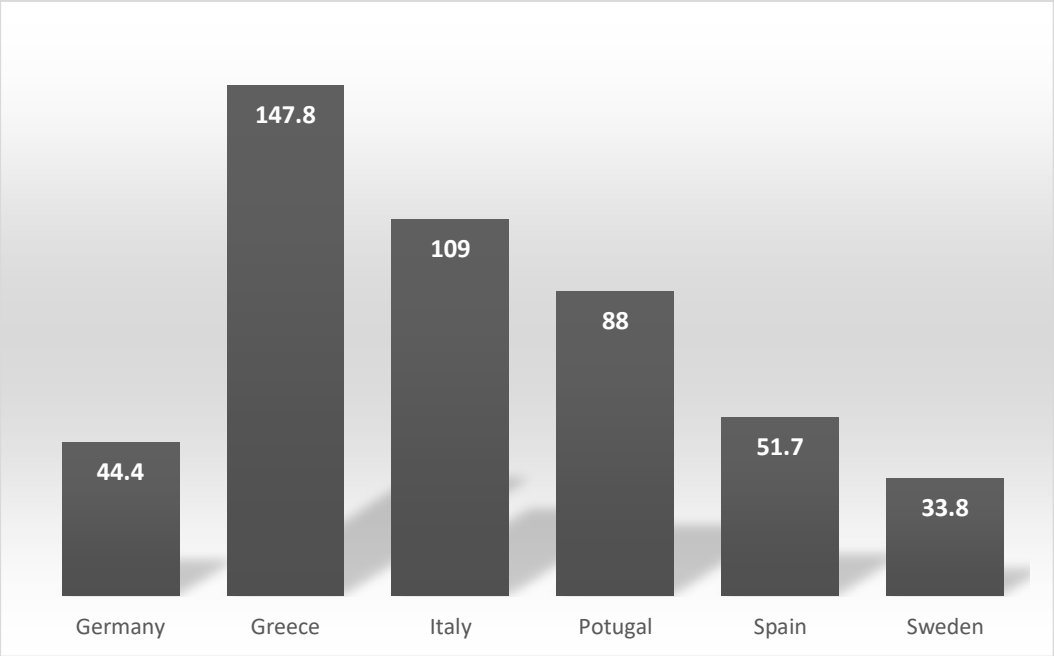


Figure 2: Central Government Debt in European Countries, as percentage of the Gross Domestic Product. (Germany, Greece, Italy, Portugal, Spain and Sweden) in 2010.

Source: OECD Stats.

The economic vulnerability of the Southern European countries, as it was portraited above, and their M&A premia of target firms, can be related to the concept of Fire-Sale FDI. This concept was introduced by Krugman (2000), and suggests that companies from countries which were more affected by financial crisis tend to be bought by firms from more developed countries at a lower price than their fundamental value.

The authors Acharya, Shin and Yorulmazer (2011) affirm that one great reason banks secure a certain amount extra of liquid assets when the economy is not on a crisis period is to purchase assets during a financial crisis and at lower prices, Indeed "fire-sale prices". Companies in developed countries are also very much affected by financial crises but they have more financial stability to manage the crisis and support to their national companies.

This study aims to identify if there was a difference between the acquisition premium of companies in the banking sector in South European countries, which were more impacted and financially exposed by the financial crisis, and North European countries, which were less impacted. We chose to compare the mergers and acquisition in distinct countries, but in the same sector, banking. Because the acquisition premium determinants could change when taking into consideration different sectors of the economy, and this sector is one of the most affected by financial crises. This way it is possible to analyze companies with very similar fundamental characteristics and using the same benchmarks.

As Rhoades (1987) pointed out, it is fundamental to study mergers and acquisitions because by doing it we can access business behavior and decisions which are immediately and directly observable. By understanding how the acquisition premium works in the banking sector during the financial crisis helps to understand the impact of the crisis in the banking sector and how the financial institutions deal with it.

This paper has the objective of answering two main questions: Did the financial crisis impact the acquisition premium in the banking sector? And If there was an impact, was it different in countries which were more damaged by the crisis?

To answer these questions, we will collect data on the acquisition premium of the mergers and acquisitions in the banking sector that occurred between 2002 and 2018. The purpose was to gather enough data to provide information for the periods before, during and after the financial crisis in both South European Countries and North European Countries, in order to provide an adequate geographic analysis on the premia.

Subsequently, an econometric model will be developed using the main determinants of the M&A premium extracted from the literature review on the theme. Then, data will be collected and applied in the econometric model, it will be used to measure the impact of the financial crisis in the determinants of the premium paid in the transactions.

