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Family Firms and Acquisition Premiums in Uncertain Times: Evidence from the European Market during COVID-19

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Abstract

The economic disruptions during the Covid-19 crisis significantly impacted the likelihood and dynamics of mergers and acquisitions transactions. Indeed, the economic turmoil impacted the strategic decisions of family firms, a prevalent yet frequently overlooked form of ownership. This paper is one of the first to attempt to analyze the M&A bid premiums of family firms during the Covid-19 period. Using Ordinary Least Squares (OLS) regression, we analyze one-week and one-month premiums paid by European publicly listed from 2018 to 2024, focusing on the Covid-19 crisis. Findings reveal that family firms consistently pay higher premiums than non-family firms during the crisis, particularly when using the date of most recent terms as a proxy for the Covid-19 period. Further, while family stock ownership did not exhibit any statistical significance, results showed that family firms positively react to government policies measured by the Government Response Index (OxCGRT), suggesting increased confidence in economic recovery. These results provide insights into family firms' behavior during periods of market downturns in their M&A transactions, emphasizing their long-term orientation and responsiveness to government policies.

Keywords: Family Firms, Covid-19, Crisis, Europe, Mergers and Acquisitions, Bid premiums, Government policies,

Extended Abstract

The Covid-19 crisis triggered unprecedented economic disruptions, profoundly altering the dynamics of mergers and acquisitions. In this environment of heightened uncertainty, this research focuses on the behavior of family firms, a prevalent yet often overlooked form of ownership, when engaging in acquisition decisions. The central objective is to examine how the unique attributes of family firms influence their strategies and acquisition premiums during a major crisis. More specifically, the study seeks to answer three fundamental questions: First, do family firms pay higher M&A premiums than their non-family counterparts during the Covid-19 crisis? Second, how do family control and ownership concentration affect acquisition premium decisions compared to non-family firms? And finally do government policies implemented in response to the pandemic shape acquisition premiums paid by family firms?

To address these questions, this study provides a comprehensive empirical analysis of M&A bid premiums paid by European publicly listed family firms between 2018 and 2024. Both one-week and one-month premiums prior to the announcement date are examined, and the analysis integrates variables related to family control and government policies. The goal is to provide insights for investors and policymakers, enabling better decision-making under comparable economic shock conditions and improving our understanding of the resilience and adaptive strategies of family firms during market turmoil.

The empirical investigation relies on a dataset of 394 M&A transactions involving European publicly listed acquirers. Data on deals and acquirer characteristics were collected from Refinitiv Eikon, while government policy indicators were sourced from the Oxford Covid-19 Government Response Tracker (OxCGRT). To test the three hypotheses, Ordinary Least Squares (OLS) panel regressions were conducted, using acquisition premiums as the dependent variable. Two proxies of the Covid-19 period were employed: the deal announcement date and the date of the most recent transaction terms, the latter providing a more realistic proxy for crisis-related adjustments in deal negotiations. Robustness checks were performed through alternative definitions of the crisis period, variations in premium measurement (one-week and one-month), and exclusion of control variables to mitigate multicollinearity risks.

The results show that family firms paid significantly higher M&A premiums during the Covid-19 crisis, particularly when the most recent terms date is used as the reference point. The healthcare sector also displayed higher premiums, reflecting its central role during the pandemic. By contrast, family stock ownership did not have a statistically significant effect, although the negative coefficients observed align with the literature on socioemotional wealth theory. Another major finding is the positive and significant interaction between the "Family Firm" variable and the Government Response Index (GRI), which demonstrates that family firms react favorably to government policies. This responsiveness suggests increased confidence in economic recovery and confirms their long-term orientation, even when there is a severe exogenous shock in the market.

Additional findings highlight that firms with stronger financial performance (measured by Return on Assets) tended to pay lower premiums, while transactions financed with cash were consistently associated with higher premiums, in line with existing financial literature.

In summary, this study contributes to the literature by demonstrating that family firms exhibit distinctive behavior during crisis periods, characterized by higher acquisition premiums and a strong sensitivity to government interventions. This reflects both their willingness to seize long-term opportunities in undervalued markets and their resilience in the face of uncertainty. Future research should expand the dataset across geographies and industries to validate these findings and further explore the role of governance structures, family succession, and other socioemotional wealth dimensions in shaping acquisition strategies during crises.

List of Abbreviations

M&A: Mergers and Acquisitions

OLS: Ordinary Least Squares

GRI: Government Response Index

OxCGRT: The Oxford Covid-19 Government Response Tracker

S&P: Standard and Poor's

SEW: Socioemotional Wealth

ROA: Return on Assets

GDP: Gross Domestic Product

CEO: Chief Executive Officer

IQR: Interquartile

EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization

VIF: Variance Inflation Factor

LVMH: Louis Vuitton Moët Hennessy

TMT: Technology, Media and Telecommunications

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Introduction

Stock markets are considered a complex adaptive system (Mauboussin, 2002), and their response to global pandemics has continuously changed. The Covid had an unprecedented effect on the global economy and financial markets, surpassing previous pandemics in magnitude and speed. The World Health Organization declared the disease a pandemic and announced its name, Covid-19. First, it was considered a health crisis that drastically affected peoples' lives worldwide and quickly turned into a global financial and economic crisis. Originating in China, the pandemic quickly spread around the globe and became the largest crisis: The World Economic Forum (World Economic Forum, 2020) reported that equity markets lost 30% of their value in just a few weeks with investors divesting their assets at a speed higher than that of the 2008 financial crisis.

A study by McKinsey (Caspar, Dias, & Peter Elstrodt, 2010) revealed that family firms account for one third of the S&P 500 and 40 percent of the largest companies in France. That said, understanding the behavior and dynamics of family firms is crucial for investors and policymakers. Family businesses face unique challenges due to their ownership and governance attributes leading them to have unique priorities and strategies. They pursue mergers and acquisitions to expand, gain control, and grow their dynasties. Thus, depicting their M&A strategies and decisions is essential in understanding their behavior and priorities when undertaking an M&A transaction, especially in market downturns.

To prevent the Covid-19 spread, governments immediately implemented policies and preventive control measures. This led to worldwide corporate shutdowns, slowing trade activity and disrupting supply chains. Given its enormity, monetary and fiscal policies were implemented to alleviate its effect on financial markets. Thus, integrating a measure of government policies is essential in understanding whether they positively or negatively affect the bid premiums of family firms acquirors.

The main research question is the crisis-specific behavior of family firms and how their unique attributes impact their M&A decisions. First, Do Family Firms pay higher M&A premiums during the Covid crisis? How does their control and influence their premium decisions during

the Covid-19 crisis compared to non-family firms? Finally, do government policies impact acquisition premiums during the Covid-19 crisis?

To answer these questions, our study focuses on the impact of the global Covid-19 pandemic, on European publicly listed firms from 2018 to 2024. The primary purpose is to provide a comprehensive empirical analysis of the M&A bid premiums paid by family firms. This is achieved with an analysis of both premium 1 week and premium 1 month prior to announcement date during the pandemic period. Furthermore, our analysis incorporates family control and government policy factors to understand better their influence on bid premiums paid by family firms. This research provides investors with insights on the M&A decisions of family firms due to a massive global economic shock for more informed decisions in similar conditions.

The paper's sections are organized as follows. Section 1 explores the scholars' methodologies and findings in studying this matter. Section 2 depicts the data and research design, followed by section 3, which presents the methodology followed in our study and the model setup. Section 4 presents the results and interpretation of the findings. Finally, section 5 concludes the study, identifies its limitations, and suggests future research areas.

Section 1: Literature Review

This section sets the stage for this paper's contribution by depicting scholars' perspectives, discoveries and approaches to studying the theories of family firms, their performance during the Covid-19 crisis, how they approach corporate restructuring strategies, and the extent to which government policies impact their decisions in the context of a crisis.

1.1. Family firms' theories

Numerous debates and research have aimed to clearly define family firms and establish distinction elements between family and non-family firms but there is still no unanimous, universal definition. Based on existing literature, (Vallone, 2013) identified three main characteristics of family firms: the degree of ownership, the intention to the succession and the involvement of family members in the business.

Many prominent theories in behavioral finance that explain the drivers of decisions by family-controlled firms. (Gomez-Mejia, Takacs Haynes, Nunez-Nickel, Jacobson, & Mayono-Fuentes, 2007) brought a new theory that distinguishes family firms, which is socioemotional wealth. The authors challenged the prevalent conclusion that family firms are more risk averse than non family-controlled firms and argued that the main driver of family businesses endeavors is socioemotional wealth: They take significant risk or avoid risky decisions to avoid the loss of their socioemotional wealth. The preservation of SEW influences management decisions, the ownership and governance structure and corporate strategies. (Hauck, Suess-Reyes, Beck, Prugl, & Frank, 2016) took an important step in measuring SEW as a construct and described approaches on using it as an analytical tool. The author identified five core dimensions of SEW: Family control and influence, Identification of family members with the firm, binding social ties, Emotional attachment of family members, Renewal of family bonds through dynastic succession.

That said, family firms have different motives than non-family firms due to their ownership structure, long-term investment horizon and long-term focus on reputation. Many researchers have investigated if these ownership and governance particularities have a positive impact on the firm's performance or not. Findings of (Aziz, Salmani Bidgoli, F. Maley,

& Dabic, 2022) suggest that stewardship, family social capital and altruism are significantly more prominent in family firms, thus creating a unique competitive advantage.

To this end, (Anderson & M. Reeb, 2003) investigated the relationship between family ownership and a firm's performance, taking their sample from the S&P500. Their findings show that family firms have better performance than non-family firms by comparing the ROA and Tobin's Q. The results further suggest that a family CEO ensures better firm performance than an external CEO, explained by the fact that family members in management act as stewards. Stewardship theory states that managers act as stewards, meaning they serve the firm's interests instead of their own (Madison, T. Holt, W. Kellermanns, & L. Ranft, 2015). In family firms where ownership and control generally overlap, stewardship theory does not necessarily mean that managers prioritize the company's financial interests but they prioritize the family's objectives (Kandade, Samara, José Parad, & Dawson, 2021).

(Ardito, Miroshnychenko , Messeni Petruzzelli, & De Massis, 2025) examined the influence of a family CEO on radical innovation from a stewardship behavior perspective stating that a family CEO's presence is considered a strategic leadership stewardship behavior.

