

Accepted Manuscript

Journal of Financial Management, Markets and Institutions

Article Title: The Impact of Gender Diversity on M&A Process Results

Author(s): Erica Andreassi, Gimede Gigante, Emiliano Sironi

DOI: 10.1142/S2282717X25500033

Received: 24 December 2023

Accepted: 19 March 2025

To be cited as: Erica Andreassi, Gimede Gigante, Emiliano Sironi, The Impact of Gender Diversity on M&A Process Results, *Journal of Financial Management, Markets and Institutions*, doi: 10.1142/S2282717X25500033

Link to final version: <https://doi.org/10.1142/S2282717X25500033>

This is an unedited version of the accepted manuscript scheduled for publication. It has been uploaded in advance for the benefit of our customers. The manuscript will be copyedited, typeset and proofread before it is released in the final form. As a result, the published copy may differ from the unedited version. Readers should obtain the final version from the above link when it is published. The authors are responsible for the content of this Accepted Article.

The Impact of Gender Diversity on M&A Process Results

Erica Andreassi

Università Commerciale “L. Bocconi”
Via Rontgen, 1
20136 Milano
erica.andreassi@gmail.com

Gimede Gigante

Università Commerciale “L. Bocconi”
Via Rontgen, 1
20136 Milano
gimede.gigante@unibocconi.it

Emiliano Sironi

Università Cattolica del Sacro Cuore
Largo Gemelli, 1
20123 Milano
emiliano.sironi@unicatt.it

Abstract

The industry of financial services and investors is characterized by a still low number of female directorships. In 2021 women held 21% of board seats, 19% of C-suite roles, and 5% of CEO positions (Deloitte, 2022). Yet, companies are encouraged to increase the number of female directorships as women are more risk adverse and their participation is considered as a successful device to enhance monitoring and improve risks oversight leading to greater resilience of financial institutions. Hence, the present study aims at verifying whether female participation in the board of directors might affect the success of M&As operations.

In order to do this, a sample of M&As operations over the time window between 2013 and 2021 has been collected, conducted by only Western European acquirers towards worldwide targets. Then, regressions analyses have been performed to identify whether the percentage of women in the board affected the results of M&As operation throughout the three phases considered i.e., pre-merger phase, actual merger and post-merger phase. Empirical results show that companies with a higher percentage of women on the board of director will perform M&As with a smaller relative transaction size; similarly, the presence of female directors is related to acquisition with a lower premium paid. Lastly, we found evidence of higher post- merger acquisition performance in enterprises with higher percentage of women in the board.

Keywords: M&A, Risk aversion, Financial performance, Gender, Board of directors.

JEL Classification: G34, J16

* All authors declare that they have no conflicts of interest

** This research received no external funding

The Impact of Gender Diversity on M&A Process Results

Abstract

The industry of financial services and investors is characterized by a still low number of female directorships. In 2021 women held 21% of board seats, 19% of C-suite roles, and 5% of CEO positions (Deloitte, 2022). Yet, companies are encouraged to increase the number of female directorships as women are more risk adverse and their participation is considered as a successful device to enhance monitoring and improve risks oversight leading to greater resilience of financial institutions. Hence, the present study aims at verifying whether female participation in the board of directors might affect the success of M&As operations.

In order to do this, a sample of M&As operations over the time window between 2013 and 2021 has been collected, conducted by only Western European acquirers towards worldwide targets. Then, regressions analyses have been performed to identify whether the percentage of women in the board affected the results of M&As operation throughout the three phases considered i.e., pre-merger phase, actual merger and post-merger phase. Empirical results show that companies with a higher percentage of women on the board of director will perform M&As with a smaller relative transaction size; similarly, the presence of female directors is related to acquisition with a lower premium paid. Lastly, we found evidence of higher post- merger acquisition performance in enterprises with higher percentage of women in the board.

Keywords: M&A, Risk aversion, Financial performance, Gender, Board of directors.

JEL Classification: G34, J16

* All authors declare that they have no conflicts of interest

** This research received no external funding

Introduction

M&As are defined as extraordinary transactions, pursued by companies willing to realize their strategy by means of external growth.

As of 2022, the value of M&As totaled \$ 3.63 trillion, aligned with the average of the values between 2017 and 2021 considering 2021 as an outlier, although the last quarter of 2022 showed the first signs of economic slowdown as the difference between deal activity in the first and second half of 2022 became significant.

From the target's view, literature generally agrees that shareholders enjoy positive gains, mainly due to the premia for control (Agrawal and Jaffe, 2000). Further research has identified elements that increase these returns even more: premia increase in case of public targets (Fuller, Netter and Stegemoller, 2002; Bargeron, Schlingemann, Stulz and Zutter, 2008) and hostile takeovers (Eckbo, 2009); cash acquisitions and inside managerial ownership are correlated with higher announcement-period abnormal returns (Davidson and Cheng, 1997; Bauguess et al., 2009).

The doubt on whether M&As actually create value for the acquirer shareholders has been firstly casted by Jensen and Ruback (1983), whose research finds mixed results and mainly zero bidder returns. Agrawal and Jaffe (2000) concluded that acquirer returns are negative or statistically not different from zero. Andrade, Mitchell and Strafford (2001) argue that there are winners and losers: target shareholders are the clear winners while acquirer shareholders get negative returns. However, caution must be exercised as the results vary according to several factors. More recent studies have focused on how some characteristics of the target influence the results. Faccio, McConnell and Stolin (2006) research leads to negative-to-zero returns only when the bid is for a listed target, while Officer (2007) finds lower multiples for private firm acquisitions. Moeller, Schlingemann and Stulz (2004) focus on the target firm size and find that small targets lead to better returns. Finally, as for the business in which the target operates, according to the research of Further, Hoberg and Phillips (2010) superior gains are achieved when the target operates in a product market similar to the acquirer, thanks to the potential synergies between related businesses.

Researchers in many scientific fields have generally agreed on the existence of gender-related differences, and, when it comes to economics and finance, the main point analyzed is the attitude towards risk.

Men are found to interpret information about an investment opportunity more "optimistically" with respect to women who tend to weigh in their options more carefully. Hence, men are found to be more easily persuaded into taking risky financial decisions and to be more "acquisitive", both in terms of the number and size of deals performed (Dowling and Aribi, 2013; Chen, Crossland and Huang, 2016). Meanwhile, women are more cautious in deal selection and evaluation, resulting in fewer deals and lower premiums paid (Levi, Li and Zhang, 2014). Consequently, these traits influence how M&As are performed by boards with different number of female directors.

Starting from the existing literature, this paper aims at giving a comprehensive understanding of the gender impact on M&As by investigating its role at different stages, as well as testing evidence in a geographical setting different from the US-focused one. In addition to risk aversion, which is widely discussed in literature, we also explore the role of female directors as effective monitors, contributing to more thorough deal evaluations. Moreover, while gender diversity is often linked to enhanced decision-making, we acknowledge that it may also introduce challenges, such as slower integration processes due to increased deliberation time and potential conflict. Hence, we identified three phases in the M&A process, each one characterized by a specific hypothesis on how gender traits relate to that phase's key challenges. However, we recognize that while our study identifies correlations, establishing a direct causal relationship remains complex due to potential endogeneity.

In order to test these hypotheses, a set of regression models on a sample of deals performed by European acquirors has been run between 2014-2021.

After this brief introduction, the remainder of the paper is structured as follows: section two presents a literature review on the economic results of M&As, the framework of individual personality traits, and the development of our hypotheses. Section three presents the data and the methods adopted in the empirical part, while section four displays the results of the regression analysis. Finally, section five concludes.

2. Literature Background and aim of the study

2.1 Why do firms engage in M&As?

Firms engage in M&As mostly because they believe they will be able to generate operating and financial synergies possible to achieve only through the combination of businesses.

They are divided into operating and financial synergies (Pereiro, 2019); the former are economies of scale, economies of scope, and other cost savings connected to the joint running of the companies' operations and the sharing of knowledge, management, and IP. The latter refers to the lower cost of capital, increased debt capacity or tax benefits the acquirer could be able to enjoy following a merger and/or acquisition. Furthermore, the combination of two entities is sometimes put in place to achieve diversification with a consequent increase in market share and power towards suppliers and clients (DePamphilis, 2021).

Additionally, managers may decide to pursue M&As driven by the so-defined "managerial hubris", according to which an acquisition is brought forward by the belief that the own (higher) valuation is more accurate than the market's.

