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Value creation through M&A in the banking industry: empirical analysis of the impact on bidders' stock returns

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Table of Contents

Abstract 2
CHAPTER 1: Introduction 4
CHAPTER 2: The European Banking Sector 6
2.1 Overview of the banking sector 7
2.2 Consolidation process in the EU banking sector 13
2.3 Drivers of M&As in the banking sector 21
CHAPTER 3: Literature Review 29
3.1 Construction of abnormal returns 30
3.2 Bidder and target performance 32
3.3 Domestic vs cross-border returns 37
CHAPTER 4: Research Methodology 40
4.1 Data sample selection 41
4.2 Event study methodology 46
4.3 Robustness and validity check 48
CHAPTER 5: Results 51
5.1 Market model estimation 51
5.2 Empirical findings – Bidder returns 53
5.3 Empirical findings – Domestic and international deals' returns 54
CHAPTER 6: Conclusions 58
6.1 Summary of key findings 58
6.2 Managerial and Policy Implications 60
6.3 Limitations and Future Research 61
References 63

Abstract

This study aims to analyse the impact of Mergers and Acquisitions (M&As) on the performance of banks in the European Union. The dissertation will focus on the performance expectations of such transactions perceived by market participants, by

analysing a vast set of domestic and cross-border transactions across different banking systems, in contrast with most of the previous research that focused solely on specific environments or limited panels. The goal of this study is to determine whether M&As can successfully improve the performance of financial institutions, potentially resulting in increased profitability, efficiency, and stability of the European banking system.

The study is founded on two primary research topics: 1) Do M&A announcements in the European banking sector lead to significant value creation for the acquiring bank's shareholders? 2) How do market reactions differ when analysing domestic and cross-border deals?

To address these research questions, this study will analyse a panel dataset of previous bank mergers in the European Union over the last fifteen years using an event study methodology approach. Thus, the goal of this analysis will be to analyse the stock price reactions of the bidders in various event windows around the announcement date of the deal. Through the computation of cumulative abnormal returns (CARs) over different time frames, the study will capture investors' expectations on value creation, efficiency gains, and performance improvements following the completion of the merger. Furthermore, to answer the second question, the study will also include a separate analysis dividing the sample among domestic and cross-border transactions.

Finally, the results of the study should add to the ongoing debate about whether the increased consolidation works in the European banking sector and provide us with further insight into how international integration may affect M&A strategies in the future.

Keywords: Mergers and Acquisitions, Banking, Europe, Event study, Abnormal Returns.

CHAPTER 1
Introduction

Mergers and Acquisitions (M&As) represent one of the most influential strategic tools in shaping the composition of a sector. Over the past decades, such transactions have played a crucial role in redefining the financial industries internationally, fostered by the deregulation and globalization which started to affect the European sector during the 1990s. This process led to increased resilience of the sector through the creation of bigger and more solid banking groups. The initial fragmentation of the national markets, associated with the development of the Banking Union, has encouraged national banks to explore strategic opportunities both domestically and internationally through mergers and acquisitions.

The European banking sector has experienced profound changes throughout this period. Until 2008, Europe registered an increasing number of transactions every year, leading to intense wave of consolidation across the continent. However, with the Great Financial Crisis, the M&A activity slowed down dramatically. In the aftermath of the crisis, the structural vulnerabilities of the banking sector decelerated the momentum of cross-border integration, as institutions prioritized the resilience in their respective national markets over the more riskier international transactions. Hence, domestic deals dominated the bank M&A activity of the immediate years subsequent to the crisis.

More recently, starting from the mid-2010s, new debates reignited the interest in cross-border deals, with the aim of creating pan-European banking groups able to compete with the big American counterparties. Despite the renewed interest in international megamergers, bankers and market participants are still sceptical about the actual positive impact and value creation associated with the announcement of M&A transactions.

These motivations and the current European banking landscape have encouraged the study of this phenomenon in the following pages. The topic has received increasing attention in the academic literature starting from the 1990s, where a stream of research investigating stock price reactions to the announcement of M&As in Europe developed with Toruani-Rad and Van Beek (1999).

However, the empirical evidence on the impact on stock returns remains mixed. While Cybo-Ottone and Murgia (2000) found positive abnormal returns for European banks

announcing M&A deals, other studies (Campa and Hernado, 2004; Hernado et al., 2009) reported negative or close to zero reactions. Even more heterogenous results are found when differentiating for target and bidder bank. While all the literature seems to agree on the positive returns for the target banks, different studies presented various outcomes when analysing the bidder returns. Moreover, most of the research focused on the European banking sector is limited to the pre-2008 period, with the last 15 years period remaining significantly unexplored.

This thesis aims to fill this gap in the literature. The objective is to analyse the abnormal returns of acquiring banks over different event windows around the announcement date of the transactions. By focusing on the deals happened over the last 15 years, the research provides valuable insights on the current status of consolidation of the European banking sector and on the future trends and steps that need to be taken to furtherly encourage cross-border integration.

Two research questions have been investigated: 1) Do M&A announcements in the European banking sector lead to significant value creation for the acquiring bank's shareholders? 2) How do market reactions differ when analysing domestic and cross-border deals?. To answer these questions, we employed the event study methodology (Fama, Fisher, Jensen and Roll, 1969), with the aim of estimating the expected returns and then derive the abnormal returns over the observation period chosen.

In line with this objectives, the thesis is structured in six chapters, including this introduction. Chapter 2 provides an overview of the European banking sector, with a focus on the consolidation process started in the 1990s, the regulatory framework, and the drivers of bank M&As. The third chapter reviews the existing academic literature on the topic, running through the different steps that lead to the construction of the cumulative average abnormal returns and the discussion of the final findings. In Chapter 4 we describe the event study methodology, starting from the sample selection and description used for our analysis, that will be presented in the fifth chapter, together with the findings. Finally, the sixth chapter concludes by summarizing the evidences of our model drawing the potential managerial and policy implications, and suggesting directions for future research.

CHAPTER 2
The European Banking Sector

The current M&A dynamics in the European banking sector, after the various tender offers and hostile shareholdings acquisitions kicked off by UniCredit and its increase in stake in Commerzbank in September 2024, have reignited the debate on the benefits of a more consolidated financial system in Europe. This chapter presents a comprehensive review of the existing literature on the role of M&A transactions in the banking sector and the performance expectations from the market of such transactions. The analysis will focus on four main topics: the general overview of the financial industry and its functions in an economic system, the evolution and structure of the European market, the drivers pushing banks M&A activity, and finally a detailed analysis of the previous studies done on this topic.

Over the last 30 years, Europe has been profoundly shaped by different forces, demanding the economic system and, in particular, the financial sector, to become more resilient to turbulences in the market. Regulatory reforms and economic shocks have thus influenced substantially the current shape of the banking sector, marked by an increased wave of consolidation. The reduction in the number of credit institutions, as well as the laws introduced to stimulate the M&A activity, seem to suggest that a more concentrated banking industry can lead to cost efficiencies, operational improvements and better stability. Different studies have also highlighted how M&As emerged as a response to economic turbulences, mentioning drivers such as the pursuit of economies of scale and scope, geographical diversification, and competitive positioning.

However, the empirical evidence on the impact of bank M&As is mixed. In fact, some studies actually found improvements in cost efficiencies and stability, while others derived negative or close to zero returns of banks announcing an acquisition. This heterogeneity highlights the importance of integration difficulties and cultural differences, usually explaining the lower returns for cross-border transactions.

The following pages will walk through the historical structure of the European banking sector, present the current regulatory framework and review the theory behind the drivers of bank M&As.

2.1 Overview of the banking sector

The banking sector is a fundamental pillar in modern economic systems, playing a crucial role within capital markets in enabling the functioning of economies through its intermediation and monetary policy transmission function. The International Monetary Fund [1] describes the main activity of a bank as that of financial intermediation, gathering savings from individuals, firm, and public institutions and allocating these resources to other players in the economy through credit. Beside the traditional deposit-taking activity, banks can directly borrow in the money and capital markets, through issuing securities or performing repurchase agreement transactions. In performing its main activity, credit institutions match up creditors and borrowers, permitting an efficient allocation of the resources and fostering investments, innovation, and long-term growth.

One of the core functions of banks is the lending process, which involves the so-called maturity transformation activity. This refers to the process of borrowing short-term liabilities, such as customer deposits, and lending these liabilities in the form of credit, which is generally considered as a long-term asset. The maturity transformation process, despite being fundamental to economic progress, entails several intrinsic risk factors and therefore requires active risk management and regulatory oversight. Still, the maturity transformation is the core enabler of profitability for a bank. Indeed, credit institutions pay depositors less than they receive from the borrowers, thus generating the Net Interest Margin (NIM), one of the key metrics to assess the banks' performance. The second key function provided by financial institutions is that of providing a secure infrastructure for executing payments. The payment system is, in fact, a network of national and international banks, as well as governments and private clearing companies, that constantly match up what the different banks owe each other. Through their role in the global payment system, banks facilitate the daily economic transactions that support commerce and trade. Additionally, banks are essential to the central banks' ability to implement monetary policy, being one of the most crucial instruments for controlling economic expansion and inflation. While banks help money flow through the markets via the lending activity, the central banks regulate the money supply nationally. By altering the reserve requirements for banks and by

[1] International Monetary Fund, *Banks: at the heart of the matter*, 14th June 2017

performing open market operations, these institutions can manipulate the amount of money in the economy. Moreover, financial institutions also respond to changes in policy rates adjusting their lending rates, therefore potentially reducing or increasing the liquidity in the economic system. Thus, banks serve as a key transmission channel for the central banks' monetary policy measures.

The functions described above refer to the traditional banking activity which is generally performed by classic commercial banks. According to the European Central Bank (ECB)[2], we can classify financial institutions into six main categories:

- Monetary financial institutions (MFIs);
- Investment funds (IFs);
- Financial vehicle corporations (FVCs);
- Payment statistics relevant institutions (PSRIs);
- Insurance corporations (ICs);
- Pension funds (PFs).

The category that is relevant for the purpose of this dissertation is the one of the MFIs. Within the monetary financial institutions, the ECB distinguishes among:

- Central banks;
- Other deposit-taking corporations, including credit institutions, other financial intermediaries, and electronic money institutions;
- Money market funds.

The analysis that will be performed in this study will focus exclusively on the other deposit-taking corporations, and, especially, on the credit institutions category.

Banks, or credit institutions, can further be differentiated based on the activity they perform in three branches:

- Commercial banks, whose business is solely related to the deposit-taking activity described earlier;
- Investment banks, which provide different services and products for its clients. Among those, we have M&A advisory services, underwriting services for debt and equity offerings, and sales and trading products;

[2] ECB website: https://www.ecb.europa.eu/stats/financial_corporations/list_of_financial_institutions/html/index.en.html#mfi

- Universal banks, performing both commercial and investment banks activities.

Given its crucial role in ensuring a correct and efficient functioning of the economy, the banking sector is probably the most regulated and supervised industry in an economic system. The regulatory framework of this industry is therefore designed to ensure financial stability of the economy, aiming to protect depositors and maintaining the public confidence in the financial system. The introduction of the Single Market in 1993[3] and the development of the Monetary Union in 1999[4] marked the beginning of what would later become the single rulebook for the banking industry. Indeed, before developing a unified regulatory framework, the European banking system was highly fragmented and banks supervision was delegated to the competent national authorities, thus resulting in an imbalance between the integrated capital markets across EU and the single national banking sectors. The global financial crisis (GFC) of 2008 furtherly highlighted the banking sector's interconnectedness[5] both among cross-border institutions as well as with other non-financial sectors in the economy, resulting in increased vulnerability to financial crises and in the so-called spillover effects. The crisis exposed the system's weakness in the regulatory framework, showing the importance of taking a further step in the regulation and supervision of the European banking sector as a whole, ultimately resulting the European Banking Union. In the wake of the GFC, EU institutions undertook a harmonization process of the rules across the countries in Euro area, reducing the disparities between different national laws. First, Basel III[6] introduced increased standards in capital adequacy requirements, liquidity management, and risk governance for all EU banks, resulting in a more stringent and consistent framework. In addition to implemented standards through Basel III, the EU established new institutions, known as the three pillars of the Banking Union[7]:

- The Single Supervisory Mechanism (SSM);
- The Single Resolution Mechanism (SRM);

[3] European Parliament: https://www.europarl.europa.eu/resources/library/media/20180116RES91806/20180116RES91806.pdf
[4] ECB website: https://www.ecb.europa.eu/press/key/date/2007/html/sp070921_2.en.html
[5] Peltonen, T.A., Rancan,M., Sarlin, P., *Interconnectedness of the banking sector as a vulnerability to crises*, Bank for International Settlements, 2015
[6] Bank for International Settlements, *High-level summary of Basel III reforms*, 2017
[7] European Council website: https://www.consilium.europa.eu/en/policies/banking-union/#pillars

- The European Deposit Insurance Scheme (EDIS).

The Single Supervisory Mechanism[8] is the supranational bank supervisory body of the European Union, where the ECB works together with the national supervisors to ensure resilience to shocks of the significant banks and investing the internal risk management models.

The Single Resolution Mechanism[9] is made up of the Single Resolution Board and the National Resolution Authorities in the Eurozone countries. It provides centralised decision-making on bank resolution, protecting the public interest and critical economic functions and taking prompt action to minimise the impact of financial stability when a significant credit institution is in financial distress.

Finally, the European Deposit Insurance Scheme[10] ensures that bank deposits in the Euro Area up to €100,000 are protected through the guarantee scheme. The EDIS has been proposed in 2015 with the aim of providing a stronger and more uniform degree of insurance cover in the EU. The rationale for a deposit guarantee scheme is that of increasing the level of depositor confidence in a bank, independently from its location and, therefore, stability of its national's economic stability. This third leg is still pending and not yet fully implemented, but it is considered as a crucial pillar to effectively complete the Banking Union.

The regulatory framework described above sets out the rules to reinforce the principles of the Single Market and develops the Single Rulebook for the financial sector. The Rulebook establishes therefore a level playing field for all the credit institutions within the Banking Union, not only ensuring the stability of the economy but also levelling the competition across the various credit institutions.