This paper is structured in main six sections, the following section is dedicated to the most important theories, articles and papers about this topic will be analyzed, with a

subchapter dedicated to the specificities of the banking sector. Next, we will explain in detail the methodology applied in this research, explore the data sample used to acquire our results. Finally, we will present the empirical results and discuss these results and, per last, provide an overall conclusion on the theme of this dissertation and the results found.

2. LITERATURE REVIEW

It is fundamental to establish a theoretical and empirical foundation, for our research, in order to interpret the results from this study and have a better interpretation of these. This section is divided in two main topics and one subtopic. It starts by a review of the pricing theories in M&A, followed by the determinants of the acquisition premium and, per last, a subchapter focused on the determinants of acquisition premium in the banking sector.

2.1 DETERMINANTS OF ACQUISITION PREMIUM

In order to have a better understanding of the acquisition premium, it is important to understand how pricing in the M&A works. The topic of pricing in mergers and acquisitions has been studied and analyzed from many points of view, the M&A literature pointing out three main sources of value creation in the merger and acquisitions process: control, synergies and underpricing (Mueller, 1997).

The more traditional line of study highlights that the price of a target firm should be equal to its intrinsic value. Even taking market inefficiencies into consideration, premium acquisition could not be explained because, since it exceeds the value of the firm.

$$\text{PRICE} = \text{INTRINSIC VALUE} \quad (1)$$

In the order hand, the neoclassical theory establishes a formula in order to obtain the price in a M&A, which says that price equals value of the target firm plus synergies that will be created:

$$\text{PRICE} = \text{VALUE} + \text{SYNERGIES} \quad (2)$$

There is no agreement between the scientific community how is the best way to calculate the company's value, but according to Damodaran (2002) the valuation of a company is the central part of acquisition analysis.

Synergy is the value which is created when two companies are merged together, this event creates certain opportunities not possible before. Damodaran (2005) points out that synergies usually are valued wrong and not adequately planned for, overall is much more complex to actually create in practice synergies in mergers and acquisition than in theories.

Even though the more conservative view of finance offers no explanation for the acquisition premium and often relate the premia paid for target company to low-quality decision making from the acquiring firm, the truth is that acquirers still pay premium equal to 20-30 percent of the acquisition price, according to Hanouna, Sarin & Shapiro (2001). The authors analyzed 9566 mergers and acquisitions that occurred in the United States around 1986-2000.

The acquisition premia is measured as the additional value that an acquiring company would pay over the market value of the target firm:

$$\text{ACQUISITION PREMIUM} = \frac{(\text{TRANSACTION PRICE} - \text{MARKET})}{\text{MARKET PRICE}} \quad (3)$$

Koller, Goedhart and Wesseels (1990) observe that the price of an acquisition should be the expected cash flows from the target firm plus a transaction premium. To the authors, the purpose of an acquisition premium is to keep the other possible bidders away.

In order to analyze the factors that determine the acquisition premium paid to acquire companies, it is important to highlight that the main reason for M&A transactions consolidation is that the acquiring party believes the deal is going to be profitable (Berger, Demsetz and Strahan, 1999). Below we are going to discuss the factors why an acquirer would pay a premium for the target company.

2.1.1 MARKET SHARE

By increasing their overall market power, this benefits the acquirer by potentially creating a rise in interest rates charged in loans and a decrease in interest rates paid over deposits (Berger, Demsetz and Strahan, 1999). The authors suggest that the higher the market share of the target premium is, the higher the premium offered will be. It is important to remember that market power is very geography related, so the statement is true for companies in the same country or region of influence.

2.1.2 RELATIVE SIZE RATIO OF THE TARGET TO THE ACQUIRER

The empirical evidence about the negative relationship between the premium paid and the relative size ratio of the target to the acquirer is documented, among others, by Benston, Hunter and Wall (1995), who show that the bigger the difference in size of the institutions involved is, the higher the premium paid is.

2.1.3 DIVERSIFICATION

Another way to maximize value is by diversification, which could be geographical and/or in the supply of goods and services that are offered by the institution. When it comes to product diversification, there is empirical evidence of a negative relationship between risk[1] and the premium paid, which means that the acquiring company would pay a higher premium when the target firm allows for risk diversification (Benston, Hunter and Wall, 1995).

When it comes to evidence on geographical diversification, Shawky, Kilb and Staas (1996) concluded that premia paid for inter-state transactions are higher. In contrast, Jackson and Gart (1999) found evidence of the payment of higher premia for within the same state transactions. Both studies are focused in M&A in the US.

