The impact of European bank Mergers and Acquisitions on bond issuance

Martina Palanca

Dissertation written under the supervision of professor Eva Schliephake

Dissertation submitted in partial fulfilment of requirements for the MSc in Finance, at the Universidade Católica Portuguesa, 27th January 2025.

Abstract

This study aims to understand the relationship between M&A events in the banking sector in the European Union and its debt structure, proxied by the face value of bonds issued over time. The analysis was performed using a dataset composed of 51 bank mergers that happened in EU countries from 2016 to 2022. The results show a positive correlation between M&A events and bond issuance in European banks in the 1-2 years after the event, which confirms my initial hypothesis. These results hold regardless of deal size. I do not find enough data to confirm the phenomenon at a country level for every country in my dataset. Further research could build on my study to test the hypothesis on different samples and using different control variables than those in my regression.

Keywords: mergers and acquisitions, bond issuance, European Union, hypothesis, regression

Title: The impact of European bank Mergers and Acquisitions on bond issuance

Author: Martina Palanca

Resumo

Este estudo tem como objetivo compreender a relação entre os eventos de M&A no setor bancário da União Europeia e sua estrutura de endividamento, aproximada pelo valor nominal das obrigações emitidas ao longo do tempo. A análise foi realizada utilizando um conjunto de dados composto por 51 fusões bancárias ocorridas nos países da UE entre 2016 e 2022. Os resultados mostram uma correlação positiva entre eventos de M&A e emissão de títulos em bancos europeus durante 1 a 2 anos após o evento, o que confirma minha hipótese inicial. Os resultados são válidos independentemente do tamanho do negócio. Não foram encontrados dados suficientes para confirmar o fenómeno a nível nacional para cada país no meu conjunto de dados. Outras pesquisas podem se basear em meu estudo para testar a hipótese em diferentes amostras e usando variáveis de controle distintas das utilizadas da minha regressão.

Palavras-chave: mergers and acquisitions, bond issuance, European Union, hypothesis, regression

Título: The impact of European bank Mergers and Acquisitions on bond issuance

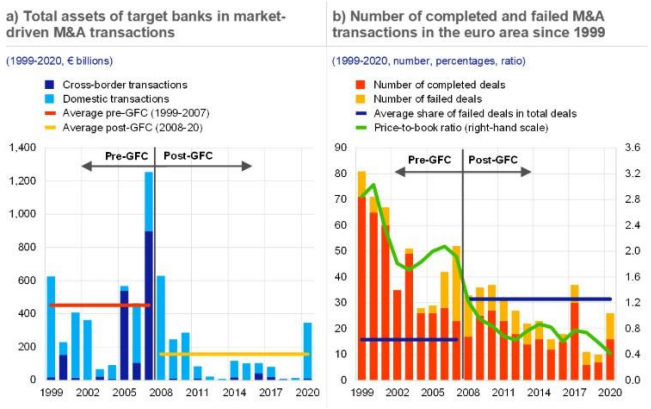
Autor: Martina Palanca

Table of contents

Introduction

After the Global Financial Crisis of 2008, the value of M&A transactions in the European banking sector fell by about two-thirds from the pre-crisis period to the period started in 2008, as illustrated in Chart 1. It has also become more difficult to finalize a transaction since one in three attempted transactions was not concluded with a deal in the post-crisis period, doubling the pre-crisis average (ECB, 2021).

Chart 1: Value of bank M&A transaction (a) and number of deals (b) in the EU from 1999 to 2020



Source: Figueiras et al. (2021).

However, this trend is beginning to reverse. According to a study by Scope Ratings, the first five months of 2024 have already experienced a rise in large bank M&A announcements, signaling potential for sector growth in the future years.

In this positive and renewing context, it is crucial to understand clearly the effect that a merger or an acquisition has on the structure of banks, particularly their debt structure.

Through this study, therefore, I develop the research question: "How do bank M&As in the European Union influence the face value of bonds issued by the merged bank/the acquirer?". It aims to identify a clear correlation between M&A events and changes in bank debt structures, using the face value of bonds issued over time as a proxy. Understanding whether M&As have a positive (or negative) impact on the debt structure over time holds economic, regulatory, and academic significance.

From the economic point of view, the major benefit from this study is taken by investors, since it has been demonstrated that M&As have an impact on default risk by the bidder, both at a corporate and banks' level in the European market (Bessler et al., 2019 and Vallascas and Hagendorff, 2011), but with a general overlook on the specific effects on debt structure.

Kolaric and Schiereck (2014) have also shown that, as the banking industry becomes more established in a country, it becomes more difficult for banks to achieve value gains through M&As, impacting the performance of the acquirer or the resulting bank. However, it does not mean that it is impossible: evidence from Hassen et al. (2018) on European commercial banks M&As suggest that M&A have increased long-term profitability. An increase in profitability and overall performance can have an impact on the debt structure, and we can therefore infer its impact on the cost of debt itself, with significant impacts on shareholders' value and gains.

Looking at the regulatory aspect, this research could be of support to understand better the "Too big to fail" phenomenon and help avoid mergers and acquisitions which have this sole scope in mind. TBTF has been studied in the past relating to bank benefits (O'Hara and Shaw, 1990) showing that markets are more willing to assign a premium to a bank that is considered to be TBTF. Banks can also pay to be considered TBTF, increasing the overall systematic risk in European financial markets (Molyneux et al., 2010). The said behaviour from markets and the rights granted to banks that are considered TBTF could lead to market distortion and become an incentive for small banks to merge in order to have the same benefits (Kolaric and Schiereck, 2014). Regulators could therefore benefit from this research and have a better look into bank structure after a merger (and in particular the effect on debt structure, here simplified by using bonds issued as a proxy).

Academically, this study could bridge the gap in the current literature regarding the effect of bank M&A on debt structure in the banking sector, since the wide topic of bank M&As has yet to deepen this specific aspect. This study can therefore contribute to the current literature and contribute to opening a new line of research on the banking M&A literature.

This thesis aims to study the drivers behind the change of the face value of bonds issued by a bank over time, focusing specifically on banks that underwent a merger or an acquisition, understanding if that event has a significant impact. I find a clear correlation between the two, specifically a positive one, suggesting that an M&A event changes the debt structure of a bank, increasing it.

This finding has an impact on the current literature under two aspects: first of all, it confirms further the correlation between an M&A event and the change in default risk, bringing a new point of view on the matter; secondly, it helps to understand the drivers behind a change in debt structure, bringing a new insight on the topic.

The thesis is composed of three chapters as follows:

1. The first chapter of this thesis will elaborate on the research question of this study and its main contribution to the literature on banking M&As. It will also summarize the main characteristics of the regulatory framework of the European Union (both at a national and international level).
2. The second chapter will focus on the methodology of the thesis, explaining the construction of the data set and its characteristics, alongside descriptive statistics of the sample and an explanation of the intuition behind the regression model used for the study.
3. The third and final chapter of the thesis will focus on the results of the statistical analysis, both on the full sample and some sub-samples. It will moreover compare the results with the existing literature highlighting the contribution of this study. This final chapter is concludes with a summary of key insights.

