

# LUISS



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Chair of Corporate Strategy

**BRIDGES OR BARRIERS?  
THE ROLE OF INTERLOCKING DIRECTORATES IN  
SHAPING M&A DECISIONS IN ITALIAN LISTED FIRMS**

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# Chapter 1

## 1 Introduction

Interlocking directorates, i.e. cases in which a director simultaneously serves on the boards of directors of multiple firms, are the interorganizational ties that have received the most scholarly interest over time. A substantial body of research documents their association with the undertaking of many organizational decisions, finding empirical evidence that they are means for diffusion of internal structures, governance procedures, innovation, environmental strategies, and strategic decisions (Mizruchi, 1996). The dominant explanation for this effect is that these ties represent channels that can be crucial to access better and otherwise non-public information and expose directors to the experience of interlocked firms (Haunschild & Beckman, 1998).

M&A provide an especially relevant empirical setting to examine their role. These decisions, in fact, are among the most complex and risky strategic choices for firms; they require a careful process of screening and valuation of opportunities as well as acquiring firms to deal with negotiation dynamics and regulatory processes (Welch et al., 2020). Because of their complexities M&A decisions often unfold under uncertainty and informational asymmetries (Haleblian et al., 2009; Jemison & Sitkin, 1986). In this view access to reliable information and the observation of other firms' experience can be crucial in altering the threshold for "go/no-go" decisions, affecting the likelihood that firms undertake the deal. Building on Resource Dependence Theory, according to which directors supply advice, information, and external linkages that can shape firms' strategy (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978), this study examines to what extent interlocking directorates influence M&A decisions. Specifically, how a firm's structural access to information (as captured by the network centrality of its board) and exposure to interlocked partners' recent M&A activity condition the propensity to undertake M&A deals, clarifying the distinct role played by the two mechanisms.

The study is also relevant because most empirical evidence on interlocks' informational effects on firms' decision making comes from the United States of America (Lamb & Roundy, 2016). The U.S. corporate governance system, as described by Shleifer &

Vishny (1997), is characterized by dispersed ownership, active markets for corporate control, and strong legal protection for minority shareholders - features that sharply contrast with the Italian context's characteristics. Italy's corporate governance framework, in fact, has historically been characterized by a restricted number of publicly listed firms and a high ownership concentration by families and the State, often integrating mechanisms that strengthen control beyond actual ownership (Zattoni, 2019). In this setting firms tend to be tied through a very small, and stable over time, elite of directors that were described as the "Lords of the Italian stock market", often belonging to the same families of directors (Fattobene et al., 2018; Santella et al., 2007). These interlocks, having their antecedents in the presence of family members and fiduciary relationships have contributed to a predominantly negative framing (Caiazza et al., 2019). Despite several scholarly contributions on the topic, Italian academic literature has often remained confined to contextual or evolutionary examinations, emphasizing the broader institutional setting or the legal changes introduced over time, with only few examples of in-depth empirical investigation mainly focusing on effect of interlocking directorates on firms' value and performance (e.g., Drago et al., 2012; Zona et al., 2018), leaving the consequences that this kind of ties have for firms' decision-making processes largely unexplored in the Italian context.

Accordingly, the research question is posed as follows: to what extent do interconnections among directors influence the M&A decisions of Italian listed firms (a) by increasing acquisition propensity through greater structural access to information and (b) by conditioning this propensity through exposure to recent M&A activities of interconnected partners?

To address this question, this study relies on a multi-year unbalanced panel dataset of 218 Italian firms listed on the STAR segment of Euronext Milan Stock Exchange (2016–2024), resulting in 1543 firm-year observations. The unbalanced nature of the panel reflects dynamics of firms' entry into and exit from the market, as well as occasional data unavailability. The dataset originates from the reconstruction of the inter-firm network from board memberships, operationalizes structural access via lagged degree centrality and exposure via partners' M&A in the prior period, and estimates binary panel logistic regression models with firm- and board-level controls and appropriate fixed effects,

focusing on the incidence of at least one acquisition in year  $t$ . Data were collected from several databases, including Orbis, Orbis M&A, Refinitiv (LSEG). The reconstruction of the inter-firm network required the integration of multiple sources. Publicly available corporate governance filings from CONSOB were extracted and processed with Python, which allowed the reconstruction of board memberships over time. Information on individual directors was matched with Boardex data. When Boardex lacked data on directors, gaps were manually complemented using company filings and other public information.

Anticipating the findings of the study, the analysis portrays interlocking directorates as a nuanced governance infrastructure whose impact on M&A decisions depends on the underlying mechanism taken in consideration. The results clarify how the same network can simultaneously facilitate and discipline strategic action.

Beyond this introductory chapter, the remainder of the study is organized as follows. Chapter 2 reviews the theoretical background and develops the hypotheses. Chapter 3 describes the dataset, variables, and the methodology of the study. Chapter 4 presents the results of the analysis. Chapter 5 discusses their implications for theory and practice, while Chapter 6 concludes by outlining the contributions, limitations, and possible directions for future research.

## Chapter 2

### 2 Literature Review

#### 2.1 Board of Directors and Strategy: A Resource Dependence approach

Boards are pivotal governance bodies, positioned at the apex of an organization's decision-making structure. Different theories exist about the role boards play within a firm. A substantial share of the corporate governance literature, drawing on Agency Theory, conceptualizes the board primarily as a monitoring and control body, whose role is to oversee managerial decisions, evaluating performance, and protecting shareholders' interests (Eisenhardt, 1989; Fama & Jensen, 1983).

Another perspective, more relevant for this study, is the Resource Dependence Theory. Other studies, in fact, adopting a resource dependence approach, have focused on the board's role in providing information in the form of advice and counsel to firms' management, in providing information channels between firms and other external organizations and in securing preferential access to critical resources (Pfeffer & Salancik, 1978). This theoretical perspective is synthesized in the strategy and service role attributed to board members by Zahra & Pearce (1989), as they define the first one as the director involvement in strategic decisions through advice and counsel to management and the second one as the establishment of contacts with the external environment. Directors are said to provide firms with what has been defined "board capital", made of both human capitals, consisting of directors' expertise and knowledge, and relational capital, consisting of the sum of informational resources embedded and derived from their network, which can be translated in additional guidance for firms' top management dealing with environmental uncertainty (Hillman & Dalziel, 2003; Nahapiet & Ghoshal, 1998). Among the channels of information that directors establish between the firm and its external environment, one that has attracted sustained scholarly attention and that has been shown to impact multiple strategic choices, is the presence of interlocking directorship (Mizruchi, 1996).

#### 2.2 Interlocking Directorates

The definition “interlocking directorates” describes the occurrence in which one person sits concurrently on the boards of directors of multiple firms (Mizruchi, 1996).

Among firms’ external connections this is the one that has received the most scholarly attention, also because they can be more easily identified thanks to the availability of public information on board of directors. Multiple theories have emerged over time around the reasons and the consequences that such ties have for firms (Lamb & Roundy, 2016; Mizruchi, 1996).

According to Caiazza et al. (2019) in the available literature on the topic, two levels of analysis have been adopted. The first level of analysis is the individual one which focuses on interlocks as social ties between directors rather than firms and is typically associated with class hegemony theory. The second one, on the other hand, largely adopted by scholars drawing on Resource Dependence Theory, and thus more relevant for this study, conceptualizes interlocks as structural connections between firms.

These theoretical perspectives have given rise to divergent explanations regarding both the origins and the implications of interlocking directorates.

### **2.3 Antecedents of interlocks**

At the individual level, the approach on studies on interlocks is rooted in the work of early theorists like Mills (1956) and Useem (1984) who see these ties as a phenomenon driven by personal relationship, conceptualizing the boardroom as a site of elite integration. To justify this approach, scholars have shown that, most of the times, accidentally broken ties between firms are rarely reconstituted (Palmer, 1983). According to this Class hegemony theory, interlocks represent the institutionalization of a managerial and financial elite that maintains social cohesion through overlapping positions. This elite of directors is formed because their members, often belonging to the same families, attend the same schools, social clubs, parties, and social gatherings, building a strong social cohesion that is greatest when the social group are seen to be exclusive (Domhoff, 1967).

On the other hand, studies on interlocking directorates adopting an organizational level of analysis have largely relied on Resource Dependence Theory (RDT), which to this day remains the most prominent explanation of why interlocking directorates arise (Gulati & Gargiulo, 1999).

At an organizational level, scholars building on RDT, argue that firms deliberately form interlocking directorates to cope with environmental dependence by securing access to critical resources and thereby reducing uncertainty (Mizruchi, 1996; Mizruchi & Stearns, 1988; Pfeffer & Salancik, 1978).

Within this framework, several types of resources have been examined in the literature as drivers for establishing interlocks. These include for example resources such as access to capital - particularly through ties with financial institutions - but perhaps most importantly and relevant for this study, access to critical information from the connected firms (Burt, 1980; Mizruchi, 1996).

## **2.4 Consequences**

However, antecedents are not the focus of this study, they have been reviewed only to clarify the typical split in how interlocks are understood. Beyond formation reasons, interlocking directorates have also been thoroughly studied for their downstream effects, often mapped back to their antecedents (Caiazza et al., 2019). The stream of research studying the behavioral effects that these ties have for firms exploited since the introduction for the first time of the concept of embeddedness by Granovetter (1985), which highlights how social relationships in which actors are embedded have a fundamental impact on economic behavior. Firms and individuals are influenced by the nature and structure of their continuous interactions with others, more than any impersonal rules or personal interests.