When it comes to European M&A, Martynova and Renneboog (2008) and Campa and Hernando (2004) found empirical evidence that the premium tends to be higher in cross-border deals than in domestic ones. Campa and Hernando (2004) studied European M&A between the years 1998 and 2000, targets and acquirers from EU countries, and deals between listed companies, the total sample size was 202 deals.

[1] Risk in Finance is usually measured by measured by the standard deviation of the performance of the target firm.

2.1.4 METHOD OF PAYMENT

Regarding the method of payment, many authors studied the relationship between the premium and the choice of payment of the deal. Travlos (1987) in his study of M&A takeovers during 1972-1981, found empirical evidence of positive rates of return at the announcement period for deals paid in cash. According to Travlos (1987) there is asymmetric information between the acquirer and the target on the value of the bidder shares, therefore the bidder can offer shares if these are overvalued and offer cash if these are undervalued. Other authors also found empirical evidence consistent with this behavior.

Taxation is also pointed out as a factor that influences the choice of payment in a M&A deal. When paying a deal in cash, the target shareholders most likely will get some liabilities from taxes on their profit of the deal, therefore they would demand a higher premium. Authors such as Wansley, Lane, and Yang (1983) support this theory and provide corresponding empirical evidence.

Amihud, Lev, and Travlos (1990) highlight that managerial control can impact the choice of payment. When using shares as payment, the shareholders of the acquirer company are diminishing their stake in the acquirer company, thus have greater chances of losing control and influence over the company.

2.1.5 MANAGERIAL CONTROL

Stulz (1988) when studying the managerial control and how voting rights affects firm value and financing policies, found out there is a positive relation between managerial ownership and takeover gains. Which, according to the author, can be explained by a smaller possibility for takeovers to happen. Also, it brings more negotiating power, which target firms could use to negotiate a higher premium (Stulz, 1988).

2.1.6 VALUE OF CONTROL

The value of control has been pointed out by authors such as Damoradan (2005) as an additional explanation for the acquisition premium. In practice, it means that investors that pay a premium in acquisitions believe that the target firm is not performing as well as it potentially could, because it is poorly managed, and by acquiring the firm, new owners will adopt new management strategies and possible a whole new management team in order to boost up the company's performance.

While some authors recognize the possible synergies that could be created with the transaction as a factor that may explain the acquisition premium, others such as Sirower (1997) disagree. This author analyzed the condition of 168 mergers and acquisitions that happened between 1979 to 1990 and concluded that there is a significant negative correlation between the acquisition premium and the M&A performance.

To Sirower (1997), the acquisition premium consumes the value that the synergies created. The author developed a model in order to measure the success of an acquisition, he establishes that the net present value is equal to the realized synergy minus the acquisition premium paid in the transaction.

NET PRESENT VALUE = SYNERGY – ACQUISITION PREMIUM (4)

2.1.7 OTHERS

There are also other variables, related to the target company, that play a role in M&A premia. These include the ratios of loans per total assets, equity per assets and non-interest income per assets. Evidence has been found in favor of the relevance of the two last ones. A target firm with a larger proportion of equity on assets is less attractive due to this implying a risk averse behavior and lack of efficiency in using its capital, so the premium paid is going to be lower (Rhoades, 1987).

2.2 SPECIFICITIES OF THE BANKING SECTOR

The particularities of the sector of the target company play a role in determining the acquisition premium. Since different markets have different characteristics, it is important to establish certain main points in the M&A premia literature about the industry which is the focus of this paper, the banking sector.

Regarding acquisition pricing and the determinants of the acquisition premia in the banking sector, Rhoades (1987) wrote one of the most important articles focusing in this issue. In that paper, the author tested the determinants of the premium paid in 1,835 of the 2,717 bank mergers and acquisitions that occurred from the years of 1973 to 1983.

Rhoades (1987) concluded that three variables had significant and consistent impact on the acquisition premium, being these variables the growth of the target firm, the growth of the target market and the capital-to-assets ratio of the target firm. The interpretation of his results is that target firms with high growth, located in a high growth market and with a low capital-to-assets, have more chance of being paid a larger premium because they are more attractive to bank investors. The author also found that the growth rate of the country where the target is located or when the banking sector is a more important part of the economy are important factors that drive a higher premium.

Other authors like Beatty, Santomero and Smirlock (1987) found evidence of a positive relationship between the presence of a less competitive markets and the acquisition premium. According to these authors, the bank investors are more likely to pay a higher premium to enter in a more concentrated market, since this is more likely to be profitable.