In Europe, cross-border banking has always been a limited phenomenon until the introduction of the Euro and the consolidation of the banking system. The first notable European cross-border banking regulation dates back to 1989 with Regulation n. 4064/89, giving for the first time the power of control on M&As across significant

[8] ECB website: https://www.bankingsupervision.europa.eu/activities/html/index.en.html
[9] Single Resolution Board website: https://www.srb.europa.eu/en/content/single-resolution-mechanism-srm
[10] European Commission website: https://finance.ec.europa.eu/banking/banking-union/european-deposit-insurance-scheme_en

financial[11] institutions solely to the Commission, and not to the local national authorities. In such cases, the Commission evaluated if the transaction could generate a potential dominant position that could threaten the competition in the European market. Through such principles, the European legislator therefore established a principle according to which the applicable laws for similar transactions are the same, regardless of the single banks' national laws and procedures. Later, in 1997, the EU has enacted Regulation n. 1310/97, halving the revenues thresholds to consider a transaction as significant from €250 mln to €100 mln. In 2004, the European Commission approved the Regulation n. 139/2004, which is still today the EU Merger Regulation and serves as the legal basis for the merger control in Europe. First, the new regulation[12] requires that "*notification is mandatory for all concentrations with a Community dimension*". After notification, which "*should take place either following conclusion of the agreement, announcement of a public bid, acquisition of control, or after manifestation of a good faith intent to do so*", the investigation phase is kicked-off by the Commission, which then notifies the involved parties of any potential concerns. At the end of the investigation, the Commission takes the final decision on the transaction, either approving, prohibiting, or approving with changes the transaction. Moreover, it is important to remark that Reg. n.139/2004 also introduced the subsidiarity principle, according to which the merger should be analysed by the most competent authority in assessing the potential threats to competition. As a result, banks willing to perform a merger transaction first need to submit the proposal to the national authorities (in the case of Italy, for instance, relevant authorities are the AGCM, the CONSOB, and the Bank of Italy). However, the consolidation of the banking sector was still lacking sufficient stimulus. Walkner C. and Raes J.-P.[13] found that the lack of progress in EU banking integration was attributable to "*national differences in market practices, regulation and taxation*". Thus, to stimulate M&A activity in the Euro area, the EU policy makers issued in 2007 the Directive 2007/44/CE, amending the previously established procedural rules and evaluation criteria for prudential assessment of acquisitions within the financial sector. Through this Directive, the Parliament and Commission introduced specific guidelines for

[11] According to Reg. 4064/89, the transaction was to be considered as relevant when the banks' total assets was equal to at least 1/10 of the balance sheet
[12] European Commission website: https://competition-policy.ec.europa.eu/mergers/procedures_en
[13] Walkner, C., & Raes, J.-P., *Integration and consolidation in EU banking – an unfinished business*, European Commission, 2005

M&As in the financial sectors, including specific rules and evaluation criteria, as well as best practices to ensure an adequate cooperation between supervisors[14].

As a result, different authorities across Europe interact in the context of an M&A operation. At the European level, the ECB may have a significant involvement in the investigation of the deal depending on the particular type of transaction. The Central Bank can have a "*formal role when the operation regards the acquisition of a qualifying holding[15] or the creation of a new bank, or if the merger involves significant banks and the law in their country gives the power to approve mergers to the supervisor*". Hence, when the ECB is involved in the investigation, the supervisory bodies will evaluate the feasibility of the M&A aiming to assess whether the newly formed group will be able to comply with the prudential standards established by the law. In particular, the ECB, together with the competent national supervisor, will assess the proposed transaction based on the following five criteria stated in the Capital Requirements Directive (CRD IV)[16]:

- Reputation of the proposed acquirer, in terms of integrity and trustworthiness, as well as professional competence;
- Reputation and experience of the proposed new managers, through a fit and proper assessment of the potential new board members;
- Financial soundness of the acquirer, determining whether the bidder is able to finance the acquisition while maintaining a robust financial structure;
- Impact on the bank, questioning if the bank would still be able to comply with the prudential requirements;
- Risk of links to money laundering or terrorist financing, verifying if the funds involved do not derive from criminal activities.

Furthermore, it is important to remark that ECB is not responsible for actively promoting or discouraging bank consolidation. Being a supranational regulatory and supervisory body, the European Central Bank must remain impartial and assess transactions solely on technical grounds. As mentioned above, also the European

[14] European Banking Authority website: https://www.eba.europa.eu/guidelines-prudential-assessment-acquisitions-and-increase-holdings-financial-sector-required

[15] A qualifying holding is defined by the ECB as a participation in another bank representing 10% or more of the shares and/or voting rights in the bank or crosses the other relevant thresholds (20%, 30% or 50%).

[16] ECB website: https://www.bankingsupervision.europa.eu/about/banking-supervision-explained/html/bank_mergers_acquisitions.en.html

Commission has a crucial role in evaluating potential banks M&As, in those cases in which the transaction reaches the previously defined *Community dimension*. In addition to these authorities, the European Banking Authority (EBA) shapes the best practices to be followed by national authorities in assessing the acquisitions of qualifying holdings. The EBA issues the Joint Guidelines[17], whose aim is to harmonise supervisory practices in the financial sector across all Member States.

2.2 Consolidation process in the EU banking sector

Since the early development of the Banking Union and the institution of the Single Market, the European banking sector experienced an unprecedented consolidation process, resulting in a significant and sustained structural development within the European financial system. This transformation process was driven by a combination of factors, including economic integration, regulatory changes, and technological development. More in detail, the gradual removal of the barriers across Member States resulted in an increase in competition at a Community level, pushing financial institutions to enlarge their sizes and increase the number of services offered to maintain a competitive edge in the market. This increase in size was also stimulated by the development of Information and Communication Technology (ICT). In fact, technological progress represented a catalyst in cost reduction and services quality improvement. Moreover, within the financial services sector, new technologies permitted the creation of economies of scale, which can be considered as one of the key drivers when considering a potential M&A target, as we'll discuss in the next paragraph. In addition to technological development, the 1990s were characterized by a progressive regulatory integration within Europe, as explained in the previous paragraph, which clearly stimulated the creation of credit institutions operating at a European level. The financial markets integration, as well as the establishment of the single currency, have led to a significant reduction in the entry barriers of the single nations' credit markets and to the decrease in transaction costs[18].

In the early 2000s, the consolidation process slightly decelerated compared to the previous period. As of December 2006, the total number of credit institutions in the

[17] EBA website: https://eba.europa.eu/publications-and-media/events/consultation-joint-guidelines-prudential-assessment-acquisitions

[18] Passera C., *Il processo di concentrazione del sistema bancario*, Treccani, 2009

EU-25[19] stood at 8,441, compared to around 9,200 in 2002, registering an annual decrease of more than 2% per year. At the same time, while the number of banks in EU declined, the total assets of the banking sector grew significantly (from €25,000 billion in 2001 to €36,280 billion in 2006)[20]. This inverse correlation among the number of institutions and total assets is clear evidence of the average increase in banks' dimensions in the market. During these first years of the new millennium, the volume of M&A activity in Europe slightly declined, except for cross-border intra-EU transactions, still accounting for 51.5% of total M&A value, highlighting an already increasing trend towards the creation of pan-European banking groups with a strong presence across Europe. Despite the decrease in deal numbers, the magnitude of the transaction increased throughout this period increased, mainly due to large deals such as Banca Intesa and San Paolo IMI, Natexis and Ixis, and BNP Paribas and Banca Nazionale del Lavoro. Thus, it is possible to identify two main features of the concentration process in Europe: the growth of the transactions' dimensions and the increase in cross-border deals. Although the first wave of bank M&As during the '90s mostly involved small and national credit institutions, the trend changed with the second wave of consolidation. As described above, this period was characterized by an intense M&A activity resulting first in the creation of strong national entities, and then in the development of international players. In fact, from 2000 to 2006, the number of domestic transactions declined significantly (from around 60 to 20 domestic deals). The rationale behind such trend is that banks, to compete in a scenario where cross-border players are increasingly present in the credit market, had to strengthen their position in their own domestic markets before exploring international opportunities. The dimensional increase in transactions values registered from the 1990s to the early 2000s demonstrates that such growth was a crucial factor for financial institutions to maintain their independence and defend their positions in the respective national markets. Such phenomenon translated into the formation of financial intermediaries with enhanced capabilities across all the different segments covered by the credit institutions and, therefore, in the possibility of obtaining a dominant position also in an international setting. In 2009, Passera C.[21] analysed the

[19] It is composed by the 25 European Union member countries prior to the accession of Bulgaria and Romania on the 1st of January 2007. EU-25 included: Germany, France, Italy, Netherlands, Belgium, Luxembourg, Denmark, Ireland, United Kingdom, Greece, Spain, Portugal, Austria, Finland, Sweden, Czechia, Cyprus, Estonia, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, Slovakia

[20] ECB research paper, *EU Banking Structures*, October 2007

[21] Passera C., *Il processo di concentrazione del sistema bancario*, Treccani, 2009

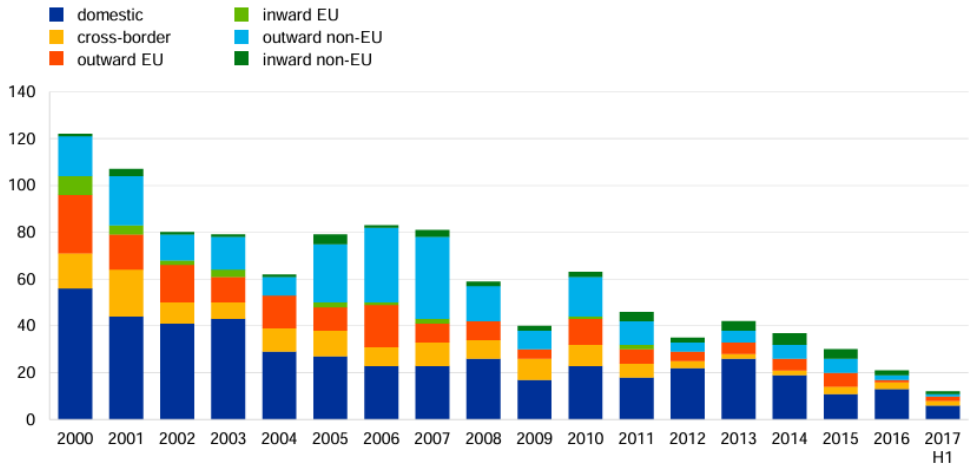
CR5[22] index across different European countries. The evidence showed that the CR5 increased in most of the member states, and especially in Belgium, Portugal, UK and France. Overall, considering the Euro area countries as of 2006[23], the value increased from 39% to 43% from 2001, while for EU-25 countries the CR5 amounted to 42%. Still, the EU banking sector remained quite heterogenous across the member states in terms of concentration. As of 2006, the German banking sector was the most fragmented in Europe, with a CR5 of only 22%, while other smaller countries, such as Netherlands and Belgium, registered a value of about 85%. Italy had a CR5 index value of 54,6%, slightly above the European average (46%). In fact, the Italian banking sector faced an intense wave of in-market operations since the early '90s, with over 350 M&As interesting more than 70% of the whole market. With the enlargement of the European Union and the rising importance of emerging markets, the number and value of cross-border transactions kept increasing after the mid-2000s, reaching its peak in 2007, with a cumulative value of €112 billion.

However, the GFC caused a slowdown in the M&A activity in the banking sector. In particular, the number of cross-border transactions decreased compared to domestic activity. From 2008 to 2013, the amount of national M&A deals remained almost unchanged, thus highlighting the ongoing trend of consolidation in the industry, mostly driven by intra-group transactions and reorganization in Italy and Germany, and the restructuring of the whole sector through a program developed by the European Institutions and the International Monetary Fund[24]. In fact, different national credit institutions restructured to respond to the financial crisis. In Italy, notable acquisitions include Monte dei Paschi di Siena and Banca Antonveneta, acquired for over €9 billion, the Banca Sella consolidation of various regional subsidiaries and the merge within Banco Popolare and numerous local cooperatives like Banca Popolare di Mantova and Banca Caripe. In Germany, we can mention the bailout of WestLB, which was then spun off into Portigon AG and acquired by Helaba, and the consolidation of several subsidiaries by Sparkassen. The post-crisis scenario put therefore many credit institutions under severe stress, requiring, in many cases, government and institutional intervention to avoid further spill-over of the crisis. As a result, the banking sector in

[22] Defined as the cumulative total assets share of the first five players in the banking sector
[23] Composed by Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and Greece
[24] European Central Bank, *Report on financial structures*, October 2017

Europe experienced an inversion of the trend compared to the early 2000s, with not only a slowdown in the overall number of deals, but also a reduced attention towards cross-border integration with shifted focus on the resilience of the respective national industries, as the graph below shows.

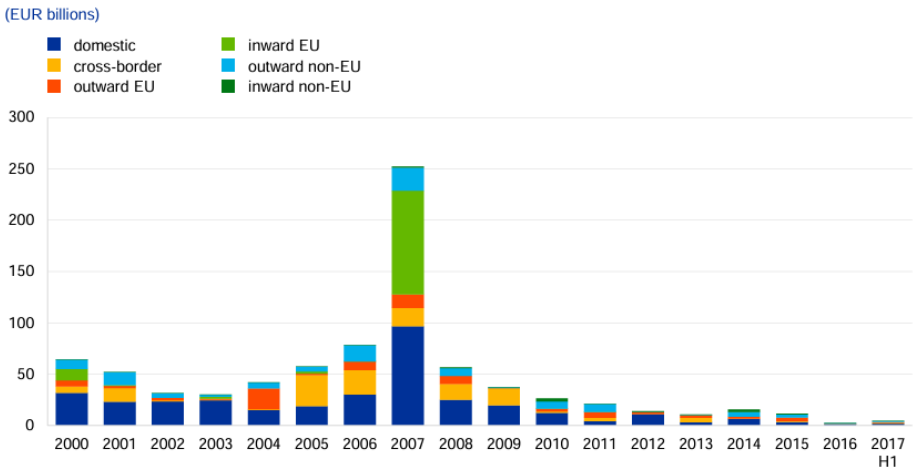
Figure 2.1: Number of bank M&As from 2000 to 2017



Source: European Central Bank, Report on financial structures, October 2017

Furthermore, in the same period, there was also a decline in the transaction value of M&A deals. As the graph below shows, the cumulative deals value declined from €54 billion in 2008 to around €2.8 billion.

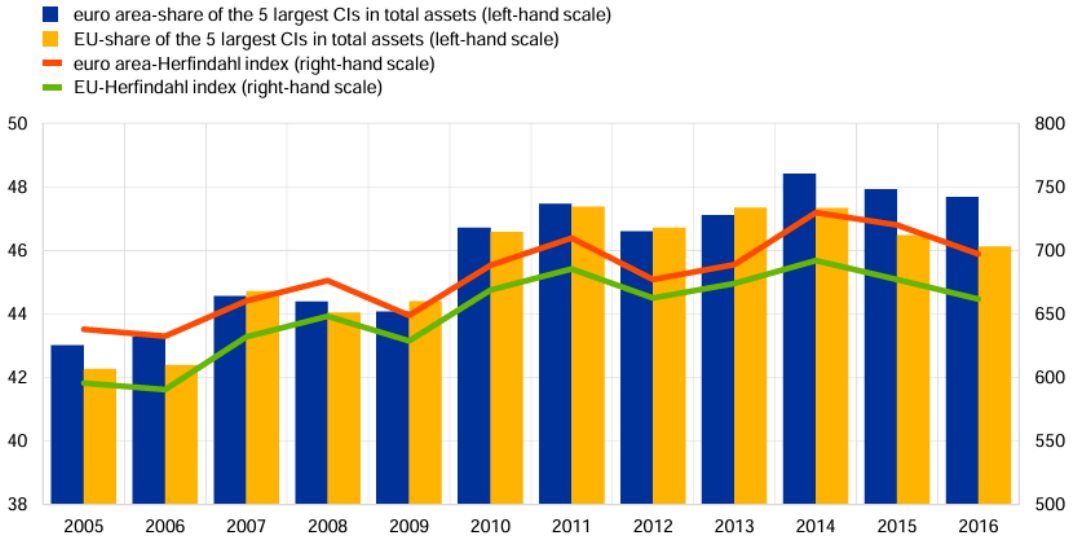
Figure 2.2: Bank M&As transactions value from 2000 to 2017



Source: European Central Bank, Report on financial structures, October 2017

Finally, in terms of concentration, the CR5 index still highlighted a positive trend in terms of concentration, with its peak recorded in 2014 at 48.4%. Still, as in the previous period analysed (1990s-2000s), the national industries are discretely heterogeneous. While countries like Greece or Spain, which experienced deep banking sector restructuring processes, recorded a CR5 index of more than 90%, as well as smaller economies like Malta and Lithuania, other larger countries recorded a lower-than-average value, ranging from 50% for France to about 31% for Germany.