Class hegemony theorist, who trace the emergence of these ties to pre-existing personal relationship among directors, typically portray interlocking directorates as welfare-depleting mechanisms (Caiazza et al., 2019). This perspective on interlocking directorates, in fact, highlights concern about the reproduction of economic and social hierarchies, and the potential for coordinated behavior that may not always align with stakeholder interests (Domhoff, 1967).

By contrast, resource-dependence accounts, given that, as already mentioned above, they attribute the formation of interlocks to the firms' efforts to manage environmental dependence and reducing uncertainty by creating firm-to-firm channels for the flow of

information, resources, and legitimacy, tend to view interlocks in a positive light (Caiazza et al., 2019; Mizruchi, 1996).

In this study, this bipartition of effects is left behind. Setting formation reasons aside and turning to the consequences, this study emphasizes that - regardless of antecedents – most theories on interlocks are consistent with the idea that they represent channels of information (Haunschild & Beckman, 1998), and this information may be influential for firms even when not actively sought (Mizruchi, 1996).

#### **2.4.1 Mechanisms Linking Interlocks to Strategic Action: Structural Access and Behavioral Exposure**

Therefore, interlocking directorates may represent a fundamental source of information and relational experience, which can be synthesized in the idea of relational capital mentioned when introducing RDT (see §2.1) and understood as the informational resources embedded in and derived from a board's network (Burt, 1980; Haunschild & Beckman, 1998). These ties are inexpensive and legitimate channels of information that can directly affect firms' strategies (Hillman & Dalziel, 2003). The association of these ties with a wide range of corporate behavior, despite not without some controversy and some studies showing no interlock effects, has been widely supported by the literature that mainly distinguishes two complementary explanatory mechanisms that explain how of interlocking directorates build the social capital that can ultimately influence firms' strategic choices, namely structural access (where in the network the firm stands) and behavioral exposure (who linked hands with whom to do what lately) (Borgatti & Halgin, 2011; Mizruchi, 1996).

The structural access mechanism focuses on network position rather than characteristics of any individual partner. Organizations are seen as rational agents that can take advantage of positions to gain access to information, save searches, and reduce uncertainty (Borgatti & Halgin, 2011). Broader and faster access to decision-relevant information (Davis, 1991; Granovetter, 1985; Gulati & Gargiulo, 1999) stems from interconnecting to a greater number of peers - and hence a more central position. Within this topological perspective, network centrality serves as a proxy for influence and potential access to information; and from the set of alternative measures, degree centrality

provides the most direct way to measure the intelligence that can be reached by the focal firm's board (Freeman, 1978). Structural equivalence also suggests that actors in parallel positions are likely to manifest similar results, even without direct links, because they face similar information and constraints (Borgatti & Halgin, 2011). As signals spread throughout the network, they are screened and rendered legible; by the time they reach pivotal actors, information is more likely to be checked for accuracy and used to assess credibility (Podolny, 2001). Within such a logic, board interlocks function as conduits of market information, providing advantages to central firms over peripheric ones in terms of the ability to identify and assess business opportunities (Mizruchi, 1996; Useem, 1984).

Consistently with this idea empirical evidence indicates that firms that have the privilege of being positioned centrally within a network have been shown to be more likely to be among the first to adopt valuable innovative practices (Davis, 1991) but also to introduce new products (Srinivasan et al., 2018) and, generally, have better performances (Nezami et al., 2025; Wang et al., 2015).

In contrast, the behavioral exposure mechanism features the identity, quality, and recent behavior of interlocked firms. Decisions are influenced through the extent that individuals are exposed to their partners' experiences within their direct structural subgroups - the "connectionist" point of view (Borgatti & Halgin, 2011). Typically, in the available literature such experience opens opportunities for diffusion of practices leading to mimetic isomorphism among connected firms.

Organizations confronting uncertainty treat the actions of others as either analytically informative templates (learning from others) or normative prompts about what is legitimate and proper (doing what seems right) (DiMaggio & Powell, 1983; Lieberman & Asaba, 2006; Useem, 1984). Evidence of this effect has been shown for multiple corporate choices; adoption of internal structures, governance arrangements, innovation and environmental strategies, and political contributions - which represents a most important object of attention: high-stakes strategic decisions (Davis, 1991; Haunschild & Beckman, 1998; Mizruchi, 1996).

Both mechanisms are enhanced under high uncertainty. Ambiguity induces the search for information and informative templates; structurally central firms draw on their access to positional pipelines while being subject to exposure to peers' recent actions provides diagnostic guidance (Haunschild, 1994; Lieberman & Asaba, 2006). The study on the spread of the poison pill - an antitakeover measure - conducted by Davis (1991) embodies this duality: central firms adopt valuable practices earlier - indicative of a greater access to information; and a higher likelihood that connected peers follow in time with each other where they share an adoption history - reflecting behavioral influence. Together, interlocks create relational capital through two complementary mechanisms: structural access increases and speeds the influx of intelligence to the boardroom while behavioral exposure conditions interpretation and decision making, clarifying the value of the action. The distinction nicely maps on to empirical operationalizations - centrality for access, observable partner actions in interactions for exposure - yet remains embedded within a unified perspective on networks as conduits and mediating structures that may shape organizational choices (Borgatti & Halgin, 2011; Podolny, 2001).

## **2.5 Interlocking and M&A**

M&A decisions provide a particular relevant setting to examine the influence of interlocking directorates. They are among the most important and consequential decisions a firm can undertake. The pre-deal phase requires careful and complex evaluations across multiple dimensions such as sourcing, screening, valuation, funding, negotiation, and many others, which makes the process highly information intensive (Welch et al., 2020). Information asymmetries can expose less-informed buyers to the risk of falling victims of trivial mistakes such as adverse selection problems or the possibility to end up overpaying for the target (Ragozzino & Reuer, 2024).

These vulnerabilities contribute to the risky nature of M&A; unsuccessful acquisitions, can, in fact, lead to significant destruction of shareholder value (Cai et al., 2022), and it is well documented that deals frequently fail to deliver the expected benefits for acquiring firms, often resulting in disappointing outcomes (Moeller & Brady, 2014; Worek, 2017) This and multiple other factors have been shown to make M&A characterized by uncertainty (McKinsey & Company, 2025).

In such a context, the ability to access, interpret, and leverage information plays a decisive role in guiding firms toward their desired outcomes (Moeller & Brady, 2014).

Not surprisingly, among various corporate decisions, mergers and acquisitions have emerged as one of the most fertile grounds for investigating network's effects arising from board interlocks (Galavotti, 2021).

Numerous studies have examined how interlocking directorates affect M&A decisions, focusing on many and distinct deal attributes.

For example, board interlocks have been shown to increase the likelihood that a connected firm will be selected as an acquisition target (Palmer et al., 1995). Interlocks with firms that possess experience in a particular foreign market increase the likelihood and performance of cross-border M&A – effects that are stronger when partners' experience is recent and successful (Xia et al., 2018). Access to information through these ties has also been associated with lower acquisition premia, as firm may learn from connected firms' experience (Beckman & Haunschild, 2002; Haunschild, 1994).

Taken together, evidence suggests that interlock can shape multiple aspects of M&A decisions, including target selection, target nationality, price paid, but also others as timing, post-acquisition returns (Beckman & Haunschild, 2002; Haunschild, 1994; Ishii & Xuan, 2014; Palmer et al., 1995; Xia et al., 2018).

De Sousa Barros et al. (2021) and previous evidence suggest that among the many factors influencing a firm's decision to undertake M&A, the availability of reliable information can become crucial and interlocking directorates may provide an economic and reliable channel to reduce information asymmetries. Through board interlocks, in fact, not only firms may gain insights from interlocked firms' past acquisition outcomes, but they may also be facilitated in the identification of acquisition opportunities thanks to their privileged access to information flowing through the network.

## **2.6 Hypotheses development**

Building on Resource Dependence Theory, according to which directors provide important advice to top management and contribute to strategic decision making (Hillman & Dalziel, 2003; Zahra & Pearce, 1989), this study follows the idea that the relational capital brought into firms by interlocked directors can significantly shape their decisions

to undertake M&A deals (as acquirers). Given the relevance of M&A decisions there is no doubt about the fact that they are being discussed, refined, and ultimately approved in the boardroom, therefore directors will be active part of them (Haunschild, 1994). As mentioned above, M&A are characterized by uncertainty and it's only reasonable to think that firms dealing with this uncertainty may adopt a more defensive approach on them (McKinsey & Company, 2025).

This study aims to examine the effects that both, as they may relate to a firm's topological placement within the interlock network (and thereby potential access to information) and influence of actions taken by its' interlocked partners, exert on firms' likelihood of pursuing M&A, distinguishing their effects.

First, it has already been explained, how - according to the structural approach - to a central position within the network is associated a generic informational advantage.

Firms can gain better and more rapid access to market intelligence, which has been associated with better overall performance, adoption of valuable innovative practices, and introduction of new products (Davis, 1991; Nezami et al., 2025; Srinivasan et al., 2018; Wang et al., 2015). No more than in the field of mergers and acquisitions, characterized by huge risks for the acquiring firm, this information can become crucial to make the best decision to lead the firm towards their corporate objective (Moeller & Brady, 2014).

In information intensive processes like M&A, in fact, this informational advantage brought by interlocking directorates may significantly benefit the pre-deal stage in all its activities - sourcing, screening, valuation and funding, negotiation, signing (Welch et al., 2020). Empirical evidences on interlocks and M&A are coherent with the idea that these ties may provide an economic and reliable way to reduce information asymmetries and be able to better identify opportunities on the market, which is line with the mentioned findings regarding the adoption of valuable innovations (de Sousa Barros et al., 2021).