While Beltratti and Paladino (2011), pointed out that for the bank acquirer, the abnormal returns are on average equal to zero at the announcement date. But then, the abnormal returns become positive after the consolidation of the deal. Also, the abnormal returns tend to be bigger for efficient banks, banks with less leverage and more profitable ones. The authors also concluded that M&A in the banking sector was different during the financial crisis when comparing to other periods, the banking M&A during the crisis was marked by delayed abnormal returns and uncertainty to completion of deals.

2.3 RESEARCH HYPOTHESES

After analyzing some of the most relevant papers in the M&A literature in order to list the determinants of acquisition premium, and understand the empirical evidence available to these determinants, we can list the following hypotheses for our study:

H1: During the financial crisis, the premium acquisition paid is smaller.

H2: During financial crises the premium acquisition is even smaller for target firms located in countries which were more affected by the crisis.

3. METHODOLOGY

3.1 SAMPLE SPECIFICATION

In order to achieve the objectives of this research, we collected data on the acquisition premium of mergers and acquisitions in the banking sector that occurred between 2002 and 2018. The purpose was to collect enough data to provide information about the periods before, during and after the financial crisis in both South European countries and North European Countries.

In this research we are going to consider as South European countries the following ones: Portugal, Spain, Greece and Italy. And as North European countries: Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden and United Kingdom.

The database used is the Thomson Reuters Eikon and Zephyr. To sum up, the sample was constructed by searching the Thomson Reuters Eikon Database for all the M&A deals that respect all the requirements below:

- Deals which disclosure the value of the transaction and its details (such as method of payment)
- Deals between companies with s shares in the stock market (at least at the moment of the transaction);
- Mergers and acquisitions within the banking sector. Which means both targets and the acquirer are in the sector;
- Deals taking place between January 2002 to December 2018;
- Deals where the target companies are from the following countries: Portugal, Spain, Greece, Italy, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden and United Kingdom.

After searching in our software of choice, Eikon, for deals which fits all the criteria above, we collected 70 deals to use as sample.

3.2 ECONOMETRIC MODEL

Next, we built an econometric model, using the premia as the dependent variable and the determinants of acquisition premium as the independent variables. Then, a linear regression analysis will be used to measure the impact of the financial crisis in the determinants of the premium paid in the transactions.

About the choice of premia determinants used in this model, we took into consideration the addition of variables for which their relationship with the premia has empirical evidence or theoretical support, as derived from the literature review in the previous section. Some variables, such as market power and governance related variables, are not added into the model due to data unavailability.

Also, a synergy variable will not be added into the model because we are analyzing deals between banking companies (both target and acquirer from the same sector of the economy), therefore it is clear there will be potential operating synergies in the deal. The econometric model used in this paper is:

$$PREMIUM_i = \beta_0 + \beta_1\, FINCRISIS_i + \beta_2\, LOC_i + \beta_3\, LOCxFINCRISIS_i + \beta_4\, PAY_i + \beta_5\, KTA_i + \beta_6\, SIZE_i + \beta_7\, DOM_i + \beta_8\, ROA_i + u_i \quad (5)$$

The dependent variable is the acquisition premium (PREMIUM i). As independent variables we have: a dummy variable for identifying periods with financial crisis when 1, period of crisis, when 0, not period of crisis (FINCRISIS); dummy variable for location of the country which the target is from 1, South Europe and 0, North Europe (LOC); dummy variable for identifying if the crisis had a deeper impact in presence of targets from South Europe, 1, when targets are located in Southern Europe and the deals happened during the financial crisis, 0, when otherwise (LOCxFINCRISIS); dummy variable for the method of payment when 1, cash and 0, otherwise (PAY); capital-to-asset ratio of target (KTA); size ratio of the target to the acquirer (SIZE); dummy variable for identifying if the transaction

was international or national, the value of which being 1, when domestic and 0 when cross-border (DOM); a variable which measures the profitability of the target by its Return on assets (ROA) and an error term (ui).

3.3. VARIABLES

Next, we are going to explain how we are going to measure and/or obtain each variable included in our econometric model. We first proceed by showing and discussing the dependent variables expected signs in the model, according to our bibliography.

a) PREMIUM

The acquisition premium is the difference between the offer price and the target closing stock price prior to the original announcement date, expressed as a percentage of the target closing stock price. The data on prices was obtained from the software Eikon. The database offers three kinds of acquisition premium: 1 day prior the announcement date, 1 week prior the announcement date and 1 month prior the announcement date.