Figure 2.3: CR5 and Herfindahl Index of the banking sector from 2005 to 2016



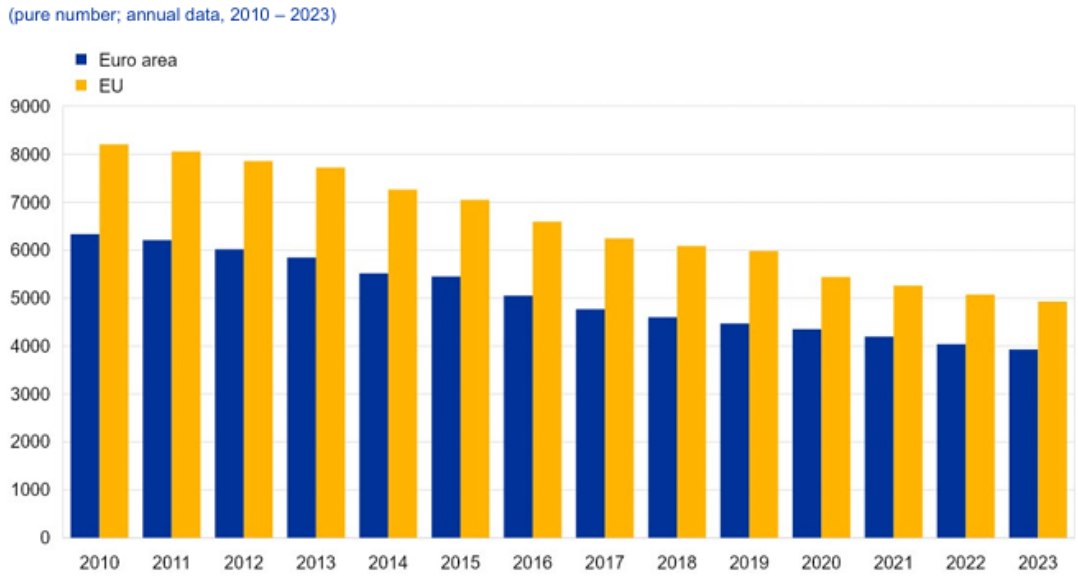
Source: European Central Bank, Report on financial structures, October 2017

In more recent years, the consolidation trend initiated in the early 2000s continued to shape the European banking sector. As of December 2023, the European Banking Federation reported a total number of credit institutions in the EU-27 of 4,927, marking a decline of 38.2% since the global financial crisis[25]. In particular, as shown in figure 2.4 below, the steepest decline was registered from 2019 onwards, when the total number of banks jumped from about 6,000 to slightly above 5,200 in 2020. This pronounced reduction in credit institutions reflects not only the urge of consolidation

[25] Saravia, F., Le Grusse, L., *Banking in Europe: EBF Facts & Figures 2024*, European Banking Federation, 2024

to better respond to financial crises, as emerged in the period 2008-2017, but also an increased restructuring process driven by both regulatory reforms and digitalization, requiring banks to find new solutions to scale their operational efficiency and maintain the competitive edge over rising fintech players.

Figure 2.4: Number of credit institutions from 2010 to 2023



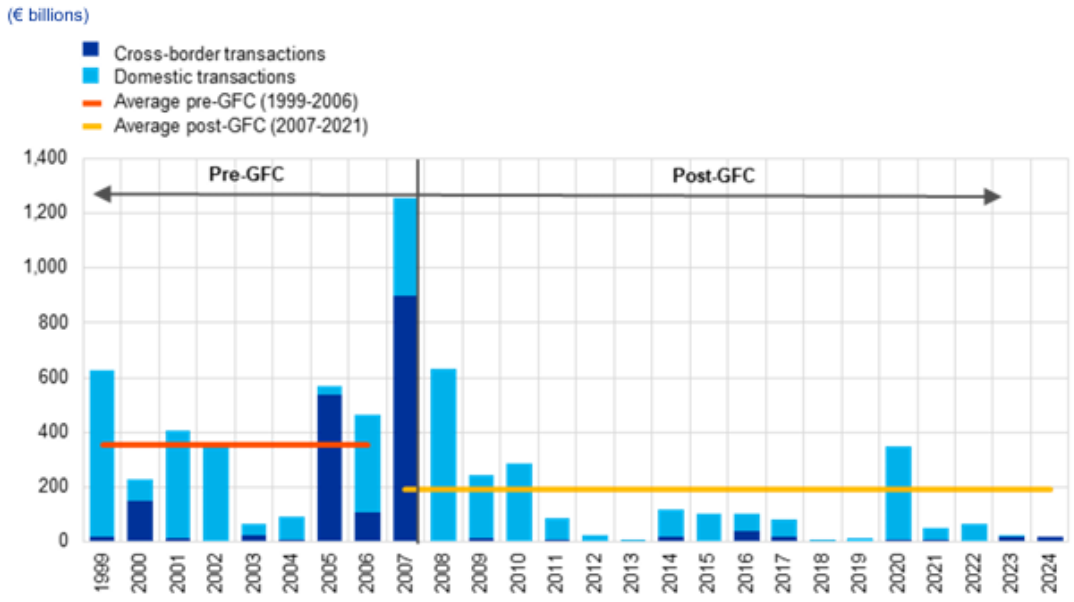
Source: European Central Bank, Financial integration and structure in the euro area, April 2024

In these years, the banking sector was also featured by a reduction of its physical presence, with a steep decline in the number of domestic branches across EU of more than 42% from 2008[26], bringing the total to just 130,194 branches. The contraction was not only the consequence of increased digitalization and changed consumer behavior, but also a potential answer from banks to the issue of lower-than-expected profitability in the past years. As a result, an increased M&A activity in the banking sector was expected to address some of the root causes of weak performance[27], thanks to the improved efficiency benefits and several other drivers that will be analysed in detail in the next paragraph. This scenario, especially in the early 2020s, led to a few high-profile deals, including the takeover of UBI Banca from Intesa Sanpaolo (Italy)

[26] Saravia, F., Le Grusse, L., *Banking in Europe: EBF Facts & Figures 2024*, European Banking Federation, 2024
[27] Fernandez-Bollo, E., Andreeva, D., Grodzicki, M., Handal, L., Portier, R., *Euro area bank profitability and consolidation*, Banco de España, 2021

and CaixaBank's merger with Bankia (Spain). However, similarly to what we saw during the post-GFC period, the majority of the deals involved domestic transactions rather than cross-border integration, which slowed down severely. In fact, the ECB reported that around 80% of completed deals in the euro area have been domestic[28], with less frequent cross-border activity interesting smaller deals involving mostly Belgian, French, and Dutch credit institutions. Moreover, the late 2010s-early 2020s bank M&A deals were characterized by medium-large sized institutions targeting smaller banks, with the aim of complementing an existing and already mature business model, rather than combining similar balance sheet footprints. In this sense, around 60% of the deals involved a larger acquirer and 15% of them touched weaker institutions, in the sense that they generated lower valuations and profitability, reflecting less solid foundations[29].

Figure 2.5: Total assets of target banks



Source: European Central Bank, Financial integration and structure in the euro area, April 2024

Within this landscape, there are still differences in the concentration level of the banking sector across the different EU countries. Greece and other smaller economies, like Lithuania, Latvia, and Estonia maintained a CR5 index of more than 90%, while

[28] ECB, *Financial Stability Review*, 2021
[29] ECB, *Financial Stability Review*, 2021

Germany and Luxembourg are still the less concentrated, with a CR5 of around 35%. Italy, especially after the merger of Intesa and UBI, now records a value of 50%[30]. The overall increase in the CR5 values across the member states thus reflects the continuous development of a consolidation process already started at the wake of the new millennium, now with a more domestic focus. In fact, it is the countries with historically fragmented sectors like Italy and Germany that registered the largest number of deals. Cross-border integration, on the other hand, has tended to cluster within a few small groups of euro area states like the Benelux region and Nordic countries, following pre-existing financial, trade, and cultural linkages[31]. Hence, the continued slowdown in cross-border activity is a symptom of persistent economic and regulatory barriers across the member states. Different tax regimes, national legislation on competition and customer protection, as well as the absence of a unified solvency guarantee scheme are complicating the integration of credit institutions across Europe. In Italy the so-called *"banking risiko[32]"*, born with the UniCredit-Commerzbank offer of September 2024 and then unfolded into an intricate network of acquisitions and tender offers interesting more than 20% of Italy's total market capitalization, is now becoming what could be the most significant transformation of the European banking industry since the 1990s. The Banking Risiko is now at the forefront of the debate, sustaining the need for a more integrated and solid banking sector, with the development of true pan-European players, while also highlighting the potential threats to fair competition advocated by the ECB. If cross-border deals are thought to be enablers of strong economies of scale and scope, developing a solid institution with a presence across Europe, the UniCredit-Commerzbank case demonstrates the clear lack of harmonization needed to stimulate international M&A activity in the sector. In fact, despite receiving the authorization for such transaction from the ECB and the supervisory authorities, the Italian bank met resistance from Commerzbank's management, employees and the German political establishment.

[30] European Central Bank, *Financial integration and structure in the euro area*, 2024
[31] ECB, *Financial Stability Review*, 2021
[32] The term describes the recent surge in banks M&A activity in Italy describing the wave of acquisitions and hostile takeover attempts that are currently shaping the Italian credit industry

2.3 Drivers of M&As in the banking sector

The concentration process of the banking industry is a complex phenomenon which takes place for a variety of reasons, depending on different factors, including both the strategic goal that the two parties want to pursue and the geographical and regulatory setting of the bidder and target. As was the case for the European credit sector, the consolidation of the banking sector in an emerging market is usually driven by the intervention of national financial and monetary authorities shaping the regulations to support the early development of industry, while, in already mature and developed economies, the M&A activity is mostly triggered by market pressures. In fact, regulators often tend to take actions when the banking sector, or the individual institution, is facing severe pressure. During crisis, therefore, the evidence shows that the catalyst for M&A activity is represented by the regulators aiming to avoid potential failures and spillovers on the real economy[33]. In this sense, several studies on deal activity in emerging markets compared to that of developed economies across the world showed how authorities intervene directly in bank M&As in developed countries, where market forces are generally not present and do not determine the potential outcome of the deal[34].

Broadly speaking, the M&A drivers in the banking industry are essentially the same that apply to corporates M&A, and can be clustered in two main categories.

The first set of reasons are those related to economic and financial goals, generally related to the aim of enhancing performance and value creation, such as aiming for improved efficiency, risk diversification, market power and competitive positioning, and greater stability of the financial institution. On the other hand, according to Berger et al. (1999)[35], the second set of reasons can be called the "non-value maximizing" motives and include all the reasons related to the management's objectives and interests, as well as defensive M&A strategies, regulatory developments, and market pressure. Anyway, all the different drivers share the common and implicit ultimate goal

[33] Awdeh, A., El-Moussawi, C., *Analysing the motives and the outcomes of bank mergers*, Middle Eastern Finance and Economics, Issue 15, 2011

[34] For further details see Awdeh, A., El-Moussawi, C., *Analysing the motives and the outcomes of bank mergers*, Middle Eastern Finance and Economics, Issue 15, 2011; Gelos, R. G., Roldos, J., *Consolidation and market structure in emerging market banking systems*, Emerging markets review, vol. 5, issue 1, 2004; Shih, M., *An investigation into the use of mergers as a solution for the Asian banking sector crisis*, The quarterly review of economics and finance, vol. 43, issue 1, 2003

[35] Berger, A.N., Demsetz, R.S., Strahan, P.E., *The consolidation of the financial services industry: Causes, consequences, and implications for the future*, Journal of Banking and Finance, vol. 23, 1999

of increasing the entity's size. In fact, dimensional expansion in an M&A transaction is a necessary factor to achieve synergies, arguably the most relevant matter to consider when exploring potential acquisitions. From a mere financial perspective, in the context of a merger synergies are calculated as the difference in the market value of the combined entity compared to the pre-merger combined value of the two separate entities[36]. Synergies arise from a merger when the new entity is assumed to become more efficient, profitable, and stable through shared resources and skills between the two financial institutions, enabling the newly formed entity to leverage a combination of factors to ultimately improve its bottom line. More specifically, synergies in banks M&A can be divided into two distinct categories. Financial synergies are those advantages tied to the firm's cost of capital. In fact, through the increased dimension of the bank, it can benefit from the lower cost of funding on the market as it will be considered less risky than smaller banks[37]. Conversely, operating synergies represent the actual economic value gains resulting from the combination of the entities. Operating synergies can be identified either as revenue synergies, in the case of an increase in revenues directly associated with the M&A transaction, or as cost synergies, when the combined entity is able to adopt cost reductions[38]. Revenue synergies are found in the price and sales volume increase that can be achieved by the sharing of the two companies' resources. However, the identification of revenue synergies is quite complex as the top line of a bank is heavily affected by external factors. On the other hand, cost synergies are easier to identify and analyse and refer to the potential cost reduction obtainable through the elimination of duplicate resources. Focusing on bank mergers scenario, cost synergies usually arise through economies of scale and scope.