The net result may be the accrual of a reduced effective level of uncertainty per decision and, consequently, a higher baseline propensity to approve at least one acquisition in any given time (Ahuja, 2000; Haunschild, 1993).

Operationally, this reasoning suggests a temporal-order association: given that network centrality - here proxied by degree - is measured at time  $t-1$ , the likelihood of observing one or more completed deals at time  $t$  should be higher, *ceteris paribus*. This timing is

line with theoretical discussions of information flows and empirical work within the interorganizational networks and strategic action literature (Gulati & Gargiulo, 1999; Haunschild, 1993).

Therefore, the Hypothesis is proposed as:

**H1:** *Firms that occupy more central positions in the interlock network are expected to display a higher propensity to engage in M&A activity.*

On the other hand, connectionist, have underlined the role of interlocking directorates in the diffusion of strategic practices through mechanisms of vicarious learning (Borgatti & Halgin, 2011; Lieberman & Asaba, 2006). Studies focusing on this effect argue that these ties also stimulate firms' managerial attention to what connected firms within their structural subgroups are doing. Davis (1991) argues that ties with an innovator may clarify the value of the innovation for the observing firms; this often leads to the diffusion of practices as seen for the poison pill – an antitakeover measure. However, firms do not mimic all over the place, as suggested by neo-institutional theories, they also pay attention to the consequences that these decisions have for firms; Haunschild & Miner (1997) explain that practices that produced positive outcomes for others will be imitated, while those that produced negative effects will be avoided. As mentioned in paragraph 2.5, it is commonly accepted in literature the idea that most M&A deals often tend to fail in delivering the expected results for the acquiring firm, leading to disappointing results (Worek, 2017). Moreover, negative results are, in fact, highly informative with regards to downside risks and as such receive more attention and weigh more heavily in updating of beliefs, a process that discourages repeating the same kind of behavior (Denrell, 2003; Kim & Miner, 2007). Therefore, despite previously available literature on interlocks emphasizes their role in the diffusion of practices among interlocked firms, this study argues that the observation of a negative outcome in M&A deals of interlocked firms will be particularly influential in Bayesian updating directors' beliefs, making connected firms more cautious after observing the risk associated to it (Denrell, 2003). Therefore, since boards may also perceive diagnostically salient adverse outcomes via the interlock network and M&A payoffs are often downside-skewed - an expectation can be formed that under conditions of exposure firms are less likely to acquire in subsequent period (Denrell, 2003; Haunschild & Miner, 1997; Kim & Miner, 2007).

Therefore, the second hypothesis can be adduced:

**H2.** *Greater exposure, through interlocking directorates, to interlocked partners' recent M&A reduces the focal firm's subsequent propensity to undertake an acquisition.*

It is important to note that this study does not directly assess the outcome of the M&A observed by the focal firm. The measure of exposure used captures only the number of deals observed by the focal firm through shared directors, without incorporating information about their performances. However, this operationalization is theoretically justified by the fact that extensive prior research has shown that most deals fail to achieve the expected results for acquiring firms (Worek, 2017).

Although presented separately, the two hypotheses are complementary. They reflect two different mechanisms through which interlocks can influence firms' behavior. H1 emphasizes the structural effect of centrality; directors occupying more central position within the network have access to more resources, information (market intelligence) useful to identify market opportunities, which reduce uncertainty and increase firms' propensity to act (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978). In contrast H2, highlights the effect linked to the exposure to interlocked firms' action. While previous studies on the adoption of innovative practices suggests that this exposure can often lead to mimetic behavior (e.g., Davis, 1991), this study argues that the interpretation of signals coming from the actions of interlocked firms, given the incidence of underperforming M&A deals and their weight in Bayesian updating (Moeller & Brady, 2014; Worek, 2017), applied to this field, may trigger the opposite effect; leading firms to be more cautious and avoid similar moves (Denrell, 2003; Haunschild & Miner, 1997).

While prior research has often examined these two mechanisms as leading to the same outcome (e.g., Davis, 1991; Haunschild, 1993), this study departs from this assumption and treats them as divergent rather than convergent. Taken together, the two hypotheses articulate a dual role of interlocks: they may stimulate action by providing structural informational advantages, while at the same time transmitting cautionary signals that foster restraint.

## Chapter 3

### 3 Research Design and Methodology

This study adopts a quantitative research design combining social network analysis (SNA) techniques with econometric modeling to investigate the determinants of firms' propensity to engage in mergers and acquisitions (M&A). In designing the empirical model, the analysis considered not only firms' network position, and influence exerted from the observation of interlocked firms' action, but also board-level characteristics. While prior research has often examined these two dimensions separately, focusing either on network characteristics or on governance attributes, this study integrates them into the same specification. The rationale behind this approach is to capture both the structural position that boards occupy in the interlocking network and their internal composition.

To mitigate endogeneity concerns and ensure temporal precedence, all independent variables and controls were measured at  $t-1$  with respect to the focal year of observation. This lag structure ensures that network position, board composition, and firm characteristics are treated as pre-existing determinants of M&A behavior, rather than simultaneous outcomes, and is coherent with previous studies (de Sousa Barros et al., 2021; Haunschild, 1993).

Finally, the logistic regression models include a set of board-level, financial, and other controls that may plausibly affect M&A activity. These controls, alongside alternative network centrality measures, allow us to account for confounding factors and test the robustness of the estimated relationships.

#### 3.1 Sample

The empirical analysis is based on a panel data of Italian firms listed on the STAR segment of Euronext Milan, and therefore subject to the disclosure obligations established by the Italian Consolidated Law on Finance (TUF), observed over a nine-year period (2016-2024). Since the population of listed firms varies from year to year due to listing and delisting dynamics, as well as corporate transformations such as mergers or suspension, the structure and number of firms in the network is not fixed. Consequently, the panel is not homogenous.

While the network was constructed on the full set of firms listed in each year, the usable firm-level observations for the econometric analysis were restricted to those firms for which director-level information could be fully reconstructed through the process described in the following section. The final sample includes 218 firms, providing a total of 1543 firm-year observations.

## **3.2 Data Collection**

### **3.2.1 Network and board level variables**

The starting point for the analysis and for the construction of the network-related variables was the collection of board composition data for Italian firms listed on the STAR segment of Euronext Milan from year 2015 to 2023 (because of the temporal gap of 1 year to mitigate endogeneity), obtained from the semi-annual filings published on CONSOB's official website. A Python script was developed to automatically extract the relevant information: the script identified within each CONSOB's HTML file all tables labeled "*Consiglio di amministrazione*" and subsequently traced them back to their corresponding firm.

Since CONSOB publishes these filings twice a year, particular caution was required to avoid duplication within the same year of directors who appeared in both semesters. To address this issue, duplicate entries were systematically removed, resulting in a dataset composed of firm name, director name and year. This dataset includes all director for a given year, regardless of whether they joined or left during the period.

To enrich the database with additional information on directors' roles (executive vs. non-executive) and demographic attributes (age and gender), the dataset obtained was enriched with information available on Boardex, a widely used international database for board-level information. This process was done through a fuzzy matching function that aligned directors' name across sources which was followed by a meticulous manual cross-check process to ensure accuracy. However, for Italian listed firms, Boardex presented substantial temporal gaps in board coverage. To overcome this limitation, interpolation rules were applied. Specifically, if a firm's board composition remained unchanged between *year*  $y$  and  $y+2$ , information for *year*  $y+1$  was imputed accordingly. Similarly, when the board in *year*  $y+1$  could be considered a subset of the board in *year*  $y$ , or when

it could reasonably be interpolated from adjacent years, missing values were completed through such reconstruction procedures.

Despite these efforts, in cases where directors remained unmatched or lacked complete information regarding their executive status, age, or gender, a manual integration of the data was carried out. Specifically, this involved the consultation of the firm's annual reports on ownership structures and corporate governance. This labor-intensive step allowed for the reconstruction of missing details and ensured a high level of completeness and accuracy of the final database.

### **3.2.2 Firm-level financial and demographic variables**

Firm-level financial variables including measures of firm size, of profitability and leverage were retrieved from Refinitiv's database, owned by the London Stock Exchange (LSEG), which is widely recognized for the reliability of its firm-level accounting and market data. Other variables such as sectoral classification (NACE Rev. 2 Code) and firm age were collected from Orbis, a database owned by Moody's.

### **3.2.3 M&A outcome variables**

M&A outcome variables were constructed using Orbis M&A (Bureau van Dijk), the transactions-dedicated module of the database already employed above. The extraction encompassed all deals involving sample firms as acquirers, with harmonized identifiers, standardized dates and values, and filters that exclude intra-group restructurings, buybacks, and financing-only events during the period.