The study of corporate governance of family-held firms is particularly rich and entails many theories; one of them is the agency theory in the setting of family firms. In studying agency relationships, (S.Schulze, K. Buchholtz, & H. Lubatkin, 2001) shed the light on agency threats incurred by private ownership and owner management overlooked by (Jensen & H. Meckling, 1976) Agency Problem I. The authors conclude in their paper that agency problems are more pronounced in family businesses because of agency threats incurred by altruism. As defined by economists, altruism is "a trait that links the welfare of an individual to the welfare of others". This trait is more pronounced in family firms and adds self-control problems to agency problems identified by scholars.

The potential of agency conflicts arises most when companies undertake acquisitions or divestitures as managers do not always seek to maximize shareholders' value, and thus do not act as stewards. Companies engage in different corporate restructuring mechanisms whether to change ownership, manage risk or create value. A lot of research studies the motives behind these strategies, but few studied the motives of a particular type of firm: Family firms. (R. King,

Meglio, Gomez-Mejia, Bauer, & De Massis, 2021) tackled this literature gap by studying papers in the intersection of these two research domains to identify future research areas.

1.2. Family firms' performance in a crisis period

Financial cycles and crises affect all types of firms, each at a different scale, but is this effect the same on family and non-family firms? To answer this question (Skare & Porada-Rochon, 2021) measured the impact of financial cycles using the credit-to-GDP gap on financial and employment indicators for family and non-family firms. The results suggest that family firms are better managed during periods of crisis than non-family firms and are less vulnerable to financial cycles. Research with the same aim was carried out by (Zhou, 2017). Using data from the S&P500, the author showed that family firms outperform non-family firms during the crisis period.

(Jarchow, Kaserer, & Keppler, 2023) studied whether the positive impact of control of family firms on financial performance persisted during the 2008 financial crisis period or reverted using a sample of public German companies. The research shows that family firms outperform their counterparts during the recession by assessing the ROA and Tobin's Q. Moreover, the authors concluded that resilience is higher with stronger family influence (more substantial equity ownership) and that one of the reasons behind this is that family firms reduce their leverage during the crisis period.

After the COVID pandemic, some researchers studied the impact of the crisis on the resilience of family firm. Using data from Italy, the results of (Amore, Pelucco, & Quarato, 2022) show that family firms performed better than non-family firms during the pandemic. The authors explain these results by citing the efficient use of labor and more resistant revenue growth.

1.3. Family firms and M&A

M&A transactions constitute a key corporate restructuring strategy for family firms to ensure growth and resilience. Many scholars have explored how family firms approach M&A transactions, regarding their motivation, propensity to engage in deals and post-transaction performance and value creation.

However, there is limited research on their strategic decisions during crisis periods, specifically on the M&A premiums they pay. This literature gap is wider for research covering the recent COVID crisis. Existing literature focused on whether family firms pay lower or higher premium

or examined the crisis impact on M&A premiums paid in the broader market. Our study aims to fill this gap by investigating how the Covid-19 crisis influenced M&A premiums paid by family firms.

(Zhou, 2017) studied the performance of family firms during the 2008 financial crisis using a dataset from the S&P500 and found evidence that family firms outperformed non-family firms. Further, the research explained the findings by the fact that family firms are less likely to overinvest compared to non-family firms. Similarly, (Croci, A. Doukas, & Gonenc, 2011) emphasized that family firms are more presumably to focus on long-term performance to sustain growth due to their ownership concentration and focus on long-term objectives. Furthermore, research by (Heijden & Rudman, 2016) showed that family firms listed in the S&P 400 pay higher M&A premiums than non-family firms.

Synthesizing these findings, the observed outperformance and resilience during periods of economic turmoil and their long-term orientation suggest that family firms are willing to pay higher premiums than non-family firms during the Covid-19 crisis.

H1: Family firms pay higher M&A premiums during the COVID-19 crisis than non-family firms.

Socioemotional wealth factors play a major role in family firms' corporate decisions namely Mergers and Acquisitions. The results of (Arena, Dewally, A.Jain, & Shao, 2022) confirm this statement by providing evidence that family firms' acquisitions differ from that of non-family firms by these socioemotional wealth considerations, risk aversion and maintaining control. The study focused on agency theory and Socioemotional wealth considerations and the results further showed that family firms generate higher positive returns than non-family firms in cross border deals.

In their meta-analysis study, (Palm, S.Kraft, & Kammerlander, 2023) argue that family businesses pursue socio-emotional wealth, which generates SEW resources, namely long-term orientation, strong stakeholder relationships, and favorable firm reputation which according to (Combs, Jaskiewicz, Ravi, & L Walls, 2022), leads to engaging in M&A deals that have both beneficial (industry related M&As) and detrimental (domestic M&As) effects on the deal's performance. Further, the research suggests that on average family firms achieve better M&A performance than non-family acquirers thanks to these SEW resources. In addition to

their M&A superior performance, research of (Heijden & Rudman, 2016). extended their study to analyzing the socioemotional wealth factors in premiums paid and found a negative association between acquisition premiums and family control measured by their stock ownership stock ownership.

In this study we will investigate if this result holds when family firms experience market downturns. This leads us to our second hypothesis which is the following.

H2: There is a negative association between family stock ownership and M&A premium.

1.4. Government Policies and M&A premiums

Most studies on M&A premiums focused on the financial crisis of 2008 and transactions in developed countries. (Magnanelli, Nasta, & Ramazio, 2022) contributed to the literature by examining the cumulative abnormal returns (CARs) and bid premiums during the Covid-19 crisis. The empirical analysis included the Covid severity index, which tracks government restrictions policies but found no significant association between the index and bid premiums or the cumulative abnormal returns. In contrast, (Karjalainen, Do Crisis Periods Affect M&A Premiums: Evidence, 2023) tests the same hypothesis on emerging markets and found that acquirers paid higher premiums and government restrictions further amplified this effect.

To our knowledge, no research has examined the intersection of M&As, government policies, and family firms. While these studies did not specifically focus on family firms, their findings suggest that government policies may have a positive effect on the acquisition premiums of family firms acquirers.

H3: Government policies have a positive effect on M&A premiums paid by family firms.

Section 2: Sample and research design

This section outlines the research design followed to conduct the empirical analysis. It covers data collection and the data screening process, followed by a presentation of data cleaning methods and the limitations of our dataset. In addition, the dependent variables, the main independent variables and the control variables will be presented in detail. Finally, we will conclude with the descriptive statistics of our dataset.

2.1. Data Collection & screening

For our study, we used Refinitiv Eikon to collect data on European publicly M&A transactions from 1st January 2018 to 31 December 2024 as our sample. We chose this period to include data before, during and after the Covid-19 period. In the first phase, we collect data on completed deals with an announcement date within the time frame chosen, where the acquirer is publicly listed and based in Europe and where the deal value, premium paid 1 month prior announcement date and premium 1 week prior announcement date are disclosed. We exclude companies in the real estate and finance industries due to discrepancies in accounting fundamentals and eliminate the impact of regulations (Anderson & M. Reeb, 2003) and transactions done by government entities or institutions. Following the initial screening process, we compiled a dataset of 572 transactions.

The European countries included in this study are the following: Norway, United Kingdom, Romania, France, Poland, Switzerland, Italy, Austria, Germany, Spain, Netherlands, Belgium, Denmark, Sweden, Monaco, Ireland, Russia, Finland, Luxembourg, Greece, Malta, Portugal, Isle of Man, Hungary, Estonia, Turkey, Cyprus, Faroe Islands

In the second phase, after data collection of deal specific information, we collect data of acquirer financials that will serve as our control variables and data ownership to determine whether it is a family firm. This data will be merged with M&A transaction data to form our final sample. All monetary data of our sample is denoted in US dollars. Finally, data on government restrictions and policies is sourced from OxCGRT (the Oxford COVID-19 Government Response Tracker), a free up-to-date database containing data on 24 government policies across four primary indicators: containment and closure policies,

economic policies, health system policies, vaccination policies. Our analysis will only include the overall government response index that encompasses all indicators.

2.2. Data Cleaning

First, we exclude transactions involving companies that were publicly listed at the time of the M&A announcement but have since become private or delisted, due to the unavailability of financial and ownership data such as total assets, total debt, shares held by investors or any other data required for our control variables. In addition, we excluded certain variables (adjusted market beta and EBITDA to total assets) from our analysis due to a high proportion of missing data.

Appendices 2 and 3 present the yearly box plot of premium 1 week and premium 1 month respectively. The graphs confirm the presence of outliers in our sample that could potentially distort our results. To identify what outliers to exclude from our sample, we applied both Interquartile Range (IQR) method and the Z-score method to the premium variables. The IQR method indicates the presence of 25 outliers in the 1 week premium and 29 outliers in the 1 month premium. On the other hand, the z-score method identified only 3 outliers in each premium. Given our relatively small sample size, we opted to remove the outliers according to the z score method. Finally, following this data cleaning, our final sample has been reduced from 572 to 394 transactions.

2.3. Variables

Dependent Variables

The dependent variable to be examined in this study is M&A premiums. The M&A premium is measured based on the target's stock price four weeks before the deal announcement and the M&A premium one week before the deal announcement as suggested by (Rossi & F. Volpin, 2004).

$$Premium_t = \frac{P_{offer} - P_{target,t-28}}{P_{target,t-28}} \times \mathbf{100}$$

The primary premium examined is the one 1 month prior the announcement date as the closer the premium is from the announcement date, the more it captures and prices in information. We also also add analysis on premium 1 week before the announcement for robustness check and to verify the consistency of the obtained results.

Main independent variables

The main independent variables of our analysis are measures of the Covid-19 period, family firm ownership, family firm stock ownership and the Government Response Index.

Family ownership

The definition of family firms in literature is not unanimous, and so we take different definitions of family firms in terms of governance, management and ownership. Following the definition of (Anderson & M. Reeb, 2003), we identify family firms as those in which the founder or a member of the family is an officer or block holder. Adding to this definition, we also account for equity ownership by selecting firms with family ownership of 5% or more of voting rights. This is in line with the 5% threshold in many studies.

Family Firm Status: Binary variable based on ownership and management criteria:

- 1 if family ownership ≥ 5% or founder/family member is CEO/Chairman
- 0 otherwise

In addition, we add the founder-run firms to our sample, where the founder has the intention of transferring ownership and/or control to his heirs (Villalonga & Amit, 2006). According to (Zhou, 2017), during the crisis period, family firms with one of the founders in the management significantly outperformed non-family firms.