Chapter 1

The starting point: existing literature and EU regulation

1.1 Existing literature

Mergers and acquisitions, and more specifically mergers and acquisitions in the financial sector, are widely studied by academic scholars worldwide. Chiaramonte et al. (2023) provide a comprehensive bibliometric review on the M&A studies in the financial industry. The literature mainly focuses on the banking industry inside the financial sector, as it is the most relevant and the largest sub-topic studied. The existing literature mainly focuses on the economic consequences of a merger and its impact. This study adds to the literature by studying the consequences of mergers and acquisitions on bonds issued by a bank after a merger. Dennis et al. (2021) analyse the merger's influence on debt. Focusing on firms' mergers rather than banks, they find that firms with a leverage level higher than optimal tend to choose public bonds before M&A activity rather than a bank loan.

Since there is a lack of literature on banks' M&A funding choices, we can use studies on firm's funding choices to understand bank's funding choices for an M&A. To do so, we need to get back to a basic concept: how does a bank fund its operations? According to the International Monetary Fund, banks are simple intermediaries between depositors (who lend money to the bank in exchange for interest) and borrowers (whom the bank lends money to). Banks pay depositors less than they receive from borrowers, and that difference accounts for the bulk of banks' income in most countries. Also, they can complement traditional deposits as a source of funding by directly borrowing in the money and capital markets (IMF, 2012). These funds serve various purposes, including (an eventual) merger or acquisition. An M&A is a deal that often scores various millions of euros, and firms can choose among various sources to fund it: equity, cash or company profits as internal funds or a bank loan as an external fund (Forbes, 2020). Since banks are subject to more restrictive regulation policies compared to firms (as we will see in paragraph 1.2), they have to choose among a much more restricted range of funding choices. One of the methods that banks can use is bond issuance, "sealing the deal" by creating new debt, and therefore have an impact on the debt structure of the merged bank (or the acquirer). The timing of the bond issuance is important and provides some insight about the motives behind an M&A. Fisher (2017)

provides evidence that the characteristics of the acquirer determine the general source of funding (whether external or internal). Once the choice between internal and external funds has been made, the target characteristics act as a discriminant to determine the source of external funding (credit, debt or stock).

Another important question is why do banks merge? To answer this question, we have several aspects to take into account, such as the macroeconomic conditions, the country of the merger (which will gain particular importance later) and the intrinsic motives of the single banks involved. Focarelli et al. (2002) find that mergers between banks in Italy are more likely to occur between a more service-oriented and a less serviced-oriented bank (so diversification of purposes can play a role in this decision). Houston et al. (2001), find that a common ground for M&A is value creation. The value creation mainly results from cost savings by cutting overlapping operations and improving efficiency rather than mere revenue enhancement. This study finds evidence that, when related to a projected cost cut, a merger announcement is positively taken by investors, implying that most of the estimated value gains from bank mergers stem from the cost-cutting opportunity rather than revenue enhancements.

The third, and last question, is are there any negative consequences related to a merger or an acquisition between banks? The literature shows that the main concerns when banks go through an M&A are the ones related to risk rating changes. Vallascas and Hagendorff (2011) study changes in risk rating for European banks after a merger. They show that, on average, mergers are risk neutral. However, for fairly large banks, a merger may increase default risk. This raises concerns also for regulators since risk changes in bank mega-mergers have an impact on the banking sector's stability. Even though their empirical results show an increase in default risk, they argue that there could be justifications for their findings, for example a deal involving a significantly risky target, though increasing the overall risk rating of the resulting bank. Besser et al. (2019) analyse changes in bidder default risk as a consequence of a bank M&A (although focusing on European firms). On average, mergers and acquisitions are confirmed to increase default risk also on firms and not only related to the banking sector. In the presence of cross-country deals, the results are the same. We can therefore conclude that there are negative consequences correlated with an M&A operation, but the extent of it could well be justified by strategic decisions that can still benefit the banks involved.

The literature on the M&A topic is more focused on corporate M&As rather than bank's ones. In the banking sector, the literature is focused mostly on the consequences of an M&A operation and less on its drivers and causes, leading to a lack of information that could be useful for future research. That is because banks' M&As are more complex than corporate ones due to much stricter regulation around banks and their capital (this topic will be addresses in paragraph 1.2). This also poses a challenge for this study since there is a lack of existing studies for comparison of results. In particular, the effects of bank's M&A on debt have yet to be studied, creating a gap in the literature that this study could help to fill. Despite that, existing literature can be used as a foundation to explore aspects of the topic that are understudied at the moment.

1.2 The regulation of banks M&A in the European Union

To better understand the context in which European M&As between banks happen, it is important to look also at the regulation, both at the Union and national supervisory levels. The European Union's regulation on bank Mergers and Acquisitions is based on the "Joint Guidelines on the prudential assessment of acquisitions and increases of qualifying holdings in the financial sector" published by the EBA on December 2016. The Guidelines are based on Directive 2007/44/EC of the European Parliament of September 2007. The Guidelines aim to clarify procedures and assessment criteria that competent authorities should apply for the prudential assessment of acquisitions in the European financial sector. To carry out the assessment, the Guidelines specify a set of information required, subject to paragraph 9.5 and listed in Annex 1. This section also clarifies the role of the ECB as a supervisor. The ECB, in case of mergers and acquisitions, acts as a supervisor of the national authorities of the single member states. The ECB has a formal role in the transaction only in some cases, which are specified in the ECB's site. For example, in case of an acquisition, the formal role is required only in the case of the creation of a new bank or the acquisition of a qualifying holding (an acquisition of a participation in a bank that represents 10% or more of the shares and/or voting rights in that bank). In case of a merger, on the other hand, the ECB's formal role is required only if the merger involves significant banks and the single country law gives the power of approval to the supervisory authority. Each country has a different level of involvement of the ECB on the matter based on national law. For example, Germany and Luxembourg do not have the power to approve mergers on a national level, so the involvement of the ECB in the transaction is considered part of the ongoing supervision of the institutions involved. A more formal involvement of the ECB in those countries would

be triggered in the cases explained above. To summarize, the ECB focuses on the business plan, the projections and their credibility to assess the compliance of the resulting entity with all the requirements and buffers (ECB, 2019).

Mergers and Acquisitions have to comply with strict rules to avoid banks that become "Too big to fail". In particular, as classified by the Financial Stability Board, the ECB complies with rules applied to banks at a global level. Equally important is the Single Supervisory Mechanism (SSM), established in 2014 to allow the ECB and the national supervisory banks to "join forces" in the bank supervision sector.

This study uses a comprehensive dataset of Eurozone mergers and acquisitions, of which the majority took place in Italy and Spain. Due to this concentration, it is crucial to consider the specific national regulations in these countries, as differences in legal framework may influence the nature of the deals.

In Italy, the national jurisdiction on banks is ruled by the Consolidated Law on Banking (*Testo Unico Bancario*), a Legislative Decree (Decreto Legislativo 385/1993) that sets out the basic set of rules and standards regarding the Italian financial sector, and it is composed of 162 articles. In particular, article 57[1], paragraph 1 of the CLB (part of Title III on the Banks Supervision) states that the Central Bank of Italy (*Banca d'Italia*) authorizes mergers and acquisitions between banks, given that this practice does not interfere with the general criteria of good management. However, this authorization is not necessary when the operation is ruled by the ECB, in accordance with the hierarchy of norms. For Italy, then, the national supervisor acts as the major institution only if the ECB role is not required.