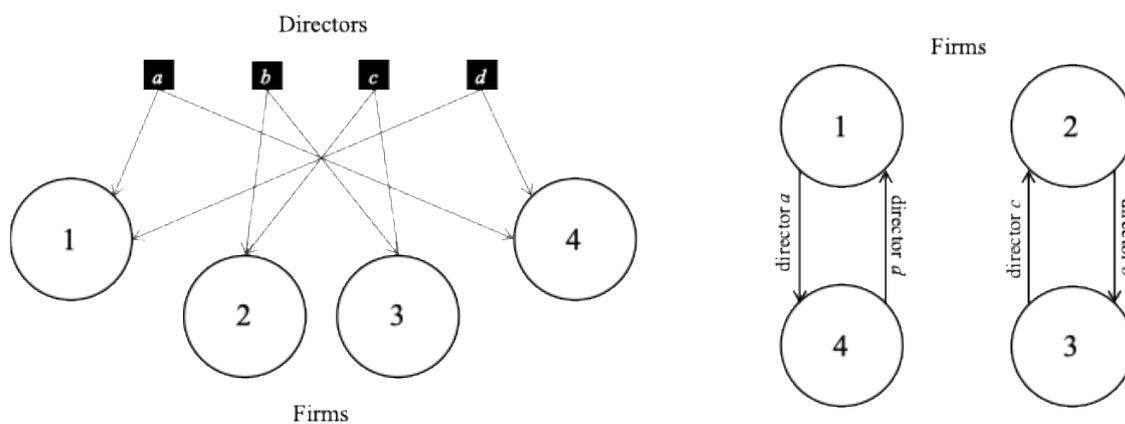
### **3.2.4 Processing of Network variables**

As anticipated in the data collection section, the network variables required an additional layer of processing of the data collected. In social network analysis (SNA), interorganizational networks are typically represented as bipartite graphs linking firms to directors (Wasserman & Faust, 1994). In this study, for each year, it was constructed a bipartite graph in which one node set represented directors and the other firms; an edge was drawn whenever a director sat on a firm's board. To analyze firm-level interlocks, this bipartite structure was then projected onto the firm layer, producing a one-mode network where two firms are connected if they share at least one director. Following this

projection, we considered both unweighted edges - capturing the existence of an interlock - and weighted edges, where the weight reflects the number of directors shared. This procedure was implemented in Python using the NetworkX library, which provides established functions for bipartite graph projection and subsequent calculation of centrality measures.

**Figure 1 - Firm–Director Bipartite Graph and Firm-Level Projection**

**Source: Author’s elaboration**



### 3.3 Independent Variables

To assess the impact of exposure to interlocked firms’ deals on the propensity to engage in M&A operations and thus test Hypothesis 2, coherently with Haunschild (1993) it was constructed an independent variable to capture the direct observation of M&A transactions completed by interlocked firms. For each firm-year observation, the procedure was as follows:

1. It was considered the interlock network of each year prior to the focal year  $t$ .
2. Within each of these yearly networks, were identified the firms directly connected to the focal firm through shared directors.
3. For each prior year, were counted the number of M&A deals completed by these connected firms.
4. Finally, these yearly counts were summed across all years prior to  $t$ .

The resulting variable, called “M&A\_OBSV”, therefore represents the cumulative number of acquisitions that a firm could observe through its interlock partners, based on the information available in each yearly network before the focal year. A higher value indicates greater exposure to acquisition activity within the interlock network, while a value of zero means that the firm had no such observable experiences in the past. The other independent variable, aimed at testing the first hypothesis, related to the role of access to information, is degree centrality. Centrality captures the prominence of a node in a network and its potential access to information and influence (Freeman, 1978). Degree centrality was operationalized for each year as the number of distinct firms to which a focal firm is directly connected through at least one shared director (Haunschild, 1993).

The variable can be formally expressed with the following equation:

*Equation 1 - Degree Centrality*

$$C_D(i) = \sum_{j=1}^n a_{ij}$$

where:

- $C_D(i)$  = degree centrality of firm  $i$
- $n$  = total number of firms in the network in year  $t$
- $a_{ij}$  = element of the adjacency matrix, equal to 1 if firm  $i$  and firm  $j$  share at least one board member in year  $t$ , and 0 otherwise

### **3.4 Control Variables**

#### *Other Network Variables*

Betweenness centrality measures how often a firm lies on the shortest paths connecting other pairs of firms, thus reflecting its ability to intermediate information flows and exert influence over otherwise disconnected parts of the network (Freeman, 1977).

Formally, the betweenness centrality of firm  $i$  is defined as:

*Equation 2 - Betweenness Centrality*

$$C_B(i) = \sum_{s \neq i \neq t} \frac{\sigma_{st}(i)}{\sigma_{st}}$$

where:

- $C_B(i)$  = betweenness centrality of firm  $i$
- $\sigma_{st}$  = number of shortest paths between firms  $s$  and  $t$
- $\sigma_{st}(i)$  = number of those shortest paths that pass through firm  $i$

Closeness centrality captures the extent to which a firm can quickly access information circulating in the network, since firms with higher closeness scores are at shorter average distances from others (Freeman, 1978). Formally:

*Equation 3 - Closeness Centrality*

$$C_C(i) = \frac{n - 1}{\sum_{j \neq i} d(i, j)}$$

where:

- $C_C(i)$  = closeness centrality of firm  $i$
- $n$  = total number of firms in the network
- $d(i, j)$  = length of the shortest path between firms  $i$  and  $j$

Eigenvector centrality, which captures not only the number of a firm's interlocks but also the importance of the firms it is connected to. The intuition is that ties to firms that are themselves well-connected contribute more to a firm's centrality score than ties to peripheral firms (Bonacich, 1972). Formally:

*Equation 4 - Eigenvector Centrality*

$$x(i) = \frac{1}{\lambda} \sum_{j=1}^n A_{ij} x(j)$$

where:

- $x(i)$  = eigenvector centrality of firm  $i$
- $A_{ij}$  = element of the adjacency matrix, equal to the weight of the tie between firm  $i$  and firm  $j$
- $\lambda$  = leading eigenvalue of the adjacency matrix
- $n$  = total number of firms in the network

### ***Board level variables***

In the model were included also boards' characteristics which may influence firms' behavior. The first one is board size, as the size of the decision-making group tends to have a negative effect on risk propensity (Moscovici & Zavalloni, 1969). The second one is the percentage of outside directors in board, since their presence is expected to enhance monitoring and reduce managerial discretion (Fama & Jensen, 1983). Another is the percent of female directors present in board, as it has been shown that firms with higher percentages are less inclined to undertake M&A (Chen et al., 2016). The last is the average of directors' age, as older boards may be more risk averse.

### ***Firm financial variables***

Since according to Iyer & Miller (2008) and Pinelli et al. (2024) firm size may influence risk propensity, in line with their studies it was decided to control for the logarithm of firms' Total Assets. In addition, other financials were also included in the model, specifically Cash Flow expressed in millions of dollars, ROA calculated as EBIT / Total Assets and Leverage (Long-Term Debt / Total Assets).

### ***Other Variables***

Given that learning effects may shape acquisition behavior (Pinelli et al., 2024), two other variables were included in the model. The first one is focal firm's age, representing the difference between the year of the observation -1 and the foundation year of the focal firm in the observation. The second one is the cumulative number of deals previously completed by the focal firm, calculated as the aggregate number of acquisitions undertaken in all years prior to the observation within the period under analysis. This second variable allows us to control for effects of path dependence, as suggested in Galavotti's (2021) study. The model includes NACE Rev.2 two-digit industry fixed effects and year fixed effects to absorb sectoral and temporal heterogeneity in M&A activity.

### **3.5 Dependent Variable**

The dependent variable, called DEAL, is a dummy which measures the propensity of a firm to undertake acquisitions of other firms or minority stakes in the year of the observation, taking the value 1 if the focal firm has completed at least one and 0 otherwise. This is in line with previous studies (eg., de Sousa Barros et al., 2021).

Table 1 summarizes all the variables above mentioned.

**TABLE 1 - Summary of Variables****Source: Author's elaboration**

<i>Type</i>	<i>Variable</i>	<i>Code</i>	<i>Description</i>	<i>Data Source</i>
DV	Propensity to undertake M&A	DEAL	Dummy equal to 1 if the focal firm has undertaken at least one operation, 0 otherwise	Orbis M&A
IV	M&A observed through interlocks	M&A_OBSV	Number of M&As undertaken by interlocked firms previously observed by the focal firm	Elaboration on Orbis M&A data
IV	Degree Centrality $t-1$	CENTR	Number of distinct firms to which a focal firm is directly connected through at least one shared directors	Elaboration on CONSOB data
CV	Betweenness Centrality $t-1$	BETW	% of shortest paths between firms $s$ and $t$ passing through the focal firm	Elaboration on CONSOB data
CV	Closeness Centrality $t-1$	CLOSE	Inverse of the average shortest-path distance from the focal firm to all other firms in the network	Elaboration on CONSOB data
CV	Eigenvector Centrality $t-1$	EIGEN	Weighted sum of the connections of the focal firm, where ties to highly connected firms contribute more	Elaboration on CONSOB data
CV	Board's Size $t-1$	BOARD_SIZE	Number of directors on board	Elaboration on CONSOB data
CV	Non Executive $t-1$	NON_EXEC	% of supervisory directors on board	Boardex; Companies' Reports on Corporate Governance
CV	Gender Diversity $t-1$	BOARD_FEM	% of female directors on board	Boardex; Companies' Reports on Corporate Governance
CV	Board's Age $t-1$	BOARD_AGE	Average of directors' age	Boardex; Companies' Reports on Corporate Governance
CV	Firm's Size $t-1$	SIZE	Natural Logarithm of Total Assets	Elaboration on Refinitiv data
CV	Cash Flow $t-1$	CASH_F	Cash Flow in M \$	Refinitiv
CV	ROA $t-1$	ROA	EBIT / Total Assets	Refinitiv
CV	Leverage $t-1$	FLEV	Long Term Debt / Total Assets	Refinitiv
CV	Firm's Age	FIRM_AGE	Number of years since the foundation of the focal firm	Orbis
CV	M&A experience	DEAL_EXP	The number of previous deals undertaken by the focal firm in the period under analysis	Orbis M&A
FE	Year and Industry	YEAR AND NACE	Year of the f observation and 2 Digits NACE	Panel; Orbis

## Chapter 4

### 4 Empirical Analysis and Results

#### 4.1 Descriptive Statistics

First, descriptive statistics were computed for all variables included in the models, in order to provide a general overview of the data distribution and its main characteristics (mean, standard deviation, minimum, and maximum values).