Crisis period

The WHO organization declared on 11 March 2020 the COVID-19 as a global pandemic, and later, on 5 May 2023 it declared that even though the pandemic is not over, the global emergency it caused is. Thus, we identify this period as the COVID-19 crisis period.

We add a dummy variable Covid-19(a) that takes value one if the deal announcement date is during the period stated above which is 11 March 2020 to 5 May 2023 and the value zero otherwise. Another dummy variable of Covid period is used, Covid-19(b), which takes the date of the transaction's most recent terms as a proxy for the pandemic period.

Government Policies and Restrictions

To integrate government policies into our analysis, we use the Government Response Index directly sourced from OxCGRT (the Oxford COVID-19 Government Response Tracker). The

index takes a number between 0 and 100 that reflects the government policies in response to Covid-19 events. The index englobes 24 policy indicators across four major fields: containment and closure policies, economic policies, health system policies, vaccination policies. (Source: Oxford Covid-19 Government Response Tracker Github).

The following table presents the main independent variables in our empirical analysis

Table 1: Description of the main independent variables

Variable	Variable Type	Description
Family Firm	Binary	Firms whose founder or a member of the family is an officer or block holder or with ownership of 5% or more by family members
COVID-19	Categorical	Takes the value of one for the period March 2020 to May 2023 and zero otherwise
Family Firm x Covid	Binary	An interaction term to represent the effect of being Family Firm in the Covid period on M&A premium paid
Family Stock Ownership	Numerical	Percentage of common stocks held by the family or the individual owner
Government Response Index	Numerical	overall government response index (values between 0 and 100)
Family Firm x GRI	Numerical	An interaction term to represent the effect of Family Firm in the Covid period with an index of government policies

Socioemotional Wealth Variable: Family Control

(Berrone, Gome-Mejia, & Cruz, 2012) identified five core dimensions of SEW: Family control and influence, identification of family members with the firm, binding social ties, emotional attachment of family members, renewal of family bonds through dynastic succession. This measurement model is named FIBER. Later (Gomez-Mejia & Herrero, 2022) reduced the five dimensions of the FIBER model to only three dimensions: Identification of family members

with the firm, emotional attachment and renewal of family bonds through succession. The FIBER is considered the most recent framework to measure SEW in literature. Thus, we will use family stock ownership as a proxy for the family control and influence

Control variables

To correctly identify the impact of family ownership and Covid-19, we add control variables to account for deal and firm's characteristics and industry specificities. Similar to the study of (Anderson & M. Reeb, 2003) and (Villalonga & Amit, 2006), we included the debt ratio to control leverage and capital structure and we include the transaction 1st level industry variable to account for differences in industries' effect. To limit the number of binary variables thus limiting results bias, we grouped retail, consumer staples with consumer services, combined technology, media and telecommunications into one single category and merged industrials with materials.

We also control the deal characteristics by including total monetary deal value and a dummy variable Transaction Type that takes value 1 if the deal is an M&A to acquire a majority stake, in our case more than 20% ownership of the target. We also add the percentage of cash and cash only deal variables to test the effect of cash offer on M&A premiums. This is in line with the study of (Karjalainen, Do crisis periods affect M&A Premiums: Evidence from Emerging Markets, 2023).

Table 2 summarizes all the control variables

Table 2: Description of the control variables

Variable	Variable Type	Description
ROA	Percentage	Acquiror return on assets 1 fiscal year prior the announcement
Acquiror leverage	Numerical	Net debt 12 months before the deal announcement divided total assets 12 months prior to deal announcement
Industry	Categorical	The Transaction 1st level industry.
Healthcare binary	Binary	A dummy variable that takes value 1 if the industry is healthcare and 0 otherwise

		Numerical	The total monetary value of the M&A deal
Ln (Deal Value)	Numerical		The total monetary value of the M&A deal
Transaction Type	Binary		Takes the value of 1 if the acquiror buys a majority stake (>20% ownership) and 0 otherwise
Percentage of Cash	Numerical		The percentage of deal value financed with cash

2.4. Descriptive Statistics

The following table indicates a descriptive statistical summary of the variables collected in our dataset including the metrics measured are the mean, standard deviation, minimum, maximum and the 25th, 50th and 75th percentiles.

Table 3: Descriptive statistics of all the variables

	mean	std	min	0,25	0,50	0,75	max
Premium - 1 Week	40,34	47,26	-12,47	6,64	27,27	54,77	296,61
Premium - 4 Weeks	42,00	50,10	-28,28	8,28	27,03	58,22	327,94
COVID-19(a)	0,44	0,50	-	-	-	1,00	1,00
COVID-19(b)	0,46	0,50	-	-	-	1,00	1,00
Rank Value (M USD)	1 496,16	6 320,97	0,08	17,55	147,04	923,20	106 748
Cross border	0,53	0,50	-	-	1,00	1,00	1,00
Deal Value (M USD)	1 317	5 060	0, 07627	16, 970	141, 370	920,52 8	81 056
Ln (Deal value)	18,52	2,66	11,24	16,65	18,77	20,64	25,12
% of Shares Acquired	49,25	40,83	-	9,09	33,32	100,00	100,00
Return on Assets 1 FYP	-6,25	31,07	- 231,84	-4,20	1,76	5,88	50,10
Percentage of Cash	76,86	40,96	-	81,78	100,00	100,00	100,00
Transaction Type	0,77	0,42	-	1,00	1,00	1,00	1,00
Acquiror leverage ratio	0,53	5,89	-1,84	-0,01	0,11	0,25	113,30
Family Firm dummy	0,19	0,40	-	-	-	-	1,00

The statistics reveal that the Deal Value variable (USD) has significant variability as indicated by the large standard deviation, with a mean deal value of 1.32 billion US. Consistent with Appendix 1 that shows the curve of Deal Value, showing a mean of 18.52 and indicating a right-skewed distribution of deal values.

The return on assets 1 Fiscal year prior exhibits a negative mean of –6.25 reflecting the impact of the market downturn during COVID on firms' profitability. This variable has also a high standard deviation of 31.07 indicating considerable variability of the data and a wide range of performance indicators.

A visualization of the Acquiror macro industry as shown in Appendix 4 shows that the health care industry accounts for the highest number of deals with 71 M&A transactions constituting approximately 18% of total deals, this is followed by the technology industry.

Binary variables analysis shows that on average 45% of deals were announced during the Covid period defined in our analysis. Around 19% of deals were undertaken by family firms, this relatively low percentage could potentially reflect family firms' strategic decision to limit investments during periods of crisis.

In addition, 53% of the deals are cross-border deals (Appendix 7) and 77% were majority stake transactions possibly reflecting the buyer's intention to gain full control of targets during this uncertain period. Finally, when analyzing the payment method, we observe that a significant number of deals was financed entirely with cash (Appendix 9), with an average Percentage of Cash of 76.78% and a median of 100% potentially reflecting the buyers need to preserve control and avoid equity dilution during periods of uncertainty.

Section 3: Methodology

To test the research question proposed in this paper, we suggest three main hypothesis that will subsequently be tested using multivariate OLS regression as it is a common method in this type of study. In this section, we will detail the null and alternative hypothesis, and the general mathematical regression equation for each hypothesis.

3.1. Regression models

Statistical Hypothesis 1: Family Firm Effect

*$H1_0$: There is **no difference** between M&A premium paid by family firms and non-family firms during the COVID-19 crisis.*

*$H1_1$: Family firms pay **higher** M&A premium than non-family firms during the COVID-19 pandemic*

The general regression formula.

$$Premium_{i,t} = \beta_0 + \beta_1 Family\ Firm_{i,t} + \beta_2 Covid_t + \beta_3(Family\ Firm_{i,t} \times Crisis_t)$$
$$+ \sum \beta_j Control\ Variable_j + \varepsilon_{i,t}$$

$Where: i$ is the firm index ; t is the announcement date of the M&A transaction

Statistical Hypothesis 2: Ownership concentration Effect

*$H2_0$: There is **no relationship** between total family stock ownership and the M&A premium paid by family-owned acquirers.*

*$H2_1$: There is **a negative relationship** between total family stock ownership and the M&A premium paid by family-owned acquirers.*

$$Premium_{i,t} = \beta_0 + \beta_1 Covid_t + \beta_2 Family\ Firm_{i,t} Stock\ Ownership$$
$$+ \sum \beta_j Control\ Variable_j + \varepsilon_{i,t}$$

$Where: i$ is the firm index ; t is the announcement date of the M&A transaction

Statistical Hypothesis 3: Government Policies Effect

*H3₀: There is **no relationship** between government policies and the M&A premium paid by family-owned acquirers.*

*H3₁: There is **a positive relationship** between government policies and the M&A premium paid by family-owned acquirers*

$$Premium_{i,t} = \beta_0 + \beta_1 Family\ Firm_{i,t} + \beta_2 Government\ Response\ Index_t$$
$$+ \beta_3(Family\ Firm_{i,t} \times Government\ Response\ Index_t)$$
$$+ \sum \beta_j Control\ Variable_j + \varepsilon_{i,t}$$

3.2. Robustness check

To ensure the robustness of our results, the following tests are conducted:

✓ **Alternative measures of bid premium:** In testing each hypothesis, we re-run each regression using premium 1 week and premium 1 month as a measure for bid premiums. Premium 1 month is more prominently used in literature as the longer the period before the announcement, the more the premium reflects the effects studied. We examine also 1week premium to check the robustness of our results.

✓ **Alternative measures of Covid-19 period:** Given the lengthy and complex process of M&A transactions, which typically involves extended negotiations, thorough due diligence processes and regulatory approvals, the announcement date may not accurately reflect when the deal was positioned in the crisis. Furthermore, many deals were revised in response to changes in market conditions during the pandemic, we re-run the regressions using an alternative proxy for the Covid-19 period which is the date of most recent transaction terms. This approach identifies transactions that were revised in Covid period regardless of their initial announcement date and provides a more realistic classification that captures the pandemic's influence on deal structures.

✓ **Exclusion of control variables:** Many regressions have been compiled by iteratively excluding one control variable at a time and assessing the regression and VIF results afterward to identify their impact on the R squared and check their multicollinearity.