Scale economies take place when the cost per unit of the output decreases as the production output increases, generating in the long term a significant overall cost reduction. It is important to note that the banking traditional activity requires a broad set of costly infrastructures and resources, including branches, ATMs, and data processing systems. In the context of a bank merger, the two entities combined may achieve scale economies, for instance, by eliminating duplicate branches in the same geographical area, while retaining the number of customers of the two pre-merger

[36] Awdeh, A., El-Moussawi, C., *Analysing the motives and the outcomes of bank mergers*, Middle Eastern Finance and Economics, Issue 15, 2011
[37] Penas, M.F., Unal, H., *Gains in bank mergers: Evidence from the bond markets*, Journal of Financial Economics, vol. 74, 2004
[38] Vulpiani, M., *Special cases of business valuation*, McGraw-Hill, 2014

entities combined, thus generating an overall decrease of the cost per unit of product. Since the 1990s, several studies have analysed the actual benefits of scale economies for financial institutions[39]. While previous studies have highlighted how economies of scale benefits as a result of a merger may be much more limited than expected, the more recent literature prospected a possible efficiency gain for the post-merger entity. As the technological progress strengthened in the financial sector, economies of scale intensified too. In fact, technology investments in banking are considered as fixed-cost intensive and therefore the only way banks can realize cost savings is by increasing their size to amortize this expenditures on a bigger size. Therefore, IT development is to be considered as an enabler of economies of scale through sharing the same software costs and platforms across a bigger entity[40]. Moreover, even the new financial engineering products born with the technological development are more likely to be adopted by bigger entities, as well as for the advancements in payment technologies, furtherly increasing scale economies even in back-office operations. Thus, as Berger et al. suggested[41], technological development became both a driver and an enabler of consolidation. In fact, it creates the conditions to achieve scale benefits, while also lowering the costs of managing a broader credit institutions more geographically dispersed. Supporting this theory, further studies concluded that it is possible to identify a positive correlation between the bank's size and the level of scale benefits they can achieve through the adoption of technological cost-effective innovation[42].

Economies of scope, on the other hand, represent the form of operating cost synergy that is reached through the ability of reducing the average cost per unit by producing more than one product at the same time. Within the banking industry, economies of scope are achieved from either the spreading of fixed costs over a broader product mix

[39] For further details see Berger, A.N., *The efficiency of financial institutions: A review and preview of research past, present and future*, Journal of Banking and Finance, vol. 17, 1993; Rhoades, S.A., *The efficiency effects of bank mergers: An overview of case studies of nine mergers*, Journal of Banking and Finance, vol. 22, 1998; Berger, A.N., Mester, L.J., *Inside the black box: What explains differences in the efficiencies of financial institutions?*, Journal of Banking and Finance, vol. 21, 1997; Clark, J.A*., Economies of Scale and Scope at Depository Financial Institutions: A Review of the Literature*, Federal Reserve Bank of Kansas City, 1988

[40] Berger, A.N., Demsetz, R.S., Strahan, P.E., *The consolidation of the financial services industry: Causes, consequences, and implications for the future*, Journal of Banking and Finance, vol. 23, 1999

[41] Berger, A.N., Demsetz, R.S., Strahan, P.E., *The consolidation of the financial services industry: Causes, consequences, and implications for the future*, Journal of Banking and Finance, vol. 23, 1999

[42] For further details see Berger, A.N., Demsetz, R.S., Strahan, P.E., *The consolidation of the financial services industry: Causes, consequences, and implications for the future*, Journal of Banking and Finance, vol. 23, 1999; Kolari, J.W., Zardkoohi, A., *Bank costs, structure, and performance*, Lexington, 1987; Miller, S.M., Noulas, A.G., *The technical efficiency of large bank production*, Journal of Banking and Finance, vol. 20, 1996

or from the cost complementarities in producing different products[43]. For instance, a bank branch can spread its fixed costs by issuing different types of deposits to the clients instead of opening separate branches to perform different activities. Such benefits occur when different products or services require the same infrastructures, like computers or accounting systems and, at the same time, there is not enough local demand to justify the opening of a dedicated branch for certain services. Cost complementarities between loans and deposits, on the other hand, arise for example when the payment flow data created when providing deposit services can be used to lower the expenses associated with obtaining credit information and tracking the loans to the same customers[44]. However, the literature on economies of scope is much more limited compared to that of economies of scale. In fact, the actual valuation of scope economies is usually more complicated given the lack of data on firms that specialize. In the banking sector, most of the institutions produce the whole product mix associated with the traditional banking activity described in the previous paragraphs, therefore it is almost impossible to decompose the cost for each single product or service and then assess a precise value of the scope economies. However, Pulley and Humphrey (1993) found that large banks benefit from sharing fixed costs between deposit and loan products, yielding a cost reduction of around 4-5% at best[45].

Another classic incentive for bank mergers is to increase market share and improve the competitive positioning. M&As represent, indeed, a quick way for a bank to achieve the so-called inorganic growth, which is the growth reached not through an increase in output but rather through the acquisition and the combination of another business entity. There are, in fact, cases where it can be cheaper for a bank to implement a growth strategy through M&A by acquiring a credit institutions which already has in place the characteristics that the bidder may otherwise obtain by implementing its own resources.

Looking at growth from the opposite perspective, a bidder may choose to pursue an M&A opportunity when the target has registered abnormal growth rates, making it a more attractive player on the market. In particular, the bank growth and, especially, the

[43] Berger, A.N., Humphrey, D.B., *Bank Scale Economies, Mergers, Concentration, and Efficiency: The U.S. Experience*, Wharton Financial Institutions Center, 1997
[44] Berger, A.N., Humphrey, D.B., *Bank Scale Economies, Mergers, Concentration, and Efficiency: The U.S. Experience*, Wharton Financial Institutions Center, 1997
[45] Pulley, L.B., Humphrey, D.B., *The Role of Fixed Costs and Cost Complementarities in Determining Scope Economies and the Cost of Narrow Banking Proposals*, The Journal of Business, vol. 66, 1993

market growth[46] are seen to be indicative factors of higher than average expansion opportunities after a successful acquisition[47]. In this sense, the bidder could simultaneously eliminate a potential competitor from the market while strengthening its own competitive advantage and market share. Davis (2000), indeed, argued how M&As could be the only successful way to gain market share, given that the elimination of a competitor brings advantages also in terms of pricing power and as seen above, of cost economies[48]. However, it is important to remember that high-profile acquisitions, especially in the banking industry, often raise the attention of the regulator and of the supervisory authorities, leading to potential opposition for antitrust purposes. Thus, larger institutions may be incentivized to pursue acquisitions on smaller banks that are less likely to generate competition issues and that are generally easier to integrate within the broader credit institution.

Mergers can also be motivated by the goal of diversification. Broadly speaking, according to the traditional portfolio theory the acquiring company can achieve operating benefits by diversifying its investments. In particular, when the risk factors of a business are closely tied to the company's capacity to generate cash flows and income, portfolio diversification enables the reduction of the volatility of the operating performance, directly impacting positively the whole portfolio value[49]. Focusing on the banking sector, a credit institutions' performance is almost completely tied to the macroeconomic environment of its geographical setting. Therefore, usually the diversification strategy in the banking industry is almost always centered on a geographical point of view. In this sense, Chionsini et al. (2003) found that product diversification often fails to improve the bidder's performance and reduce its earnings volatility, while geographic diversification still yields generally modest benefits when purchasing a bank incorporated in a radically different region[50]. Similarly, other studies found that larger banks, with more diversified products and geographical presence, tend to assume more risks elsewhere, offsetting the low benefits of diversification and sometimes experiencing also greater income volatility and no improvements in risk-

[46] Both growth rates are calculated in terms of the target's deposit growth during the three years prior to the observed acquisition
[47] Hannan, T.H., Rhoades, S.A., *Acquisition Targets and Motives: The Case of the Banking Industry*, The Review of Economics and Statistics, vol. 69, 1987
[48] Davis, S.I., *Bank Mergers: Lessons for the Future*, Palgrave Macmillan, 2000
[49] Vulpiani, M., *Special cases of business valuation*, McGraw-Hill, 2014
[50] Chionsini, G., Foglia, A., Reedtz, P.M., *Bank mergers, diversification and risk*, Banca d'Italia, 2003

adjusted returns[51]. Hence, diversification can still be considered as an important driver of bank mergers, especially in the context of cross-border transactions, but it still has to be considered jointly with other motives for a successful merger.

Another driver of banks M&As is the elimination of inefficient management. While it is possible that companies may have inefficient management for a certain time, the market mechanisms will replace it over the long run through acquisitions from more efficient institutions[52]. Consequently, evidence from U.S. bank mergers shows that when the bidder successfully acquires under-performing targets, the transaction results in higher gains in profitability and scale efficiency[53]. Many other studies[54] supported this thesis, confirming that the acquisition of an inefficient target results in better cost-to-income ratios, improved risk profile in the lending activity and an overall better CAMEL[55] profile.

Finally, bank mergers can also be the result of the intervention of supervisory authorities to respond to sector crises. As mentioned at the beginning of the paragraph, authorities often shape the banks M&A market through their intervention in critical systemic scenario like particularly underperforming and unstable banks or credit institutions facing bankruptcy. In such cases and in a crisis environment, authorities may induce many unstable small banks to merge into a single entity, the so-called "*super-bank*"[56]. On this matter, Shih (2003)[57] showed that actually, when a super-bank is created there is no certainty on the outcome of the merger. In fact, he argued that the likelihood of bankruptcy of the super-bank is actually higher as the number of small

[51] For further details see Demsetz, R.S., Strahan, P.E., *Diversification, Size, and Risk at Bank Holding Companies*, Journal of Money, Credit and Banking, vol. 29, 1997; Stiroh, K.J., *Diversification in Banking: Is Noninterest Income the Answer?*, Journal of Money, Credit and Banking, vol. 36, 2004
[52] Awdeh, A., El-Moussawi, C., *Analysing the motives and the outcomes of bank mergers*, Middle Eastern Finance and Economics, Issue 15, 2011
[53] Peristiani, S., *Do mergers improve the X-efficiency and scale efficiency of U.S. banks? Evidence from the 1980s*, Journal of Money, Credit and Banking, vol. 29, 1997
[54] For further details see Campa, J., Hernando, I., *M&As performance in the European financial industry*, Journal of Banking and Finance, vol. 30, 2006; Knapp, M., Gart, A., Chaudhry, M., *The impact of mean reversion of bank profitability on post-merger performance in the banking industry*, Journal of Banking and Finance, vol. 30, 2006; Koetter, M., Bos, J.W.B., Heid, F., Kolari, J.W., Kool, C.J.M., Porath, D., *Accounting for distress in bank mergers*, Journal of Banking and Finance, vol. 31, 2007
[55] CAMEL is the acronym of a rating system used by supervisory authorities assessing a bank's capital adequacy, asset quality, management, earnings, and liquidity
[56] Awdeh, A., El-Moussawi, C., *Analysing the motives and the outcomes of bank mergers*, Middle Eastern Finance and Economics, Issue 15, 2011
[57] Shih, M., *An investigation into the use of mergers as a solution for the Asian banking sector crisis*, The quarterly review of economics and finance, vol. 43, issue 1, 2003

entities merging increases. Following this same idea, Chong et al. (2006)[58] found that bank mergers forced by the regulators destroy economic value. Even in Europe, especially following the GFC, many credit institutions aimed at pursuing M&As to increase their size beyond the threshold to be considered "too big to fail" from the institutions. This statute, indeed, seems to guarantee to these systemically significant banks a special treatment in case of financial distress from the authorities, whose goal is to avoid at all costs a collapse of such institutions given their size and share of the credit market.

For the purpose of this research, it is important to point out the different drivers pushing credit institutions to pursue both domestic and cross-border M&A opportunities. As analysed earlier in this chapter, the European banking sector M&A has been characterized, especially in the more recent years, by a large share of domestic deals, rather than cross-border ones. Even across the whole world, between 1985 and 2001, international transactions remained at about one fifth of total bank mergers[59].

Regarding domestic transactions, Hernando et al. (2009)[60] have shown how these kind of deals are stimulated by all the general bank M&A drivers that we have discussed above. Thus, in-market acquisitions in the banking sector are mostly explained by performance enhancement, improvement of the efficiency of the target, increased diversification and penetration in particular segments, and inorganic growth.

On the other hand, cross-border transactions seem to require more specific characteristics to induce acquirers to pursue such operations. However, the phenomenon is still limited because, as we discussed in paragraph 2.2, regulatory barriers like different tax regimes and divergent national competition rules hinder international takeovers[61]. Furthermore, the digital transformation of the financial services is now reducing the need for cross-border mergers. In fact, with most of the competition in the sector coming from fintech and digital platforms, "legacy" banks would rather invest in their digitalisation creating their fintech arm than acquiring

[58] Chong, B.S., Liu, M.H., Tan, K.H., *The wealth effect of forced bank mergers and cronyism*, Journal of Banking and Finance, vol. 30, 2006
[59] Buch, C.M., DeLong, G., *Cross-border bank mergers: What lures the rare animal?*, Journal of Banking and Finance, vol. 28, 2004
[60] Hernando, I., Nieto, M.J., Wall, L.D., *Determinants of domestic and cross-border bank acquisitions in the European Union*, Journal of Banking and Finance, vol. 33, 2009
[61] European Central Bank, *Financial integration and structure in the euro area*, 2024

another legacy bank to expand geographically[62]. Analysing the drivers for cross-border mergers, it is important to point out that, in the European market, such transactions took place mostly across regions where countries are closely linked by a common language or generally similar institutional and legal features[63]. In that sense, a study from the ECB[64] demonstrated how links through bilateral interbank loans across the Euro area are associated with a higher number of cross-border M&As. Moreover, credit institutions tend to avoid the entry into radically new countries, limiting their M&A activity in regions where they already have established a physical presence through subsidiaries. Yet, the banks' choice to expand abroad is driven by the search for increased profits and growth opportunities, which are more likely to come from underdeveloped markets. This is also explained by the fact that banks in countries with a more developed sector will likely have an advantage over potential targets in the destination market[65]. Generally speaking, Caiazza et al. (2014)[66] found that cross-border bidders are often larger, more profitable and focused on traditional banking activities. This findings suggest the theory of the "*national champions*", large financial institutions able to internationalize given their size and stability, having the capacity to absorb the fixed costs associated with the entry in a new market.

This analysis described the broad set of drivers pushing M&A transactions in the banking sector. However, when focusing on cross-border operations, several obstacles emerge. These barriers explain therefore the trends described in the previous paragraph shaping the European banking sector, while highlighting the need for further harmonization of the regulatory differences across Europe to ensure the creation of a true single market and stipulate cross-border banking integration.

[62] Theodore, S., *Cross-border bank mergers in Europe: not such a grand idea*, Scope Insights, 2020
[63] Buch, C.M., DeLong, G., *Cross-border bank mergers: What lures the rare animal?*, Journal of Banking and Finance, vol. 28, 2004
[64] ECB, *Financial Stability Review*, 2021
[65] Focarelli, D., Pozzolo, A.F., *The patterns of cross-border bank mergers and shareholdings in OECD countries*, Journal of Banking and Finance, vol. 25, 2001
[66] Caiazza, S., Pozzolo, A.F. and Trovato, G., *Do domestic and cross-border M&As differ? Cross-country evidence from the banking sector*, Applied Financial Economics, vol. 24, 2014

CHAPTER 3
Literature Review

The raising concentration of the European banking sector and the increased number of bank M&As has attracted the attention of scholars around the world. In fact, as we have seen in the previous chapter, the banking sector has registered over the past few decades a steep increase in terms of value and number of the deals, which made the phenomenon interesting to be investigated, with the aim of deriving general conclusions for managers in the industry and for policy makers.