Roll's (1986) hubris hypothesis consists of misvaluing the target where target valuation in M&A determines the price. The price range has the current market price as the lower boundary, given that target shareholders would not sell for less. However, as the current market price is the average valuation given by rational investors based on the information available on the market, any valuation above the given value is biased upwards. Failure to recognize so is based on the presumption that one's own valuation is more accurate than the market one, which is the hubris bias. As managers base their decisions on wrongful valuations, hubris predicts that the target and acquirer's combined value should fall with the takeover.

Complementing the motives classification, Seth, Song and Pettit (2002) verify the existence of correlations between motives and success. Results from their US sample (2000) and cross-border acquisitions (2002) prove that synergies are associated with value-creating transactions, while hubris leads to value destruction.

Building on this evidence, Malmendier and Tate (2008) introduce overconfidence, which is the overestimation of one's ability to generate returns. According to the authors' rationale, if the ability to operate the target post-acquisition is overstated, the price is inflated as well. This bias might lead to a generous valuation of the synergies and an increase in the willingness to acquire; in both cases, the consequence is value disruption for the acquirer shareholders. Testing this hypothesis, they pair acquisition data with a measure of CEOs overconfidence inferred from their behavior in exercising executive stock options: those CEOs believing in their ability to positively influence the company's future performance are more likely to wait before exercising in-the-money options. Findings confirm the hypothesis and show that not only are overconfident CEOs more acquisitive, but they also perform more diversifying acquisitions, resulting in poorer performance of their M&A decisions.

Consequently, can an increased gender diversity in the board, intended as an higher percentage of non-male individuals, lead to better performing M&As? This one of the questions which this paper will try to answer.

2.2 Gender diversity, differences in personality traits and the effects on M&As performance

Gender diversity is defined as the equal and/or fair representation of people of different genders and usually measured through the ratio of men and women. Nonetheless, it also aims to represent people of non-binary genders.

Gender differences in behavior and anticipated backlash are considered to constitute two of the reasons for a “women to men ratio” which is too low to be considered equitable or fair especially in leadership positions. Particularly, women are shown to refrain themselves from taking leadership positions due to their excessive cautiousness i.e., risk aversion, and anticipated negative reactions even when owning the same level of leadership-related knowledge, competence and motivation as men (Shen and Joseph, 2021).

For the latter reason, women are found to be less likely to negotiate and self-promote assertively on their behalf (Amanatullah and Morris, 2010) and to speak up in organizations due to fear of negative reactions and greater penalization with respect to men. Akinola, Martin and Phillips (2018) found that women are less likely to engage in behaviors that could be defined as agentic with respect to men, as in the case of delegation, which results in the worsening of their effectiveness and consequently in them achieving successful outcomes.

Whereas, for what concerns risk aversion, Shen and Joseph (2021) highlighted how women’s precaution in the workplace may hinder their willingness to enact leadership behaviors “leading to weaker relationships between leadership-related knowledge, skill or motivation and subsequent leader behavior”.

A variety of personal and interpersonal or external factors may explain why: Grijalva et al. (2015) reported men’s tendency to be more narcissistic and hence overconfident while Bear, Cushenbery, London and Sherman (2017) explained how the higher probability for women to receive patronizing and mixed feedbacks of dubious interpretation may bring them to underestimate their capabilities.

Given the uncertainty of decisions leaders are responsible to take in top positions, and women’s relatively lower unwillingness to engage into risky dynamics, they often lack the necessary exposure needed to be promoted to senior positions with a consequent higher percentage of men covering those roles.

Nonetheless, according to Morgenroth (2022), most of the time it’s the assumption about women’s lower confident traits, and not their actual attitude and behavior towards risk that hinders their career progression. In fact, Morgenroth believes that the average description of women follows the lines of someone who is “affectionate, gentle and helpful” conflicting with the agentic characteristics used to refer to a leader as in “confident, dominant and self-sufficient” leading to gender stereotypes and unconscious biases. This bias is captured in Schein’s “think male think leader” aphorism (Koenig et al., 2011).

Although women’s lower risk aversion with respect to men may be evaluated excessively harshly and lead to biases and stereotypes, it is still true that they lack the overconfidence men have and that they tend to be more careful in evaluation procedures following superior monitoring and stricter ethical practices implementation (Tampakoudis et al. 2022).

Consequently, women are found to take their role more seriously than their male counterparts as by being more likely to hold positions in monitoring committees, attending more frequently board meetings (Adams and Ferreira, 2009) and discouraging male absenteeism according to Boutchkova et al. (2021) who suggest that the presence of women on other boards has a “spillover effect” on men’s susceptibility to influence by the social norms.

Indeed, Isidro and Sobral (2015) showed a positive relationship between the presence of women on board and the compliance of the company with the declared ethical and social standards.

Nonetheless, Khaw and Liao (2018) argued that although having women on boards aids in obtaining a better monitoring, corporate decision-making process could take longer time. Still, as highlighted by Afsharipour (2022), with a low percentage of women in boards of directors, “a significant portion of the population does not hold key decision-making roles in fundamental deals that greatly impact companies and billions of dollars

trading hands". As a matter of fact, women constitute 51% of the European population although only 30% of the members in board of directors are females.

Applying females' characteristics to the risky transaction field of M&As, Dowling and Aribi (2013) have found that, as men are more risk-prone, they are more likely to engage in M&As, while women show more reluctance in undertaking them.

Huang and Kisgen (2013) results show that female directors-led firms grow at a slower pace externally, because of lower acquisitiveness. Moreover, this study reports a negative assets growth leading to the conclusion that these firms may also have a lower rate of internally generated growth. Plausible explanations might be that women-led firms have lower leverage; hence it seems like overconfident male CEOs take on more debt to fuel firms' growth. Additionally, women-led firms may also be able to access debt at a lower cost given the better corporate reputation (Afsharipour, 2022). An example is given by Carlyle Group that in 2021 "announced that it would tie the price of debt to the diversity of the board of its portfolio company" (Afsharipour, 2022).

Is this external growth appreciated by the market? Analysis of CAR around the announcement date shows that the market welcomes more positively acquisitions made by firms with female executives compared to the ones initiated by men. The same results hold for the announcement of other major capital decisions, like debt or seasoned equity offers. It seems like markets punish men's overconfidence while trust women's decisions, considering them value-enhancing. While the male-to-male transition does not produce any real change in the number of value-hindering transactions, a male-to-female transition reduces the number of bad acquisitions from over 50% to about 17%. Is overconfidence the appropriate explanation for these findings? Analysis of earnings forecast shows that male executives provide significantly narrower forecast ranges, thus confirming the overconfidence argument. Chen, Crossland and Huang (2016) take deal size as a reasonable proxy to test for overconfidence bias in M&As, expecting female presence on boards to be associated with smaller acquisitions, as larger deals are more likely to fail due to difficult integration.

The hypothesis is tested on a sample of S&P 1500 companies from 1998 to 2010 using as a predictor the ratio of female directors to total board size on acquisitiveness: results demonstrate that women on board are associated with both fewer and smaller acquisitions. As a matter of fact, what Huang and Kisgen (2013) and Chen, Crossland and Huang (2016) have successfully managed to do is to raise a reasonable doubt: is it really that women-specific risk aversion impedes deal, or is it that women are better able to identify value-maximizing deals?

As a matter of fact, a study conducted by the M&A Research Centre at Bayes Business School and Mergermarket in 2022 found that 100% of the M&As announced by women reached completion versus 95% of those announced by the male counterparts. One explanation was the stricter pickiness by women of targets with respect to high quality, high sales growth, and profitability, which can be linked to the more extensive monitoring activity brought forward by women explained above.

This is also addressed by Levi, Li and Zhang (2014), who start from the link between overconfidence and acquisitiveness, and continue by analyzing premiums paid. The research is based on a sample of M&A deals of firms in the S&P1500 for the years 1997-2009. Gender diversity is expressed as the ratio of female directors to total members of the board, while acquisitiveness, the first dependent variable, is measured as the number of bids advanced in one fiscal year. Results find female directors to be associated with lower acquisitiveness: by adding a woman on the board leads to 7.6% fewer bids. A negative relationship between female directors and premium paid is found: each additional female director decreases bid premia by 15.4%. Does overconfidence explain these results? Levi, Li and Zhang (2010) show their findings to be consistent with the overconfidence argument by including the age of male CEOs in the analysis: young CEOs are more testosterone-driven and thus more inclined to acquire.