Regarding Spain, the majority of the regulatory power is given to the ECB, which collaborates with national supervisors to ensure the application of laws and rules. In particular, Spain has the "Ley 10/2014, de 26 de junio, de ordenación, supervisión y solvencia de entidades de crédito", which rules the supervision of the financial sector. This document states the role of the national legislation and the Bank of Spain (Banco de España, the central bank of Spain and supervisor of Spanish credit institutions) on mergers and

[1] 1. La Banca d'Italia autorizza le fusioni e le scissioni alle quali prendono parte banche quando non contrastino con il criterio di una sana e prudente gestione; l'autorizzazione non è necessaria quando l'operazione richiede l'autorizzazione della BCE ai sensi dell'articolo 14. È fatta salva l'applicazione delle disposizioni previste dal decreto legislativo 20 novembre 1990, n. 356 (1) (2).

acquisitions. The article 22[2] of Title I (On credit identities) states that credit institutions shall notify the Bank of Spain of any acquisitions that crosses the limits indicated in articles 16,17 and 21 (which are aligned with the 10% stated by the ECB). The article 61 of Title III (Collaboration among supervision authorities), paragraph 2b[3], states that decisions on mergers of a credit institution subject to administrative authorisation shall be made by the Bank of Spain after consultation with the ECB. In addition to that, any bank structural change (including a merger) shall be authorised by the Minister for Economic Affairs and Competitiveness, in accordance with the twelfth additional provision[4], to comply with the rules of non-competitiveness and to block mergers and acquisitions that could interfere with the public interest.

Although these countries have a set of rules on bank mergers that are applied at the national level, the role of the ECB is still important as it could overrule any national decision on the grounds of public interest of the European Union members.

1.3 Research question

This study examines how bank M&As in the European Union impact the face value of bonds issued by the acquirer or the merged bank within 1-2 years post-event. The face value of bonds serves as a proxy for changes in the debt structure, enabling comparisons across time periods. While M&As in banking are extensively studied, the literature often overlooks their effects on debt issuance. This gap motivated the research, aiming to explore whether a correlation exists and its direction.

A positive correlation might arise as M&As increase the bank's size, requiring additional funding for operations and integration. Conversely, a negative correlation might occur, as larger banks face higher default risk (Vallascas and Hagendorff, 2010), making debt issuance less attractive. Hypotheses and potential outcomes were developed to test both possibilities.

[2] 1. Las entidades de crédito deberán comunicar al Banco de España, en cuanto tengan conocimiento de ello, las adquisiciones o cesiones de participaciones en su capital que traspasen alguno de los niveles señalados en los artículos 16, 17 y 21

[3] 2. Siempre que resulten importantes para la labor de supervisión de las autoridades competentes interesadas de otro Estado miembro de la Unión Europea, el Banco de España consultará a dichas autoridades antes de adoptar: b) Las decisiones que le correspondan sobre operaciones de fusión, escisión o cualquier otra modificación importante en la organización o gestión de una entidad de crédito, y que esté sujeta a autorización administrativa.

[4] 1. Corresponderá al Ministro de Economía y Competitividad autorizar las operaciones de fusión, escisión o cesión global o parcial de activos y pasivos en las que intervenga un banco, o cualquier acuerdo que tenga efectos económicos o jurídicos análogos a los anteriores.

Despite testing both possibilities, my hypothesis is that I will find a positive correlation between an M&A event and the change in the face value of bonds issued over time. I expect to see a rise in debt issuance during and after an M&A event (especially within 1-2 years post event), mostly because of the increase in bank size, which will require additional funding both for its operations and for the merger (or the acquisition) itself. The existing literature does not provide specific evidence on the argument, but studies on firms, as seen in Dennis et al. (2021), and Fisher (2017), demonstrate that debt issuance is one of the possible choices to fund an M&A, and sometimes one of the preferred. In addition to that, the strict European Union regulations required to complete a merger significantly reduce the funding options for a bank, making debt issuance a relevant funding choice.

From my results it will be possible to see a clear correlation between the two variables and fill a gap in the literature on the relationship between M&As and debt structure in banks. Through this study, scholars could gain insight on a driver of debt issuance to further deepen the topic in future research.

Chapter 2

Methodology of research and first results

2.1 Methodology

The empirical analysis is based on a panel dataset of 51 M&A events across the European Union from 2016 to 2022. Initially, the dataset included all M&A events from 2014 to 2022, but the period was narrowed down to 2016-2022 due to data availability (bond face values were only available in Refinitiv Eikon from January 1, 2015). Data were sourced from LSEG Workspace (Refinitiv Eikon), except for the independent variable "EURIBOR 3-month", which was obtained from Eurostat.

To have a dataset as complete as possible with all the information needed and with a baseline criterion to study the effect of the event on bond issuance without the noise from different starting conditions, I use two search criteria. The first is that all the M&As have to be unconditional and completed with a disclosed dollar value at the current date and both banks included (the target bank and the acquirer) have to be located in the Euro zone to comply with the regulation of the European Union (i.e. paragraph 1.2). The second requires searching for the dependent variable and the independent variables following a specific path. For each observation, I gather quarterly data on the total face value of bonds issued by the acquirer (as was registered on LSEG) two years before (except for 2016 observation, which will have only one year before), the year of the M&A and two years after (except for M&As that take place in 2022 which have the year 2024 incomplete). After that, I retrieve data for each bank on the quarterly total assets of the banks for the corresponding periods. I also obtain the 3-month Euribor interest rates from Eurostat for all the quarters considered. To make the face value of bonds issued and the deal sizes (in millions of Euros) comparable and to gain a baseline regardless of the different starting sizes of the acquirer banks, for the regression study I change them into percentages of total assets of the bank in the corresponding quarter. This approach allows me to compare the different deals with an even starting point and gain a deeper insight on the effect of an M&A event on the debt structure of the merged bank/acquirer.

The major limitations encountered were due to data availability and affected my dataset in three ways. First of all, in order to have at least 4 years of observations per event, I have to cut out the time period studied. Secondly, not all banks disclose their face value of bonds

issued on Refinitiv Eikon, especially small banks of Southern and Eastern EU. Lastly, some banks do not provide quarterly data on their assets (but only annual), forcing me to reduce the dataset to have every observation expressed in quarters. The lack of information resulting from this cut may affect my results in different ways. For example, a small sample has a smaller statistical power, leading to Type II errors. It could also lead to overfitting, making it difficult for me to differentiate the noise from the general trend. The overfitting problem is particularly present when I study the regression using data from a single country, since for most of them I do not have many observations. All these problems will be better addressed in paragraph 3.1, where I will discuss in detail the regression results.

The analysis of the effect of an M&A event on the face value of bonds issued by a bank follows an event study approach, which is most common for M&A studies (see e.g. Kolaric and Schiereck (2014)). The final regression has the following form:

$$FV\ of\ bonds\ issued_{it} = \beta_0 + \beta_1 M\&AEvent_{it} + \beta_2 COVID19_t + \beta_3 EURIBOR_t + \beta_4 DealSize_{it} + \beta_5 Italy_i + \beta_6 Germany_i + \beta_7 Spain_i + \beta_8 Cyprus_i + \beta_9 Estonia_i + \beta_{10} France_i + \varepsilon_{it}$$

$$i = 1 \ldots\ldots 51 \quad t = 2015 \ldots\ldots 2024$$

The regression presented has one dependent variable, the face value of bonds issued by bank i at time t expressed in percentage of the total assets of bank i at time t, and 10 independent (both studied and control) variables.