However, the empirical evidence on the impact of bank M&As is mixed. In fact, some studies actually found improvements in cost efficiencies and stability, while others derived negative or close to zero returns of banks announcing an acquisition. This heterogeneity highlights the importance of integration difficulties and cultural differences, usually explaining the lower returns for cross-border transactions. As we analysed in this chapter, the majority of the studies on this topic have been performed on a sample of American banks, or not only composed by European institutions. In fact, as the aim of this thesis is to evaluate the perceived performance of bank M&As from the market in Europe, this chapter will focus on the research related exclusively to our same geographical region. The following pages will review these studies in depth, offering a detailed overview of the various research and the findings, with the goal of establishing an extensive theoretical framework for the empirical analysis that will be performed in the next chapter.

At first, we will discuss the different approaches that have been used to derive the abnormal returns and construct the cumulative average abnormal returns. The second paragraph, instead, will present the various conclusions that the literature derived from the analysis performed, illustrating the heterogeneous results found for target and bidder's returns. Finally, the third paragraph will be dedicated to the studies who analysed the stock performance when differentiating for domestic or international transactions.

3.1 Construction of abnormal returns

Following the deregulation movements of the 1980s and 1990s and the increase in volume of bank M&A deals, the academic literature started examining such phenomenon around the world. The foundational question driving this research stream is whether bank M&As can create value for shareholders, assessing both the target's and acquirer's returns.

However, academic researchers often yielded contrasting results. In fact, each M&A transaction is different from the others and the various geographical and macroeconomic settings shape the outcome of the deal itself, adding a layer of complexity to the research investigating the topic. Given this strong interdependence among different markets' features and M&A deals characteristics, the research often focuses on specific sectors and geographical areas where industries and M&A transactions may share some similarities.

As the focus of this work will be to analyse the impact on returns of M&As within the European banking sector, the following pages will focus on reviewing papers studying this particular topic. For the reasons stated above, in fact, comparing the work that has been done on American banks may lead to contrasting results, as the regulatory and cultural framework is substantially different from the European one. Nonetheless, while the U.S. market interested academics since many years ago, the interest in the European industry grew starting only from the late 1990s, with the boom in banks M&As. The predominant methodological approach to assess this topic is the event study methodology, which examines the abnormal returns of a stock around a certain event date (generally defined as "event window") which, in our case, will be the announcement date of the transaction. The rationale of this methodology lays on the Efficient Market Hypothesis (Fama, 1970), according to which, simplistically, prices in the market reflect all the available information and, therefore, represent the future performance of the corporation.

The straight-forward method for constructing abnormal returns (ARs), used by Ekkayokkaya et al. (2009)[67] is represented by the following equation:

$$AR_i = r_i - r_m,$$

[67] Ekkayokkaya, M., Holmes, P., Paudyal, K., *The Euro and the changing face of European banking: evidence from mergers and acquisitions*, European Financial Management, vol. 15, 2009

where r_i is the return of the stock *i* and r_m is the return of the market. However, the larger part of the literature used the market model approach, following the work of Tourani Rad and Van Beek (1999) [68] . According to this model, the ARs are defined as the actual returns minus the predicted returns based on the market portfolio, represented by the index:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i \times R_{mt}),$$

where:

- R_{it} is the return of stock *i* on day *t*;
- R_{mt} is the return on the benchmark on day *t*;
- α_i and β_i are the market model parameters estimated for stock *i*. In particular, Cybo-Ottone and Murgia (2000)[69] clarified that the parameters are estimated through the OLS methodology and each regression was run using the Scholes-Williams (1977) procedure[70].

Another application of the market model to calculate ARs was used by Elad and Bongbee (2017)[71], who followed a risk-adjusted return approach calculating abnormal returns using the following formula:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

where $E(R_{i,t})$ represents the expected return of stock *i* at day *t* assessed through a regression analysis assuming that the deal announcement has not been released:

$$E(R_{i,t}) = \alpha_{i,t} + \beta_{i,j} R_{mt}$$

where $\alpha_{i,t}$ and $\beta_{i,j}$ are the regression coefficients and R_{mt} is the daily return of the benchmark index *m* at day *t*.

After calculating the abnormal returns through the market, the aggregate abnormal return (AAR) is calculated:

[68] Tourani Rad, A., Van Beek, L., *Market valuation of European bank mergers*, European Management Journal, vol. 17, 1999
[69] Cybo-Ottone, A., Murgia, M., *Mergers and shareholder wealth in European banking*, Journal of Banking and Finance, vol. 24, 2000
[70] Scholes, M., Williams, J., *Estimating betas from nonsynchronous data*, Journal of Financial Economics, vol. 5, 1977
[71] Elad, F.L., Bongbee, N.S., *Event study on the reaction of stock returns to acquisition news,* International Finance and Banking, vol. 4, 2017

$$AAR_t = \overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t}$$

The AAR, which basically represents the average abnormal return at day *t* for the *i-th* stock, is functional for the calculation of the cumulative abnormal returns (CARs), representing the ultimate output of the event study methodology. The CAR, in this analysis, calculates the cumulative abnormal returns for the bank *i* over the desired event window (T_1 and T_2) as the sum of the daily AAR:

$$CAR_{i(T_1-T_2)} = \sum_{t=T_1}^{T_2} \overline{AR_t}$$

By using this formula, we can calculate the abnormal returns within the desired time window across all the *N* securities included in our sample.

3.2 Bidder and target performance

The existing literature found that the positive abnormal returns in the context of a bank M&A transaction are mostly attributable to the target's shareholders, while the analysis on bidders seems to yield varying results which usually don't differ much from zero. For instance, Tourani Rad and Van Beek (1999)[72] found that targets record an average cumulative abnormal return (CAR) of +3.8%, and that this number doesn't change depending on the nature of the transaction (cross-border or domestic). On the other hand, Cybo-Ottone and Murgia (2000)[73] found even more substantial target CARs ranging from +12% to +16%, but that such value creation is only associated with domestic deals. Campa and Hernado (2004)[74], following a similar approach to Cybo-Ottone and Murgia (2000), but with an extend event window of around one month, found that target CARs are on average as high as 9%, with cross-border deals significantly lowering value creation opportunities for the shareholders. Many other studies examined[75], although yielding different CARs gains, all agree on the fact that,

[72] Tourani Rad, A., Van Beek, L., *Market valuation of European bank mergers*, European Management Journal, vol. 17, 1999

[73] Cybo-Ottone, A., Murgia, M., *Mergers and shareholder wealth in European banking*, Journal of Banking and Finance, vol. 24, 2000

[74] Campa, J.M. & Hernando, I., *Shareholder value creation in European M&As*, European Financial Management, vol. 10, 2004

[75] For further details see Schmautzer, D, *Cross-border bank mergers: who gains and why?,* SSRN Electronic Journal, 2006; Beitel, P., Schiereck, D., Wahrenburg, M., *Explaining M&A success in European banks*, European Financial Management, vol. 10, 2004; Ismail, A., Davidson, I., *Further*

close to the announcement date, the target's stock price will likely increase, while the acquirer's declines. The explanation to this phenomenon lays on the fact that strategic buyers, in the context of an acquisition, usually have to pay a "*control premium*" over the current market price. Of course, this is not the case in distressed M&A situations, where the target's shareholders may be even willing to sacrifice value to liquidate their shares. Another peculiarity of the literature analysed is that the stock prices usually start moving prior to the actual announcement of the deal to the general public, given the early trading rumours that trigger a higher volatility of the security. By comparing the CAR over an event window of same length both before and after the date, the difference was zero. However, when computing CARs over the time window (-t, 0), the result has always been positive.

The tables below summarize the findings of Cybo-Ottone and Murgia (2000), which can be considered as the baseline for the further analyses that have been done on the topic. The first table shows the daily CARs for bidders, while the second table represents the CARs of the targets' stock. As can be seen, acquirers registered returns almost close to 0, especially on larger event windows, while targets demonstrated to perform much better than the two benchmarks used in the study, with CARs as high as +17.95% over the 20 days prior to the announcement date.

Table 2.1: Bidders CARs

Event window	**Mean (%)**	**S.D. (%)**	**Z-test**	**p-value**
Panel A - Benchmark: Datastream General Market Index				
(–1, +1)	0.99	6.64	2.32	0.01
(–2, +2)	1.4	7.8	2.39	0.01
(–5, +5)	1.08	7.17	1.17	0.12
(–10, +10)	1.16	9.52	0.68	0.25
(–20, +20)	2.19	9.43	2.02	0.02
(–1, 0)	0.62	5.75	1.37	0.08
(–2, 0)	0.7	5.81	1.45	0.07
(–5, 0)	0.58	6.18	0.69	0.24
(–10, 0)	0.92	7.73	0.56	0.29
(–20, 0)	1.46	8.71	1.44	0.07
Panel B - Benchmark: Datastream Bank Sector Index				

analysis of mergers and shareholder wealth effects in European banking, Applied Financial Economics, vol. 15, 2005; Drymbetas, E., Kyriazopoulos, G., *Short-term stock price behavior around European crossborder bank M&As*, Journal of Applied Finance & Banking, vol. 4, 2014; Teplý, P., Stárová, H., Černohorský, J., *Value creation of European bank mergers and acquisitions in the 1998–2007 period*, Ekonomický časopis, vol. 58, 2010

(–1, +1)	–0.19	4.37	–0.20	0.42
(–2, +2)	0.16	4.75	0.44	0.33
(–5, +5)	–0.17	4.35	–0.19	0.43
(–10, +10)	0.11	7.74	0.35	0.36
(–20, +20)	1.03	9.16	0.75	0.23
(–1, 0)	–0.17	3.95	–1.06	0.14
(–2, 0)	–0.20	3.94	–0.42	0.34
(–5, 0)	–0.40	3.93	–0.79	0.22
(–10, 0)	0.03	5.61	0.33	0.37
(–20, 0)	0.31	6.52	0.42	0.34

Source: Cybo-Ottone, A., Murgia, M., *Mergers and shareholder wealth in European banking*, Journal of Banking and Finance, vol. 24, 2000

Table 2.2: Target CARs

Event window	**Mean (%)**	**S.D. (%)**	**Z-test**	**p-value**
Panel A - Benchmark: Datastream General Market Index				
(–1, +1)	12.93	22.19	36.03	<0.000
(–2, +2)	13.68	22.36	30.94	<0.000
(–5, +5)	13.52	23.64	19.58	<0.000
(–10, +10)	14.16	24.88	14.33	<0.000
(–20, +20)	15.3	29.55	11.64	<0.000
(–1, 0)	13.16	21.95	44.76	<0.000
(–2, 0)	14.31	22.14	41.67	<0.000
(–5, 0)	15.02	22.83	28.84	<0.000
(–10, 0)	15.69	23.37	21.81	<0.000
(–20, 0)	17.95	24.17	17.87	<0.000
Panel B - Benchmark: Datastream Bank Sector Index				
(–1, +1)	12.09	22.01	33.37	<0.000
(–2, +2)	12.77	22.23	28.94	<0.000
(–5, +5)	12.55	23.3	17.87	<0.000
(–10, +10)	12.95	24.95	12.74	<0.000
(–20, +20)	14.01	29.09	10.39	<0.000
(–1, 0)	12.55	21.92	42.27	<0.000
(–2, 0)	13.68	22.16	39.81	<0.000
(–5, 0)	14.21	22.72	27.11	<0.000
(–10, 0)	14.82	23.36	20.08	<0.000
(–20, 0)	16.63	24.18	16.19	<0.000

Source: Cybo-Ottone, A., Murgia, M., *Mergers and shareholder wealth in European banking*, Journal of Banking and Finance, vol. 24, 2000

Subsequent studies to Cybo-Ottone and Murgia (2000) furtherly analysed the impact of M&As announcements on the targets' return. For instance, Beitel et al. (2004)[76] discovered that the relative size of the target to that of the acquirer, as well as the relative cost-to-asset ratio, influenced the market's perception of the transaction. This finding also serves as an empirical proof to the drivers for M&As that has been described in the previous paragraph. In fact, a smaller size and lower cost-to-asset ratio mean that the target is relatively smaller and less efficient than the bidder and, therefore, there will be more room for value creation. Another study[77] pointed out how targets with high ROE tend to record higher abnormal returns, because the market will perceive the merger between a financially stable entity and a larger bidder as more value-creative.

Regarding the bidders' stock performance, this preliminary literature review demonstrated that the majority of research shows that they tend to underperform the benchmark in the context of a transaction. A recurring theme across the literature is that of the different characteristics of the deal, that can influence the acquirer's returns. Again, Beitel et al. (2004)[78] showed how bidders may generate more value for the shareholders when they opt for the acquisition of less profitable targets, which could generate more growth and efficiency-enhancement opportunities. In the same study, they also concluded that bidders generally also benefit of higher returns when acquiring targets which are already well managed, providing enough synergy potential. Moreover, Schmautzer (2006)[79] found that bidder CARs are positively affected by increasing cost-to-income ratio and decreasing target's market-to-book ratio, meaning that the market generally rewards mergers likely to improve the combined efficiency of the entity. In this context, the author also compared his results with that of other previous studies. In particular, he considered: Waheed and Mathur (1995) indicated as "WM", Hudgins and Seifert (1996) abbreviated as "HS", Gleason and Mathur (1998) in the table as "GM", Tourani Rad and Van Beek (1999) as "TB", Cybo-Ottone and Murgia (2000) as "CM", Beitel and Schiereck (2001) as "BS", Amilhud et al. (2002)

[76] Beitel, P., Schiereck, D., Wahrenburg, M., *Explaining M&A success in European banks*, European Financial Management, vol. 10, 2004
[77] Drymbetas, E., Kyriazopoulos, G., *Short-term stock price behavior around European crossborder bank M&As*, Journal of Applied Finance & Banking, vol.4, 2014
[78] Beitel, P., Schiereck, D., Wahrenburg, M., *Explaining M&A success in European banks*, European Financial Management, vol. 10, 2004
[79] Schmautzer, D, *Cross-border bank mergers: who gains and why?,* SSRN Electronic Journal, 2006

as “ADS”, and Bessler and Murtag (2002) as “BM”. The table below summarizes this analysis:

Table 2.3: Bidder returns in comparison with previous studies

		CARs (%) in previous studies							
Event window	**CARs (%)**	**WM (1995)**	**HS (1996)**	**GM (1998)**	**TB (1999)**	**CM (2000)**	**BS (2001)**	**ADS (2002)**	**BM (2002)**
(–20, 0)	–0.51						–0.54		
(–4, 0)	–0.62			–0.45					
(–1, 0)	–0.67	–0.51	–0.05	–0.29	–0.41		–0.62		
{0}	–0.66				–0.32		–0.68		
(–1, 1)	–1.07		–0.25	–0.32	–0.37		–0.85		–0.30
(–5, 5)	–1.10				–0.19	2.00	–0.87	–0.98	
(–10, 1)	–1.04								0.90
(–10, 10)	–1.00				0.08		–1.23		
(–20, 20)	–0.72						–0.32		

Source: Schmautzer, D, Cross-border bank mergers: who gains and why?, SSRN Electronic Journal, 2006

The comparative analysis showed that bidder CARs range from 0.5 to 1 percent negative across all the event windows selected. In conclusion, Schmautzer (2006) also found that the bidders may generate positive returns when they take over targets that don’t have stand-alone growth prospects, in accordance with what explained in the previous paragraph regarding M&A drivers. Anyways, it must be pointed out that this has been found to be true only in those cases where the targets are already efficient in terms of cost-to-income ratio, and therefore only lack resources or know-how to implement growth strategies. Despite the authors presented as of now an almost unified view on bidders’ returns, other studies have found contrasting results. Particularly interesting is the analysis performed by Ismail and Davidson (2005)[80]on a sample of 102 bank mergers in Europe from 1987 to 1999. From their study, they found slightly positive bidder CARs in the order of 0.5% to 1%, especially in shorter event windows. Furthermore, Lensink and Maslennikova (2008)[81] reported on average a positive CAR of around 0.3% to 0.5% over the long term. In their analysis, comparing

[80] Ismail, A., Davidson, I., *Further analysis of mergers and shareholder wealth effects in European banking*, Applied Financial Economics, vol. 15, 2005

[81] Lensink, B.W., Maslennikova, I., *Value performance of European Bank acquisitions*, Journal of Applied Financial Economics, vol. 18, 2008

European and U.S. deals, they highlighted how in the former case bidders tend not to lose value, while in the latter they consistently record negative returns. A more recent study conducted by Kontonikas et al. (2023)[82] focused on the shift in CARs trends for bidders in the post-GFC scenario. The authors concluded that, after 2008, acquirers were able to create value for shareholders around the announcements of around +0.3% to +0.4%. They attributed this increase in CARs to the consequent increase in market concentration after a M&A, given that any merger likely results in increased market power when the sector is more concentrated. In fact, they found that announcement CARs and long-run combined performance post-merger are more likely in the positive range when the acquirers are entering into less competitive markets.