For this paper, we are going to focus our analysis on the 1 week prior the announcement date, but also estimate our model with the 1 day and 1 month prior the announcement date premium as independent variables. Eikon's methodology to calculate the premium 1 Week Prior to Announcement Date is the following:

$$PREMIUM = ((HOSTPR - HOSTC1WK) / HOSTC1WK) * 100 \quad (6)$$

Where HOSTPR is the price per common share in target's country currency, and HOSTC1WK is the target stock price 1 week prior to announcement date in target's country currency. For the 1 day and 1 month prior the announcement date premium the methodology is the same, besides, we exchange the target stock price 1 week prior to announcement date in target's country currency for target stock price 1 day and 1 month prior to announcement date in target's country currency.

b) FINCRISIS

This variable is defined as a dummy variable for identifying periods of financial crisis, and it is equal to 1 when in presence of a period of crisis, 0 otherwise. For this paper, we are going to consider the duration of the financial crisis going from 2008 until 2011, when most of economies affected by it were somewhat recovered from the crisis, following the criteria used by Micu and Micu (2016).

c) LOC

This is a dummy variable for identifying the location of the country which the target company is from. It is going to be equal to 1 for South European countries (Portugal, Spain, Greece and Italy) and equal to 0 for North European countries (Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden and United Kingdom). The information was extracted from the software Eikon.

d) LOCxFINCRISIS

This is an interaction variable, equal to the variable LOC multiplied by the variable FINCRISIS. This variable is expected to measure if the financial crisis had a stronger impact when in the presence of targets from Southern countries.

e) PAY

This is defined as a dummy variable for the method of payment of the deal. It is equal to 1 when it was paid in cash, and equal to 0 when was paid either stocks or a mix of stocks and cash or some other method. The information on the method of payment of the deals was extracted from the platform Zephyr.

f) KTA

It is a variable which depicts the capital-to-asset ratio of target firm. The values of capital and assets used in the calculation were taken from Eikon, and equation (7) is used for its computation:

KTA = TOTAL CAPITAL OF TARGET / TOTAL ASSETS OF TARGET (7)

g) SIZE

The variable SIZE corresponds to the size ratio of the target in relation to the acquirer. To compute this ratio, the values used were taken from Eikon, and the following formula was used:

SIZE = TOTAL ASSET OF TARGET/ TOTAL ASSET OF ACQUIRER (8)

h) DOM

This variable is a dummy for identifying if the transaction is national or international. It will be equal to 1 when the transaction is domestic, and equal to 0 when it is cross-border. The information was taken from Eikon.

i) ROA

This variable measures the profitability of the target firm by their Return on Assets (ROA). The data was extracted from Eikon, the formula is shown below:

ROA = NET INCOME/ AVERAGE TOTAL ASSETS (9)

3.4. EXPECTED SIGNS

In this section we are going to present the expected signs of each independent variable listed in the last section. According to the most important literature on mergers and acquisitions premium determinants, which was explored on chapter 2.

The variable FINCRISIS is supposed to have a negative impact on the premium, meaning that in periods of financial crisis, the premium was smaller (Krugman, 2000). The variable LOC is presumed to have a negative sign, which means that when the target company is located in a Southern European country the premium tends to be smaller (Krugman, 2000). The variable LOCxFINCRISIS is supposed to have a negative sign, meaning that the premia for Southern European targets were even smaller than Northern European during the crisis (Micu and Micu, 2016).

The variable PAY is presumed to have a positive sign, hence when transactions are paid with cash the premium tends to be higher (Tavlos, 1987). KTA has a negative expected sign, meaning that the higher the capital-to-asset ratio of the company the lower it will be the premium (Rhoades, 1987). The independent variable SIZE also has a negative impact, meaning that the bigger the size ratio of the target to the acquirer, the smaller the premia will be (Benston, Hunter and Wall, 1995).

DOM is supposed to have a negative impact, this being felt when the deal is between two companies of the same country, in which case the premium tends to be smaller. Per last, the variable ROA is presumed to have a negative impact, because acquirers tend to pay higher premia for companies they believe are undervalued (Damoradan, 2005). As it is shown in the table 1:

Independent variables	Expected sign	Theoretical support
FINCRISIS	-	Krugman (2000); Beltratti and Paladino (2011)
LOC	-	Krugman (2000)
LOCxFINCRISIS	-	Micu and Micu (2016)
PAY	+	Tavlos (1987)
KTA	-	Rhoades (1987)
SIZE	-	Benston, Hunter and Wall (1995)
DOM	-	Martynova and Renneboog (2008); Campa and Hernando (2004)
ROA	-	Damoradan (2005)

Table 1: Expected signs of independent variables.