✓ **Industry variables:** Since our sample size is relatively small, we complied several regressions with all the industries then combined two relatively close macro industries (retail and consumer staples with consumer services, technology with media and telecommunications, materials with industrials). In our final regressions, we only kept the dummy variable healthcare as the other industries proved to be consistently insignificant.

The robustness checks reveal that indeed the 1 month premium yield more robust results. The date of most recent terms as a reference of the Covid period consistently had more robust results then the announcement date. Finally, the control variables leverage, cross border, ln (deal value) and transaction type have been consistently insignificant in our regressions.

Section 4: Results

This section presents the results and findings of our empirical analysis to discern the effect of factors studied on M&A premiums paid by family firms during Covid-19. We conducted our analysis on the dependent variables premium 1 week and premium 1 month for all the regressions. Additionally, we run the regressions using two measures of the Covid-19 period: the first one according to the announcement date and the second one according to the date of most recent terms. Subsequent to this section, regression results will be discussed from an exhaustive perspective.

4.1. Family firm effect on M&A premiums during Covid-19

Table 4: Panel Regression Results of M&A Premium during Covid-19

	Premium 1 Week		Premium 1 Month	
	COVID-19(a)	COVID-19(b)	COVID-19(a)	COVID-19(b)
Const	22,7539***	20,7194***	21,0738***	18,9086***
	(0.000)	(0.001)	(0.001)	(0.003)
Return on Assets 1 Fiscal Year Prior	-0,2422***	-0,2269***	-0,2374***	-0,2208**
	(0.003)	(0.008)	(0.004)	(0.010)
Percentage of Cash	0,1606***	0,2154***	0,1644***	0,2192***
	(0.005)	(0.000)	(0.004)	(0.000)
Family Firm	1,6183	-2,4601	0,5231	-3,3209
	(0.799)	(0.712)	(0.935)	(0.619)
Healthcare dummy	19,1255***	24,4729***	18,5488***	23,8307***
	(0.004)	(0.000)	(0.005)	(0.001)
COVID-19	-4,7513	-6,8023	-1,3435	-2,9514
	(0.416)	(0.267)	(0.817)	(0.627)

Family Firm x COVID-19	12,5907	19,6207*	16,5584*	23,1649**
	(0.199)	(0.057)	(0.093)	(0.025)
No. Observations:	391	391	391	391
R^2	0.084	0.105	0.089	0.110
Adjusted R^2	0.070	0.091	0.075	0.096
Prob (F-statistic)	6.58E-06	1.36E-07	2.63E-06	4.45E-08

Significance levels: *at 10% level, **at 5% level, *** at 1%

In this first phase, several regressions were run to estimate the percentage change of our dependent variables premium 1 month and premium 1 week to changes in other independent variables as presented in the first equations. After running multiple regressions while adjusting the independent variables each time, we selected the independent variables that have low multicollinearity according to the Variance Inflation Factor (VIF).

The degree of explanation across the four models measured by the R-squared varies but is relatively close 0.084 and 0.089 for Covid-19(a) measure that identifies the Covid-19 period according to the deal's announcement date, and 10.5 and 0.11 for premium 1 week and premium 1 month respectively when using the Covid-19(b) measure that takes the date of most recent terms as a reference. The R^2 suggests that models where premium 1 month is the dependent variable and/or Covid-19(b) is the variable indicating Covid-19 crisis period exhibit better explanatory power. The figures overall indicate a low to moderate power of explanation and model fit and the F-statistic suggests that all the models as a whole are significant. These results could be explained by the low number of observations. The main independent variables COVID and Family Firm showed no statistical significance across the four regressions however the interaction term Family Firm x Covid-19 is significant (at 5% and 10% levels) with premium 1 month and significant with premium 1 week only with Covid-19(b). the coefficients are consistently positive (12.5-23.16) indicating that family firms paid higher M&A premiums during the Covid period, thus rejecting the null hypothesis. This finding is stronger when the date of most recent terms is our reference for the Covid period, as many buyers revised the

deal terms after the Covid crisis impacted the whole market (e.g., LVMH and Tiffany & Co deal).

Among the deal specific factors, previous regressions revealed high collinearity between ln (deal value) and acquisition premiums, as well as between percentage of cash and transaction type. Leverage and industry dummies were also removed to avoid multicollinearity and overfitting and to reduce the large number of categorical variables in the model. The only industry indicator retained is the healthcare dummy, justified by its strong relevance to our study and the sector's substantial exposure to the crisis. To this end, we retained the percentage of cash, Return on assets 1 fiscal year prior and healthcare dummy as our control variables.

The healthcare sector is consistently significant at a 1% level across the four regressions with a high positive coefficient (19.13-23.83) suggesting that premiums paid by buyers in the healthcare sector are significantly higher, this can be explained by the demand surge in the healthcare sector due to the pandemic. It is noteworthy that in the regressions we compiled for robustness check where all the industries are included in the model, the TMT sector showed marginal significance and the coefficients of the energy and power and TMT sectors are consistently negative which might indicate lower premiums paid in these industries (example in Appendix). The acquirer ROA 1 fiscal year prior is statistically significant at 1% level and has a negative association (-0.22— -0.24) with acquisition premiums, suggesting that acquirers with higher ROA, thus higher profit margins pay lower premiums. Cash offer positively impacts premiums paid (0.16-0.22) and is statistically significant at a 1% level, this could be explained by the fact that acquirors avoid equity dilution and shareholders accept higher premiums to preserve control.

Although the model revealed significant coefficients of independent variables, some of the variation of the premiums remains unexplained by these models due to the low number of observations and consequently low number of independent variables.

4.2. Family stock ownership effect on M&A premiums during Covid-19

In this analysis, we focus on transactions undertook by family firms only, and add the control factor represented by the family's percentage stock ownership in the acquiring company. The number of observations has been further reduced which may impact the robustness of our results.

Overall, the models exhibit better model fit than the previous ones, with R squared between 0.099 and 0.156 but still present low explanatory power of acquisition premiums. The F-statistic is significant with premium 1 month which proved to exhibit more robust results than premium 1 week. Return on assets are insignificant with negative coefficients consistent with models testing the first hypothesis. The percentage of cash is significant with premium 1 month only also with positive coefficients consistent with previous models. The main independent variable Covid-19 is significant with 1 month premium and even more significant when the date of most recent terms is the reference date for covid. The coefficients further confirm our hypothesis indicating that European family firms pay higher premiums than European non-family firms with coefficients of 14.82 and 18.31 for 1 week premium and 1 month premium respectively. The family stock ownership is insignificant so we fail to reject the null hypothesis. We observe negative coefficients across the four models, the coefficients result is in line with the findings of (Heijden & Rudman, 2016). Agency problems could be a possible explanation of this finding as family firms tend to pay lower premiums when their exposure to losses is high due to the high stock ownership. The Energy and Power sector is significant with premium 1 month with significant negative coefficients revealing that premiums of transactions in the Energy and Power are lower than those in other industries. Healthcare and Industrial and Materials sectors are statistically insignificant and the TMT sector is significant with 1 month premium exhibiting negative effect on premiums paid (-21.54- -22.82).

Table 5: Panel Regression Results of M&A Premium paid by Family Firms during Covid-19

	Premium 1 Week		Premium 1 Month	
	COVID-19(a)	COVID-19(b)	COVID-19(a)	COVID-19(b)
Const	36.4147***	34.4914***	30.4462**	28.4132**
	(0.006)	(0.009)	(0.022)	(0.033)
Return on Assets 1 Fiscal Year Prior	-0.3311	-0.3103	-0.3369	-0.3097
	(0.228)	(0.258)	(0.228)	(0.267)
Percentage of Cash	0.157	0.1619	0.2711**	0.2763***
	(0.125)	(0.113)	(0.010)	(0.008)
COVID-19	9.3521	12.9868	14.8246*	18.3096**
	(0.266)	(0.129)	(0.084)	(0.036)
Family Stock Ownership	-15.8419	-14.4049	-22.2453	-20.3184
	(0.364)	(0.408)	(0.211)	(0.252)
Energy and Power	-35.5754*	-33.1872*	-42.6056**	-39.5562**
	(0.054)	(0.072)	(0.024)	(0.036)
Healthcare	-10.2209	-10.2617	-3.6445	-3.4531
	(0.545)	(0.541)	(0.832)	(0.840)
Industrials and Materials	6.2703	5.3762	0.8597	-0.3553
	(0.580)	(0.634)	(0.941)	(0.975)
Technology, Media and Telecommunications	-17.7364	-17.0507	-22.82**	-21.5419*
	(0.117)	(0.127)	(0.048)	(0.059)

No. Observations:	142	142	142	142
R^2	0.099	0.107	0.147	0.156
Adjusted R^2	0.045	0.053	0.096	0.106
Prob (F-statistic)	0.076	0.053	0.006***	0.003***

Significance levels: *at 10% level, **at 5% level, *** at 1%

4.3. M&A premiums and Government restrictions effect

Table 6: Panel Regression Results for M&A premiums adding Government Response Index

	Premium 1 Week	Premium 1 Month
Const	32,7284***	33,1096***
	(0.000)	(0.000)
Cross Border	-8,0311	-8,6664
	(0.111)	(0.100)
Return on Assets 1 Fiscal Year Prior	-0,2125**	-0,1932**
	(0.010)	(0.025)
Percentage of Cash	0,1669***	0,218***
	(0.003)	(0.000)
Acquiror Leverage	-0,3243	-0,3037
	(0.409)	(0.460)
Family Firm	-2,3308	-5,2493
	(0.703)	(0.413)
Government Response Index	-0,1338	-0,145
	(0.200)	(0.184)

Family Firm x GRI	0,4544**	0,5548***
	(0.010)	(0.003)
Energy and Power	-11,6539	-13,4253
	(0.200)	(0.158)
Healthcare	11,3595	13,819
	(0.165)	(0.107)
Industrials and Materials	-0,9776	-3,6376
	(0.886)	(0.610)
Technology, Media and Telecommunications	-9,0763	-13,734*
	(0.204)	(0.066)
No. Observations:	391	391
R^2	0.110	0.134
Adjusted R^2	0.085	0.109
Prob (F-statistic)	5.11E-06***	7.21E-08***