Diversity is the starting point of Parola, Ellis and Golden (2015). As Dezsó and Ross (2012), they believe that gender difference in the top management team (TMT) brings together different backgrounds and capabilities, which might enhance certain decisions or increase conflictual tensions for some others. Focusing on the

selection and the integration phase, the authors' basic hypotheses are that TMT diversity is beneficial in the former phase, as it leads to a more accurate selection of the target, while conflict caused by diversity slows down decision making and negatively affects the latter phase. They select a sample of domestic US deals made by listed Fortune 1000 companies between 2004 and 2009, with restrictions for deal size and type in order to analyze decision-making for the same type of transaction. TMT diversity is measured as the percentage of women in the team and is evaluated with pre- and post-integration performance; results confirm the positive effect of gender diversity on pre-integration performance. Additionally, Hummel (2018) found that especially when the board has a gender diversity of at least 30%, the bid premium paid by the acquirer will be even lower and this increases the probability of success since smaller deals are usually better performing than bigger ones.

Results might be motivated by the additional network connections brought by women, their enhanced monitoring interest and their risk attitude which penalize hazardous deals.

Hence, what emerges from past literature is that gender has been found to mainly impact acquisitiveness, with evidence about women performing fewer and better deals. However, the nature of the impact of gender diversity on the overall firm value is still controversial in that, although the presence of women on boards does provide additional benefits as a better deal valuation and a constant, deeper surveillance, it is still unclear as to whether such impact on firms' value is direct or indirect.

2.3 Aim of the study

This research aims at complementing the previous literature by filling in some important gaps. Firstly, the majority of the literature present and analyzed focuses on the U.S. M&A activity, leaving a significant gap for what concerns the same field in Western Europe.

Looking at the legal framework, from a minority shareholder protection perspective, the EU follows a decision rights strategy, requiring a supermajority (often 75%) approval and enforcing strict disclosure and auditor report requirements, which can delay or block deals due to shareholder opposition. The U.S., in contrast, follows an exit strategy, allowing mergers with fair compensation for dissenting shareholders, who have stronger appraisal rights, increasing potential legal and financial risks. In merger control, the EU prioritizes preventing market distortion and protecting competition, potentially blocking deals even without immediate consumer harm. The U.S. focuses on consumer harm, meaning mergers face less intervention unless they raise prices, lower output, or reduce efficiency. The EU's multi-level approval system with varying turnover-based thresholds makes M&A approvals slower and more unpredictable, especially for cross-border deals. The U.S. operates under a single federal system, revises control thresholds annually, and requires a filing fee, making the process faster and more predictable. For market concentration, the EU is stricter on large transactions, often requiring divestitures, while the U.S. is more sensitive to even small concentration increases, potentially scrutinizing smaller deals. Overall, EU M&A faces longer approvals and stricter competition rules but benefits from incentives like goodwill accounting, while U.S. deals move faster but must navigate stronger appraisal rights and concentration concerns.

Research has left a significant gap between Western Europe and the U.S. market regarding gender diversity as well. Hence, the decision to bring forward research aimed at shedding light on how gender diversity can impact M&A activity in the old continent as well.

Particularly, Western Europe and mainly the European Union represents an interesting setting given the political and regulatory pressures to augment the presence and influence of women on boards.

The EU has been promoting and incentivizing economic and social integration through the introduction of quota laws, financial incentives and educational programs.

Many European countries have enacted legislation mandating female representation on corporate boards, influencing the strategic direction of M&A activity. For instance, France's Copé-Zimmerman law requires at least 40% female board representation in large companies, a policy that has sparked both support and controversy. Spain and Finland have introduced similar measures. Countries like Italy, Ireland, and the

Netherlands have also reinforced gender balance requirements. Moreover, an EU directive mandates 40% female non-executive directors or 33% of all directors by 2026.

The impact on M&A transactions is notable. Companies subject to strict gender diversity requirements may find themselves seeking acquisition targets that help them meet quotas, prioritizing firms with stronger female board representation. Additionally, buyers may face regulatory scrutiny if post-merger governance structures do not comply with national gender laws. This can influence deal structures, board composition negotiations, and the attractiveness of certain targets. For example, an acquiring company in Portugal or Belgium, where quotas exceed 33%, might have to adjust its leadership composition to meet compliance post-merger.

While the U.S. has seen progress in corporate diversity initiatives, it lacks federal gender quotas, making governance structures more flexible but also less standardized across deals. In contrast, the EU's legal mandates create a more predictable regulatory environment but also add complexity to cross-border M&A, where companies must navigate diverging national requirements. Deals involving firms in Norway or Luxembourg, where gender balance is well-established, may proceed more smoothly than in countries with more recent or less enforced regulations, such as Greece or Malta.

Lastly, the value of M&As in Europe accounted for approximately 25% of worldwide M&As as of 2022 and consequently represents a valuable testing field and is worth of attention. Furthermore, previous studies tend to focus on one specific aspect of an M&A transaction, but M&As are complex staged processes whose results should be considered with a broader perspective that includes all its phases (Gomes et al., 2013). Therefore, we aim at testing the impact of gender on the whole M&A process by looking at pre-acquisition, deal structuring and completion, and post-acquisition phases. Our hypotheses are based on linking findings from gender-related traits, as well as implications of team diversity, with the major drivers of the different acquisition phases.

The following section goes into further details of the three identified phases (Salus, 1989; Appelbaum et al., 2000): (i) the pre-merger phase, or setting the stage for the deal (ii) the actual merger, where the deal is closed (iii) the post-merger phase, with the integration of the entities. Each stage has a specific challenge that might be impacted by gender-specific traits, resulting in three hypotheses.

i. The pre-merger phase

In the pursuit of their strategy, companies usually resort to external growth; in doing so, some deals are inherently riskier, especially when they involve a large transaction size compared to the dimension of the acquirer. It has been demonstrated that both bidder and target returns decrease in public acquisitions as the relative size increases (Fuller, Netter and Stegemoller, 2002; Officer, 2007). A rationale driving toward riskier deals is “empire building” (Gaughan, 2004), consisting in performing acquisitions to gain control of a larger company, as it leads to prestige and higher compensation. As men are more risk-prone, we believe them to be more inclined to empire building, while women-specific risk aversion should make them less inclined to undertake an especially risky transaction. Therefore, we formulate hypothesis 1: companies with a higher number of women on the board of directors will perform M&As with smaller relative transaction size and hypothesis 2: firms with a significant percentage of women in the board will be less acquisitive.

ii. The actual merger

The merger phase is probably the most delicate one, as parties conduct the negotiation attempting to strike a good deal for them. The crucial point is the premium evaluation: an excessive value means transferring all the deal's benefits to the target shareholders. Roll (1986) formulated the so-called “hubris hypothesis”, which refers to one's belief to have superior valuation skills, leading to mispricing compared to the market valuation. We believe that men are more inclined to misevaluation both in terms of overconfidence (Chen, Crossland and Huang, 2016) and hubris (Huang and Kisgen, 2013). Consequently, we formulate hypothesis 3: companies with a higher number of women on the board of directors will pay lower premiums.

iii. The post-merger phase

No deal can be successful without an integration strategy, a complex process of organizational and operational restructuring, which realizes the predicted benefits. Timely decision-making and communication throughout the organization are essential success factors, anticipating returns and bringing the new company to its optimal conditions (Angwin, 2004). We believe gender diversity might increase the degree of conflict inherent in the board, thus potentially hindering the speed of decision-making in this phase. We formulate hypothesis 4: the number of women on the board of directors is negatively correlated with the post-merger performance.