The control variables that are not dummy variables, such as EURIBOR and Deal Size, are expressed as a decimal number. For the EURIBOR, I took the 3-month Euribor rate. This control variable was chosen as the Euribor interest rate may influence the funding decision of a bank, including its debt issuance strategy. The Euribor is chosen with a 3-month maturity to follow the quarterly division of data of this study. The Deal Size is the amount of the transaction for the merger or acquisition expressed as a percentage of Total Assets, to be coherent with the dependent variable. Both the dependent variable (the face value of Bonds Issued by bank i at time t) and the independent variable Deal Size are expressed as percentage of Total Assets rather than in millions of euros for robustness reasons. The deals studied are very different from one another regarding the acquirer's size, involving both small banks and large banking giants. By expressing both variables as percentages, I

eliminate the noise caused by these size differences, allowing for more accurate comparisons across diverse transactions.

I use a dummy variable to study the correlation between the M&A event and the face value of bonds issued, following the approach of Hassen et al. (2016). I also use control dummy variables, such as a COVID-19 dummy variable with a value of 1 for 2020 and the first half of 2021 and 0 otherwise, to account for the differences demonstrated by Shen et al. (2020) on M&As during a crisis and a dummy variable for each country the deal was located in. The final dataset has around 20 observations for each event and 10 variables (for specifics about each observation, please refer to the Appendix).

To compute all the results presented in this thesis, I use two programs, one for the descriptive statistics (i.e. paragraph 2.2) and one for the regression results (i.e. paragraph 3.1). For the descriptive statistics I use Microsoft Excel, due to its quickness and efficiency to explore preliminary data. For my regression analysis and my robustness checks I use STATA because it offers greater accuracy, reliability, and advanced statistical tools, making it well-suited for more complex econometric modeling.

A problem that could arise in my regression is endogeneity, mainly in two forms. The first is omitted variables, since there could be other variables influencing banks' bond issuance over time, such as strategic reasons or national regulation on the matter. The other issue may be reverse causality, since a change in the debt structure of a bank could be the signal of an imminent M&A operation, both for funding the M&A or to strengthen the strategic position beforehand.

2.2 Descriptive statistics

The dataset is composed of 960 observations on 51 bank M&As. Dividing by country, we have 9 deals in Spain, 32 in Italy, 2 in Greece, 3 in Cyprus, 2 in Germany, 2 in France and 1 in Estonia. Grouping by year, we have 11 deals both in 2016 and 2022, 5 in 2017, 9 both in 2018 and 2020 and 3 both in 2019 and 2021.

In addition to that, I will introduce some descriptive statistics regarding the non-dummy variables included in the study, which are the Total Assets of the acquirer, the face value of bonds issued and the Deal Size (the two latter expressed both in millions of Euros and in percentage of Total Assets). The descriptive statistics that I choose are mean, median and standard deviation, grouped by year.

We will start by looking at the mean (Table 1). The average face value of bonds issued (expressed in millions of Euros) presents a steady decline from 2015 to 2020, then a slight upward turn up until 2023. The same variable, expressed as a percentage of total assets, exhibits instead a steady decline for the whole decade. The reason for that is in the nature of the data set, since in the most recent years we have deals made by much smaller banks (especially after COVID-19), which may have a smaller leverage ratio compared to "bank giants" due to less access to capital and resources. This decline has also to be paired with an inclined curve of the average of Total Assets (excluding 2015 and 2024) which can also be a cause for the behaviour of the face value as a percentage of total assets. Considering that I work with different kinds of deals, the mean can be an important but also incomplete measure. To avoid outliers' influence it could be useful to break it down by year, but it is not sufficient to gain a clear view on the behaviour of the dataset subject of this study.

Table 1: Mean of non-dummy variables in the data set

	Mean									
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Face Value of bonds (millions of Euros)	31214,99	40119,67	36211,25	30095,55	23142,29	36825,87	48579,28	56291,27	54176,75	85841,33
Face Value of bonds (% of total assets)	0,0856	0,0835	0,1388	0,1164	0,1487	0,1990	0,2451	0,2065	0,2130	0,2295
Deal size (millions of Euros)			332,47	1360,50	1104,29	157,71	98,60	33,08	109,39	
Total assets (millions of Euros)	342524,47	523519,06	396366,06	380004,25	291989,13	285548,91	237571,80	267016,43	256069,45	333497,11

Source: manipulation, on LSEG data, by the author, using MS Excel.

Taking into consideration that we have different numbers of deals per year, we can still notice that the average deal size was higher during COVID-19 years (especially 2020) and much smaller during the other years, suggesting that bigger banks decided to merge or acquire new subsidiaries during the pandemic. This is consistent with Beltratti and Paladino (2013) who document the same pattern during the 2007-2010 crisis.

It is noteworthy that while the average deal is 400,13 million euros (in the whole decade) the median deal is 74 million euros, much lower than the previous. That's because, especially if we analyse the data with a distinction of the deals by country (which we will do later) we can see that there are many small deals between local small banks (especially in Italy, which has the majority of the deals studied), alongside much larger deals made by big banks such as Deutsche Bank for Germany and Intesa Sanpaolo for Italy. However, the median in the different years has the same path as the average, although with very different values as explained above: here we have the highest median deals on 2019 and 2021, confirming the tendencies of the banks to merge during crisis periods.

The face value of bonds issued, expressed in millions of Euros, is changing over the years, but has a much lower median value if compared to the corresponding mean, indicating the presence of a major wave of small banks involved in M&As in the EU in the period considered; a similar conclusion can be drawn if we look at total assets.

Table 2: Median of non-dummy variables in the data set

	Median									
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Face Value of bonds (millions of Euros)	2954,47	6055,66	7181,98	4652,76	4796,17	2602,71	6840,61	7928,46	7665,66	17460,56
Face Value of bonds (% of total assets)	0,0839	0,0729	0,0752	0,0643	0,0837	0,0943	0,1084	0,1114	0,0589	0,1799
Deal size (millions of Euros)			75,00	258,00	66,71	220,00	76,30	28,91	35,30	
Total assets (millions of Euros)	76626,00	85449,01	82656,00	81193,85	57360,13	46163,93	43168,09	41746,30	36273,47	45976,15

Source: manipulation, on LSEG data, by the author, using MS Excel.

The variance in both the face value of bonds issued and in Total Assets (in millions of Euros) is large and follows the same path as the corresponding means. The deal size standard deviation, on the other hand, confirms what was said before and completely coherent, underlying outliers in 2020 and 2021 (where we see larger deals) and much less deviation the other years, suggesting deals that revert to the mean.