Significance levels: *at 10% level, **at 5% level, *** at 1%

This model tests the effect of the government response index, an aggregate of 24 policy indicators tracking containment and closure policies, economic policies, health system policies, and vaccination policies. After conducting multiple robustness checks, we chose to exclude the covid-19 variable from this model dur to its high collinearity with the index. The Government Response Index effectively captures the occurrence and magnitude of covid related policies making it a more comprehensive proxy for pandemic impacts. Both models deliver relatively low R^2 of 0.11 for premium 1 week and 0.134 for premium 1 month reflecting low explanatory power, while the F statistic is significant indicating an overall statistical significance of the models. The Government Response Index and Family Firm show no

statistical significance, which could be explained by the small sample size. The negative coefficients of the index could be interpreted as government policies don't drive premiums. The coefficient results are in line with (Karjalainen, Do crisis periods affect M&A Premiums: Evidence from Emerging Markets, 2023) work, confirming the negative impact of government restrictions on acquisition premiums. The interaction term Family Firm x GRI is statistically significant at 5% level for premium 1 week and significant at 1% level for premium 1 month. Counterintuitively, the coefficients of the interaction term are positive, indicating that family firms pay higher premiums then non family firms when policies are imposed during the Covid-19 crisis. Thus, we reject the null hypothesis and accept the hypothesis stating that government policies have positive effect on M&A premiums. This reveals that family firms reacted more favorably to government interventions, potentially reflecting greater confidence and long-term orientation during this period. The return on assets 1 fiscal year (ROA) is statistically significant suggesting that firms with higher profitability pay lower premium (-0.1932— -0.2125). In contrast, Percentage of cash has a highly significant positive effect on M&A premiums indicating that deals financed with cash in majority. In examining industry effect, all of the industries have insignificant effect on both 1 month and 1 week premia, except for the technology, media and telecommunications (TMT) sector which exhibited marginal significance at 10% level with 1 month premium with positive coefficient of -13.734.

Section 5: Discussion

5.1. Discussion of the key findings

The analysis of M&A premiums of European publicly listed firms during the period 2018-2024, which includes the Covid-19 pandemic reveals that family firms pay higher premiums than non-family firms confirming our first hypothesis. This statement holds true with the 1 month premium prior the announcement date and is even more pronounced when using the date of most recent terms of the transaction as a proxy the Covid-19 period. Overall, all the empirical analysis showed that the 1 month premium and the Covid-19(b) measures yield more robust results.

Our finding, that family firms pay higher premiums during periods of crisis, could be explained by target underpricing during periods of high volatility and the fact that they don't adjust their price expectations leads to higher bid premiums. Another possible explanation is that family firms, unlike non-family firms, have a strong long-term orientation and are willing to pay higher premiums for potential synergies that will create value when the market recovers.

This study contributes to the existing literature by demonstrating that when assessing M&A premium during a crisis period, using the date of most recent terms instead of announcement date to determine the crisis period yields to more robust results as it reflects realistic changes in deals circumstances and recent changes to the deal terms.

Second, our study also aimed to analyze the impact of family control and influence on premium paid by adding stock ownership percentage to our analysis. While, the finding did not reveal a statistically significant impact of the ownership concentration on premiums, the negative coefficient observed is in line with previous literature findings suggesting a reverse effect on bid premiums.

Additionally, this research integrated government policies into the analysis of bid premiums paid by family firms to assess their response to this factor. Our results showed that the Government Response Index (GRI) is marginally significant at 10% level with a negative coefficient suggesting that overall, it has a negative effect on premiums paid by publicly listed European firms. In contrast, the interaction term Family x GRI is statistically significant with

both 1 week and 1 month premiums with positive coefficients. This indicates that family firms respond positively to government policies and interventions and gain confidence in future market recovery.

Our research also showed evidence that firms with higher ROA tend to pay lower premiums and the percentage of cash used to finance a deal has a significant positive impact on those premiums consistent with the current literature.

5.2. Limitations and further research

The first and most important limitation of our research is the limited sample size. This limitation reduced the number of control variables that was reduced and increased the risk of multicollinearity and overfitting. The second limitation that impacted our analysis is the unavailability of data of private and delisted firms and data on firms' ownership and governance.

Future research could address these limitations by increasing the sample size to have more robust results and test other control variables. Focusing on industrial and country fixed effects could also give new insights into the premiums paid during the covid period. This study could also be replicated on other countries or markets (emerging markets).

Future research could incorporate socioemotional wealth factors other than control and influence such as the Family CEO, family representation in the board and generational succession of the family. In analyzing government restrictions, future research could deconstruct the Government Response Index to multiple factors (economic, health etc.) to analyze the impact of each policy type.

Conclusion

The study investigates M&A premiums paid by family firms during the Covid-19 period, focusing on European publicly listed firms as our sample study. Using OLS panel regression, we analyzed premium 1 week and premium 1 month prior deal announcement from 1st January 2018 to 31 December 2024. We extended the research to analyzing the effects of family stock ownership concentration and government policies on bid premiums. The findings revealed that family firms pay higher premium during the Covid-19 period. Although the regression results related to family ownership are not statistically significant, the negative coefficients suggest a potential a reverse effect on bid premiums paid. Additionally, our analysis shows that family firms positively responded to government policies leading to higher premiums paid.

The contribution of our research is twofold. First, it addressees a gap in the literature by studying the behavior of European family firms in M&A transactions during a crisis period with a focus on the effects of family control and government policies. Secondly, by using the date of most recent terms, our study revealed a novel and potentially more robust proxy for analyzing M&A transactions in times of crises.

For investors, this study offers valuable into M&A transactions involving family acquirers, revealing their tendency to pay higher premiums even during periods of market downturn. This behavior may potentially indicate their long-term orientation and undervalued targets during economic turmoil. For shareholders of target firms or institutional investors looking for exit strategy, this overvaluation will lead to higher return on investments. On the other hand, family firms should evaluate the potential risk of overvaluation by thoroughly assessing the deal and adjusting investment strategies accordingly. The findings also demonstrate Government policies efficiency in restoring market confidence and encouraging family firms to pursue their investment strategies.

Section: References

Amore, M. D., Pelucco, V., & Quarato, F. (2022). Family Ownership during the Covid-19 pandemic. *Journal of Banking and Finance, 135*.

Anderson, R. C., & M. Reeb, D. (2003). Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The journal of Finance, 58*(3), 1301-1328.

Ardito, L., Miroshnychenko , I., Messeni Petruzzelli, A., & De Massis, A. (2025). Family CEO and radical innovation: A stewardship perspective. *Research Policy, 54*(1).

Arena, M. P., Dewally, M., A.Jain, B., & Shao, Y. (2022). Family firms' cross-border mergers and acquisitions. *International Review of Financial Analysis, 82*.

ASAF, E., Carvalho, I., Leke, A., & Malatesta, F. (2023). *The secrets of outperforming family-owned businesses: How they create value—and how you can become one.* Mckinsey & Company. Retrieved from Mckinsey.

Aziz, M., Salmani Bidgoli, M., F. Maley, J., & Dabic, M. (2022). A stewardship perspective in family firms: A new perspective for altruism and social capital. *Journal of Business Research, 144*, 764-775.

Belling, M., Pidum, U., & zu Knyphausen-Aufseß, D. (2022). Restructuring in family firms: Balancing family objectives and economic prosperity. *Long Range Planning, 55*(2).

Berrone, P., Gome-Mejia, L., & Cruz, C. (2012). Socioemotional Wealth in Family Firms: Theoretical dimensions, Assessment Approaches, and Agenda for future research. *Family Business Review, 25*(3), 258-279.

Block, J. (2010). Family Management, Family Ownership, and Downsizing: Evidence from S&P 500 Firms. *Family Business Review, 23*(2), 109-130.

C.Anderson, R., & M.Reeb, D. (2003). Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal of Finance* , 1301-1328.

Caspar, C., Dias, A., & Peter Elstrodt, H. (2010). *The five attributes of enduring family businesses.* McKinsey Quarterly.

Combs, J. G., Jaskiewicz, P., Ravi, R., & L Walls, J. (2022). More Bang for Their Buck: Why (and When) Family Firms Better Leverage Corporate Social Responsibility. *Journal of Management, 49*(2), 575-605.

Croci, E., A. Doukas, J., & Gonenc, H. (2011). Family Control and Financing Decisions. *European Financial Management, 17*(5), 860-897.

Feldman, E. R., Amit, R., & Villalonga, B. (2019). Family firms and the stock market performance of acquisitions and divestitures. *Strategic Mangement Journal, 40*(5), 757-780.

Gomez-Mejia, L. R., & Herrero, I. (2022). Back to square one: The measurement of Socioemotional Wealth (SEW). *Journal of Family Business Strategy, 13*(4).

Gomez-Mejia, L. R., Takacs Haynes, K., Nunez-Nickel, M., Jacobson, K., & Mayono-Fuentes, J. (2007). Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence from Spanish Olive Oil Mills. *Administrative Science Quarterly, 52*(1), 106-137.

Hauck, J., Suess-Reyes, J., Beck, S., Prugl, R., & Frank, H. (2016). Measuring socioemotional wealth in family-owned and -managed firms: A validation and short form of the FIBER Scale. *Journal of Family Business Strategy, 7*(3), 133-148.

Heijden, L. v., & Rudman, R. (2016). *The Influence of Family Ownership on Premiums in Mergers & Acquisitions.* Master Thesis MSc in Corporate Finance & Banking, EDHEC Business School.

Jarchow, S., Kaserer, C., & Keppler, H. (2023). Family frm performance in times of crisis—new evidence. *Eurasian Business Review, 13*, 543-580.

Jensen, M. C., & H. Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360.

Kandade, K., Samara, G., José Parad, M., & Dawson, A. (2021). From family successors to successful business leaders: A qualitative study of how high-quality relationships develop in family businesses. *Journal of Family Business Strategy, 12*(2).

Karjalainen, L. (2023). *Do Crisis Periods Affect M&A Premiums: Evidence.* Hanken School of
Economics, Finance and Economics, Helsinki.

Karjalainen, L. (2023). Do crisis periods affect M&A Premiums: Evidence from Emerging
Markets.

Labaki, R., & Hirigoyen, G. (2020). The Strategic Divestment Decision in the Family Business
Through the Real Options and Emotional Lenses. (I. Global, Ed.) *Handbook of
Research on the Strategic Management of Family Businesses*, 244-279.

Madison, K., T. Holt, D., W. Kellermanns, F., & L. Ranft, A. (2015). Viewing Family Firm
Behavior and Governance Through the Lens of Agency and Stewardship Theories.
Family Business Review, 29(1).