In conclusion, the literature is quite vast and doesn't arrive to a common finding shared across the various studies when analysing the bidders' returns in the context of a merger.

3.3 Domestic vs cross-border returns

Finally, for the purpose of this work, it is important to discuss the findings of the literature when analysing the impact on returns of both domestic and cross-border deals. As briefly mentioned earlier in the paragraph, the literature on the topic is not unanimous. The first analysis on domestic versus cross-border deals taken into consideration was performed by Tourani Rad and Van Beek (1999)[83]. The authors observed that for most event windows the CARs were generally higher in the case of domestic deals, despite their findings were not statistically significant and therefore concluding that the geographical nature of the deals does not have any effect on shareholders' value creation. Consequently, Cybo-Ottone and Murgia (2000)[84] found how domestic bank mergers often show positive abnormal returns, especially for targets, while cross-border deals fail to create value for shareholders, showing how investors tended to reward consolidation in familiar markets rather than abroad, given the higher likelihood of synergies and lower level of risk associated with the domestic market. Moreover, they also added that the post-merger entity usually experiences

[82] Kontonikas, A., Leledakis, G.N., Pyrgiotakis, E.G., Travlos, N.G., *Value Creation in European Bank M&As*, SSRN Electronic Journal, 2023
[83] Tourani Rad, A., Van Beek, L., *Market valuation of European bank mergers*, European Management Journal, vol. 17, 1999
[84] Cybo-Ottone, A., Murgia, M., *Mergers and shareholder wealth in European banking*, Journal of Banking and Finance, vol. 24, 2000

significant positive abnormal returns in national M&As, suggesting that in cross-border deals the target is relatively small and therefore does not generate any value. Schmautzer (2006)[85] found that cross-border mergers may be a value creating activities, but only if we consider a compensating value destruction for some other stakeholders. The author also highlighted how, since other studies did not report any potential harms to debtholders and the general public as a result of an international M&A, cross-border activities should be encouraged by the policymakers. Yet, his study also showed how country-specific factors still affect the outcome of the deal. In particular, the bidders seem to be able to generate better returns when the economic distance among the bidder and target country is low. On the other hand, Nnadi and Tanna (2010)[86] observed an initial positive response from the market one month prior the announcement of a cross-border merger. However, the positive trend inverted closer to the announcement date, registering a CAR as low as -41.5% two weeks after the news. The high volatility of the returns is explained by the higher degree of uncertainty associated with cross-border mergers due to economic and regulatory differences. Moreover, Drymbetas and Kyriazopoulos (2014)[87] highlighted in their study how the results of cross-border megers are usually mixed. Indeed, acquirers usually experience negative abnormal returns close to the announcement date as low as -1%, while targets are often rewarded with a strong market reaction. Finally, Karolyi and Taboada (2015)[88] explored the importance of the bidder and target countries regulatory frameworks. In particular, their study found that cross-border mergers are not necessarily associated with negative or positive returns. In fact, the sign and magnitude of the CARs depends mostly on the country-specific characteristics. The highest bidders returns observed in their study are found in cases where the target country has weaker regulation and low supervisory power, suggesting that the market rewards regulatory arbitrage of acquiring banks.

As highlighted by the literature review proposed in this paragraph, different scholars adopted various approaches and yielded heterogeneous results. Even though we can identify some recurring patterns in the majority of the studies, it is still difficult to

[85] Schmautzer, D, *Cross-border bank mergers: who gains and why?,* SSRN Electronic Journal, 2006
[86] Nnadi M., Tanna S., *Analysis of domestic and cross-border mega-M&As of European commercial banks,* Financial Engineering Laboratory – Technical University of Crete, 2010
[87] Drymbetas, E., Kyriazopoulos, G., *Short-term stock price behavior around European crossborder bank M&As*, Journal of Applied Finance & Banking, vol.4, 2014
[88] Karolyi, A.G., Taboada, A.G., *Regulatory arbitrage and cross-border bank acquisitions*, The Journal of Finance, vol. 60, 2015

come up with a decisive result on the impact of bank M&As on the share performances. In particular, most scholars agree on the positive performance observed on the target's side of a transaction, but do not share same results when assessing the value creation for bidding banks. Even more debated is the different impact on returns of domestic versus cross-border deals on the bidder's side, with contrasting views and interpretations of the results.

CHAPTER 4
Research Methodology

In this section the empirical analysis we performed based on the methodologies described in the previous chapter is illustrated.

In particular, we will adopt an event study-based approach to investigate the effects of the announcement of M&A transactions among financial institutions on the bidding bank's stock returns, through the analysis of abnormal returns that the banks recorded around the announcement date of the deal.

The decision of focusing just on the bidders' returns is based on the fact that all the previous studies on the topic found that the target banks often registered positive returns across all the different event windows, while bidders did not show a homogeneous pattern in the extra-returns. Furthermore, given the lack of extensive literature analysing the post-crisis returns, this research will perform the analysis on the transactions that took place exclusively after the GFC. As shown in the previous chapter, it was thought to be of interest to conduct a comprehensive research on the perceived impact of bank M&As after 2008, given the current consolidation trend shaping the credit industry in Europe.

Hence, the first paragraph describes the parameters that has been chosen to select the sample of the transactions, covering the sources and the criteria we used for the study. The paragraph will also provide a breakdown of the different deal characteristics, types, and geographical locations.

The second paragraph will illustrate the methodology that has been applied to the sample to perform the analysis. In particular, it will run through how the CARs have been derived from the application of the market model and the calculation of the expected returns.

After the description of the methodology, the third paragraph will run through the different approaches and instruments that we will adopt to perform the various robustness and validity checks on the model findings. In fact, given the high level of complexity associated with the analysis and the different assumptions and estimations made to determine the abnormal returns and, therefore, to derive the conclusions, the

model will require a strong series of tests to ensure that the findings are consistent and statistically significant.

This chapter, through the illustration of the sample and of all the steps that have been taken to implement the event study methodology, serves as the basis for the empirical analysis that will be conducted and presented in the next chapter, where we will discuss the findings of our study.

4.1 Data sample selection

The analysis is based on daily stock prices of banks headquartered in the EU-27 area that successfully completed M&A deals from 2010 to 2025.

As the goal of the analysis is to measure investor reaction to these announcements, we are interested only in banks that were active and continuously traded on the market throughout the period of interest. The transactions sample has been extracted from three well-known databases, Mergermarket, BankFocus, and Capital IQ. Mergermarket is an Acuris database which provides deal intelligence and analysis on M&A transactions globally. BankFocus, is instead a banking database provided by Moody's Analytics (formerly Bureau Van Dijk). Capital IQ, on the other hand, is a fully integrated financial information provider distributed by S&P Global and integrating M&A information, financial analysis, and market data of public and private companies globally.

The specific filters which have been applied to derive the sample and cross-refer the data from the three different providers are the following:

- Announcement date of the M&A deal between 01/01/2010 and 31/07/2025;
- The deal status is "Completed";
- Both the bidder and the target are classified as banks[89];
- The bidder is publicly listed;
- Both parties are headquartered in a EU-27 country;
- The deal value is disclosed;

[89] For this purpose, two sub-criteria have been used and the results have been cross-referenced to create a fully comprehensive sample of M&A deals. In particular, we used both the sector classification "Banks", as each database uses internally, and the NAICS 2017 sector code to include only commercial banks.

After exporting the data from the databases, the initial sample consisted of 84 transactions over the 15 years considered. However, we checked each transaction and its characteristics, first eliminating all the M&As whose deal value was smaller than €30 mln. Then, deals including minority stakes or acquisitions of minor business areas have been excluded. Finally, as we will see in detail in the next chapter, seven more deals have not been considered after the preliminary regression analysis and significance tests of the OLS coefficients estimated. As a result, the final deal sample that will be considered for the analysis consists of 44 observations. The general time distribution of the deals is summarized in the table below:

Table 4.1: Deals time distribution

Year	**No. of deals**	**Average value (€ mln)**
2010	2	617
2011	2	2,643
2012	6	1,049
2013	2	509
2014	4	596
2015	4	131
2016	5	544
2017	3	475
2018	1	200
2019	3	330
2020	5	2,118
2021	3	440
2022	1	725
2023	3	220
2024	-	-
Total	***44***	***10,597***

Source: Author's elaboration

As it could be seen from Table 4.1, the first years were characterized by a lower number of transactions that could be explained by the general economic downturn resulting from the crisis happened in 2008. From 2012 onwards, the M&A activity seems to recover, with an increasing number of selected transactions. Despite 2013 includes, in

our analysis, only two transactions, it is important to remark that we excluded on purpose four transactions happened in that year given the non-significant coefficients derived from the OLS estimation. This can be explained by the fact that those transactions happened in Greece, a country which experience a severe financial crisis in those years, where bank M&As were mostly driven by the country's interest of preserving the soundness of the banking sector, avoiding the collapse of some credit institutions through M&A activity. In addition, it is interesting to note that the average deal value is higher in the early years shown, closer to the GFC and during the 2012 debt crisis in Europe. From 2013 onwards, in fact, the average deal value observed decreases to as low as €131 mln in 2015. The year with the smallest number of deals, according to the criteria we used in this study, is 2018, with only one transaction falling in scope. Finally, in 2020 we observe a steep increase in the average transaction value, driven by two mega-deals, which are the acquisition of UBI Banca by Intesa Sanpaolo for €3,940 mln and Caixa's takeover of Bankia for €5,486 mln.

Table 4.2: Domestic and Cross-border deals comparison

	Domestic		**Cross-Border**	
Year	**No. of deals**	**Average value (€ mln)**	**No. of deals**	**Average value (€ mln)**
2010	1	679	1	555
2011	1	1,344	1	3,942
2012	4	1,290	2	568
2013	1	64	1	954
2014	4	596	-	-
2015	1	241	3	94
2016	4	528	1	610
2017	1	476	2	475
2018	-	-	1	200
2019	2	335	1	320
2020	4	2,619	1	115
2021	2	451	1	419
2022	1	725	1	260
2023	-	-	2	200
2024	-	-	-	-
Total	***26***	***9,348***	***18***	***8,712***

Source: Author's elaboration

The table above presents the comparison among domestic and cross-border deals over per year over the 15 years analysed. At a first glance, it clearly emerges the predominance of domestic transactions over international ones. However, despite cross-border deals are less than half of the total sample, the average value is almost in line with the one recorded for domestic transactions. As a result, what we observed when constructing the sample is in line with the theories anticipated earlier in this work, stating that during crises, banks are less likely to engage in international transactions while, at the same time, credit institutions in countries facing economic downturns are more likely to be considered as targets from foreign bidders. That is why, as the table below shows, most of the cross-border transactions belong to banks in the Eastern Europe or countries which experienced a severe downturn during the 2010s.

Table 4.3: Bidders and Targets geographical distribution

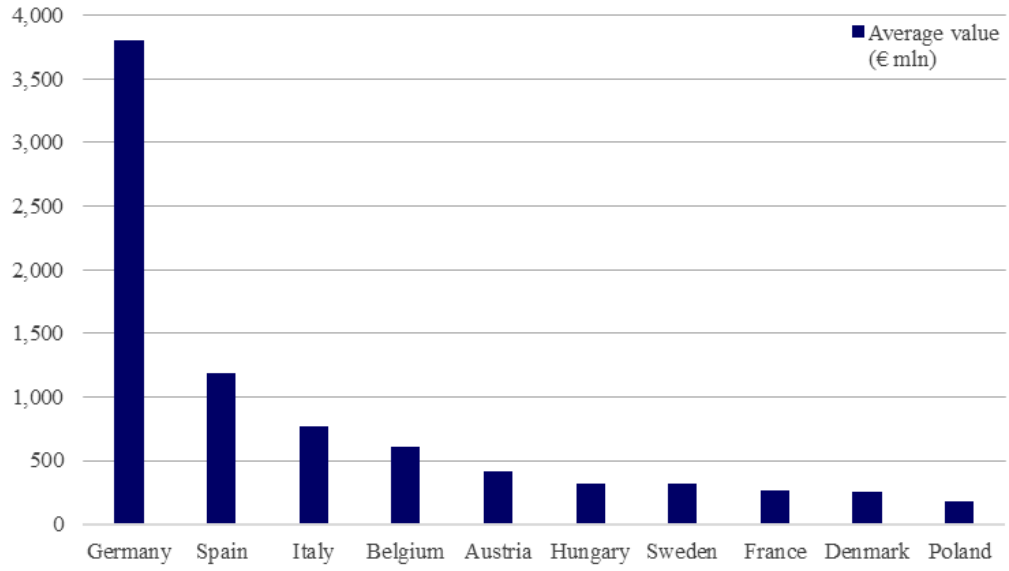
		Target country												
		BG	**DE**	**DK**	**ES**	**FR**	**IE**	**IT**	**PL**	**PT**	**RO**	**SE**	**SI**	***Total***
Bidder country	**AU**						1							***1***
	BE	1												***1***
	DE		1											***1***
	DK			4										***4***
	ES		1		9				3	3				***16***
	FR				1	1		3	2					***7***
	IT							8			2			***10***
	HU												1	***1***
	PL								2					***2***
	SE											1		***1***
	Total	***1***	***2***	***4***	***10***	***1***	***1***	***11***	***7***	***3***	***2***	***1***	***1***	**44**

Source: Author's elaboration

The table presented clearly shows what stated by the theory. The most targeted countries in those years are, in fact, Italy and Spain, which experienced severe turbulences during the debt crises that hit southern Europe from 2012. Then, Poland also recorded a strong number of transactions during the 15 years considered. If we look at Table 3.3 from another perspective, it also emerges that the countries which were major targets in cross-border transactions are Italy, Portugal, Poland, and Romania. In particular, Italian banks were targets of international bidders in three transactions, the same number as Polish and Portuguese banks, with Romanian institutions being targeted just twice. In this context, the major bidders are France and

Spain, which are also among the most active nations in our sample. Beside these countries, Italy recorded two cross-border deals towards Romanian banks initiated from UniCredit and Intesa Sanpaolo, targeting Alpha Bank and First Bank respectively. Ultimately, also Austria, Belgium, and Hungary engaged in one cross-border transaction each, acquiring in order an Irish, Bulgarian, and Slovenian bank.