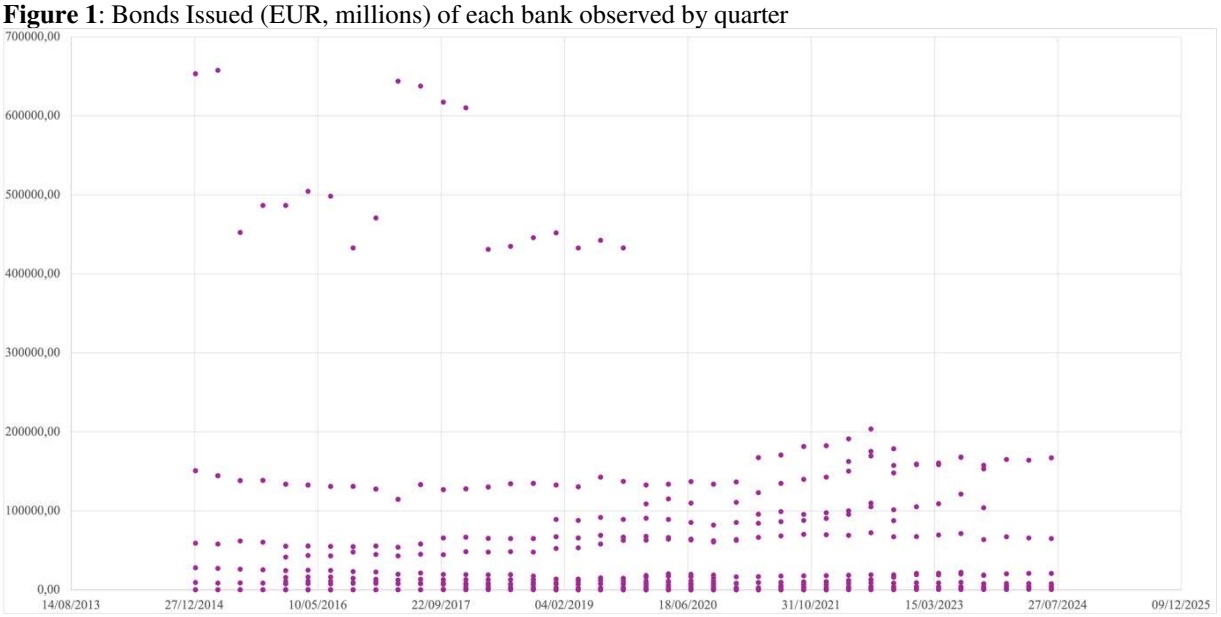
Table 3: Standard Deviation of non-dummy variables in the data set

	Standard Deviation									
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Face Value of bonds (millions of Euros)	56265,20	58238,27	57818,08	51335,55	38582,43	85889,89	90333,97	115725,54	101422,51	141209,00
Face Value of bonds (% of total assets)	0,0496	0,0478	0,2926	0,2598	0,2737	0,3525	0,3948	0,3575	0,3860	0,3974
Deal size (millions of Euros)			767,18	2025,63	1809,58	134,22	90,24	24,14	186,41	
Total assets (millions of Euros)	612409,09	824701,24	714350,32	648633,47	564238,40	553958,57	370521,02	402904,07	421067,78	476684,59

Source: manipulation, on LSEG data, by the author, using MS Excel.

We also need to check for the presence of trends for macroeconomic reasons that could bias our regression results. Figure 1 shows the quarterly data on the face value of bonds issued by each bank on the years studied (4 or 5 depending on the bank).

Figure 1: Bonds Issued (EUR, millions) of each bank observed by quarter



Source: manipulation, on LSEG data, by the author, using MS Excel.

The different levels of face values are evenly distributed through the years, with some outliers until the end of 2019 indicating no clear trend over the years. The absence of trends may be because the deals studied are very different from one another. There are, in fact, many deals between small banks (especially in some countries such as Italy) alongside much bigger deals between bank giants (especially in Germany and France) justifying the absence of a clear trend.

Chapter 3

Results and arguments

3.1 Empirical results

In this paragraph I examine the correlation between M&A events (independent variable) and debt issuance, proxied by the face value of bonds issued, against the null hypothesis of non-correlation, following an event study approach. A positive coefficient would indicate a positive correlation, therefore an M&A between banks would increase the face value of bonds issued by the merged bank or the acquirer. Conversely, a negative coefficient would indicate that an M&A event would reduce bond issuance over time. The regression equation is shown below.

$$FV\ of\ bonds\ issued_{it} = \beta_0 + \beta_1 M\&AEvent_{it} + \beta_2 COVID19_t + \beta_3 EURIBOR_t + \beta_4 DealSize_{it} + \beta_5 Italy_i + \beta_6 Germany_i + \beta_7 Spain_i + \beta_8 Cyprus_i + \beta_9 Estonia_i + \beta_{10} France_i + \varepsilon_{it}$$

The results of the regression are shown in Table 4. Starting from the studied variable, the M&A event, we can see that it has a coefficient of 0.060 at a 1% significance level, meaning that after an M&A event the acquirer (or the merged bank) has an increase of 0.06% in bond issuance. I can therefore accept my hypothesis at a 1% significance level. Possible reasons are explored in paragraph 3.3.

Regarding control variables, we have various results. The COVID-19 dummy has a negative correlation with the dependent variable, stronger than the M&A event one (-0.08 versus 0.06), at a 1% significance level. The EURIBOR has a significant negative impact on the face value, since for each percentage point that the 3-month Euribor goes up, the face value of bonds issued goes down by 2.62 points. The deal size has the highest impact of all the variables considered, since a 1% rise (in relation to the assets of the acquirer) causes a rise in bond issuance of 12.126% (also in relation to the total assets of the acquirer). We can therefore infer that the funding choice of an M&A tends to go more through external funds (like bonds) if the requirement for the deal itself is higher. Smaller deals will instead tend to fund themselves through internal pre-existing funds. That phenomenon is independent from the size of the bank itself, since both variables are scaled based on the total assets.

The variable Total Assets has no impact on the face value (the exact coefficient is -5.4 x 10^{-8}) at a 1% significance level. The size of the acquirer itself does not therefore directly influence the debt structure of the resulting bank after a merger or an acquisition, but there are other drivers to look into. Country variables exhibit a particular behaviour, since only Germany and Spain have a significance level (1%), indicating that the belonging of banks to these two countries has a positive correlation with changes in bond issuance over time. This significance may be due to regulatory and fiscal reasons, but it could also be attributed to an overfitting issue, due to a lack of data on these countries (9 events in Spain and 2 in Germany). All the other countries do not show significance. Another curious non-significance is the one from the constant (β_0), meaning that, if all the variables included in the model equal 0, we cannot reject the fact that the face value of bonds issued by bank i at time t could be 0. This does not mean that the model is not valid (also because we have several variables that are significant), but we can explain it through heterogeneity issues, since the full sample includes deals that are very different from one another and, as we will see later, restricting the sample based on common characteristics can resolve the problem, as the restricted sample becomes more homogenous. However, the R-squared of the regression in the full sample is 0.486, so the model presented can explain almost half of the changes over time in the face value of bonds issued by a bank i in the European Union.

Table 4. Regression results on the full sample. The table indicates, for each independent variable, the coefficient and the standard deviation (in parenthesis). *, ** and *** indicate significance (respectively 10%, 5% and 1%).

Dependent variable	Face value of bonds issued
M&A Event	0.060***
	(0.016)
COVID 19	-0.080***
	(0.020)
EURIBOR	-2.620***
	(0.811)
Deal Size	12.126***
	(0.695)
Total Assets	0.000***
	(0.000)
Italy	-0.006
	(0.042)
Germany	0.199***
	(0.057)
Spain	0.321***
	(0.046)
Cyprus	-0.073
	(0.051)
Estonia	-0.018
	(0.069)
France	0.079
	(0.069)
Constant	0.059
	(0.041)
R-squared	0.486
Observations	949

Source: manipulation, on LSEG data, by the author, using STATA.

Since the regression on the full sample size could be subject to heterogeneity issues due to the differences among the events studied, I also test my hypothesis on smaller, segmented samples, restricting them to reflect shared attributes such as country or deal size. The first two sub-samples that I study are the ones that group all the deals that happened in Italy and Spain, the two countries for which I have the largest number of deals (32 for Italy, 9 for Spain). Due to the difference in the number of deals, the results could be influenced by sample sizes. From this restriction I expect to confirm my hypothesis also in a homogenous sample, such as the country sample. Conversely, these results might contradict my hypothesis, signaling differences at a country versus European level.