Magnanelli, B. S., Nasta, L., & Ramazio, E. (2022). Bid premiums and cumulative abnormal
returns: An empirical investigation on the consequences of the Covid-19 pandemic.
Finance Research Letters, 49.

Mauboussin, M. J. (2002). Revisiting Market Efficiency: The stock market as a complex
adaptive system. *Journal of Applied Corporate Finance, 14*(4), 47-55.

Palm, M. D., Diaz Moriana, V., & Kammerlander, N. (2023). Restructuring of Poorly
Performing Family-Owned Portfolio Firms: The Role of Socioemotional Wealth.
Family Business Review, 37(2), 267-291.

Palm, M., S.Kraft, P., & Kammerlander, N. (2023). Family Firms, M&A strategies and M&A
performance. *Journal of Management*, forthcoming.

Pinelli, M., Chirico, F., & De Massis, A. (2023). Acquisition Relatedness in Family Firms:.
Forthcoming, Journal of Management Studies.

R.King, D., Meglio, O., Gomez-Mejia, L., Bauer, F., & De Massis, A. (2021). Family Business
Restructuring: A Review and Research Agenda. *Journal of Management Studies,
59*(1), 197-235.

Rossi, S., & F. Volpin, P. (2004). Cross-country determinants of mergers and acquisitions.
Journal of Financial Economics, 74(2), 277-304.

S.Schulze, W., K. Buchholtz, A., & H. Lubatkin, M. (2001). Agency Relationships in Family Firms: Theory and Evidence. *Organization Science, 12*(2), 99-116.

Skare, M., & Porada-Rochon, M. (2021). Measuring the impact of financial cycles on family. *International Entrepreneurship and Management Journal, 17*, 1111-1130.

Vallone, C. (2013). CONTRIBUTION ON FAMILY BUSINESS DEFINITION.

Villalonga, B., & Amit, R. (2006). How Do Family Ownership, Control, and Management Affect Firm Value? *Journal of Financial Economics, 80*, 385-417.

World Economic Forum. (2020). Retrieved from https://www.weforum.org/publications/impact-of-covid-19-on-the-global-financial-system/

Zhou, H. (2017). Did family firms perform better during the financial crisis? New insights from the S&P 500 firms. *Global Finance Journal, 33*, 88-103.