TABLE 2 - Descriptive Statistics

<i>Variable</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
DEAL	1543	0	1	0,299	0,458
M&A_OBSV	1543	0	72	8,884	10,862
CENTR	1543	0	20	4,182	3,444
BETW	1543	0	0,105	0,010	0,014
CLOSE	1543	0	0,320	0,183	0,079
EIGEN	1543	0	0,688	0,015	0,063
BOARD_SIZE	1543	2	25	10,110	2,892
NON_EXEC	1543	0,143	0,960	0,749	0,149
BOARD_FEM	1543	0	0,666	0,368	0,093
BOARD_AGE	1543	45,833	68,600	58,034	3,998
SIZE	1543	7,043	12,088	9,238	0,912
CASH_F	1543	-11,371	22,855	400,215	1,548
ROA	1543	-1,389	2,450	0,045	0,104
FLEV	1543	0	6,239	0,321	0,310
FIRM_AGE	1543	1	552	61,710	59,687
DEAL_EXP	1543	0	31	2,209	3,426
<i>Valid Observations</i>	<i>1543</i>				

## 4.2 Correlation Analysis

Second, a correlogram was produced, including the Pearson R to examine the linear relationships among variables, with the aim of detecting potential multicollinearity issues. The results show that Table 3 reports the Pearson correlation matrix for all independent and control variables. As expected, the three network measures are highly correlated with each other: degree centrality is strongly correlated with betweenness ( $r = 0.836$ ) and with closeness centrality ( $r = 0.720$ ). These values exceed the commonly accepted thresholds of 0.6 and indicate potential multicollinearity issues.

## 4.3 Multicollinearity Test

To further investigate potential multicollinearity issues, Table 4 reports the Variance Inflation Factors (VIF) for all independent and control variables. Consistently with the correlation matrix, degree centrality shows a high VIF (6.09), largely driven by its strong linear association with betweenness ( $r = 0.836$ ) and closeness centrality ( $r = 0.720$ ). Similarly, betweenness also exceeds the commonly accepted threshold (VIF = 3.75), while closeness remains below but still relatively high (VIF = 2.35). All the remaining variables display VIF values close to 1, indicating no multicollinearity concerns.

As explained by Freeman (1978) the position at the center of a star network simultaneously embodies the maximum degree, the maximum betweenness, and the maximum closeness. This example highlights why alternative measures of network centrality, although conceptually distinct, are often highly correlated in empirical settings. They capture related structural properties of network position, which explains the collinearity observed in the present analysis between degree, betweenness, and closeness. Based on these results, betweenness and closeness centrality were excluded from the main specification to avoid inflating standard errors and biasing the interpretation of the key independent variable, degree centrality. A new set of VIF values was then computed after excluding betweenness and closeness (Table 5). As shown, all values now fall well below the conservative threshold of 3, ranging from 1.05 to 2.13. This confirms that the problem of multicollinearity was entirely driven by the high correlation among the alternative measures of network centrality.

**TABLE 3 - Pearson Correlation Matrix**

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<i>DEAL (1)</i>	-															
<i>M&amp;A_OBSV (2)</i>	0,027	-														
<i>CENTR (3)</i>	0,139	0,571	-													
<i>BETW (4)</i>	0,120	0,525	<b>0,836</b>	-												
<i>CLOSE (5)</i>	0,118	0,473	<b>0,720</b>	0,503	-											
<i>EIGEN (6)</i>	-0,024	0,108	0,236	0,128	0,144	-										
<i>BOARD_SIZE (7)</i>	0,113	0,251	0,314	0,290	0,251	0,134	-									
<i>NON_EXEC (8)</i>	0,086	0,232	0,296	0,261	0,238	0,057	0,347	-								
<i>BOARD_FEM (9)</i>	0,000	0,222	0,042	0,062	0,108	0,008	-0,058	0,078	-							
<i>BOARD_AGE (10)</i>	-0,022	0,192	0,092	0,076	0,065	0,038	0,259	0,053	-0,029	-						
<i>SIZE (11)</i>	0,166	0,334	0,381	0,335	0,353	0,085	0,544	0,408	0,045	0,229	-					
<i>CASH_F (12)</i>	0,103	0,140	0,178	0,179	0,152	0,014	0,156	0,190	0,032	0,088	0,432	-				
<i>ROA (13)</i>	0,046	0,011	0,011	-0,011	0,008	-0,038	-0,012	-0,112	-0,052	-0,023	-0,037	0,032	-			
<i>FLEV (14)</i>	0,023	0,041	0,059	0,070	0,028	-0,010	0,110	0,129	0,055	-0,016	0,193	0,059	-0,180	-		
<i>FIRM_AGE (15)</i>	0,002	0,103	0,081	0,079	0,048	-0,012	0,065	0,007	0,034	0,097	0,204	-0,050	-0,046	0,100	-	
<i>DEAL_EXP (16)</i>	0,242	0,188	0,121	0,109	0,138	-0,031	0,181	0,110	0,132	0,041	0,276	0,218	0,030	0,084	-0,003	-

Note: Bold values indicate correlations >0,60

**TABLE 4 - Variance Inflation Factor (VIF)**

<i>Variable</i>	<i>VIF</i>	<i>1/VIF (Tolerance)</i>
M&A_OBSV	1,708	0,585
CENTR	<b>6,090</b>	0,164
BETW	3,752	0,267
CLOSE	2,351	0,425
EIGEN	1,101	0,908
BOARD_SIZE	1,594	0,627
NON_EXEC	1,305	0,766
BOARD_FEM	1,115	0,897
BOARD_AGE	1,132	0,884
SIZE	2,160	0,463
CASH_F	1,305	0,767
ROA	1,059	0,944
FLEV	1,091	0,917
FIRM_AGE	1,100	0,909
DEAL_EXP	1,141	0,876

**TABLE 5 - Variance Inflation Factor Updated**

<i>Variable</i>	<i>VIF</i>	<i>1/VIF (Tolerance)</i>
M&A_OBSV	1,676	0,597
CENTR	1,721	0,581
EIGEN	1,076	0,929
BOARD_SIZE	1,588	0,630
NON_EXEC	1,305	0,766
BOARD_FEM	1,104	0,906
BOARD_AGE	1,129	0,886
SIZE	2,132	0,469
CASH_F	1,300	0,769
ROA	1,058	0,946
FLEV	1,088	0,919
FIRM_AGE	1,098	0,911
DEAL_EXP	1,140	0,877

#### 4.4 Regression Analysis

As mentioned in paragraph 3.3 the variables betweenness and closeness centrality were initially considered as additional controls for alternative measures of network position. However, due to their collinearity with degree centrality, they were removed from the main specification. Eigenvector centrality, instead, did not show problematic levels of correlation and was therefore retained in the model as an additional control. Once the problem of multicollinearity was taken care of, as confirmed by the new set of VIF values (Table 5), the logistic regression analysis proceeded with two independent variables of interest: M&A\_OBSV, capturing firms' prior observation of M&A from interlocked firms, and degree centrality (CENTR), representing their network position. Eigenvector centrality and the other firm- and board-level covariates were included as control effects.

To improve clarity in the interpretation of effects, for the main specification four models were developed:

- Model 1: which includes only control variables.
- Model 1b: which adds to the control variables only Degree Centrality to test the effect of network position.
- Model 1c: which adds to the control variables only M&A\_OBSV to test the effect of the observation of M&A from interlocked firms.
- Model 1d: the full model which includes both variables simultaneously, allowing to test the combined effects of network position and exposure to partner activity.

Table 6 summarizes the results that were obtained from the binary logistic regressions performed for each model.

**TABLE 6 - Logistic regression results for Main specification**

<i>DV = DEAL (dummy)</i>	Model 1	Model 1b	Model 1c	Model 1d
	<i>Controls only</i>	<i>Controls + Hp 1</i>	<i>Controls + Hp 2</i>	<i>Full Model</i>
Variable	<b>Coefficients (SE)</b>	<b>Coefficients (SE)</b>	<b>Coefficients (SE)</b>	<b>Coefficients (SE)</b>
M&A_OBSV	-	-	<b>-0,009 (0,008)</b>	<b>-0,024** (0,009)</b>
CENTR	-	<b>0,051* (0,021)</b>	-	<b>0,083*** (0,025)</b>
EIGEN	-1,691 (1,302)	-2,340 <sup>+</sup> (1,398)	-1,609 (1,292)	-2,515 <sup>+</sup> (1,413)
BOARD_SIZE	0,030 (0,030)	0,023 (0,031)	0,033 (0,030)	0,026 (0,031)
NON_EXEC	0,770 (0,498)	0,582 (0,503)	0,839 <sup>+</sup> (0,503)	0,638 (0,506)
BOARD_FEM	0,384 (0,833)	0,279 (0,834)	0,360 (0,834)	0,168 (0,836)
BOARD_AGE	-0,010 (0,019)	-0,009 (0,019)	-0,009 (0,019)	-0,005 (0,019)
SIZE	<b>0,240* (0,092)</b>	<b>0,200 (0,133)</b>	<b>0,304** (0,134)</b>	<b>0,256<sup>+</sup> (0,135)</b>
CASH_F	0,000 (0,000)	0,000 (0,000)	0,000 (0,000)	0,000 (0,000)
ROA	0,361 (0,634)	0,360 (0,629)	0,376 (0,637)	0,395 (0,633)
FLEV	0,015 (0,634)	0,31 (0,241)	-0,007 (0,239)	-0,019 (0,248)
FIRM_AGE	0,000 (0,001)	0,000 (0,001)	0,000 (0,001)	-0,000 (0,001)
DEAL_EXP	<b>0,089*** (0,023)</b>	<b>0,089*** (0,023)</b>	<b>0,087*** (0,023)</b>	<b>0,082*** (0,022)</b>
Observations	1543	1543	1543	1543
Model $\chi^2$	297,163***	302,875***	298,615***	310,094***
Nagelkerke R <sup>2</sup>	0,248	0,253	0,250	0,258
Year FE	YES	YES	YES	YES

Logistic regression. Coefficients are log-odds; standard errors in parentheses. \*, \*\*, \*\*\* indicate significance at the 5%, 1%, and 0.1% levels respectively. Model  $\chi^2$  reports the likelihood ratio test of the overall model fit. Nagelkerke R<sup>2</sup> is presented as a measure of explained variance. All models include year and 2 Digits NACE industry effects (not reported).