4. RESULTS AND DISCUSSION

First, we are going to present the descriptive statistics from all the variables used in our model, this is reported in tables 2. The variable PREMIUM_WEEK had a mean equal to 17.7, a median 10.1, a maximum value of 176.19, a minimum -83.75 and a standard deviation of 38.15138. The variable PREMIUM_DAY presents a mean of 16.30129, a median value 10.31, a maximum value 184.31, a minimum -83.47 and a standard deviation equal to 35.4312. Finally, PREMIUM_MONTH had a mean of 20.89271, a median 12.615, a maximum of 276.62, a minimum of -84.11 and a standard deviation 47.48723.

The independent variable FINCRISIS had its standard deviation equal to 0.44. Out of our 70 observations, 18 deals were made during the period of financial crisis and 52 deals were closed before or after the financial crisis. To sum up, 26% the deals happened during the crisis, and 74% during a non-crisis period.

The variable LOCxFINCRISIS had its standard deviation equal to 0.39. From our sample, only 14 deals, 20%, happened during the financial crisis and with targets from Southern European country, the other 56 deals, 80%, did not fit these criteria. And, the variable DOM has its standard deviation equal to 0.44. From the deals used as our sample, 51 deals were between companies from the same country, and 19 between companies from different countries. Which means, 73% the deals were national and 27% international deals.

This variable LOC its standard deviation equal to 0.47. From the deals used as our sample, 47 deals the target were from a South European country, and 23 from a North European country. Which means that 33% the deals were from targets from northern Europe and 67% from southern Europe. While, the variable PAY has its standard deviation equal to 0.50. From our sample, 31 deals were paid with cash and 39 deals were paid with stocks or mix of. To sum up, 44% the transactions paid with cash, and 56% with other methods.

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
PREMIUM_DAY	16.30129	10.31	184.31	-83.47	35.4312
PREMIUM_MONTH	20.89271	12.615	276.62	-84.11	47.48723
PREMIUM_WEEK	17.70443	10.11	176.19	-83.75	38.15138
FINCRISIS	0.257143	0	1	0	0.440215
LOCxFINCRISIS	0.185714	0	1	0	0.391684
SIZE	543.5454	0.182703	38008.5	0.002059	4542.817
ROA	-0.24029	0.375	1.66	-19.76	2.767857
DOM	0.728571	1	1	0	0.447907
KTA	0.08224	0.070863	0.333367	-0.00968	0.056424
LOC	0.671429	1	1	0	0.473085
PAY	0.442857	0	1	0	0.50031

Table 2: Descriptive statistics for our model variables. PREMIUM_DAY, PREMIUM_MONTH and PREMIUM_WEEK being the acquisition premium, respectively, 1 day, 1 month and 1 week prior the announcement date. FINCRISIS is for identifying periods with financial crisis when 1, period of crisis, when 0, not period of

crisis. LOCxFINCRISIS is for identifying if the crisis had a deeper impact in presence of targets from South Europe, 1, when targets are located in Southern Europe and the deals happened during the financial crisis, 0, when otherwise. SIZE is the size ratio of the target to the acquirer. ROA is the target's return on assets. DOM is for identifying if the transaction was international or national, the value of which being 1, when domestic and 0 when cross-border. KTA is capital-to-asset ratio of target. LOC is the location of the country which the target is from 1, South Europe and 0, North Europe. PAY is the method of payment when 1, cash and 0, otherwise.

Then, we estimated our model with the 1 week premium as dependent variable, which are the results we are going to focus our analysis, presented in Table 3. The statistically significant results are: FINCRISIS, which has coefficient equal to -70.88, LOC which is equal to -19.6, and LOCxFINCRISIS is 69.9.

The interpretation of the estimation of FINCRISIS is that the financial crisis decreases the M&A premium 1 week prior the announcement date in approximately 70.8 percentage points, which is very economically significant. And the LOC, the targets located in Southern Europe has the premium smaller in approximately -19.6 percentage points. While, the interpretation of the LOCxFINCRISIS is that the targets located in South Europe during the financial crisis had their premia increased in 69.9 percentage points.

These results confirm our first hypothesis meaning that during the financial crisis, the premia is indeed smaller. And do not confirm our second hypothesis, during the financial crises, the M&A premia is somehow bigger on Southern European countries targets than in Northern European targets. Later we are going to explore the possible reasons on why is that true.