The incremental contribution of this research lies in addressing key gaps in the literature on gender diversity and M&A performance. Unlike most studies that focus on U.S. M&A activity, this research examines Western Europe, where legal frameworks, regulatory pressures, and gender diversity policies differ significantly. It also goes beyond previous work by evaluating gender diversity across all three M&A phases—pre-acquisition, deal structuring, and post-merger integration—rather than focusing solely on acquisitiveness or premiums paid. Indeed, literature usually focuses on one or two of the outcomes of the three M&A phases (García & Herrero, 2022; Defrancq et al., 2021; Ahammad & Glaister, 2013.) or, alternatively on single countries or on a limited sub-set of markets. Additionally, this study refines the debate on risk aversion by challenging the assumption that women’s lower M&A activity results from excessive caution, exploring instead whether their selectivity leads to better deal quality. Moreover, by assessing gender diversity’s impact on market reactions, deal success rates and premiums paid, this research provides a broader and more nuanced perspective on M&A decision-making

3. Data & Methods

To test our hypotheses, we collected information on deals with specific characteristics. Deals information have been retrieved from SDC Platinum database, over the period 1 January 2014 to 31 December 2022. Given the sole focus on Europe, we ensured the gender information is related to European companies by selecting exclusively European acquirors while maintaining a worldwide focus for the targets. Furthermore, we decided to restrict the analysis by selecting the following criteria:

- Deal type M and A, that is merger and acquisition as defined by SDC
- European focus for acquirors with countries being France, United Kingdom, Spain, Switzerland, Germany, Italy, Ireland, Sweden, Netherlands, Finland, Norway, Greece, Belgium, Denmark, Luxembourg, Austria, Faroe Islands, Portugal, Malta (see Table I)
- Public and private status of both the acquirers and the targets
- 100% ownership after the transaction
- Completed deal

[TABLE I HERE]

The criteria above have been selected, in order to reduce external influences other than the variables included in our analysis.

The decision to choose both public and private acquirors and targets has been taken given the different requirements public companies are subject to due to regulation in achieving a certain threshold of women in the board as well as the presence of grey women/token directors (Tampakoudis et al., 2022) in private and especially family-owned and family-run businesses. Hence, considering both criteria help providing a more comprehensive picture.

We restrict mergers and acquisitions of 100% ownership, to avoid deal-specific characteristics that might bias the results and to ensure the inclusion of deals requiring a revision from the board.

To avoid effects of very small transactions which may impact the scope of the broader analysis, the decision to exclude M&As transactions with a deal value of less than 1 million euro has been taken.

Finally, the post-merger performance evaluation requires us to study completed deals.

The second step was retrieving the financial and governance information needed to perform the analysis. This data are obtained from Thomson Reuters Datastream, for both acquirors and targets in the period 2013-2022. The decision to analyze gender diversity's effects on M&As performances in a 10-year timeframe has been related to the acknowledgement of (i) the importance of an increased female presence in BoDs to balance the typically masculine risk-taking behavior especially after the financial crisis of 2007 and 2008 and (ii) an heightened interest from EU regulators in the field of gender equality in the past years.

The analysis requires financial and board information in different years, according to the M&A phase we are considering. Thus, for the pre-merger and merger phase, we used data from the last fiscal year before the announcement date to ensure the board information to refer to the board that discussed the deal. For the post-merger phase, our reference point is the end of one year later the completion date, as sufficient time is needed to complete the deal but other major events that might influence the operating performance have to be excluded. Thereinafter, the sample size is reduced to 348 deals conducted in 12 major industries (see Table II and Table III for the split in mid industries) by erasing the deals for which required data was missing.

[TABLE II HERE]

[TABLE III HERE]

Table IV and V provide some details and descriptive statistics and definitions of the variables of the three models: the dependent variables are respectively, the relative size, the number of deals, the premium and the ROA variation and the premium, while the key explanatory variable is the gender variable.

[TABLE IV HERE]

[TABLE V HERE]

The companies in the sample have performed on average more than 1 acquisition each year.

There is a consistent difference between the two premium measures, possibly motivated by the inflated target stock price used as the premium, because measured at the announcement date; therefore, the undisturbed premium measured at the rumored date is much higher.

4. Empirical Results

The empirical strategy is devoted to answering the research questions formulated above. H1 and H2 refer to the pre-merger phase: the objective is to understand whether gender diversity expressed (in terms of percentage of women in the board of directors) influences the type of M&As performed in terms of transaction size, given that overconfidence and risk attitudes might lead to different decisions. The hypothesis is worded as follows.

Hypothesis 1: companies with a higher percentage of women on the board of directors will perform M&As with a smaller relative transaction size.

The dependent variable is the relative size, defined as the ratio of the deal value to the total assets of the acquirer; it allows understanding how risky the deal is by taking the consideration paid related to the size of the acquirer's business. The variable is regressed on two categories of financial and governance variables, including the gender measure. Furthermore, we added some of the target's company financial measures which are thought to influence the consideration paid. Hence, we include a measure of the target size (the logarithm of total assets) and of its attractiveness both in terms of performance (Tobin's Q) and of capital structure (debt to equity). The model specification is defined below:

Model 1

$$\text{Relative size} = \alpha + \beta_1 \text{Ln Total Assets}_{\text{acquirer}} + \beta_2 \text{Scaled cash} + \beta_3 \text{Tobin's Q}_{\text{acquirer}} + \beta_4 \text{ROA} + \beta_5 \text{D/E}_{\text{acquirer}} + \beta_6 \text{Ln Total Assets}_{\text{target}} + \beta_7 \% \text{Tobin's Q}_{\text{target}} + \beta_8 \text{D/E}_{\text{target}} + \beta_9 \text{Board Independence} + \beta_{10} \text{CEO Duality} + \beta_{11} \% \text{Females on Board} + \varepsilon$$

Table VI provides the results of the regression analysis:

[TABLE VI HERE]

The percentage of females on board is significantly related to the size of the acquisition at the 5% level. As expected, the coefficient is negative, showing that women's influence on board tends to be related to less risky acquisitions or at least, acquisitions with a more conservative valuation. As for the other variables, the higher the performance measures of the target, the higher the relative size, which logically shows acquirer's willingness to pay more for valuable targets. Moreover, although corporate governance variables are non-significant in our analysis, it is preferable to leave them in the model in order to ensure that the female variable does not capture their effect. As for the acquirer's performance measure, we notice a negative relationship which supports the general knowledge of M&As destroying value and is in line with the previous literature.

For what concerns targets' variables, the size of such companies, referred to as the logarithm of the total assets, has been found to be significantly and positively related at the 1% level to the deal's relative size. This can be explained by the acquirer's greater evaluation of a consolidated entity.

Lastly, target's D/E ratio is positively related to the deal's relative size. An explanation for this could be found in the target's higher financing costs due to the interest payments on its debt.

As for the acquirer's financial variables, the firm's size and Tobin's Q ratio are significantly related to the size of the acquisition at the 1% and 5% level, respectively.

The analysis of the Variance Inflation Factors shows that multicollinearity is not an issue of the model, as the VIFs are all below the threshold of 5. This allows us to exclude multicollinearity.

Hypothesis 2: firms with a significant percentage of women in the board will be less acquisitive.

The dependent variable is the number of deals undertaken by firms throughout the period analyzed (2014-2021) as a measure of their acquisitiveness. In this model, the key dependent variable is a count variable, that indicates the number of M&As performed by one firm in a given year. As the dependent variable is a count, we need to apply a negative binomial regression. The presence of the same firms in the sample provides a more complete understanding of the company's relative evaluation of the target, as in the deals' relative size. Consequently, the key independent financial variables selected are the total assets, the deal's relative size and the long-term debt of acquirors. All three variables have been expressed as averages computed considering their values throughout the years in which acquirors have conducted the M&A transactions as a significant number of firms has conducted multiple ones. Governance variables have remained the same as those used in the model above.

Model 2

Number of deals* = $\alpha + \beta_1 \text{LnTotal Assets} + \beta_2 \text{Ln Debt} + \beta_3 \text{Ln Cash} + \beta_4 \text{Ln Market Capitalization} + \beta_5 \text{Board Size} + \beta_6 \text{Board independence} + \beta_7 \text{CEO Duality} + \beta_8 \% \text{ Females on Board} + \varepsilon$

[TABLE VII HERE]

The model below shows the eight independent variables selected to highlight an eventual relation between the presence of women on boards, i.e., board diversity, and the number of deals each firm has conducted throughout the period analyzed.

As expected, the number of deals concluded by a company is negatively affected by the percentage of females on board and the total assets owned by a company. Firms whose boards are made of a greater percentage of women are showed to be less acquisitive in terms of number of deals undertaken. Lastly, board independence is shown to be not significantly affecting the number of deals completed. A similar explanation to the one employed for model three applies: board independence may lead to higher scrutiny, risk aversion, longer decision-making processes, and potential conflicts of interest between the board and management. Independent board members may be more likely to question the benefit of a potential M&A deal and may be more risk-averse in their decision-making, even if the effect is not significant. This could result in a more cautious approach to M&A deals and potentially fewer deals being undertaken overall.