The results of Model 1 show that among the controls, firm size is positive and significant ( $\beta = 0.240$ ,  $SE = 0.092$ ,  $p < 0.05$ ), the same thing can be said for deal experience which positive and highly significant ( $\beta = 0.089$ ,  $SE = 0.023$ ,  $p < 0.001$ ). All other control variables, including profitability, leverage, board size, and gender diversity, do not display statistically significant effects in this baseline specification.

In Model 1b, to the control variables is added only the independent variable Degree Centrality, which improves the model fit (Model 1b vs. Model 1:  $\Delta\chi^2 \approx 5.7$ ). Degree centrality is positive and significant ( $\beta = 0.051$ ,  $SE = 0.021$ ,  $p < 0.05$ ), providing evidence of its association with M&A propensity. In this model Eigenvector centrality (EIGEN), also included as an additional network control, becomes marginally significant ( $\beta = -2.340$ ,  $SE = 1.398$ ,  $p < 0.10$ ), however the effect does not meet conventional thresholds of 5% significance and should therefore be interpreted with caution. Among the controls, deal experience remains positive and highly significant, while firm size loses its significance.

In Model 1c, when the other independent variables M&A\_OBSV is added to the control variables, the model fit improves slightly (Model 1c vs. Model 1:  $\Delta\chi^2 \approx 1.4$ ). When entered alone the independent variable is not significant. Among the controls firm size becomes again significant maintaining a positive coefficient ( $\beta = 0.304$ ,  $SE = 0.134$ ,  $p < 0.01$ ) and deal experience keeps having a positive and highly significant impact ( $\beta = 0.087$ ,  $SE = 0.023$ ,  $p < 0.001$ )

The full model (Model 1d) - including both degree centrality and M&A\_OBSV - shows the strongest overall fit (Model 1d vs. Model 1:  $\Delta\chi^2 \approx 13.0$ , Nagelkerke  $R^2 = 0.258$ ). Degree centrality remains positive and increases in magnitude ( $\beta = 0.083$ ,  $SE = 0.025$ ,  $p < 0.01$ ). By contrast, M&A\_OBSV keeps being negative and turns significant ( $\beta = -0.024$ ,  $SE = 0.009$ ,  $p < 0.01$ ), indicating that aggregate exposure to partners' prior deals has a negative effect (as hypothesized) once informational access and controls are accounted for.

Following Freeman's (1978) clarification, as robustness checks, the two network measures that had been excluded from the main specification due to multicollinearity -

betweenness centrality and closeness centrality - were introduced as independent variables in alternative models, since they also capture different facets of the structural advantage associated with occupying a central network position. In these specifications, degree centrality was replaced by either betweenness (Model 2) or closeness (Model 3) as the main network variable, while eigenvector centrality, and the other firm- and board-level controls were retained.

**TABLE 7 - Logistic regression results for Robustness checks**

<i>DV = DEAL (dummy)</i>	Model 2a	Model 2b	Model 3a	Model 3b
	<i>Controls + Betw</i>	<i>Full Model (with Betw)</i>	<i>Controls + Close</i>	<i>Full Model (with Close)</i>
Variable	Coefficients (SE)	Coefficients (SE)	Coefficients (SE)	Coefficients (SE)
M&A_OBSV	-	<b>-0,021* (0,009)</b>	-	<b>-0,016* (0,008)</b>
BETW	<b>10,964* (4,809)</b>	<b>16,574** (5,377)</b>	-	-
CLOSE	-	-	<b>1,964* (1,021)</b>	<b>2,638* (1,084)</b>
EIGEN	-2,008 (1,356)	-1,971 (1,353)	-1,904 (1,334)	-1,831 (1,322)
BOARD_SIZE	0,021 (0,031)	0,023 (0,031)	0,028 (0,030)	0,033 (0,031)
NON_EXEC	0,656 (0,501)	0,748 (0,505)	0,644 (0,502)	0,721 (0,506)
BOARD_FEM	0,320 (0,835)	0,235 (0,837)	0,278 (0,833)	0,209 (0,834)
BOARD_AGE	-0,009 (0,019)	-0,005 (0,019)	-0,008 (0,019)	-0,005 (0,019)
SIZE	<b>0,223+ (0,132)</b>	<b>0,286* (0,135)</b>	<b>0,198 (0,134)</b>	<b>0,240+ (0,136)</b>
CASH_F	0,000 (0,000)	0,000 (0,000)	0,000 (0,001)	0,000 (0,000)
ROA	0,374 (0,631)	0,414 (0,638)	0,370 (0,631)	0,400 (0,636)
FLEV	0,032 (0,239)	-0,009 (0,243)	0,031 (0,240)	-0,004 (0,245)
FIRM_AGE	0,000 (0,001)	0,000 (0,001)	0,000 (0,001)	0,000 (0,001)
DEAL_EXP	<b>0,091*** (0,023)</b>	<b>0,086*** (0,023)</b>	<b>0,090*** (0,023)</b>	<b>0,086*** (0,023)</b>
Observations	1543	1543	1543	1543
Model $\chi^2$	302,375***	308,229***	300,962***	304,734***
Nagelkerke R <sup>2</sup>	0,252	0,257	0,251	0,254
Year and Industry FE	YES	YES	YES	YES

Logistic regression. Coefficients are log-odds; standard errors in parentheses. \*, \*\*, \*\*\* indicate significance at the 5%, 1%, and 0.1% levels respectively. Model  $\chi^2$  reports the likelihood ratio test of the overall model fit. Nagelkerke R<sup>2</sup> is presented as a measure of explained variance. All models include year and 2 Digits NACE industry effects (not reported).

Table 7 presents the robustness checks in which degree centrality was replaced by betweenness centrality (Model 2) and closeness centrality (Model 3). The results indicate that both alternative measures of network position are positively and statistically associated with the likelihood of engaging in M&A.

In Model 2a, betweenness centrality is positive and statistically significant at the 5% level ( $\beta = 10.964$ ,  $SE = 4.809$ ,  $p < 0.05$ ). In Model 2b, when also Hp 2 is added, betweenness centrality is also positive and significant at the 1% level ( $\beta = 16.574$ ,  $SE = 5.377$ ,  $p < 0.01$ ).

In model 3a, closeness centrality is positive and significant ( $\beta = 1.964$ ,  $SE = 1.021$ ,  $p < 0.05$ ), result that is confirmed when hypothesis 2 is added to the model ( $\beta = 2.638$ ,  $SE = 1.084$ ,  $p < 0.05$ ).

M&A\_OBSV remains negative in both robustness models, reaching significance in Model 2b ( $\beta = -0.021$ ,  $SE = 0.009$ ,  $p < 0.05$ ) and in Model 3b ( $\beta = -0.016$ ,  $SE = 0.008$ ,  $p < 0.05$ ).

These results confirm that the association between network centrality and M&A activity is not limited to degree centrality but extends to other widely used centrality measures as well and that the negative association between observed M&A activity in interlocked firms and the likelihood of engaging in acquisitions is consistent also when observed in presence of other centrality measures.

Among the controls, the results are broadly consistent with the main specification. Deal experience continues to be strongly positive and highly significant across both models  $\beta = 0.085$ ,  $SE = 0.023$ ,  $p < 0.001$  in Model 2b and in Model 3b. Firm size is positive and significant at the 5% level in Model 2b ( $\beta = 0.286$ ,  $SE = 0.135$ ,  $p < 0.05$ ) and marginally significant in Model 3b ( $\beta = 0.240$ ,  $SE = 0.136$ ,  $p < 0.10$ ). Other board- and firm-level controls remain non-significant, in line with the main model.

Model fit is satisfactory in both specifications. The likelihood ratio chi-square test is highly significant (Model 2b:  $\chi^2 = 308.229$ ,  $p < 0.001$ ; Model 3b:  $\chi^2 = 304.734$ ,  $p < 0.001$ ), showing that both models significantly improve over the null. The Nagelkerke  $R^2$  values

are 0.257 for Model 2b and 0.254 for Model 3b, very close to the 0.258 obtained in the main model, confirming the stability of the results.

#### 4.5 Summary of findings

**Hypothesis 1:** *Firms that occupy more central positions in the interlock network are expected to display a higher propensity to engage in M&A activity.*

Binary logistic regressions results show a highly significant positive relationship between degree centrality (CENTR) and the likelihood of engaging in M&A ( $p < 0.001$ ). Therefore, Hypothesis 1 is accepted. This implies that firms occupying central positions in the interlock network have a higher propensity to engage in acquisitions. To verify the stability of the results, two additional models were estimated in which degree centrality was replaced by alternative measures of network position previously exclude from the main specification, namely betweenness and closeness centrality. In both specifications, the coefficients of the network variables remain positive and statistically significant ( $p < 0,01$ ). Confirming that also different operationalizations of centrality maintain a significant relationship with the propensity to undertake M&A.