The results from the regression on the Italy and Spain sub-sample are presented in Table 5. Results for Italy show an insignificant negative value of the dummy "M&A event". A smaller sample size and similar events may explain this, along with other drivers behind bond issuance at the national level. The significant coefficients for Italy (at least at a 5% level) are EURIBOR (positive correlation), Deal Size (negative correlation), Total Assets (exact value 1.13 x 10^{-7}) and the constant (positive correlation). The R-squared is 0.288, meaning that the restricted model for Italy lacks to capture specifics of the variation in bond issuance at the same level as the full model.

In Spain we have all the coefficients significant at least at the 5% level, and with the same direction of correlation as the full sample (even though with different magnitude). EURIBOR and Deal Size are still the main drivers of the outcome variable, but it is interesting to notice that the variable "M&A event" has an higher influence on the dependent variable in respect to the full sample, but with a higher standard deviation and a slightly lower significance level (5% against 1%). The difference can be traced both on the nature of the samples (the second is more homogenous) and the size of it (the Spain sample is much smaller than the previous). Its R-squared is 0.444, similar to the full sample, suggesting a good fit despite the smaller sample size.

Table 5. Regression results by country. The table indicates, for each independent variable, the coefficient and the standard deviation (in parenthesis). *, ** and *** indicate significance (respectively 10%, 5% and 1%).

	(1) Italy	(2) Spain
Dependent variable	Face value of bonds issued	Face value of bonds issued
M&A Event	-0.004	0.181**
	(0.005)	(0.796)
COVID 19	0.000	-0.274***
	(0.007)	(0.090)
EURIBOR	1.255***	-8.821**
	(0.330)	(3.644)
Deal Size	-1.615**	11.498***
	(0.694)	(1.507)
Total Assets	0.000***	0.000***
	(0.000)	(0.000)
Constant	0.905***	0.475***
	(0.005)	(0.072)
R-squared	0.288	0.444
Observations	579	175

Source: manipulation, on LSEG data, by the author, using STATA.

The other two sub-samples I decide to study are the ones based on the deal size, to understand if small and big deals have different effects on bond issuance. To have equal sub samples, I compute the median deal size of the data set (74 millions of Euros) and I create two sub samples, one with the deal size lower than 74, and the other with the deal size equal

to or more than 74. The results are presented in Table 6. For the first subsample, we have generally lower magnitudes of the explanatory variables but with the same direction as the full sample. This is also the only subsample in which the EURIBOR variable is not significant, and it is also way smaller in size in respect to the other subsamples and the full sample. The main driver confirms to be the deal size, along with the constant and the M&A event dummy. The R-squared is 0.695, much higher than expected, meaning that for small deals most of the variation in bond issuance over time can be explained by the variables considered in the model. However, we must take into consideration that a small sample may be subject to overfitting. Regarding the other sub-sample, we have a similar situation but with much more significant variables, since all of them are significant at least at a 10% level (like M&A event dummy) and in line with the full sample, also in relation to the R-squared (0.4, very similar to the 0.486 of the full sample).

Table 6. Regression results by deal size. The table indicates, for each independent variable, the coefficient and the standard deviation (in parenthesis). *, ** and *** indicate significance (respectively 10%, 5% and 1%).

	(1) Deal size < 74	(2) Deal size >= 74
Dependent variable	Face value of bonds issued	Face value of bonds issued
M&A Event	0.019***	0.056*
	(0.004)	(0.032)
COVID 19	-0.002	-0.128**
	(0.005)	(0.037)
EURIBOR	-0.246	-3.054**
	(0.211)	(1.458)
Deal Size	1.633**	14.762***
	(0.782)	(0.973)
Total Assets	0.000***	0.000**
	(0.000)	(0.000)
Constant	0.046***	0.187***
	(0.004)	(0.029)
R-squared	0.695	0.400
Observations	444	505

Source: manipulation, on LSEG data, by the author, using STATA.

In summary, the analysis confirms that an M&A event has a positive correlation with the face value of bonds issued over time by a European bank. While this correlation holds across all deal sizes, it cannot be verified at the country level for every nation in the sample.

3.2 Robustness check

The robustness check for this regression is performed on the full sample following the approach of Barslund et al. (2007), who implemented the STATA function "checkrob". This method tests whether the results on the correlation between M&A events and changes in bond issuance are robust to changes in the specification. The approach divides the variables of the equation into two groups. The first group is composed of studied or "core" variables, here limited to the "M&A event" variable, included in all regressions. The other group, composed of control or "secondary" variables, contains all the others. The face value of bonds issued is then regressed on the studied variable and all possible combinations of secondary variables, performing 1024 regressions.

Results on the studied variable are shown in Table 7. The mean is lower than what I find in the regression but follows the same direction (positive correlation) all the time. The average t-value is high even though the percentage of significance is 66,8%, indicating "moderate robustness". That could be due to the high variability in the data, since I deal with M&A events that are very different from one another. Also, endogeneity issues, such as reverse causality, could reduce the robustness of my regression.

Table 7. Robustness check on the studied variable. Max, Min, and Mean are the maximum, minimum, and mean values of the coefficient (of the variable) estimated on all regressions. AvgSTD is the average standard deviation, same for AvgT in respect to the t-value. PercSig is the ratio (out of 1) that the coefficient was significant. Perc+ indicates the ratio (out of 1) that the coefficient showed a positive sign. Same for Perc-.

Studied Variable	Max	Min	Mean	AvgSTD	PercSigni	Perc+	Perc-	AvgT
M&A Event	0,065	0,002	0,040	0,018	0,668	1	0	2,253E+15

Source: manipulation, on LSEG data, by the author, using STATA.

Table 8 summarizes control variables, whose behaviour is very mixed. Only Deal Size shows to be robust in all specifications, whereas the other variables have different degrees of robustness. This could again be due to variability issues in the data and generally with the dimension of the sample. The signs are consistent with the regression for the variables with the same sign in all regression.

Table 8. Robustness checks on control variables. Max, Min, and Mean are the maximum, minimum, and mean values of the coefficient (of the variable) estimated on all regressions. AvgSTD is the average standard deviation, same for AvgT in respect to the t-value. PercSig is the ratio (out of 1) that the coefficient was significant. Perc+ indicates the ratio (out of 1) that the coefficient showed a positive sign. Same for Perc-.

Control Variables	Max	Min	Mean	AvgSTD	PercSigni	Perc+	Perc-	AvgT
COVID-19	-0,038	-0,114	-0,074	0,022	0,932	0	1	3,328E+15
EURIBOR	-0,679	-6211295127868650,000	-3095509870559900,000	0,886	0,887	0	1	3,472E+15
Deal Size (% of TA)	161197624206543,000	1209768962860100,000	1375265151448540,000	0,699	1	1	0	1,966E+15
Total Assets	5575,797	-16322,302	-5144,309	1975,167	0,637	0,131	0,869	2,898E+15
Italy	0,090	-0,393	-0,123	0,025	0,656	0,221	0,779	6,303E+15
Germany	0,342	-0,226	0,118	0,046	0,719	0,816	0,184	3,293E+15
Spain	0,548	0,205	0,372	0,028	1	1	0	1,364E+15
Cyprus	-0,018	-0,457	-0,167	0,041	0,813	0	1	4,081E+15
Estonia	0,029	-0,443	-0,117	0,067	0,297	0,064	0,936	1,733E+15
France	0,296	-0,405	-0,074	0,054	0,520	0,221	0,779	2,375E+15

Source: manipulation, on LSEG data, by the author, using STATA.