As a result, hypothesis four is proven to be true.

The second research hypothesis requires investigating the role of diversity in the merger phase, by focusing on one of the main issues, that is the premium paid.

Hypothesis 3: companies with a higher percentage of women on the board of directors will pay lower premiums

The dependent variable is a measure of the premium, calculated as the ratio of the offer price to the target company stock price 4 weeks before the announcement. This premium measure should be sufficiently free from the influence of acquisition rumors, which usually spread close to the announcement date. The model selects variables that are supposed to influence the premium paid in a transaction, according to the literature. Hence, the following three groups of variables are implemented: 1) the financial profiles of the acquiror, influencing the premium paid given the availability of funds, 2) the financial profile of the target, that might justify the payment of a higher premium given some peculiarities or a particularly impressive performance, 3) governance variables, including the gender variable, which is our key focus. The model has the specification below:

Model 3

Premium = $\alpha + \beta_1 \text{Ln Deal} + \beta_2 \text{Scaled Cash} + \beta_3 \text{Book leverage} + \beta_4 \text{Relative size} + \beta_5 \text{Ln tot assets target} + \beta_6 \text{ROA target} + \beta_7 \text{Board size} + \beta_8 \text{Board independence} + \beta_9 \% \text{ Female on board} + \varepsilon$

[TABLE VIII HERE]

The gender variable significantly impacts the premium at the 5% level: a negative relationship has been found, which confirms the hypothesis about the presence of female directors related to acquisition with a lower premium paid. Moreover, the sign of the coefficient is also in line with the findings of the previous literature (Levi, Li and Zhang, 2014). As for the other variables, the size of the board does not contribute to reducing the premium paid. The financials of the target show a negative relation with the premium, probably due to acquisitions usually targeting companies in distress, which is also in line with what has been found by Levi,

Li and Zhang (2014). Like Model 1, Model 2 has been subjected to regression diagnostic: the model is affected by heteroskedasticity, which has been solved with robust standard errors. The F-test provides evidence for the significance of the model, which is confirmed by the R^2 of 18%, with our variables explaining sufficiently the variation in the dependent variable; multicollinearity is not present as the VIFs are all below the threshold of 5.

Finally, the empirical analysis concludes with the delicate evaluation of the post-merger performance deeply investigated in the literature (Teerikangas and Thanos, 2018). We focus on the role played by diversity in the integrating phase and test the following hypothesis:

Hypothesis 4: *the percentage of women on the board of directors negatively affects post-merger performance*

Building on Khan and Vieito (2013) research, the post-merger performance has been measured in terms of operating performance, establishing as dependent variable the percentage change in the ROA, over the post and pre-merger time horizon. The post-merger reference date is the end of the fiscal year after the year of the acquisition, chosen to ensure the effective completion of most of the integration procedure. As for the key independent variables, governance and financial variables, with the latter being defined as percentage change, have been introduced. The model specification, consisting in a linear regression, is described below:

Model 4

$$\text{ROA growth} = \alpha + \beta_1 \text{ Sales growth} + \beta_2 \text{ Market cap growth} + \beta_3 \text{ Tot Assets growth} + \beta_4 \text{ Net income growth} + \beta_5 \text{ Board Size} + \beta_6 \text{ Board Independence} + \beta_7 \text{ CEO Duality} + \beta_8 \% \text{ Female on board} + \varepsilon$$

Two interesting notes should be made: firstly, as the board analyzed is measured on average two years after the pre-merger board, we notice an increase in diversity by approximately 14% given an average diversity of 17.8% the year before M&As were conducted versus a 20.2% two years after such transactions were completed. Moreover, the average ROA is negative giving the insight that the sample is characterized by deals negatively impacting the operating performance. Table IX shows regression estimates:

[TABLE IX HERE]

As expected, the coefficient for the percentage of females on board, expressed as percentage of females on the board of directors, is negative.

Adams and Ferreira (2009) have justified such results stating that adding more diverse voices and perspectives to a board can indeed lead to longer decision-making processes and more disagreements, which can be challenging for boards that have not previously had a diverse membership and may require some time to adapt to new ways of working. Additionally, gender diversity on boards may not be enough to drive improvements in company performance, particularly if the board lacks proper training or experience in making strategic decisions and implementing changes (Carter et al., 2003; Erhardt et al., 2003).

The resistance to change and longer decision-making processes resulting from diverse voices can temporarily impact company performance and lead to slower ROA growth (Adams and Ferreira, 2009). Furthermore, a lack of experience among diverse board members may result in poorer company performance, including ROA (Carter et al., 2003; Erhardt et al., 2003). Some companies may struggle to recruit and retain diverse board members due to limited resources or a lack of diversity in their leadership pipeline, which can result in a less diverse board and limit the potential benefits of gender diversity on company performance, including ROA (Noland et al., 2016).

Nonetheless, ROA Change has been computed on a 2-year timeframe since, as stated above, the post-merger reference date is the end of the fiscal year after the year of the acquisition. This makes it a very short-term KPI

that will, consequently, only highlight the potential short-term negative impacts neglecting that gender-diverse boards can lead to long-term benefits such as increased innovation, better risk management, and improved financial performance (Noland et al., 2016).

The variable of board independence does not exhibit a significant correlation with the change in the return on assets (ROA). This result can be attributed to the absence of any material relationship between an independent director and the company. Independent directors, being uninvolved in day-to-day operations and not being part of the executive team, are able to provide a more objective and impartial evaluation and decision-making process. Overall, the relationship between ROA and market capitalization is influenced by several factors, including investor expectations, growth prospects, and capital expenditures.

With respect to regression diagnostic, standard errors are corrected for heteroskedastic while multicollinearity is not an issue of the model, as the VIFs are all below the threshold of 5.

5. Discussion of the results

The results of our empirical analysis are significant in every model with respect to the role played by board diversity in terms of gender composition: there clearly exists a relation between gender variables and all the dependent variables of the models, but there is uncertainty in attributing causation or a unique interpretation. First of all, the potential bias deriving from endogeneity in the relationship between performance in M&As and previous appointments of females in the board of directors has to be taken into account. Indeed, less risk deals can be anticipated by early appointments of more females in the board of directors of the involved corporations. Nevertheless, the general introduction of gender quotas in European firms, already realized in several companies among the richest Western Economies at the time of the deals considered in the sample, may mitigate this issue. In that case the appointment of a minimum percentage of females can be considered in many cases as quasi-exogenous, even if variability of the board composition across companies reduces in those cases.

With respect to the adjunct value of the study, the present research is innovative because it is focused on European M&As: we restricted the sample to European acquirors to collect gender information that would refer to companies based in the Euro-area. The specific interest is motivated by the recent spread of quota laws, giving hope for diversity progress in the upcoming years. Furthermore, our study is innovative in attempting to take into consideration all the building blocks of those transactions, by the decomposition of the deals into their separate phases, to finally recombine them into a unique assessment of the gender impact.

The study shows the presence of women on board to be associated with fewer and less risky acquisitions. We have attributed these findings to two main factors: the greater predisposition of men to both overconfidence and empire building. The former leads to the application of excessive confidence in one's ability to influence the probability of success, which motivates in some cases the realization of wrong acquisitions, characterized sometimes in higher gains, but with the exposition to higher probabilities of obtaining also great losses. The latter leads to performing larger acquisitions since running the bigger merged company would give benefits in terms of prestige and compensation. Nonetheless, we complemented these male traits with the risk aversion of women: they undertake less extraordinary corporate finance transactions, and less risky transactions, selecting deals with lower relative size. However, there are still some other plausible explanations fair to mention. We have seen that Dezsó and Ross (2012), considering the impact of men and women working together, find that diversity brings additional competencies to the workplace. Thus, an explanation might be that diversity on the directors' board leads to a more careful revision of potential M&As, as people with different backgrounds take extra time and attention to apply their competencies together.

Additionally, looking into the association between female directors and premium paid, we found that women's presence coexists with acquisitions with lower premiums. This finding has been attributed to men's predisposition to hubris: trusting their judgment rather than the market one's, misvaluing models and using them to establish the pricing range. On the contrary, women are more risk-averse, thus staying away from inflated premiums that might put the company in danger. However, we have seen that Adams and Ferreira (2009) have found that women are better monitors. Women might exercise extra care in building the valuation

of a potential target, not because of their risk aversion but mainly because of their greater effort to carefully revising valuation tools and models. Therefore, we recognize how female directors contribute to the success of an M&A from the acquirer perspective, by contributing to an adequate allocation of the value created between the target and the bidder through the premium.