**Hypothesis 2:** *Greater exposure, through interlocking directorates, to interlocked partners' recent M&A reduces the focal firm's subsequent propensity to undertake an acquisition.*

Coherently with the vicarious-learning logic mentioned in paragraph 2.6, the coefficient on M&A\_OBS (exposure at  $t-1$ ) is negative and statistically significant in the main specification ( $p < 0.01$ ). This result indicates that firms exposed to partners' recent deal activity are less inclined to undertake an acquisition in the subsequent period. Which may be consistent with deterrence via attention to adverse outcomes.

In the alternative models in which degree centrality is replaced by betweenness and closeness centrality, the exposure coefficient remains negative but weakens, being significant at 5% level. Taken together, these results provide qualified support for Hypothesis 2: the predicted negative association emerges in the baseline

model and is directionally consistent, albeit less precise, when centrality is operationalized through alternative metrics.

Among the control variables, firms' deal experience is positive and strongly significant in all specifications, which suggest that firms with a stronger acquisition track are more likely to engage in further acquisitions. Also, firm size shows a positive and significant relationship in some model specifications, but it does not retain significance in the main model, suggesting that it is not a robust predictor once both network variables are accounted for.

## Chapter 5

### 5 Discussions of the results

Evidence from the study portrays interlocking directorates as a nuanced governance infrastructure whose effects depend on the underlying mechanism taken into consideration.

First, central network positions - captured mainly by lagged degree centrality - are positively and significantly associated with the likelihood of undertaking an acquisition in the subsequent period. Read through the “board capital” lens, centrality enlarges the volume, freshness, and credibility of decision-relevant cues reaching the boardroom and thereby lowers effective uncertainty along the pre-deal funnel (Hillman & Dalziel, 2003; Welch et al., 2020). This is aligned with previous literature on interlocks showing that heavily interlocked firms tend to identify and evaluate opportunities earlier, converting this informational advantage into strategic action, already observed in other studies focusing on the adoption of valuable innovations and introduction of new products (Ahuja, 2000; Davis, 1991; Srinivasan et al., 2018).

On the other hand, exposure to interlocked partners’ recent acquisitions emerges as significant only in models that account for centrality measures. This suggests that exposure does not significantly and independently shape acquisition behaviors, but rather tempers the influence of centrality by transmitting cautionary signals. Consistent with what hypothesized in H2, in a domain often characterized by disappointing outcomes such as M&A, and considering the weight attributed to such results in Bayesian updating directors’ belief (Denrell, 2003; Moeller & Brady, 2014; Worek, 2017), exposure appears to act as a brake, tempering firms’ propensity to replicate these decisions. This interpretation resonates with theories of vicarious learning, according to which firms learn from the observed successes and failures of others (Denrell, 2003; Haunschild & Miner, 1997) and suggests that exposure becomes especially relevant in the presence of structural informational advantage.

Taken together, these findings reinforce the proposition that interlocking directorates serve as robust and consistent predictors of M&A behavior by demonstrating that they do

not exert a univocal pressure towards action. The study, in fact, highlights the dual role that interlocks can play, acting as accelerator by reducing uncertainty through structural access, and as brakes by transmitting cautionary signals through exposure. This interpretation challenges previous work (e.g., Davis, 1991; Haunschild, 1993) which have often treated the two mechanisms as convergent to the same outcome. Davis (1991) argues that interlocking directorates lead to the diffusion of practices because ties with firms engaging in a given practice can help clarify the value of that practice. However, this study suggests that in settings like M&A - where disappointing outcomes are frequent – exposure may also clarify the risks associated to it, discouraging firms' propensity to act.

Among controls, deal experience remains robustly positive and highly significant across all specifications. The evidence suggests that the number of acquisitions previously undertaken by a firm is a strong predictor of future M&A activity, in line with the commonly acknowledge path dependence effect in acquisition behavior (e.g., Galavotti, 2021).

## Chapter 6

### 6 Conclusions

This thesis examined how interlocking directorates shape M&A decisions by distinguishing two distinct mechanisms: structural access to information, captured through network centrality, and behavioral exposure to interlocked partners' acquisition activity.

Using a multi-year panel of STAR-segment firms from the Italian market, based on the reconstructions of the firm–firm interlock network, and panel logistic models with lagged predictors including board and firm-level controls, the analysis modelled the incidence of interlocking directorates on the propensity to undertake acquisitions as the outcome of structural access to information, captured by degree centrality at  $t-1$ , and behavioral exposure, capturing the observation of partners' recent M&A activity.

The results discussed in the previous chapter reveal a pattern coherent with the hypotheses. Firms embedded in more central positions display a higher propensity to undertake M&A, consistent with the interpretation of centrality as expanded, timelier informational reach across the pre-deal phase; by contrast, greater exposure to partners' prior-period deals correlates with a lower likelihood of transacting in the main specification (retains its direction in robustness checks), suggesting that outcome-rich signals transmitted via trusted ties can rationally temper deal making. Read together, these results substantiate the dual role of interlocks - structure widens what boards can see, exposure shapes how they interpret what they see - explaining why interlocks do not uniformly lead to acquisition activity.

Beyond the discussion of results, this work contributes to both the understanding of interlocking directorates mechanisms and M&A decisions. On the one hand in fact, it disentangles the effects of structural access from those of behavioral exposure - mechanisms that previous work often reported as producing similar outcomes (e.g., Davis, 1991; Haunschild, 1993). On the other hand, it complements the literature on M&A decision making, by adopting a network-based lens that shifts the focus from purely

economic drivers to relational and informational mechanisms, which have been shown to play an increasingly significant role in shaping strategic corporate behavior.

Finally, the study adds value by examining the Italian market, which has received limited empirical attention with respect to the behavioral implications of interlocking directorates, despite the prominence of the phenomenon.

However, this study is not without limitations. First, it relies on board interlocks as the observable indicator of interfirm social relations, however, clearly these ties do not capture the full range of underlying ties (e.g., friendship) that may also facilitate information flows among firms. This limitation is reinforced by the fact that the network reconstructed in this study only includes publicly listed firms (Davis, 1991; Mizruchi, 1996). Also, this study adopts unweighted measures to account for interlocks, considering ties with firms without accounting for the intensity of the relationship (number of shared directors with each firm). Moreover, the operationalization of exposure to partners' recent M&A activity only captures the number of deals, without incorporating information on the actual outcomes of those deals (as mentioned in paragraph 2.6). The predominantly negative outcome is theoretically justified by prior literature; however, it prevents the study to analytically distinguish from successes and failures.

Future research can build on this study in several directions. First, incorporating deal-level outcomes would allow scholars to distinguish between learning from successes and failures, thereby refining the exposure mechanism, which could be also enriched with recency, and similarity weights. Second, it can integrate weighted measures to account for the intensity of ties to other firms, to assess if this factor has an impact on the influence exerted on the focal firm. Moreover, future work could also examine whether the dual accelerator–brake role of interlocks also applies to other strategic domains.

In addition to its academic relevance, the study also carries practical implications. For practitioners, the findings highlight the need for firms' boards to balance the advantages of network centrality with the cautionary lessons learned through the observation of partners' recent actions.

## 7 References

- Ahuja, G. (2000). Collaboration Networks, Structural Holes, and Innovation: A Longitudinal Study. *Administrative Science Quarterly*, 45(3), 425–455. <https://doi.org/10.2307/2667105>
- Beckman, C. M., & Haunschild, P. R. (2002). Network Learning: The Effects of Partners' Heterogeneity of Experience on Corporate Acquisitions. *Administrative Science Quarterly*, 47(1), 92–124. <https://doi.org/10.2307/3094892>
- Bonacich, P. (1972). Factoring and weighting approaches to status scores and clique identification. *The Journal of Mathematical Sociology*, 2(1), 113–120. <https://doi.org/10.1080/0022250X.1972.9989806>
- Borgatti, S., & Halgin, D. (2011). On Network Theory. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2260993>
- Burt, R. S. (1980). Cooptive Corporate Actor Networks: A Reconsideration of Interlocking Directorates Involving American Manufacturing. *Administrative Science Quarterly*, 25(4), 557. <https://doi.org/10.2307/2392281>
- Cai, C., Li, H., & Zhou, H. (2022). Learning-by-doing: the experience effect in mergers and acquisitions. *Accounting & Finance*, 62(S1), 1189–1229. <https://doi.org/10.1111/acfi.12821>
- Caiazza, R., Cannella Jr, A. A., Phan, P. H., & Simoni, M. (2019). An Institutional Contingency Perspective of Interlocking Directorates. *International Journal of Management Reviews*, 21(3), 277–293. <https://doi.org/10.1111/ijmr.12182>
- Chen, G., Crossland, C., & Huang, S. (2016). Female board representation and corporate acquisition intensity. *Strategic Management Journal*, 37(2), 303–313. <https://doi.org/10.1002/smj.2323>

Davis, G. F. (1991). Agents without Principles? The Spread of the Poison Pill through the Intercompany Network. *Administrative Science Quarterly*, 36(4), 583. <https://doi.org/10.2307/2393275>

de Sousa Barros, T., Cárdenas, J., & Mendes-Da-Silva, W. (2021). The effect of interlocking directorates on mergers and acquisitions in Brazil. *Journal of Management and Governance*, 25(3), 811–839. <https://doi.org/10.1007/s10997-020-09529-7>

Denrell, J. (2003). Vicarious Learning, Undersampling of Failure, and the Myths of Management. *Organization Science*, 14(3), 227–243. <https://doi.org/10.1287/orsc.14.3.227.15164>

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2), 147. <https://doi.org/10.2307/2095101>

Domhoff, G. William. (1967). *Who rules America?* Prentice-Hall.