Chart 4.1: Average Deal Value by Country



Source: Author's elaboration

The chart above illustrates the average deal value per bidding country. The clear outlier in the sample is Germany. In fact, according to our criteria, Germany engaged in one single transaction, yet it can be considered as a mega-deal. In 2012, the German Deutsche Bank merged with one of the largest financial services provider in Germany at the time, Postbank, for €3,800 mln. Beside Germany, the countries which present the highest average deal value are Spain, Italy, and Belgium, followed by Austria, Hungary, and Sweden. On the contrary, the countries with the lowest average transaction value were Poland, Denmark, and France. The high value associated with Spanish bidders, precisely €1,184 mln, is mostly driven by the two mega-deals of 2011 and 2020. Respectively, Santander acquired Bank Zachodni (Poland) for €3,942 mln, and Caixa Bank took over Bankia for €5,486 mln. The Santander-Bank Zachodni transaction also represents the biggest cross-border deal of the whole sample in terms of acquisition price. Italy's top two deals are the acquisition of UBI Banca by Intesa

Sanpaolo for €3,940 mln in 2020 and the merger of Banco Popolare and Banco Popolare di Milano Scarl in 2016 for €1,575 mln, which resulted in the creation of one of the largest banking groups in Italy. Belgium, like Germany, engaged in one single transaction with Interlease Bank, a Bulgarian institution, for a total value of €610 mln. It is also interesting to point out how France, despite being among the top bidders in terms of number of deals, registered the third lowest average value, €267 mln. This can be seen as an empirical proof of the trend we described in the previous chapter, with the average deal value per year decreasing since the post-crisis period, showing that banks are now engaging in less big transactions, favouring deals of smaller size.

4.2 Event study methodology

As anticipated earlier in this work, the methodology that we adopt to assess bank M&As impact on bidders return is the event study approach. An event study is an econometric methodology vastly employed in finance to evaluate how an event influences the stock prices or other financial metrics of a firm within a defined timeframe. The idea of this approach was first formulated by Fama, Fisher, Jensen and Roll (1969)[90] and is based on the underlying Efficient Market Hypothesis (Fama, 1970). In its semi-strong form, the Efficient Market Hypothesis states that security prices fully reflect all the publicly available information and, therefore, the effects of an event will be incorporated into the stock prices over an arguably short period of time. Moreover, the event study methodology also assumes that the market doesn't have any anticipations related to the event – in our case the announcement of the M&A transaction – and therefore there should not be any abnormalities in the stock prices of the parties involved prior to the announcement to the general public. However, it is generally the case that some information will be perceived in advance by some market players. Especially in the context of M&A deals announcements, there are generally rumours that are already spread in the market, thus influencing the stock prices even prior to the actual announcement. It is for this reason that the event study methodology has developed to adopt various event windows that cover a period of time both before and after the announcement date.

[90] Fama , E. F., Fisher , L., Jensen, M. C., Roll, R., *The adjustment of stock prices to new information*, International Economic Review, vol. 10, 1969

As mentioned in the previous paragraph, we collected the initial sample of completed transactions among European banks from 2010 to 2025. In order to apply the event study approach to determine the impact of deals announcement on the bidding banks, we have downloaded from Bloomberg the daily share prices of the acquirers.

The first step to determine the abnormal returns is the calculation of the observed returns of the security through the following formula:

$$R_t = \frac{P_t - P_{t-1}}{P_{t-1}};$$

where R_t is the return at time *t*, P_t is the price of the security in *t* and P_{t-1} is the price in *t-1*. Applying this formula to the closing prices derived from Bloomberg, we obtain the daily returns for each bidder over the time period of our interest. Next, we compute the expected return ($E(R_{i,t})$) through the market model formula described in the literature review chapter:

$$E(R_{i,t}) = \alpha_{i,t} + \beta_{i,j} R_{mt}$$

where $\alpha_{i,t}$ and $\beta_{i,j}$ are the regression coefficients and R_{mt} is the daily return of the benchmark index *m* at day *t*. As a benchmark we used the EURO STOXX Banks index, tracking the performance of the European banking sector. Through the application of the market model, we can compute the OLS parameters of the regression for each transaction and test for the significance of the coefficients through the p-value method. The estimation period for the expected returns that we employed starts 260 days before the announcement and ends 20 days before the date, aiming to derive the OLS parameters from stock data not affected by any potential rumours on the transaction.

Once the returns of the bidders and the expected returns are obtained, the abnormal returns can be calculated:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

Through this formula, we apply the "unaffected" estimated coefficients to the observed returns during the event windows of our interest to compute the expected returns around the announcement date and, from there, we derive the ARs. The event windows τ that have been considered are: [-15; +15], [-10; +10], [-5; +5], [-2; +2], [-1, +1], {0}, [-10; +1], [-1; 0], [-2; 0], [-5; 0], [-10; 0], [-15; 0], [0; +1], [0; +2], [0; +5], [0; +10], [0; +15]. During each even window, we can compute the cumulative abnormal returns:

$$CAR_{i,[t_1;\,t_2]} = \sum_{t=t_1}^{t_2} AR_{i,t}$$

where [t_1; t_2] represents the various windows that we decided to consider.

The final step to determine the impact of M&A announcements on bidders returns is the aggregation of the CARs for each event window and transaction into the cumulative average abnormal returns (CAARs):

$$CAAR_\tau = \frac{1}{n}\sum_{i=1}^{n} CAR_\tau$$

where τ represents each event window chosen for our analysis.

As anticipated at the beginning of the chapter, all the returns and CAARs will be first calculated on the whole sample, and then the model will be applied again to two separate samples distinguishing for domestic and cross-border deals.

4.3 Robustness and validity check

Throughout the implementation of the model, all the empirical findings have to be tested for robustness and validity to guarantee the credibility and generalizability of our findings. The analysis will implement different procedures in each step of the event study methodology, testing systematically the model's assumptions and results.

As we mentioned in the previous paragraph, the first step of the analysis is the estimation of the OLS parameters through the application of the market model for each transaction that will then be used for the estimation of the "unaffected" expected returns around the announcement date. The results of the regressions represent a crucial part of the whole analysis, given that they will influence the outcome of the CAARs calculation and, therefore, of all the model. Thus, we test statistically the coefficients of the 44 regressions run for each transaction to assess their statistical significance. The first statistic we look at when evaluating the validity of the model is the R^2. The R^2, or coefficient of determination, is calculated through the following formula:

$$R^2 = \frac{SSR}{SST} = \frac{\sum(\hat{y}_i - \bar{y})^2}{\sum(y_i - \bar{y})^2}$$

where SSR is the regression sum of squares, or the variation explained by the model, and SST is the total sum of squares, or the total variation in the data. Hence, $\hat{y}_i$ are the fitted values from the market model regression, while y_i are the actual observed returns and $\bar{y}$ is the mean of returns. It is then clear how the R^2 measures how much of the variation in the dependent variable – in our case the bidder's stock returns – is explained by the model. A higher R^2 implies that the model has a better explanatory power and explains the variation in the dependent variable's returns. In our case, a high R^2 suggests that the estimated abnormal returns will be based on a model that actually captures the relationship between the bidder's stock and the market, increasing the reliability of the results. The coefficients' validity will then be checked through its reported p-value. Generally speaking, a low p-value indicates that the estimated coefficient is unlikely to be non-significant and therefore we can reject the null hypothesis according to which the slope of the market model equation is equal to zero.

After having tested the regressions run on the stock returns and derived the OLS parameters, we can proceed with the calculation of the ARs and CARs over the different event windows. In this phase, the CARs are analysed to manage for any potential outliers. As Ghosh and Vogt (2012)[91] suggested in their study, outlier management is a crucial part of a robustness check within a model, especially in the case of financial variables that may contain some extreme observations that can affect the outcome of the whole model. Therefore, the data are manipulated through the winsorization technique to reduce the extreme effects of outliers on the model by setting the observed values over the 99th and below the 1st percentile at the threshold level. By applying this method, we can ensure more robust findings for both the estimates and the CARs through the minimization of the impact of extreme values.

At this point, we perform a statistical significance test on the actual outcome of the model, the CAARs. The Student-t test is carried out to assess whether the cumulative average abnormal returns are different from zero. The t-statistic used for this analysis is calculated as:

$$t_{CAAR} = \frac{CAAR_\tau}{\hat{\sigma}(CAAR_\tau)}$$

[91] Ghosh, D, Vogt, A, *Outliers: an evaluation of methodologies*, Journal of Statistical Computation and Simulation, 2012

where the denominator $\hat{\sigma}(CAAR_\tau)$ is the estimated standard deviation of the CAAR and is calculated through the following formula:

$$\hat{\sigma}(CAAR_\tau) = \sqrt{\frac{1}{N^2}\sum_{i=1}^{N}\sum_{t=\tau_1}^{\tau_2}\widehat{\sigma_{i,t}^2}}$$

where τ_1 and τ_2 represent the start and the end of each event window, and $\widehat{\sigma_{i,t}^2}$ is the variance of the abnormal returns for each security *i* calculated during the estimation window.

The findings will further receive stability through the different alternative specifications that we perform. As already mentioned, we will conduct the first analysis on the broader sample, including all the 44 transactions. Then, the analysis will be conducted by splitting the sample into two different subsets to account for the different impact of the announcement in the case of cross-border and domestic deals. The implementation of different specifications of the model may therefore lead to reduce the likelihood of reverse causality and therefore to more robust and consistent results.

Finally, the study addresses potential endogeneity problems through the design of the event study methodology. First, the abnormal returns are calculated mostly in very narrow windows around the announcement date of the deal, minimizing the effect of other exogenous and non-related shocks to the stock price. Moreover, the expected returns obtained through the OLS estimation are derived in a pre-event window, limiting the possibility of information leakage and distorted returns. Then, the market model approach to estimate the expected returns is risk-adjusted, in the sense that using a market index as benchmark removes potential market-wide shocks during the estimation window and therefore implies that the derived abnormal returns reflect just the deal news rather than macro conditions.

The robustness and validity tests will serve as a key part of our analysis to reinforce the study's findings. Through these methods the thesis will show how the market perceives and reacts to the announcement of M&A deals among financial institutions, especially in the context of international transactions.

CHAPTER 5
Results

In this section, we present the results of our empirical analysis and perform the robustness checks to validate the findings. To answer the research questions, we adopt the event study methodology, as discussed in the previous chapter. Thus, we begin by running an OLS regression for each transaction to estimate the expected returns, through which we then calculate the abnormal returns (ARs) and the cumulative abnormal returns (CARs).

To present a consistent and coherent work, the structure of this chapter will follow the different steps we took to derive our conclusions. In the first paragraph we will discuss the findings of the market model, illustrating the characteristics of the OLS predictors and their robustness.

Then, we estimate the CARs both for the total sample and for the two sub-samples of domestic and cross-border M&A deals, building three different models to determine the market reaction to deal announcements.

Therefore, the second paragraph will cover the findings of the preliminary analysis over the whole sample, while the third will illustrate the other specifications of the model, differentiating for cross-border and domestic deals.

To correctly interpret the results, we recall that a positive CAR denotes a stock return higher than the expectations, according to the expected return estimated through the market model.

5.1 Market model estimation

As we saw in the previous chapter, the first step to be done is the estimation of the expected returns of the stock, which will serve as the basis to determine the abnormal returns and the CARs to derive the final conclusions.

To do so, we perform an OLS regression for each transaction's bidder over an estimation window of [-260; -20], taking the daily returns of the stock and the index EURO STOXX Banks. The rationale of choosing such window is to avoid any potential rumours and information leakage that may distort the unaffected returns of the security. Therefore, we apply the regression to the lagged returns to obtain the

unaffected OLS coefficients that we will later use for the ARs. Table 5.1 presents the descriptive statistics for the coefficients and the main statistics associated with the model.

Table 5.1: Market model estimation results

Statistic	**α**	**β**	**R^2**	***t-stat* (β)**
Mean	0.0002	0.8603	0.6291	20.28
Median	0.0002	0.9087	0.6870	19.09
Std. Dev.	0.0009	0.2190	0.2311	10.12
Min	-0.0011	0.2213	0.2360	4.29
Max	0.0028	1.3302	0.9118	41.44

Source: Author's elaboration

The key statistics reported in the table include the intercept, the slope coefficient of the market model, the coefficient of determination, and the t-statistics associated with the estimated betas. These results provide the basis for our further analysis and ensure that the market model captures correctly the relationship between the market index and the stock returns.

Starting with the intercept α, the mean is close to 0, with the minimum and maximum values confirming the result of the mean. Under the market model assumptions, the intercept represents the average return of the stock that is not explained by the benchmark index. In this case, given that the EURO STOXX Banks replicates the trend of the European banking sector, it can be assumed that a very little portion of the security's return can be explained by the α.

The slope coefficient β has a mean of 0.8603, suggesting that, on average, the bank stocks in the sample are strongly related to market movements, being the values relatively close to one. The standard deviation (0.2686) may seem relatively high. However, this can be explained by the heterogeneity of the sample, comprising both large banks with global operations as well as smaller and domestic institutions. Such differences do not undermine the validity of our model, being explained by the differences in the business models of each bank. In fact, the table reports also the t-

statistic for the coefficients, whose average of 20.28 suggests a statistical significance of all the βs at a 1% significance level.

Finally, the R^2 values generally confirm that a large and acceptable portion of the variance in the stock returns is captured by our model. Therefore, taking all these results together, we can safely state that our model appropriately estimates the expected returns and provides a solid basis for the analysis of the ARs.