Finally, the last part of the analysis focused on the integration phase and post-merger operating performance. We found this to be the only phase where female directors are protagonists in firms with a lower operating performance. A plausible explanation can be found in the issues brought by diversity, namely the obstacle to the speed of decision-making. The latter can be attributed to two main factors: building on evidence from Adams and Ferreira (2009), one factor can be found in the accurate monitoring exercised by women; the other is related to diversity, as it brings in conflict potential (Parola, Ellis and Golden, 2015). Diversity is considered a positive factor, due to the additional competencies and perspectives it provides to groups. Thus, the introduction of best practices might be a feasible suggestion to preserve both the value-added by diversity and the speed required in the integration phase (Bauer and Matzler, 2014).

6. Concluding remarks

In conclusion, our empirical analysis reveal a significant relationship between gender variables and the dependent variables of the models, even if uncertainty remains in attributing causation or a unique interpretation. Our study is particularly innovative as it focuses on European M&As, where the spread of quota laws has reinforced the central role of gender diversity in corporate governance practice. Hence, this paper has focused on the presence of females in the board composition on all three different phases in M&As as a whole. In more detail, by dividing the acquisition process into its various phases, we have assessed the impact of female directors on the overall transaction. The findings suggest that firms with a greater presence of women on the board tend to engage in fewer and less risky acquisitions. This observation aligns with existing theories that men exhibit higher overconfidence and a tendency towards empire building, leading to aggressive acquisition strategies. In contrast, women's higher risk aversion results in more prudent transaction choices, including deals of lower relative size. This pattern suggests that the presence of female directors contributes to a more cautious corporate environment, where decisions are made with a higher degree of scrutiny and risk assessment.

Moreover, our results indicate that acquisitions involving female directors are characterized by lower premiums, supporting the argument that men's propensity to participate in riskier transactions can drive excessive valuations, but in same case can also provide large gains in the M&A process. Women, being more cautious, avoid inflated premiums that could jeopardize the company's financial stability. However, another plausible explanation lies in the superior monitoring capabilities of female directors, as suggested by Adams and Ferreira (2009). Rather than simply being risk-averse, women may exercise greater diligence in valuation assessments, ensuring a fairer allocation of value between the bidder and the target. Additionally, the integration phase presents an exception to the positive influence of female directors, as firms with a higher proportion of women on the board exhibit lower post-merger operating performance. This could stem from diversity-related challenges, such as increased deliberation time and conflict potential, which may slow down decision-making. The potential for conflict arises from differences in perspectives, which, while beneficial in the long term, may initially create hurdles in the integration phase. Nevertheless, implementing best practices in governance, such as structured communication frameworks and conflict resolution mechanisms, could help mitigate these issues while preserving the benefits of diversity. A more inclusive decision-making environment that embraces diverse viewpoints without compromising efficiency is crucial for maximizing the advantages of gender diversity on corporate boards.

It should be noticed that our findings have some limitations. Our analysis required a precise sample restriction: we selected a specific category of deals and other additional characteristics to reduce the influence of factors other than the selected variables. This approach has allowed us to be confident about the significance of the results obtained and their relationship with the specific explanations identified; however, it might be too risky

to stretch these results onto any kind of M&A deal, as it would not be safe to generalize our findings. Nonetheless, we believe that the literature might provide a sufficient variety of deal types to obtain a comprehensive judgment of the role of gender in M&As.

Attention should be paid to the issue of causation: the analysis we led can only inform us about the existence of a correlation, but it cannot solve the issue of the direction of causality due to the potential presence of endogeneity in the relationship between gender diversity in board composition and results in M&As. Indeed, it might be that companies that are worse-performing from an operational viewpoint select more women on the board, making a negative performance to determine the presence of female directors. This example should warn our readers to take any statistical result with a pinch of salt. Nevertheless, it is true that our models have adequate predictive power in stating the presence of female directors coexists with the positive and negative effects on acquisitions described above.

Future research should explore a broader range of deal types to develop a more comprehensive understanding of gender influence in corporate acquisitions. Additionally, different cultural and regulatory environments might influence the extent to which gender diversity plays a role in M&A decision-making. Comparing findings across different geographical regions could provide a more nuanced perspective on this issue.

References

- Adams, R.B. & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance, *Journal of Financial Economics* 94/2009, 291–309.
- Afsharipour, A. (2022). Women and M&A, *UC Irvine Law Review*, 12/2, 359-422.
- Agrawal, A. & Jaffe, J.F. (2000). The post-merger performance puzzle, *Advances in Mergers and Acquisitions* 1, 7-41.
- Ahammad, M. F., & Glaister, K. W. (2013). The pre-acquisition evaluation of target firms and cross border acquisition performance. *International Business Review*, 22(5), 894-904.
- Akinola, M., Martin, A. E., & Phillips, K. W. (2018). To delegate or not to delegate: Gender differences in affective associations and behavioral responses to delegation, *Academy of Management Journal*, 61/4, 1467-1491.
- Amanatullah, E. T., & Morris, M. W. (2010) Negotiating gender roles: Gender differences in assertive negotiating are mediated by women's fear of backlash and attenuated when negotiating on behalf of others, *Journal of personality and social psychology*, 98/2, 256-267.
- Andrade, G., Mitchell, M. & Stafford, E. (2001). New Evidence and Perspectives on Mergers, *Journal of Economic Perspectives* 15/2 2001, 103-120.
- Angwin, D. N. (2004). Speed in M&A integration: the first 100 days, *European Management Journal* 22/4, 418-430.
- Appelbaum, S.H., Gandell, J., Shapiro, B.T., Belisle, P., & Hoveven, E. (2000). Anatomy of a merger: Behavior of organizational factors and processes throughout the pre-during-post stages (part 1), *Management Decision* 38/10, 649–661.
- Appelbaum, S.H., Gandell, J., Shapiro, B.T., Belisle, P., & Hoveven, E. (2000). Anatomy of a merger: Behavior of organizational factors and processes throughout the pre-during-post stages (part 2), *Management Decision* 38/10, 674–684.
- Bargeron, L.L, Schlingemann, F.P., Stulz, R.M. & Zutter, C. (2008). Why do private acquirers pay so little compare to public acquirers?, *Journal of Financial Economics* 89/2008, 375–390.
- Bauer, F., & Matzler, K. (2014). “Antecedents of M&A success: The role of strategic complementarity, cultural fit, and degree and speed of integration”. *Strategic management journal*, 35/2, 269-291.
- Bauguess, S.W., Moeller, S.B., Schlingemann, F.P., & Zutter, C.J. (2009). Ownership structure and target returns, *Journal of Corporate Finance* 15/1 2009, 48-65.
- Boutchkova, M. Gonzalezas, A., Main, B.G.M., & Sila, V. (2021) “Gender diversity and the spillover effects of women on boards”, *Corporate Governance: An International Review*, 29, 2–21.
- Campbell, M. & Goold, A. (1998). Desperately seeking synergy, *Harvard Business Review* 76/5, 130-143.
- Carpenter, W.G. & Sanders, M.A. (2007). *Strategic management: A dynamic perspective*, Upper Saddle River, NJ: Pearson Prentice Hall.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33-53.
- Chen, G., Crossland, C. & Huang, S. (2016). Female board representation and corporate acquisition intensity, *Strategic Management Journal* 37/2016, 303-313.
- Coates, J.M. & Herbert, J. (2008). Endogenous Steroids and Financial Risk Taking on a London Trading Floor, *National Academy* 105/16, 6167-6172.
- Davidson, W.N. & Cheng, L.T.W. (1997). Target Firm Returns: Does the Form of Payment Affect Abnormal Returns?, *Journal of Business Finance and Accounting* 24/3 1997, 465-479.