To further check the robustness of the studied variable, I also perform a bank fixed-effects panel regression in STATA using the functions xtset (to define the panel dataset) and xtreg (to regress using bank fixed effects). I do not include time fixed effects because there are gaps in my dataset (I do not have data for all observations from 2015 to 2024, but only for some quarters for each observation, and that could bias my results).

Results in Table 9 show that most coefficients are significant at the 5% level, except for EURIBOR, Total Assets and Germany. The omitted variables because of collinearity could influence the results of the previous robustness check. Also, the M&A coefficient is coherent, sign-wise, with the studied regression. The difference in results between the two robustness checks could reflect heterogeneity and collinearity issues, which are discussed in paragraph 2.1 and elaborated upon in paragraph 3.3.

Table 9. Robustness check using bank fixed effects. The variables Spain, Cyprus, Estonia and France are omitted by Stata because of collinearity.

	Coefficient	Standard error	t	P > |t|
M&A Event	0,007	0,003	2,280	0,023
COVID-19	-0,018	0,004	-4,470	0,000
EURIBOR	0,239	0,166	1,440	0,150
Deal Size	2,582	0,608	4,250	0,000
Total Assets	0,000	0,000	-1,930	0,054
Italy	-0,023	0,017	-1,330	0,183
Germany	-0,027	0,028	-0,980	0,327
Spain	(omitted)			
Cyprus	(omitted)			
Estonia	(omitted)			
France	(omitted)			
Constant	0,199	0,014	13,740	0,000
R-squared	0,238			

Source: manipulation, on LSEG data, by the author, using STATA.

3.3 Discussion of results and arguments

Although there is no dedicated branch of literature on the impact of bank M&As on debt structure, specifically on bond issuance, comparisons can be drawn from existing studies. Carletti et al. (2007) demonstrate that banks tend to create an "internal money market", which modifies merged banks' optimal choice of reserve holdings. This happens in two ways, by decreasing them due to a diversification effect or increasing them due to an internalization effect. They conclude that, for larger banks, mergers are more likely to increase liquidity needs due to a "polarization" of the banking system. A relevant connection to this study is Lee et al. (2023) which, though conducted on firms, finds that cash holdings are increased prior to bond issuance to lower default risk. Banks could also adopt this strategy, which could increase reserve holdings prior to an M&A (and therefore bond issuance) to counteract an increase in default risk, proven by Vallascas and Hagendorff (2011). This confirms my hypothesis of a positive correlation between an M&A event and bond issuance, but could also highlight a reverse causality issue since an increase in reserve holdings prior to bond issuance is used to signal creditworthiness, which is particularly useful before an operation like an M&A. Thus, bond issuance becomes the driving force behind an M&A.

It can occur that a reason behind increased bonds issuance right around an M&A can be attributed to a "positive selection" effect. This effect is studied by Covitz and Harrison (2004), who demonstrate that positive selection for banks manifests near issuance and may be stronger after larger, subordinated and riskier issues. Issuing public debt is a way for the bank to signal a positive reinforcement to potential shareholders. This reinforcement allows for higher performance to be observed due to a positive selection effect. Positive selection is more prevalent among riskier banks, and it is stronger for larger issues, as these have been proven to be 2 percent more likely to be upgraded than small bonds. This result aligns with my hypothesis of an increased bond issuance after an M&A since such operations aim to build credibility for the new institution among potential shareholders, and issuing bonds can lead to positive reinforcement.

Past results by scholars, therefore, align with the hypothesis and regression results of this study at the European level. However, at a country level, my results were different. For instance, my data could not find a clear correlation between an M&A event and bond issuance in Italy. Possible drivers of the change of bond issuance over time for this country

can be found in the regulatory framework. In particular, after the sovereign debt crisis, Italy experienced a downgrade of its sovereign debt by credit agencies. This limited Italian banks' access to international financial markets, causing a decline in gross bond issuance (Ceci et al. 2023). Therefore, there was a change in the composition of Italian debt securities, favoring covered bonds instead of ordinary bonds. This phenomenon was also fostered by unconventional monetary policies (such as "Monti bonds"), that do not include a transfer of credit risk or represent a direct source of funding (as could be used, for example, in an M&A operation). Italy has had a set of regulatory shocks on bond financing, influencing the funding sources for ordinary and extraordinary operations such as M&As.

The literature, even though it does not focus specifically on this topic, suggests that bond issuance is positively correlated with an M&A event. My regression results are therefore confirmed by literature. However, the outcome can also be explained by a reverse causality effect, since my data do not clearly distinguish between a change in bond issuance concurrent or subsequent to an M&A event.

My results have implications for both economic and regulatory aspects. From an economic perspective, the positive effect of M&As on bond issuance could help investors to gain insight into banks' default risk, performance and cost of debt. To understand these implications better, future research could test further reverse causality issues on the correlation between M&As and bond issuance.

From the regulatory point of view, my results could help regulators in two ways. Firstly, in understanding the "Too Big To Fail" phenomenon, an increase in bond issuance could actually benefit the merged bank through reduced risk and a "positive selection" effect. In this context, regulators could use the results of my study to analyse further the distinction among the different purposes of an M&A, limiting the ones that have solely an "excessive protection" as a goal. Secondly, at the European level, there is an organic regulation regarding banks' M&As, but with certain differencies among the member countries. This study highlights the effect of M&As on banks' debt structure, which not only has an impact on the banks directly involved but also on the macroeconomic system. Given that, implementing a set of rules that apply at the same level for all member countries could help regulators to level out the differences and the macroeconomic effects of M&A events for all member countries.

Conclusions

Through this study, I investigate the correlation between an M&A event and the change in the face value of bonds issued by a European bank over time, following an event study approach. My hypothesis is that I will find a positive correlation between the two, mostly due to the increase in the bank's size. My initial hypothesis is confirmed by the regression results, therefore I can conclude that an M&A event has a positive impact on bond issuance over time, increasing the face value of bonds issued by the merged bank or the acquirer right around and in the 1-2 years following the event. The positive correlation with a control variable, deal size, suggests that the bond issuance increase is higher in the presence of higher deal requirements. This result holds at the European level for every deal size, but further research is needed to confirm the phenomenon also at a country level. The robustness checks performed show moderate robustness, which could be due to heterogeneity and collinearity issues. To address them, further research with different time periods and more extensive datasets is needed, especially in relation to reverse causality, which could also influence the results of this study.

However, this research could be of help for scholars to explore the wider topic of M&As' influence on banks' debt structure, contributing to opening a new research line. This research could also be of help in the study of banks' risk profiles since there is a clear correlation between changes in debt structure, and therefore M&A events, and default risk. Scholars could therefore further deepen the topic and gain valuable insight both for academic and policy purposes.

Future implications of this research are particularly important for regulators, since the effects on bond issuance have also macroeconomic implications, that could be deepened and regulations could be implemented to support or mitigate them, especially to address to the "Too Big To Fail" phenomenon, predominant in the European Union after the 2008 crisis.