Variable	Coefficient	Prob.
C	33.72591** (13.34555)	0.0141
FINCRISIS	-70.8808*** (19.00543)	0.0004
LOC	-19.6494* (10.90048)	0.0764
LOCxFINCRISIS	69.96246*** (22.43426)	0.0028
PAY	-	-
KTA	-	-
SIZE	-	-
DOM	-	-
ROA	-	-
R-squared		0.19846
Adjusted R-squared		0.09334
Mean dependent var		17.70443
Number of observations		70

Table 3: Results from the estimation using the premium 1 week prior the announcement date.

We tested the model for heteroskedasticity and multicollinearity, since it is a cross-section model, these tests were relevant in other to check our results. We executed the White Test in Eviews, for heteroskedasticity, and correlation matrix, for multicollinearity. For the level of significance of 5%, there is no heteroskedasticity and no multicollinearity in our model.

We decided to estimate the model with different dependent variable, first we changed the premium 1 week prior the announcement date to the premium 1 day prior the announcement date. The coefficient of the variable FINCRISIS is -62.69, LOC is -21.6, LOCxFINCRISIS is 60.18.

In this regression, FINCRISIS, LOC and LOCxFINCRISIS had statistically significant results, again. The interpretation of the FINCRISIS coefficient is that the financial crisis decreased the M&A premium 1 day prior the announcement date in approximately 62.69 percentage points. About the LOC, when the target is located in Southern Europe, the premium tends to be smaller in 21.6 percentage points. The interpretation of the LOCxFINCRISIS is that the targets located in South Europe during the financial crisis had their premia increased in 60.1 percentage points. The results are possible to see bellow on the table 4:

Variable	Coefficient	Prob
C	30.15859* (12.39581)	0.0179
FINCRISIS	-62.6999*** (17.65289)	0.0007
LOC	-21.6177** (10.12474)	0.0368
LOCxFINCRISIS	60.18235*** (20.83771)	0.0054
PAY	-	-
KTA	-	-
SIZE	-	-
DOM	-	-
ROA	-	-
R-squared		0.198229
Adjusted R-squared		0.093078
Mean dependent var		16.30129
Number of observations		70

Table 4: Results from the estimation with premium 1 day prior the announcement date as dependent variable.

Then we estimated the model with the premium 1 month prior the announcement date as the dependent variable. The coefficient of the variable FINCRISIS is -83.59, and LOCxFINCRISIS is 79.66.

The only statistically significant results are from FINCRISIS and LOCxFINCRISIS. The interpretation is that the financial crisis decreased the M&A premium 1 month prior the announcement date in approximately 83.59 percentage points. The interpretation of the LOCxFINCRISIS is that the targets located in South Europe during the financial crisis had their premia increased in 79.66 percentage points. This is report on the table 5, below:

Variable	Coefficient	Prob.
C	38.23751** (16.8763)	0.0270
FINCRISIS	-83.5914*** (24.03356)	0.0009
LOC	-	-
LOCxFINCRISIS	79.66094*** (28.36954)	0.0067
PAY	-	-
KTA	-	-
SIZE	-	-
DOM	-	-
ROA	-	-
R-squared		0.172681
Adjusted R-squared		0.06418
Mean dependent var		20.89271
Number of observations		70

Table 5: Results from the estimation with premium 1 month prior the announcement date as dependent variable.

We can observe that there were no great differences between the results when we change the dependent variable from premium 1 day or 1 week or 1 month prior the announcement date. Besides that, when estimating the model using the 1 month premium as dependent variable, the variable LOC was not statistically significant.

Other observation is how big is the impact of the variables FINCRISIS and LOCxFINCRISIS on the premium, we could not find a clear explanation for this result. But when estimating the model without the variable LOCxFINCRISIS, the impact of the variable FINCRISIS on the premia was much smaller. The results from the estimation is possible to check on the annex.

The table 6 illustrates both signs, expected and actual of the estimations. It is possible to see that the independent variables FINCRISIS and LOC had their effect on the premium as it was expected. And LOCxFINCRISIS had a different impact than expected.

Independent Variables	Expected Signs	Actual Signs
FINCRISIS	-	-
LOC	-	-
LOCxFINCRISIS	-	+
PAY	+	0
KTA	-	0
SIZE	-	0
DOM	-	0
ROA	-	0

Table 6: Expected signs and actual signs.