- Defrancq, C., Huyghebaert, N., & Luypaert, M. (2021). Influence of acquirer boards on M&A value creation: Evidence from Continental Europe. *Journal of International Financial Management & Accounting*, 32(1), 21-62.
- DePamphilis, D.M. (2021). *Mergers and acquisitions basic: negotiation and deal structuring*, Academic Press. Elsevier. Burlington, MA, 01803, USA.
- Dezso, C.L. & Ross, D.G. (2012). Does female representation in top management improve firm performance? A panel data investigation, *Strategic Management Journal* 33/2012, 1072-1089.
- Dowling, M. & Aribi, Z.A. (2013). Female directors and UK company acquisitiveness, *International Review of Financial Analysis* 29/2013, 79–86.
- Eckbo, B.E. (2009). Bidding strategies and takeover premiums: A review, *Journal of Corporate Finance* 15/1 2009, 149-178.
- Eckel, C.C. & Grossman, P.J. (2008). Forecasting risk attitudes: An experimental study using actual and forecast gamble choices, *Journal of Economic Behavior and Organization*, 68/1, 1-17.
- Eckel, C.C. & Grossman, P.J. (2002). Sex differences and statistical stereotyping in attitudes toward financial risk, *Evolution and Human Behavior* 23/4, 281–295.
- Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11(2), 102-111.
- Faccio, M., McConnell, J.J. & Stolin, D. (2006). Returns to Acquirers of Listed and Unlisted Targets, *Journal of Financial and Quantitative Analysis* 41/1 2006, 197-220.
- Fuller, K., Netter, J., & Stegemoller, M. (2002). What do return to acquiring firms tells us? Evidence from firms that make many acquisition, *The Journal of Finance* 57/4, 1763-1793.
- Gaughan, P.A. (2004). M&A lesson: Beware of empire builders, *Journal of Corporate Accounting and Finance* 15/2, 21-23.
- García, C. J., & Herrero, B. (2022). Corporate entrepreneurship and governance: Mergers and acquisitions in Europe. *Technological Forecasting and Social Change*, 182, 121845.
- Gomes, E., Angwin, D. N., Weber, Y., & Yedia Tarba, S. (2013). Critical success factors through the mergers and acquisitions process: revealing pre-and post-M&A connections for improved performance. *Thunderbird international business review*, 55(1), 13-35.
- Hoberg, G. & Phillips, G.M. (2010). Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis, *The Review of Financial Studies* 23/10, 3773-3811.
- Hummel, L. Van. (2018). Gender diversity on boards and M&A deals, *Faculteit der Managementwetenschappen*.
- Huang, J. & Kisgen, D.J. (2013). Gender and corporate finance: Are male executives overconfident relative to female executives?, *Journal of Financial Economics* 108, 822–839.
- Khaw, K. L. H. & Liao, J (2018). Board gender diversity and its risk monitoring role: Is it significant?, *Asian Academy of Management Journal of Accounting and Finance*, 14 (1), 83–106.
- Isidro, H., & Sobral, M. (2015). The effects of women on corporate boards on firm value, financial performance, and ethical and social compliance, *Journal of Business Ethics*, 132, 1-19.
- J.P. Morgan (2018). 2018 Global M&A Outlook: Navigating consolidation and disruption Report of J.P. Morgan.
- Jensen, M.C. & Ruback, R.S. (1983). The market for corporate control: The scientific evidence, *Journal of Financial Economic* 11/1–4, 5-50.

- Khan, W.A. & Vieito, J.P. (2013). CEO gender and firm performance, *Journal of Economics and Business* 67, 55– 66
- Koenig, A. M., Eagly, A.H., Mitchell, A. A., Ristikari, T. (2011). Are leader stereotypes masculine? A meta-analysis of three research paradigms, *Psychological bulletin*, 137/4, 616-642.
- Levi, M., Li, K. & Zhang, F. (2010). Deal or No Deal: Hormones and the Mergers and Acquisitions Game, *Management Science* 56/9 2010, 1462-1483.
- Levi, M., Li, K. & Zhang, F. (2014). Director gender and mergers and acquisitions, *Journal of corporate finance* 28/2014, 185-200.
- Malmendier, U. & Tate, G. (2008). Who makes acquisitions? CEO overconfidence and the market's reaction, *Journal of Financial Economics* 89/1 2008, 20-43.
- Moeller, S.B. Schlingemann, F.P., & Stulz R.M. (2004). Firm size and the gains from acquisitions, *Journal of Financial Economics* 73/2 2004, 201-228
- Morgenroth T, Ryan M., (2022). The Gendered Consequences of Risk-Taking at Work: Are Women Averse to Risk or to Poor Consequences?, *Psychology of Women Quarterly*, 46/3, 257–277.
- Noland, M., Moran, T., & Kotschwar, B. (2016). Is Gender Diversity Profitable? Evidence from a Global Survey. Peterson Institute for International Economics Working Paper, 16-3.
- Officer, M.S. (2007). The price of corporate liquidity: Acquisition discounts for unlisted targets, *Journal of Financial Economics* 83/3 2007, 571-598
- Parola, H.R., Ellis, K.M., & Golden, P. (2015). Performance effects of top management team gender diversity during the merger and acquisition process, *Management Decision*, 53/1, 57-74
- Pereiro, L. E. (2019). The Estimation of M&A Synergies: A New Approach, *Journal of Corporate Accounting & Finance*, 29/4, 54-62.
- Rogish A., Shemluck N., Danielecki P., Hazuria S., (2022). Advancing ore women leaders in financial services: a global report, Deloitte Insights <https://www2.deloitte.com/xe/en/insights/industry/financial-services/gender-diversity-in-global-financial-services.html>
- Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers, *The Journal of Business* 59/2 1986, 197-216
- Salus, N.P. (1989). Public relations before and after the merger, *Bottomline* 6, 47–49
- Shen, W. & Joseph, D.L. (2021) “Gender and leadership: A criterion-focused review and research agenda”, *Human Resource Management Review*, 31/2, 100765.
- Seth, A. Song, K.P. & Pettit R.R. (2002). Value creation and destruction in cross-border acquisitions: an empirical analysis of foreign acquisitions of U.S. firms, *Strategic Management Journal* 23/10, 921-940
- Tampakoudis, I. Nerantzidis, M, Eweje, G. Leventis, S. (2022). The impact of gender diversity on shareholder wealth: Evidence from European bank M&A, *Journal of Financial Stability*, 60, 1-18
- Teerikangas, S., & Thanos, I. C. (2018). Looking into the ‘black box’–unlocking the effect of integration on acquisition performance. *European Management Journal*, 36/3, 366-380.

Table I: Division of M&A deals by country

Country	%
France	22,6%
United Kingdom	18,3%
Spain	9,3%
Switzerland	9,0%
Germany	8,1%
Italy	6,7%
Ireland	4,9%
Sweden	4,6%
Netherlands	3,8%
Finland	2,6%
Norway	2,3%
Greece	2,0%
Belgium	1,4%
Denmark	1,4%
Luxembourg	0,9%
Austria	0,9%
Faroe Islands	0,6%
Portugal	0,3%
Malta	0,3%

Table II: Division of M&A deals by industry

Acquiror Industry	%
Healthcare	16,4%
Industrials	12,4%
Financials	11,2%
Energy and Power	10,4%
Real Estate	9,2%
Media and Entertainment	7,5%
High Technology	6,9%
Materials	6,6%
Consumer Staples	6,3%
Retail	4,6%
Telecommunications	4,3%
Consumer Products and Services	4,0%

Table III: Split of M&A deals by mid industry

Acquiror Mid Industry	%
-----------------------	---

Pharmaceuticals	9,8%
REITs	6,6%
Healthcare Equipment & Supplies	5,8%
Oil & Gas	4,9%
Banks	4,6%
Food and Beverage	4,6%
Transportation & Infrastructure	4,3%
Insurance	4,0%
IT Consulting & Services	3,5%
Professional Services	2,9%
Machinery	2,6%
Building/Construction & Engineering	2,6%
Power	2,6%
Chemicals	2,6%
Food & Beverage Retailing	2,3%
Telecommunications Equipment	2,0%
Petrochemicals	2,0%
Metals & Mining	2,0%
Telecommunications Services	1,7%
Other Retailing	1,4%
Aerospace & Defense	1,4%
Motion Pictures / Audio Visual	1,4%
Software	1,2%
Household & Personal Products	1,2%
Publishing	1,2%
Casinos & Gaming	1,2%
Other Financials	1,2%
Residential	1,2%
Construction Materials	1,2%
Broadcasting	1,2%
Other Consumer Products	0,9%
Real Estate Management & Development	0,9%
Biotechnology	0,9%
Cable	0,9%
Automobiles & Components	0,9%
Electronics	0,9%
Advertising & Marketing	0,9%
Tobacco	0,6%
Water and Waste Management	0,6%
Internet Software & Services	0,6%
Apparel Retailing	0,6%
Semiconductors	0,6%
Alternative Financial Investments	0,6%
Hotels and Lodging	0,6%
Containers & Packaging	0,6%
Wireless	0,6%
Other Industrials	0,6%
E-commerce / B2B	0,3%