5.2 Empirical findings – Bidder returns

Following the methodology described in the previous chapter, the CAARs have been derived through the calculation of the abnormal returns compared to the values estimated by the market model. In this paragraph, we will present the results of the first specification of our model considering the whole sample of 44 transactions.

Table 5.2: Bidder CAARs on the whole sample

Event Window	CAAR	Pos/Neg	*t-stat*
[-15;+15]	0.0040	22/22	0.3577
[-10;+10]	0.0033	20/24	0.3601
[-5;+5]	0.0115	28/16	1.5056
[-2;+2]	0.0143	26/18	2.1897
[-1;+1]	0.0151	27/17	2.4513
{0}	0.0131	30/13	2.3114
[-10;+1]	0.0062	23/21	0.7648
[-1;0]	0.0151	27/16	2.5458
[-2;0]	0.0149	25/19	2.4839
[-5;0]	0.0136	25/19	2.0057
[-10;0]	0.0058	19/25	0.7481
[-15;0]	0.0160	26/18	1.9684
[0;+1]	0.0132	28/16	2.2213
[0;+2]	0.0122	31/13	1.9988
[0;+5]	0.0107	27/17	2.0309
[0;+10]	0.0103	26/18	1.3833
[0;+15]	0.0008	23/21	0.0982

Source: Author's elaboration

Table 5.2 summarizes the results of our model in its first specification, comprising the overall sample of transactions. The table provides the cumulative average abnormal returns, the associated t-statistics testing whether the mean CAAR differs from zero, and the ratio of positive to negative CARs observed in each window.

The trend of the bidder returns in the sample of transactions going from 2010 to 2025 is mixed. Starting with the longer windows [-15, +15] and [-10, +10], the CAARs are almost close to zero (0.0040 and 0.0033 respectively). This result is also confirmed by the reported t-statistics which imply that, over a month-long event window, the market does not attribute any long-term value creation to the announcement of the deal.

On the other hand, shorter event windows report more significant results. In fact, the [-1, +1] window yielded a CAAR of 1.51%, with a t-statistic significant at a 5% level. Similarly, the [0, +1] window shows a CAAR of 1.32% and a t-statistic of 2.22. These results seem to suggest that bidding banks record positive and significant abnormal returns in the two days around the announcement date. As we move further from the announcement date, the returns become slightly less relevant. While the [-2, +2] window still shows a positive and significant CAAR, the [-5, +5] reports a lower and marginally not significant CAAR.

Looking at the pre-announcement windows, the longer term time horizon of [-10; +1] yields a non-significant return of 0.0062, while the event window [-2; 0] reports a CAAR of 0.0149 with a t-statistic of 2.48, suggesting that the market incorporates earlier than the announcement date the impact of the M&A deal announced through some information leakage.

The post-announcement windows display positive and significant CAARs up to the [0, +5] window. Then, as seen for the symmetric longer windows, the t-statistic suggests that the mean CAAR do not significantly differ from zero.

Finally, the column Pos/Neg provides additional interpretation of the results. For the majority of the event windows we considered, the number of positive CAARs exceeds that of negative ones, suggesting that the final results of our model are driven by the majority of the observations, with fewer outliers recording the negative returns. Even in less significant event windows, such as the [0, +10] one, the majority of the banks – 26 out of 44 – report positive CARs.

5.3 Empirical findings – Domestic and international deals' returns

After having presented the first results of our study, it is now interesting to separate the sample to account for domestic and cross-border transactions and answer to the second research question of this thesis.

For this purpose, the sample of 44 transactions has been divided into two groups: 26 domestic transactions and 18 cross-border M&As.

The table below (Table 5.3) illustrates the values for the event windows we considered for the overall sample, now associated only with the domestic transactions.

Table 5.3: Bidder domestic CAARs

Event Window	**CAAR**	**Pos/Neg**	***t-stat***
[-15;+15]	0.0242	15/11	1.4826
[-10;+10]	0.0086	11/15	0.6136
[-5;+5]	0.0177	17/9	1.9627
[-2;+2]	0.0242	16/10	2.3472
[-1;+1]	0.0238	18/8	2.4036
{0}	0.0195	19/6	2.0491
[-10;+1]	0.0129	14/12	1.0307
[-1;0]	0.0241	17/8	2.4244
[-2;0]	0.0231	15/11	2.3513
[-5;0]	0.0208	16/10	1.9917
[-10;0]	0.0122	13/13	1.0018
[-15;0]	0.0356	18/8	2.5201
[0;+1]	0.0194	19/7	2.0382
[0;+2]	0.0198	20/6	2.0521
[0;+5]	0.0157	15/11	1.9789
[0;+10]	0.0151	15/11	1.3289
[0;+15]	0.0073	14/12	0.5998

Source: Author's elaboration

The broader event windows – [-15, +15] and [-10, +10] – report positive CAARs. However, their t-statistics is lower than the threshold level for significance, thus we can conclude that, even in this model specification, longer windows do not provide valuable insights on the impact of M&A deals announcements on the bidder returns.

When focusing on the shortest windows used, the market reaction is clearly positive, with the highest CAAR recorded in the [-2, +2] event window at 2.42%. Across the five days surrounding the announcement, the CAARs observed over the domestic transactions sample are generally all significant at a 5% level and higher than the CAARs we observed over the overall group. In fact, while comparable windows for the broader set of M&A deals produced abnormal returns of about 1.3-1.5%, these transactions report CAARs closer to 2-2.4%, suggesting that the market expects domestic transactions to produce more value creation.

Evidence of positive returns is also found in the days immediately before the announcement date. The [-1, 0] window presents a CAAR of 0.0241 and a t-statistic of 2.42, while the [-2, 0] window records a return of 0.0231, significant at a 5% threshold. These findings may demonstrate how domestic deals are more predictable to the market and that, in these cases, rumours prior to the announcement favour information leakage, anticipating the market reaction.

Once again, the effect of the transaction on the post-announcement windows are more diluted as we get further from the date. In the short-term windows [0, +2] and [0, +5], the CAARs are still positive and significant, but in longer windows up to 15 days after the announcement the returns are non-significant and close to zero.

International deals considered in our study reported a completely different picture. While in the previous specifications of the model most of the CAARs were positive, in this case a vast number of observations reported negative returns. Table 5.4 summarizes these results.

Table 5.4: Bidder cross-border CAARs

Event Window	**CAAR**	**Pos/Neg**	***t-stat***
[-15;+15]	-0.0252	7/11	-1.8905
[-10;+10]	-0.0042	9/9	-0.4050
[-5;+5]	0.0025	11/7	0.3293
[-2;+2]	0.0000	10/8	-0.0001
[-1;+1]	0.0026	9/9	0.5433
{0}	0.0042	11/7	1.4271
[-10;+1]	-0.0035	9/9	-0.4354
[-1;0]	0.0027	10/8	0.8035
[-2;0]	0.0029	10/8	0.8452
[-5;0]	0.0033	9/9	0.5959
[-10;0]	-0.0034	6/12	-0.4701
[-15;0]	-0.0124	8/10	-1.2723
[0;+1]	0.0041	9/9	0.9116
[0;+2]	0.0013	11/7	0.2430
[0;+5]	0.0034	12/6	0.5679
[0;+10]	0.0034	11/7	0.4306
[0;+15]	-0.0086	9/9	-0.8983

Source: Author's elaboration

Looking at the longer symmetric windows, the results show negative abnormal returns. Even in shorter event windows, we did not record any significantly different from zero abnormal returns. The broader symmetric windows, such as [-5, +5] and [-1, +1]

reported slightly positive CAARs, but their t-statistics lack of robustness, leading to non-relevant conclusions.

In the post-announcement period, the findings remain weak and inconsistent. In fact, the [0, +2] window records a CAAR of 0.0013, while the [0, +5] window's return amounts to 0.0034, in contrast with the trend we saw in the two previous analysis of a fading impact of the announcement over longer windows.

The Pos/Neg ratio reinforces our findings of the event study approach. In many windows, the number of negative returns is more than the number of positive ones, suggesting that, despite the low significance of the CAARs, bidding banks often record negative abnormal returns in the context of cross-border deals.

CHAPTER 6
Conclusions

The following pages will present the results of the analysis conducted in this dissertation, discussing the key findings and drawing the conclusions from the evidence of the model. Furthermore, we will analyse the implications of our findings for bank managers and policy makers, aiming to derive a general framework which can be useful for these players to drive the growth of the European banking sector and stimulate the integration and the development of the single market and of the banking union.

6.1 Summary of key findings

As we have seen through the course of this thesis, the bank M&As have had a crucial role in the banking sector starting from the 1990s. In fact, driven by the financial deregulation and integration of the European single market, credit institutions started exploring growth opportunities, both domestically and abroad, through M&A transactions until 2008, when the financial crisis drastically interrupted this phenomenon. However, with the beginning of the 2010s, the M&A activity in the banking sector started to recover and is currently experiencing an unprecedented boom, especially in the Italian market.

The first two chapters of this thesis were dedicated to the description of the historical and current structure of the European banking sector, focusing on the regulation and the drivers shaping the bank M&A market, and to a detailed review of the previous studies that have been done on the topic, aiming to understand the previous findings, as well as to discover the current gaps that still need to be assessed. After having outlined the theoretical framework that serves as the basis for the thesis, we walked through the construction of the model used for the analysis and its different specifications, to then present the results we found.

This research investigated the effect on bidders' stock returns of the announcement of M&A transactions, by distinguishing for domestic and cross-border deals. The analysis was based on the estimation of expected returns for each bidder through the market model, to then construct the abnormal returns and the cumulative average abnormal returns and draw the conclusions.

The results of the empirical analysis showed that the CAARs for bidding banks are often positive around the announcement dates. The statistical significance of our results further confirms the validity of the model. Across the whole sample, various event windows considered yielded significant and positive CAARs, with the most pronounced reactions concentrated over the very few days surrounding the date, specifically the [-2, +2] and [-1, +1] windows. These results confirm that the market generally attributes value creation to the announcement of M&A transactions across banking institutions. However, the market reactions have been found to be limited to the short-term. In fact, when analysing longer event windows, the CAARs derived are almost always close to zero or non-significant.

When differentiating for domestic and cross-border transactions, our analysis found heterogeneous results. The CAARs observed in the sub-sample of 26 domestic deals are consistently higher than those derived from the first specification of our model. In fact, while the abnormal returns on the whole sample amounted to 1.3-1.5% over the short-term, domestic M&As yield CAARs up to 2.42%. These results demonstrate that, broadly speaking, the domestic transactions are driving the abnormal returns in bank M&As, confirming our expectations based on the previous studies we discussed in Chapter 3 (see Tourani Rad and Van Beek (1999) and Cybo-Ottone and Murgia (2000) for reference).

In contrast, international transactions present a very different picture. First, the CAARs are found to be non-significant over the various event windows taken into consideration. Moreover, none of the windows report a different from zero abnormal returns, which also turn negative in some cases. Recalling the theoretical framework presented in the Chapters 2 and 3, our findings are consistent with the intuition that investors seem to be sceptical that cross-border deals can generate value, likely due to the regulatory, institutional, and cultural differences that still persist in Europe.

Overall, these findings present a clear asymmetry in the different market reactions to the announcement of bank M&As. On one hand, domestic M&As are perceived as value-creating and, therefore, bidders are rewarded with positive abnormal returns. On the other hand, cross-border deals fail to generate value and are sometimes seen by the market as value-destroyers. In general, the analysis we performed found consistent results in accordance with the previous studies, confirming that the market rewards bidders who are exploring inorganic growth to M&A opportunities, with the strongest

and most reliable returns associated with transactions taking place within the national borders.

6.2 Managerial and Policy Implications

The analysis of this dissertation supports the studies showing a positive market reaction associated with the announcement of bank mergers. The evidence of our research suggests that, on average, bidders generate significantly different from zero abnormal returns in the short-term.

While previous studies addressed this topic focusing mostly on the pre-2008 banking sector, and not all of them focused on the difference among domestic and cross-border deals, this dissertation contributes to the existing literature addressing these research gaps and updating the current studies on the topic. Moreover, this study carries several important implications for mangers and policy makers.

From a managerial perspective, the results suggest that inorganic growth through domestic M&As remains the most attractive option for shareholders value creation. Investors, indeed, reward national transactions and perceives them as enabler for synergies and for increased stability of the institutions, without facing the uncertainty related to international deals. Therefore, managers should have stronger incentives in prioritizing in-market opportunities, as it is now the case in the European banking sector. In contrast, the findings of our cross-border model specification show a lack of significant positive returns. Hence, managers considering international M&As must consider the greater execution risks associated with such operations due to the differences in governance, culture, and institutional setting. Without clarity in the execution strategy, the markets are less likely to reward bidding banks with abnormal returns at the time of the announcement.

The heterogeneous outcomes also hold significant implications for policy makers. The absence of a clear and positive market reaction to cross-border deals reflects the structural barriers that continue to exist in the European market. In particular, the differences in tax regimes, insolvency procedures, and deposit protection schemes, affect the positive outcome of international transactions. In fact, without a fully harmonised framework, banks operating across various jurisdictions are still facing additional risks and uncertainty. Advancing the Banking Union by finalising the third

pillar and harmonising the regulation related to cross-border bank M&As would help reduce this uncertainty and increase the likelihood of value-creation for international transactions. A more integrated banking sector would improve capital allocation across the European Union, enhancing financial stability and strengthening the competitiveness of pan-European banking groups. Still, it is important to remark that the consolidation must be accompanied by an increasingly stronger prudential oversight, reducing the risk of default of credit institutions considered "too big to fail".

Finally, the findings of this study carry a two-sided implication. For managers, the evidence highlights the importance and attractiveness of domestic M&As as value-creation strategies. For regulators, the results demonstrate the urgency of increased harmonization to remove the barriers and complete the Banking Union in Europe.

6.3 Limitations and Future Research

Despite the rigorous analysis conducted and the insights into the market reaction to bank M&As in Europe, it is possible to identify few limitations and opportunities for future research on the topic.

First, the analysis focused exclusively on bidder returns, without analysing the targets perspective. This methodology was chosen given the particular heterogeneity in the previous studies in terms of bidder returns. In fact, while targets almost always showed consistent and positive abnormal returns, bidding banks often reported negative or non-significant results.

Second, the event-study methodology captures only the short-term reaction of the market, limited to [-15, +15] days from the announcement date. Despite being suited for our purpose, such approach does not allow us to draw final conclusions on the ultimate outcome of the transaction. Future studies could complement this methodology with post-merger entities accounting and regressions to analyse in detail the outcomes of the transactions over the long-term and determine which factors influence the post-merger performance.

Furthermore, future research may differentiate between the different deal characteristics, including deal size, deal structure (cash vs stock payment), and bank business model (commercial vs universal bank), running cross-sectional regressions on CAARs to determine which variables drive the abnormal returns.

In conclusion, even if these limitations may slightly affect this dissertation, the findings of our model remain valuable and offer practical insights into the relation between bank M&As and shareholders value creation.

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