Bibliography

Bank of Italy (1993). *Testo Unico Bancario, Decreto Legislativo 1° Settembre 1993 n° 385*, Bank of Italy, Rome.

Barslund, M., Rand, J., Tarp, F., & Chiconela, J. (2007). Understanding victimization: the case of Mozambique. *World Development*, *35*(7), 1237-1258.

Beltratti, A., & Paladino, G. (2013). Is M&A different during a crisis? Evidence from the European banking sector. *Journal of Banking & Finance*, *37*(12), 5394-5405.

Bessler, W., Steenbeek, H., & Westerman, W. (2019). Do mergers and acquisitions increase default risk? Evidence from the European market. *Central European Review of Economics and Management*, *3*(4), 7-51.

Bindal, S., Bouwman, C. H., & Johnson, S. A. (2020). Bank regulatory size thresholds, merger and acquisition behavior, and small business lending. *Journal of Corporate Finance*, *62*, 101519.

Bolton, P., & Freixas, X. (2000). Equity, bonds, and bank debt: Capital structure and financial market equilibrium under asymmetric information. *Journal of Political Economy*, *108*(2), 324-351.

Carletti, E., Hartmann, P., & Spagnolo, G. (2007). Bank mergers, competition, and liquidity. *Journal of Money, Credit and Banking*, *39*(5), 1067-1105.

Carletti, E., Ongena, S., Siedlarek, J. P., & Spagnolo, G. (2021). The impacts of stricter merger legislation on bank mergers and acquisitions: Too-Big-To-Fail and competition. *Journal of Financial Intermediation*, *46*, 100859.

Ceci, D., Montino, A., Pinoli, S., & Silvestrini, A. (2023). Gross bond issuance by Italian banks: key trends in times of crisis and unconventional monetary policy. *Bank of Italy Occasional Paper*, (778).

Covitz, D. M., & Harrison, P. (2004). Do banks time bond issuance to trigger disclosure, due diligence, and investor scrutiny?. *Journal of Financial Intermediation*, 13(3), 299-323.

Chiaramonte, L., Dreassi, A., Piserà, S., & Khan, A. (2023). Mergers and acquisitions in the financial industry: A bibliometric review and future research directions. *Research in International Business and Finance*, 64, 101837.

Dennis, S. A., Wang, S., & Zhang, Y. (2021). Debt Issues around Mergers & Acquisitions. *Research in International Business and Finance*, 58, 101446.

European Banking Authority (EBA), European Insurance and Occupational Pensions Authority (EIOPA), & European Securities and Markets Authority (ESMA). (2016). *Joint guidelines on the prudential assessment of acquisitions and increases of qualifying holdings in the financial sector*.

Figueiras, I., Gardó, S., Grodzicki, M., Klaus, B., & Lebastard, L. (2021). Bank mergers and acquisitions in the euro area: drivers and implications for bank performance. *Financial Stability Review*, 2.

Fischer, M. (2017). The source of financing in mergers and acquisitions. *The Quarterly Review of Economics and Finance*, *65*, 227-239.

Focarelli, D., Panetta, F., & Salleo, C. (2002). Why do banks merge?. *Journal of money, credit and banking*, 1047-1066.

Hassan, M., & Giouvris, E. (2021). Bank mergers: the cyclical behaviour of regulation, risk and returns. *Journal of Financial Economic Policy*, *13*(2), 256-284.

Hassen, T., Fakhri, I., Bilel, A., Wassim, T., & Faouzi, H. (2018). Dynamic effects of mergers and acquisitions on the performance of Commercial European Banks. *Journal of the Knowledge Economy*, *9*, 1032-1048.

Houston, J. F., James, C. M., & Ryngaert, M. D. (2001). Where do merger gains come from? Bank mergers from the perspective of insiders and outsiders. *Journal of financial economics*, *60*(2-3), 285-331.

Kolaric, S., & Schiereck, D. (2014). Performance of bank mergers and acquisitions: a review of the recent empirical evidence. *Management Review Quarterly*, *64*, 39-71.

Lee, C. C., Wang, C. W., & Xu, Z. T. (2023). Signaling effect of cash holdings adjustment before bond issuance. *International Review of Financial Analysis*, *85*, 102470.

Molyneux, P., Schaeck, K., & Zhou, T. M. (2014). 'Too systemically important to fail'in banking–Evidence from bank mergers and acquisitions. *Journal of International Money and Finance*, *49*, 258-282.

O'Hara, M., & Shaw, W. (1990). Deposit insurance and wealth effects: the value of being “too big to fail”. *The Journal of Finance*, *45*(5), 1587-1600.

Penas, M. F., & Unal, H. (2004). Gains in bank mergers: Evidence from the bond markets. *Journal of financial economics*, *74*(1), 149-179.

Scope Ratings GmbH. (2024, June 3). European bank M&A: Case for cross-border consolidation remains weak; but domestic deals show potential. *Scope Ratings*.

Sghaier, A., & Hamza, T. (2024). CEO power and risk taking: evidence from European banks mergers and acquisitions. *Journal of Strategy and Management*.

Shen, C. H., Chen, Y., Hsu, H. H., & Lin, C. Y. (2020). Banking crises and market timing: evidence from M&As in the banking sector. *Journal of Financial Services Research*, *57*, 315-347.

Todorov, K. (2020). Quantify the quantitative easing: Impact on bonds and corporate debt issuance. *Journal of Financial Economics*, *135*(2), 340-358.

Vallascas, F., & Hagendorff, J. (2011). The impact of European bank mergers on bidder default risk. *Journal of Banking & Finance*, *35*(4), 902-915.

Sitography

Bank of Italy, About us [last access 15 Nov 2024]

European Central Bank | Banking Supervision (5 April 2019) [last access 15 Nov 2024]

International Monetary Fund, What is a Bank? (March 2021) [last access 13 Dec 2024]

Forbes, The Top 6 Ways to Fund a Merger or Acquisition (4 September 2020) [last access 13 Dec 2024]

Ley 10/2014, de 26 de junio, de ordenación, supervisión y solvencia de entidades de crédito. Agencia Estatal Boletín Oficial del Estado [last access 15 Nov 2024]

Appendix

Table A1. Observation specifics (time period included in the sample)

Bank	Specifics
1	Complete
2	Complete
3	Complete
4	Complete
5	Complete
6	Complete
7	Complete
8	Complete
9	Complete
10	Complete
11	Complete
12	Complete
13	Complete
14	Complete
15	Complete
16	Shorter time period (no 2018, 4 years)
17	Complete
18	Complete
19	Complete
20	Complete
21	Complete
22	Complete
23	Complete
24	Complete
25	Complete
26	Complete
27	Complete
28	Complete
29	Complete
30	Complete
31	Complete
32	Complete
33	Complete
34	Complete
35	Complete
36	Complete
37	Complete
38	Complete
39	Complete
40	Complete
41	Shorter time period (no 2014, 4 years)
42	Shorter time period (no 2014, 4 years)
43	Shorter time period (no 2014, 4 years)
44	Shorter time period (no 2014, 4 years)
45	Shorter time period (no 2014, 4 years)
46	Shorter time period (no 2014, 4 years)
47	Shorter time period (no 2014, 4 years)
48	Shorter time period (no 2014, 4 years)
49	Shorter time period (no 2014, 4 years)
50	Shorter time period (no 2014, 4 years)
51	Shorter time period (no 2014, 4 years)