Other Energy & Power	0,3%
Paper & Forest Products	0,3%
Internet and Catalog Retailing	0,3%
Non Residential	0,3%
Credit Institutions	0,3%
Brokerage	0,3%
Asset Management	0,3%
Recreation & Leisure	0,3%
Other Real Estate	0,3%
Travel Services	0,3%

Table IV: Dependent variables

Dependent Variables	Description	Mean	SD	Min	Max
Relative size	The ratio of the deal value to the total assets of the acquirer	0.264503	0.565539	5.74E-05	5.80028
Number of deals	The natural logarithm of the number of M&As undertaken by a firm in a given year	0.059251	0.22942	0	1.609438
Premium announcement	The ratio of the offer price to the target stock price measured at the announcement date	0.151927	0.218059	-0.5	0.95765
ROA growth	The % change in the ROA, measure as ROA growth rate between the pre and post-deal date	-0.02217	0.070404	-0.38616	0.223168

Table V: Independent variables

Independent Variables	Description	Mean	SD	Min	Max
Ln tot assets	The natural logarithm of the assets of the acquirer	16.3111	1.560592	12.09275	20.27567
Ln debt	The natural logarithm of the total long-term debt and current proportion of long-term debt	14.47632	2.079551	4.744932	18.07347
Ln cash	The natural logarithm of cash reserves	13.4218	1.61826	8.338067	17.42276
Ln market capitalization	The natural logarithm of the market capitalization measure at the pre-merger reference date	16.30589	1.511393	11.16614	19.44076
Board independence	The % of independent directors on board	0.560099	0.241114	0	1
Board size	The number of directors on board	11.21037	3.55536	3	22
CEO duality	Dummy variable with value 0 in case the CEO and chairman are the same person, 1 otherwise	0.308357	0.462482	0	1
Scaled cash	The ratio of cash holdings to the total assets of the acquirer	0.080958	0.084772	9.53E-05	0.598198
Tobin's Q	A measure of acquirer's performance defined as the ratio of the market capitalization to the total assets	1.19588	0.957286	0.007517	6.347997
ROA	The return on assets of the acquirer	0.065427	0.063953	-0.02239	0.287919
D/E acquirer	A measure of the capital structure of the acquirer, defined as the debt to equity ratio	0.84419	1.309094	-1.2107	12.8193
Ln tot assets target	The natural logarithm of the assets of the target	13.53414	2.057518	8.809564	19.16625
Tobin's Q target	A measure of target's performance defined as the ratio of the market capitalization to the total assets	1.459488	1.59309	0.017108	13.43746
D/E target	A measure of the capital structure of the target, defined as the debt to equity ratio	0.56274	1.724383	-18.6185	14.4907
% Female	The % of female directors on board	0.131317	0.001173	0	0.5455
Ln deal	The natural logarithm of the deal value	13.36152	2.042752	6.824374	17.85148
Book leverage	Capital structure measure, that is the ratio of the debt to total assets of the acquirer	0.236764	0.153812	0	0.811564
Relative size	Deal measure defined as the ratio of the deal value to the total assets of the acquirer	0.00028	0.000529	-2.1E-07	0.003395
Sales growth	The % change in sales, measure as sales growth rate between the pre and post-deal date	0.591016	2.389683	-0.84688	30.16337
Market capitalization gro	The % change in market cap, measure as market cap growth rate between the pre and post-deal date	0.386058	1.300753	-0.95804	17.40991
Total assets growth	The % change in total assets, measure as tot assets growth rate between the pre and post-deal date	0.632011	1.168317	-0.64701	7.793856
Net income growth	The % change in net income, measure as NI growth rate between the pre and post-deal date	0.076372	5.182621	-51.2794	43.6223

Table VI: Linear regression analysis results for the effect of the percentage of women on the board of directors on relative transaction size of M&As (Model 1)

Variable	Coefficient	Robust SD	Sig.	95% Confidence Interval	
Ln tot assets	-0.1404	0.0203	***	-0.1804	-0.1005
Scaled cash	1.0975	0.4796	**	0.1539	2.0410
Tobin's Q acquirer	0.1791	0.0858	**	0.0102	0.3479
ROA	-0.7578	0.6475		-2.0317	0.5161
D/E acquirer	0.0387	0.0413		-0.0426	0.1199
Ln Tot assets target	0.1323	0.0180	***	0.0969	0.1676
Tobin's Q target	0.0486	0.0159	***	0.0174	0.0799
D/E target	0.0282	0.0217		-0.0144	0.0708
Board independence	0.1119	0.0834		-0.0523	0.2761
CEO duality	-0.0251	0.0541		-0.1315	0.0812
% Female	-0.3929	0.1654	**	-0.7183	-0.0675
Constant	0.3911	0.2544		-0.1094	0.8916
F test	6.79		***		
R-squared	38.42%				
Observations	338				

*** Significance at 1% level, ** Significance at 5% level, * Significance at 10% level.

Table VII: Negative binomial regression analysis results for the effect of the percentage of women on the number of deals of M&As (Model 2)

Variable	Coefficient	Robust SD	Sig.	95% Confidence Interval	
Ln Tot Assets	-0,5943	0,2792	**	-1,1415	-0,0471
Ln Debt	-0,0991	0,0863		-0,2682	0,0700
Ln Cash	0,3027	0,1725	*	-0,0355	0,6408
Ln Market Capitalization	0,8725	0,2708	***	0,3418	1,4033
Board size	-0,0179	0,0616		-0,1385	0,1028
Board independence	0,4465	0,9596		-1,4343	2,3272
CEO Duality	-0,1926	0,4218		-1,0193	0,6341
% Female	-4,4858	1,8446	**	-8,1012	-0,8704
Constant	-9,9327	2,0959	***	-14,0405	-5,8249
Wald chi square	52.63		***		
Pseudo R-squared	12.66%				
Observations	340				

*** Significance at 1% level, ** Significance at 5% level, * Significance at 10% level.

Table VIII: Linear regression analysis results for the effect of the percentage of women on the board of directors on the Premium in M&As (Model 3)

Variable	Coefficient	Robust SD	Sig.	95% Confidence Interval	
Ln deal	0,0379	0,0171	**	0,0042	0,0716
Scaled cash	0,0595	0,2596		-0,4531	0,5721
Book leverage	-0,2073	0,1766		-0,5561	0,1414
Relative size	-22,9169	39,9233		-101,7399	55,9060
Ln tot assets target	-0,0689	0,0171	***	-0,1055	-0,0322
ROA target	-0,1282	0,1611		-0,4464	0,1899
Board size	-0,0070	0,0065		-0,0197	0,0058
Board independence	-0,1887	0,1060	*	-0,3979	0,0205
% Female	-0,4298	0,2176	**	-0,8593	-0,0002
Constant	1,0371	0,2313	***	0,5805	1,4938
F test	2.81		***		
R-squared	18.38%				
Observations	176				

*** Significance at 1% level, ** Significance at 5% level, * Significance at 10% level.

Table IX: Linear regression analysis results for the effect of the percentage of women on the board of directors on post-merger performance in terms of ROA growth in M&As (Model 4)

Variable	Coefficient	Robust SD	Sig.	95% Confidence Interval	
Sales growth	0,0030	0,0017	*	-0,0003	0,0063
Market capitalization growth	0,0132	0,0058	**	0,0017	0,0247
Total assets growth	-0,0168	0,0049	***	-0,0264	-0,0072
Net income growth	0,0018	0,0016		-0,0014	0,0049
Board size	0,0019	0,0009	**	0,0000	0,0038
Board independence	-0,0104	0,0136		-0,0371	0,0163
CEO duality	0,0082	0,0074		-0,0063	0,0227
% Female	-0,0575	0,0291	**	-0,1148	-0,0003
Constant	-0,0294	0,0179		-0,0647	0,0058
F test	4.45		***		
R-squared	12.81%				
Observations	354				

*** Significance at 1% level, ** Significance at 5% level, * Significance at 10% level.