Appendices

Number of Deals and Total Deal Value by Year
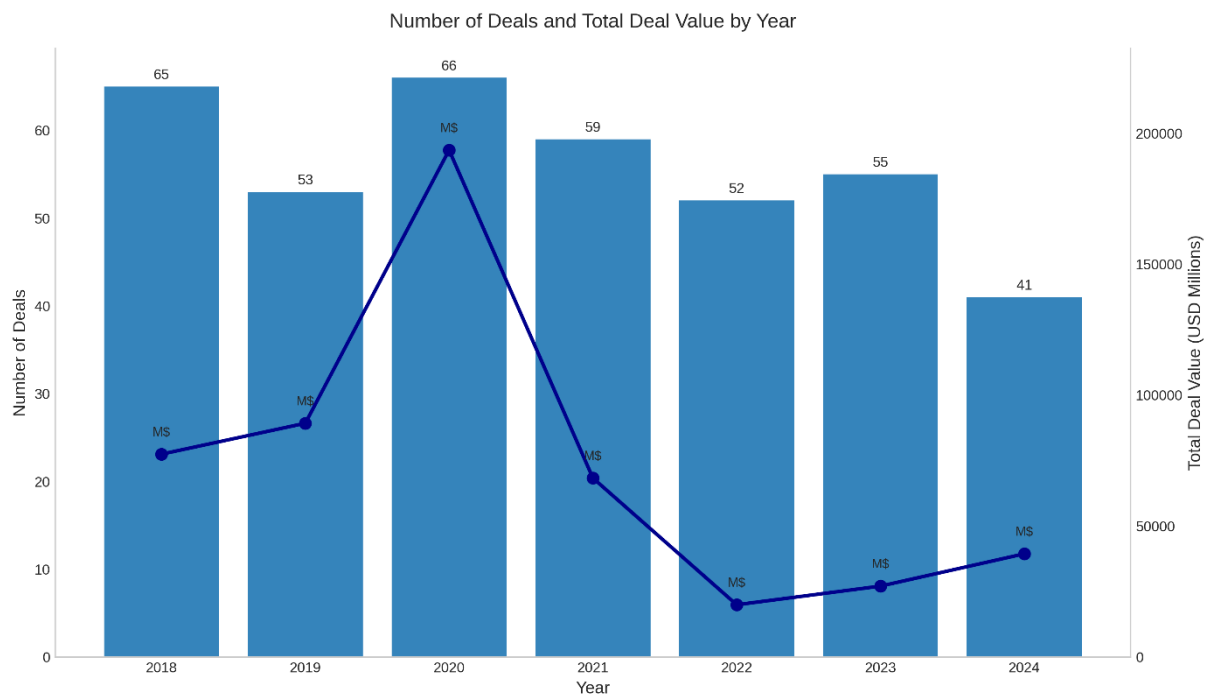
Figure 1 : Number of Deals & Total Deal Value by Year
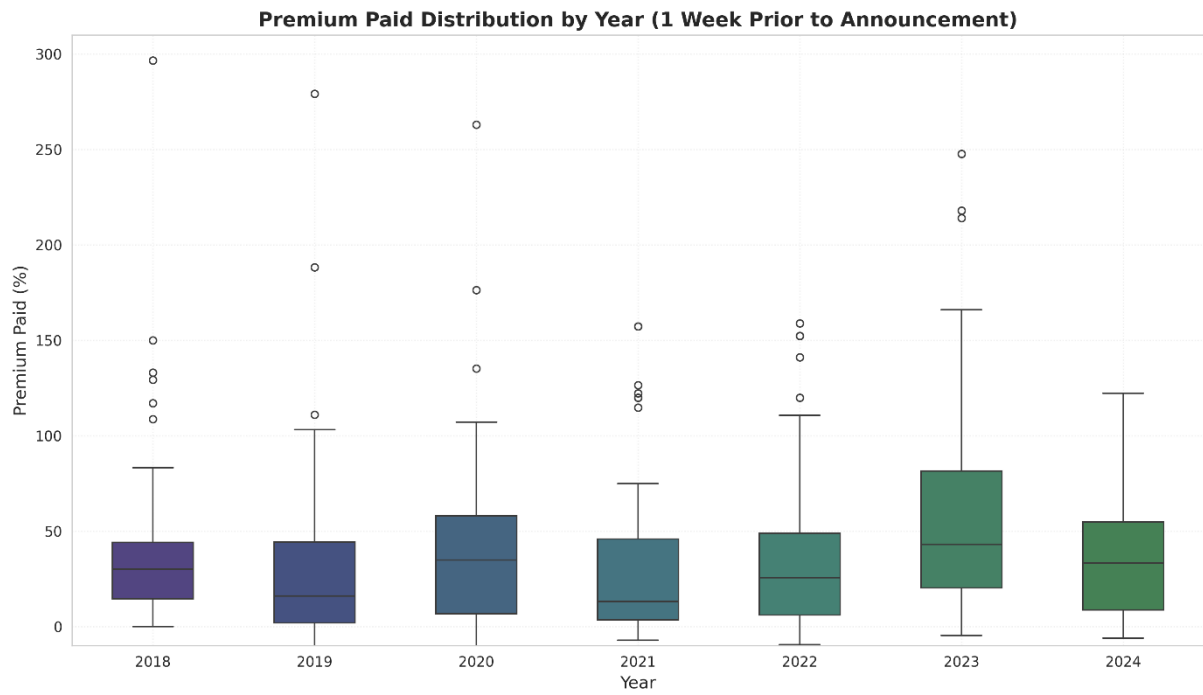
Figure 2 : Premium 1 week Box Plot per Year
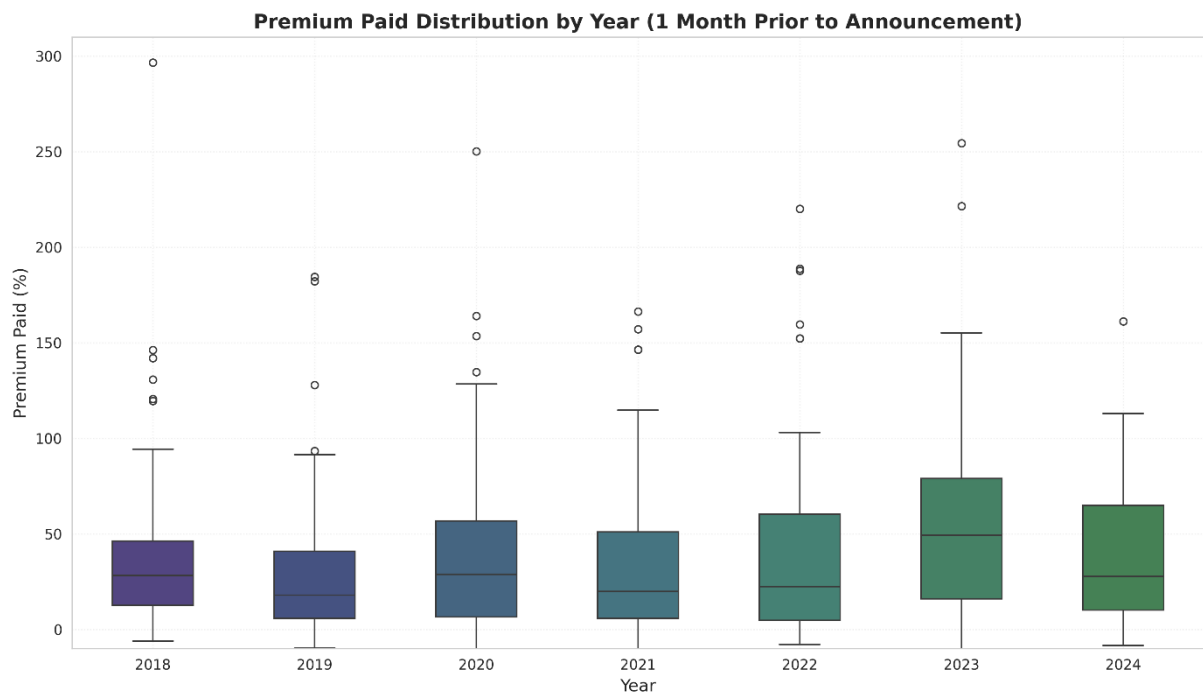
Figure 3: Premium 1 month Box plot per Year
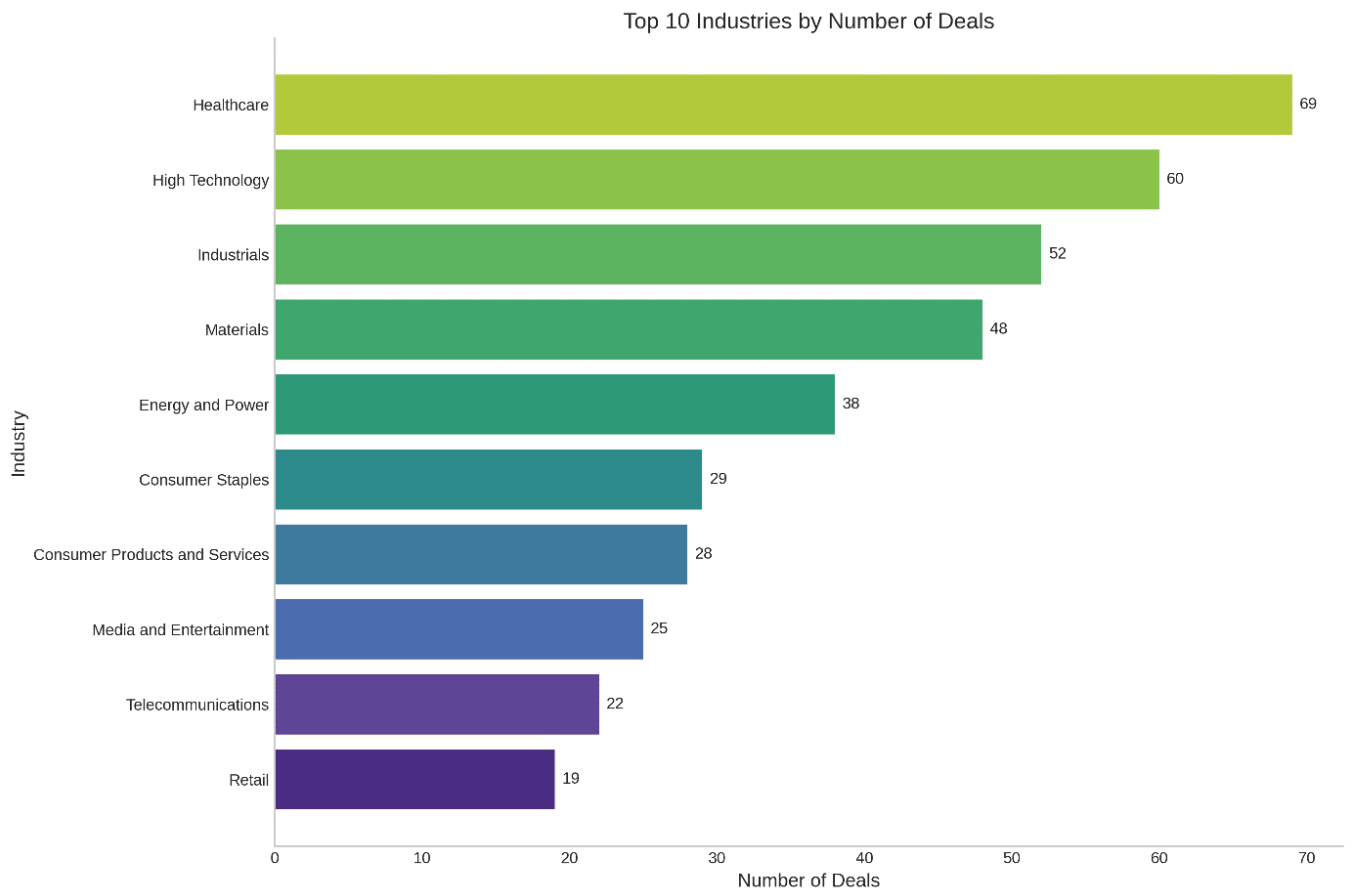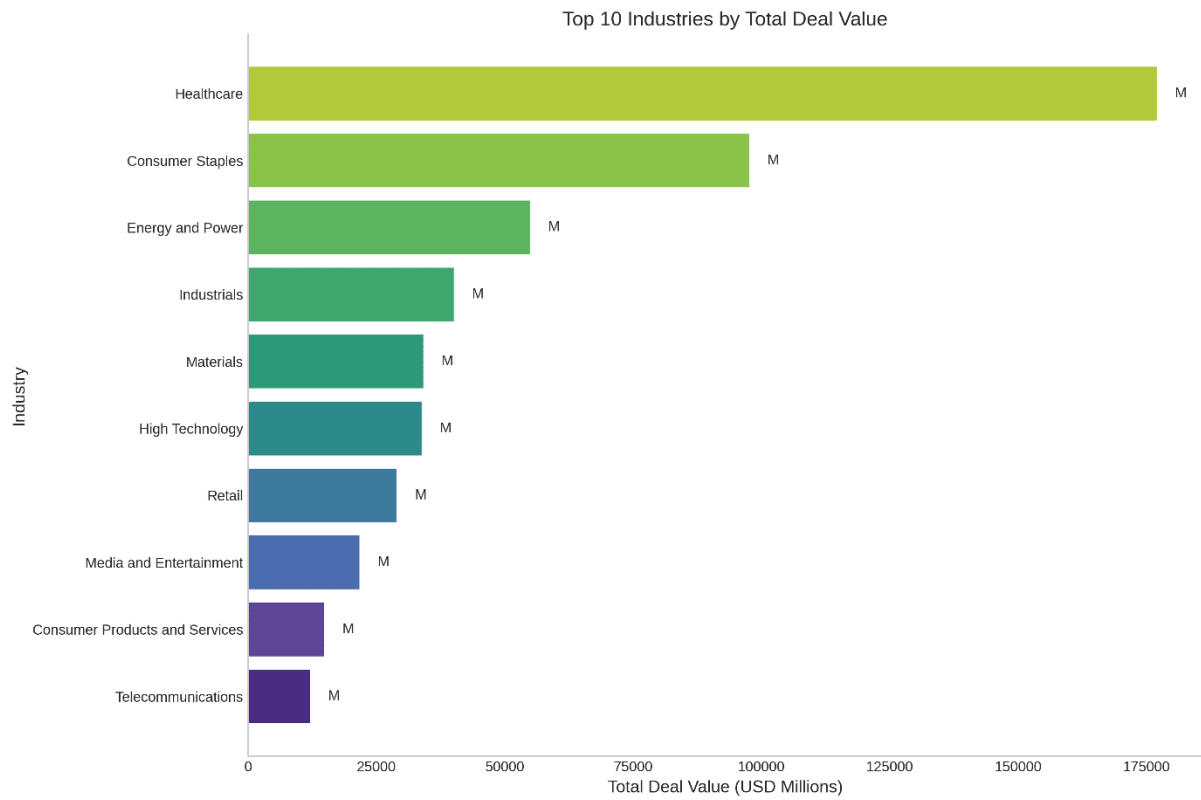
Figure 4 : Top 10 Industries by Number of Deals
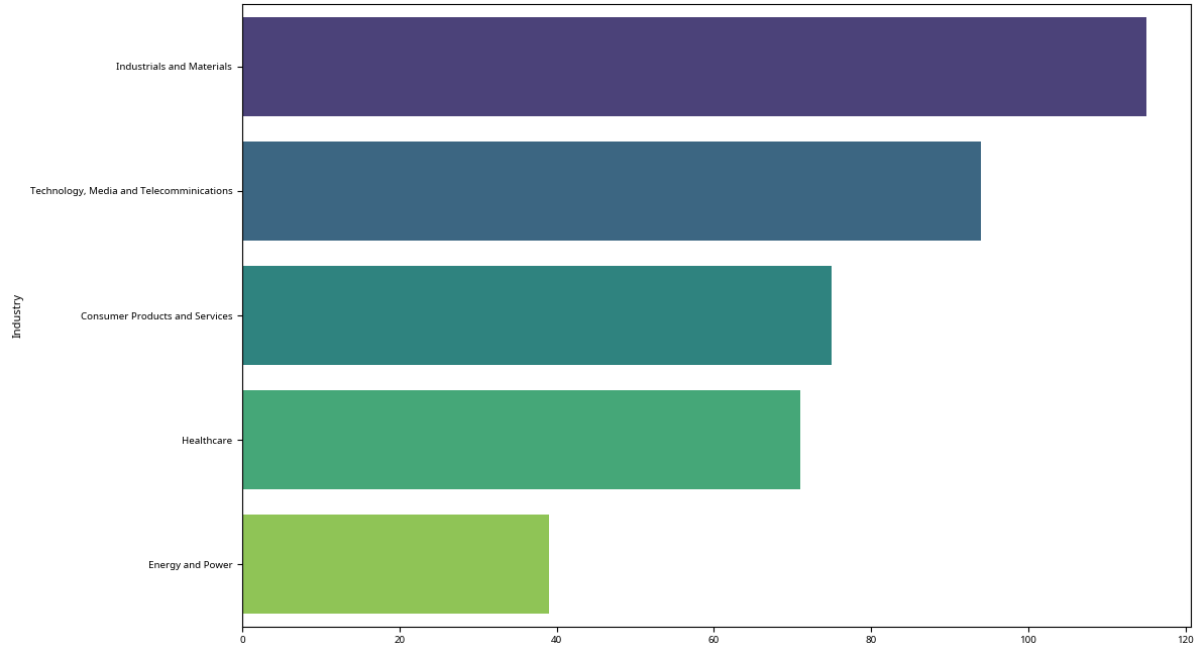
Figure 5 : Top 10 Industries by Total Deal Value