Drago, C., Millo, F., Ricciuti, R., & Santella, P. (2012). Corporate Governance Reforms, Interlocking Directorship Networks and Company Value in Italy, 1998-2007. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2105693>

Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *The Academy of Management Review*, 14(1), 57. <https://doi.org/10.2307/258191>

Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. *The Journal of Law and Economics*, 26(2), 301–325. <https://doi.org/10.1086/467037>

Fattobene, L., Caiffa, M., & Di Carlo, E. (2018). Interlocking directorship across Italian listed companies: evidence from a natural experiment. *Journal of Management and Governance*, 22(2), 393–425. <https://doi.org/10.1007/s10997-017-9392-6>

Freeman, L. C. (1977). A Set of Measures of Centrality Based on Betweenness. *Sociometry*, 40(1), 35. <https://doi.org/10.2307/3033543>

Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social Networks*, 1(3), 215–239. [https://doi.org/10.1016/0378-8733\(78\)90021-7](https://doi.org/10.1016/0378-8733(78)90021-7)

Galavotti, I. (2021). Board interlocks and imitation in corporate acquisitions: A literature review and avenues for future research. *Corporate Board Role Duties and Composition*, 17(3), 21–30. <https://doi.org/10.22495/cbv17i3art2>

Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 91, 481–510.

Gulati, R., & Gargiulo, M. (1999). Where Do Interorganizational Networks Come From? *American Journal of Sociology*, 104(5), 1439–1493. <https://doi.org/10.1086/210179>

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking Stock of What We Know About Mergers and Acquisitions: A Review and Research Agenda. *Journal of Management*, 35(3), 469–502. <https://doi.org/10.1177/0149206308330554>

Haunschild, P. R. (1993). Interorganizational Imitation: The Impact of Interlocks on Corporate Acquisition Activity. *Administrative Science Quarterly*, 38(4), 564. <https://doi.org/10.2307/2393337>

Haunschild, P. R. (1994). How Much is That Company Worth?: Interorganizational Relationships, Uncertainty, and Acquisition Premiums. *Administrative Science Quarterly*, 39(3), 391. <https://doi.org/10.2307/2393296>

Haunschild, P. R., & Beckman, C. M. (1998). When Do Interlocks Matter?: Alternate Sources of Information and Interlock Influence. *Administrative Science Quarterly*, 43(4), 815. <https://doi.org/10.2307/2393617>

Haunschild, P. R., & Miner, A. S. (1997). Modes of Interorganizational Imitation: The Effects of Outcome Salience and Uncertainty. *Administrative Science Quarterly*, 42(3), 472. <https://doi.org/10.2307/2393735>

Hillman, A. J., & Dalziel, T. (2003). Boards of Directors and Firm Performance: Integrating Agency and Resource Dependence Perspectives. *The Academy of Management Review*, 28(3), 383. <https://doi.org/10.2307/30040728>

Ishii, J., & Xuan, Y. (2014). Acquirer-target social ties and merger outcomes. *Journal of Financial Economics*, 112(3), 344–363. <https://doi.org/10.1016/j.jfineco.2014.02.007>

Iyer, D. N., & Miller, K. D. (2008). Performance Feedback, Slack, and The Timing of Acquisitions. *Academy of Management Journal*, 51(4), 808–822. <https://doi.org/10.5465/amr.2008.33666024>

Jemison, D. B., & Sitkin, S. B. (1986). Corporate Acquisitions: A Process Perspective. *Academy of Management Review*, 11(1), 145–163. <https://doi.org/10.5465/amr.1986.4282648>

Kim, J.-Y. (Jay), & Miner, A. S. (2007). Vicarious Learning from the Failures and Near-Failures of Others: Evidence from the U.S. Commercial Banking Industry. *Academy of Management Journal*, 50(3), 687–714. <https://doi.org/10.5465/amj.2007.25529755>

Lamb, N. H., & Roundy, P. (2016). The “ties that bind” board interlocks research: a systematic review. *Management Research Review*, 39(11), 1516–1542. <https://doi.org/10.1108/MRR-02-2015-0027>

Lieberman, M. B., & Asaba, S. (2006). Why Do Firms Imitate Each Other? *Academy of Management Review*, 31(2), 366–385. <https://doi.org/10.5465/amr.2006.20208686>

McKinsey & Company. (2025). *Uncertainty in M&A: Postcards from the new normal*. <https://www.mckinsey.com/capabilities/m-and-a/our-insights/uncertainty-in-m-and-a-postcards-from-the-new-normal>

Mills, C. W. (1956). *The Power Elite*. Oxford University Press.

Mizruchi, M. S. (1996). What Do Interlocks Do? An Analysis, Critique, and Assessment of Research on Interlocking Directorates. *Annual Review of Sociology*, 22(1), 271–298. <https://doi.org/10.1146/annurev.soc.22.1.271>

Mizruchi, M. S., & Stearns, L. B. (1988). A Longitudinal Study of the Formation of Interlocking Directorates. *Administrative Science Quarterly*, 33(2), 194. <https://doi.org/10.2307/2393055>

Moeller, Scott., & Brady, Christopher. (2014). *Intelligent M & A : navigating the mergers and acquisitions minefield*. Wiley.

Moscovici, S., & Zavalloni, M. (1969). The group as a polarizer of attitudes. *Journal of Personality and Social Psychology*, 12(2), 125–135. <https://doi.org/10.1037/h0027568>

Nahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *The Academy of Management Review*, 23(2), 242. <https://doi.org/10.2307/259373>

Nezami, M., Chisam, N., & Palmatier, R. W. (2025). Network centrality and firm performance: A meta-analysis. *Journal of the Academy of Marketing Science*, 53(1), 79–104. <https://doi.org/10.1007/s11747-024-01043-8>

Palmer, D. (1983). Broken Ties: Interlocking Directorates and Intercorporate Coordination. *Administrative Science Quarterly*, 28(1), 40. <https://doi.org/10.2307/2392384>

Palmer, D., Barber, B. M., Zhou, X., & Soysal, Y. (1995). The Friendly and Predatory Acquisition of Large U.S. Corporations in the 1960s: The Other Contested Terrain. *American Sociological Review*, 60(4), 469. <https://doi.org/10.2307/2096288>

Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row.

Pinelli, M., Chirico, F., De Massis, A., & Zattoni, A. (2024). Acquisition Relatedness in Family Firms: Do the Environment and the Institutional Context Matter? *Journal of Management Studies*, 61(4), 1562–1589. <https://doi.org/10.1111/joms.12932>

Podolny, J. M. (2001). Networks as the Pipes and Prisms of the Market. *American Journal of Sociology*, 107(1), 33–60. <https://doi.org/10.1086/323038>

Ragozzino, R., & Reuer, J. J. (2024). Implications of mergers and acquisitions for information disclosures in earnings calls. *Long Range Planning*, 57(1), 102393. <https://doi.org/10.1016/j.lrp.2023.102393>

Santella, P., Drago, C., Polo, A., Fico, P., Irace, D., Stecchini, M., & Ongena, S. (2007). *The Italian Chamber of Lords Sits on Listed Company Boards: An Empirical Analysis of Italian Listed Company Boards from 1998 to 2006* *The Italian Chamber of Lords Sits on Listed Company Boards An Empirical Analysis of Italian Listed Company Boards*.

Shleifer, A., & Vishny, R. W. (1997). A Survey of Corporate Governance. *The Journal of Finance*, 52(2), 737. <https://doi.org/10.2307/2329497>

Srinivasan, R., Wuyts, S., & Mallapragada, G. (2018). Corporate Board Interlocks and New Product Introductions. *Journal of Marketing*, 82(1), 132–148. <https://doi.org/10.1509/jm.16.0120>

Useem, Michael. (1984). *The inner circle : large corporations and the rise of business political activity in the U.S. and U.K.* Oxford University Press.

Wang, H., Zhao, J., Li, Y., & Li, C. (2015). Network centrality, organizational innovation, and performance: A meta-analysis. *Canadian Journal of Administrative Sciences / Revue Canadienne Des Sciences de l'Administration*, 32(3), 146–159. <https://doi.org/10.1002/cjas.1316>

Wasserman, S., & Faust, K. (1994). *Social Network Analysis*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511815478>

Welch, X., Pavićević, S., Keil, T., & Laamanen, T. (2020). The Pre-Deal Phase of Mergers and Acquisitions: A Review and Research Agenda. *Journal of Management*, 46(6), 843–878. <https://doi.org/10.1177/0149206319886908>

Worek, M. (2017). Mergers and acquisitions in family businesses: current literature and future insights. *Journal of Family Business Management*, 7(2), 177–206. <https://doi.org/10.1108/JFBM-04-2016-0009>

Xia, J., Ma, X., Tong, T. W., & Li, W. (2018). Network information and cross-border M&A activities. *Global Strategy Journal*, 8(2), 301–323. <https://doi.org/10.1002/gsj.1182>

Zahra, S. A., & Pearce, J. A. (1989). Boards of Directors and Corporate Financial Performance: A Review and Integrative Model. *Journal of Management*, 15(2), 291–334. <https://doi.org/10.1177/014920638901500208>

Zattoni, A. (2019). The evolution of corporate governance in Italy: formal convergence or path-dependence? *CORPORATE GOVERNANCE AND RESEARCH & DEVELOPMENT STUDIES*, 1, 13–35. <https://doi.org/10.3280/cgrds1-2019oa8799>

Zona, F., Gomez-Mejia, L. R., & Withers, M. C. (2018). Board Interlocks and Firm Performance: Toward a Combined Agency–Resource Dependence Perspective. *Journal of Management*, 44(2), 589–618. <https://doi.org/10.1177/0149206315579512>