The coefficient for FINCRISIS presented a negative sign which means that when there were periods of financial crisis (2008-2011) this affected negatively the M&A premium. This result is compatible with Krugman (2000) and Beltratti and Paladino (2011), both studies exploring the impacts of financial crisis and M&A.

The dummy variable LOC identifies the location of the country which the target company is from. This dummy variable also had negative impact, which means that in the South Countries (Portugal, Spain, Greece and Italy), countries more affected by the financial crisis, the premium was lower than in the North Countries (Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden and United Kingdom).

These results are compatible with the Fire-Sale FDI theory by Krugman (2000). During the financial crisis the M&A premium was smaller overall, and even smaller in Southern European countries. This theory suggests that companies from countries which were more affected by financial crisis tend to be bought by firms from more developed countries at a lower price than their fundamental value.

Meanwhile, the variable LOCxFINCRISIS had a positive impact on the premia. This suggests that during the financial crisis, the targets located in Southern Europe had larger premiums. The reason for that could be that the financial crisis and how badly their countries were handling it, pushed the targets market price significantly down, for that reason the premium was higher.

The dependent variable could also be affected by rumors, as the premium acquisition can be influenced by financial rumors. According to Chou, Tian and Yin (2010), financial rumors are "an imprecise and unconfirmed message about an impending financial event". They are usually spread between professionals which hold a advantage financial position, journalists, financial "gurus" and so on. Sometimes the rumor that a M&A deal it's about to happen or even that the acquirer's managers are discussing it, it's enough to inflate the target's share price.

The Ireland situation is an issue in this analysis. As it was established before, the South European countries were more affected during the crisis, but Ireland's economy was

also very damaged by the crisis. Although being part of Northern Europe, Ireland went through a very similar process as Portugal, Spain, Greece, and Italy. High unemployment rates, high government debt, a downfall in business investment and demand for durable goods, which for sure affected their banking sector.

5. CONCLUSION

The financial crisis of 2008 had a big impact in economies throughout the World. In Europe, the situation was not different. It had a huge impact on the banking sector, especially in the national banking system ownership (Micu and Micu, 2016), mostly in the countries which were more affected by the crisis, such as the South European countries.

The objective of this dissertation was to explore how did the financial crisis impact the acquisition premium in the banking sector and whether this impact was different on Southern European countries, where the crisis did more damage. In order to answer these questions, we formulated an econometric model, with 70 samples of banking M&A deals.

We found that the financial crisis had a negative impact on the premium, given that in the period of the crisis (2008-2011) the M&A premium was smaller. The premium tends to be smaller in the Southern countries (Portugal, Spain, Greece and Italy). However, during the financial crisis the premium tends to be higher for targets located on Southern countries, which could be explained by these companies being undervalued because of the crisis.

In order to improve the study of M&A determinants during the financial crisis, we could alternatively use Cumulative Abnomal Returns (CARs) to measure and monitor the M&A premium in a more precise way. By doing that we could also check the abnormal returns in the day of the announcement, during the process and after the M&A is completed. Also having a bigger sample would be helpful. And to add more variables which their relationship with the M&A premium had been empirically proved but were not added to this study because of the lack of availability of the data. Variables such as managerial ownership, market competitiveness and market power.

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ANNEX

Variable	Coefficient	Prob.
C	-	-
FINCRISIS	-21.4513*	0.0601
	(11.20077)	
LOC	-	-
PAY	-	-
KTA	-	-
SIZE	-	-
DOM	-	-
ROA	-	-
R-squared		0.070669
Adjusted R-squared		-0.03426
Mean dependent var		17.70443
Number of observations		70

Table 7: Results from estimation without the variable LOCxFINCRISIS (dependent variable: premium_week)

Variable	Coefficient	Prob.
C	-	-
FINCRISIS	-20.1801*	0.0546
	(10.30136)	
LOC	-	-
PAY	-	-
KTA	-	-
SIZE	-	-
DOM	-	-
ROA	-	-
R-squared		0.088591
Adjusted R-squared		-0.01431
Mean dependent var		16.30129
Number of observations		70

Table 8: Results from estimation without the variable LOCxFINCRISIS (dependent variable: premium_day)

Variable	Coefficient	Prob.
C	-	-
FINCRISIS	-27.3098*	0.0553
	(13.97855)	
LOC	-	-
PAY	-	-
KTA	-	-
SIZE	-	-
DOM	-	-
ROA	-	-
R-squared		0.065743
Adjusted R-squared		-0.03974
Mean dependent var		20.89271
Number of observations		70

Table 9: Results from estimation without the variable LOCxFINCRISIS (dependent variable: premium_month).