Figure 6 : Number of Deals by Macro Industry
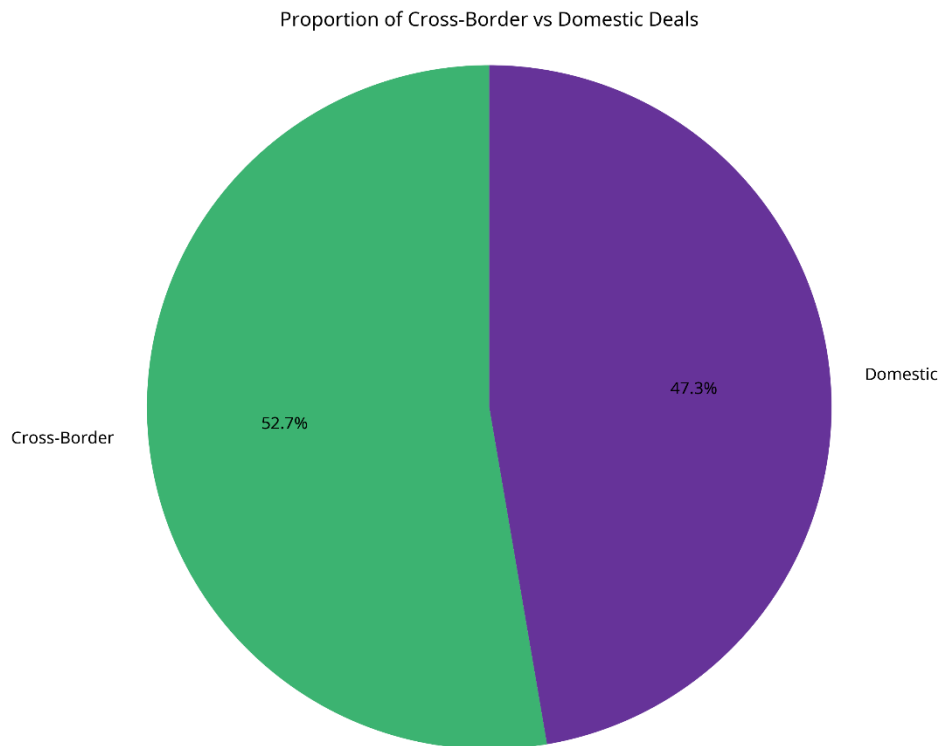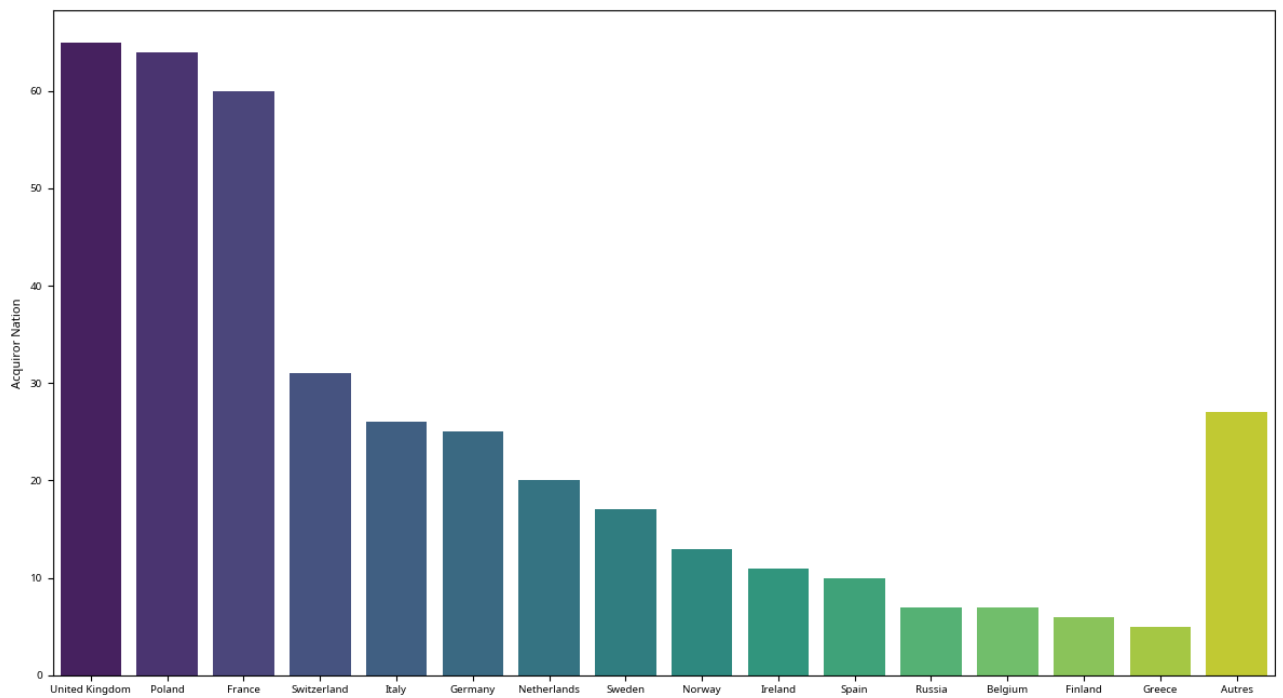
Proportion of Cross-Border vs Domestic Deals

Figure 7: Proportion of Cross-Border vs Domestic Delas

Figure 7 : Number of Deals by Acquiror Nation

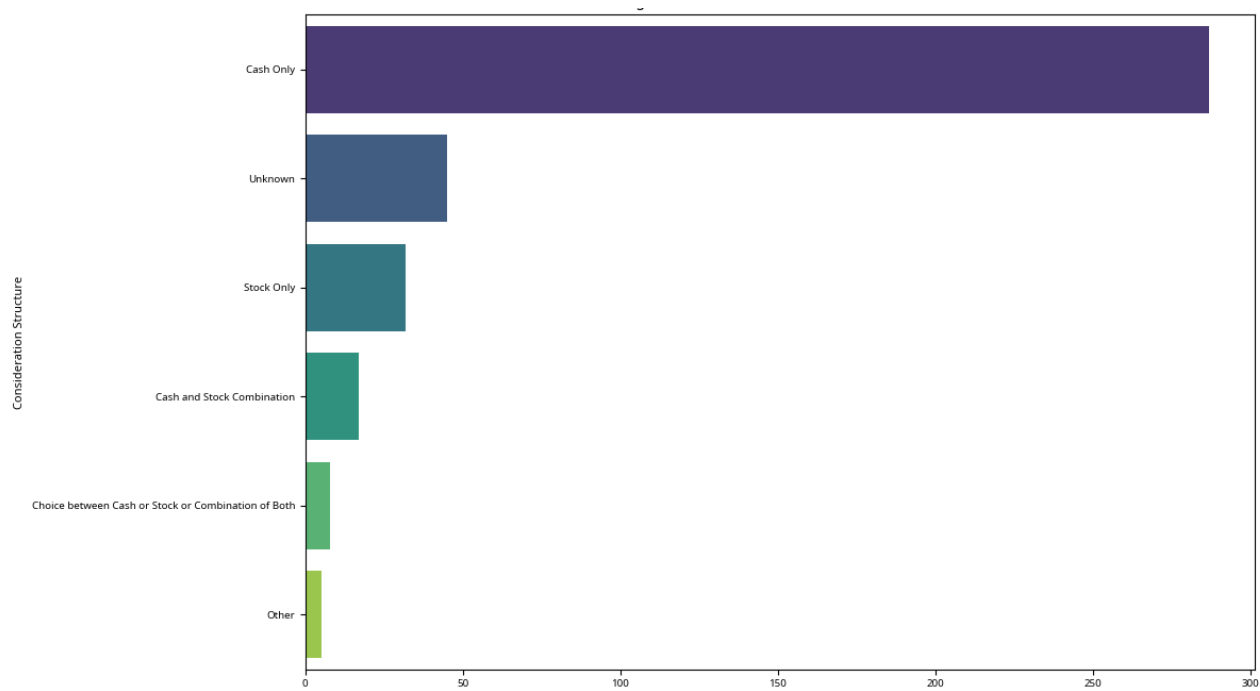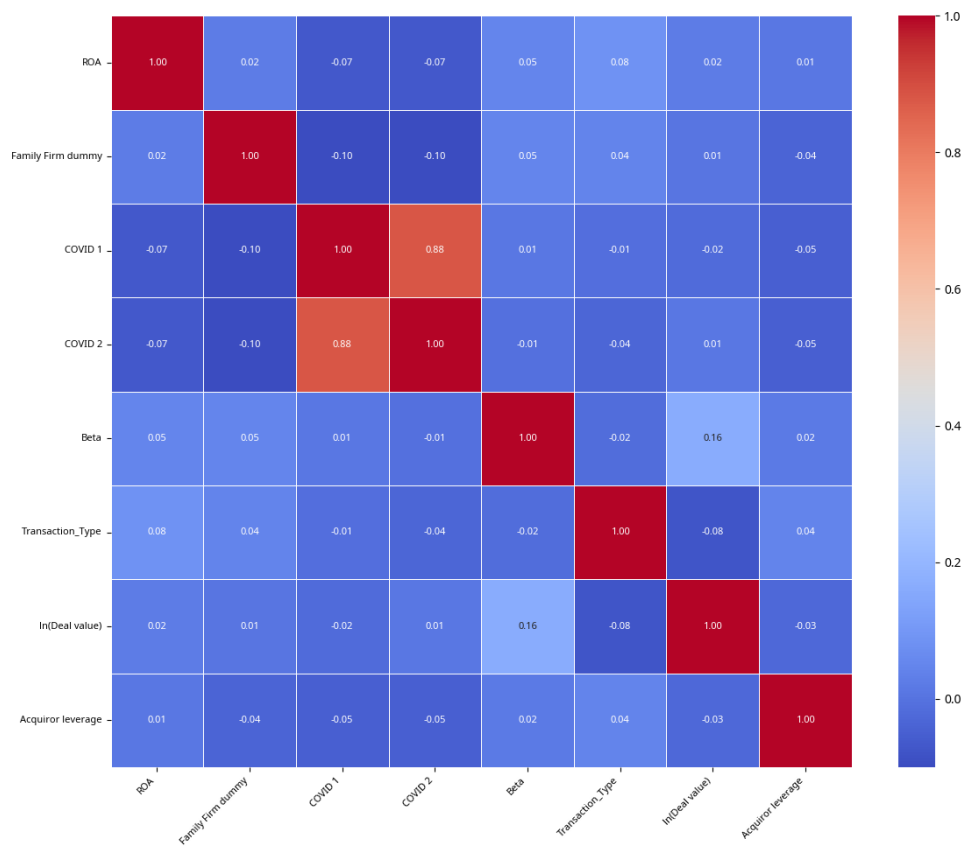*Figure 8 : Number of Deals by Consideration Structure*

Figure 9 : Correlation Heatmap