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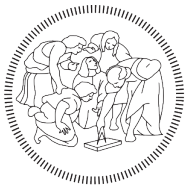

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Strategic Alliance Formation Experience and Its Antecedents For The Case of Investment Banking Industry

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Abstract (English)

This thesis focuses on the strategic alliances' formation between firms and will propose how to study this phenomenon within the investment banking industry. The initial public offering (IPO) of a firm encompasses underwriters who participate in a deal with the collaboration of other investment banks to finance the deal. This collaboration is perceived to form a strategic alliance for further IPOs and has an impact on future inter-firm relationships. Here, we will propose to study this type of alliance formation based on three major variables namely as complementarity, social capital and status similarity which have been defined by previous researchers in the same field.

Keywords: Strategic alliance, IPO, resource complementarity, status similarity, social capital, investment banking

Abstract (Italian)

Questa tesi si focalizza sulla formazione delle alleanze strategiche 'tra le imprese e proporrà come studiare questo fenomeno nel settore dell'investment banking. L'offerta pubblica iniziale (IPO) di una società comprende sottoscrittori che partecipano a un accordo con la collaborazione di altre banche di investimento al fine di finanziare l'affare. Questa collaborazione è percepito in modo da formare una alleanza strategica per le ulteriori IPO e hanno un impatto sulle future relazioni inter-impresa. Qui, ci proponiamo di studiare questo tipo di formazione di alleanze sulla base di tre variabili principali e cioè come complementarità, il capitale sociale e lo stato di somiglianza che sono stati definiti dai ricercatori precedenti nello stesso campo.

Parole chiave: Alleanza strategica, offerta pubblica iniziale, complementarità delle risorse, somiglianza di status, capitale sociale, investment banking

1. Introduction

Previous research has shed light on the causal effects of an alliance formation. The reason why firms cooperate and become an alliance was the subject of previous literature on strategic alliance formation. However, recent attention has shifted toward how to manage the strategic alliances more efficiently and how to make it an epidemic for the firms. It became the notion of Open Innovation to educate managers to collaborate more within their ecosystem and to benefit from the spillovers of knowledge by others (Chesbrough, 2003). A strategic alliance is defined as a cooperation agreement between two or more organizations that are willing to improve their performance and position in the competitive market (Ireland, Hitt, & Vaidyanath, 2002). Further, it is mentioned that the purpose of this alliance is to reaching important strategic targets that both organizations benefit from it (Wheelen & Hunger, 1995). Motivations to such phenomenon were described as to reduce the market failure which may arise due to lack of assets (Williamson, 1985), to increase the knowledge-sharing processes with other firms (Hamel, Doz, & Prahalad, 1989) and to strengthen the firm's position among other competitors in the market (Porter & Fuller, 1986). In addition to the aforementioned motivations, there are other benefits which make the firms to make a strategic alliance formation with other firms within the same industry or even outside that particular industry. For instance, it is defined by a scholar that the growth rate of a firm could be insufficient when only relying on its knowledge activities rather than when it makes alliances (Išoraitė, 2009). Reaching to global markets will require alliance formation, since the organization's value chain activities may not be sufficient to cover all the activities required to join the global markets. With the acceleration of technology, complexity in the business is arising and relying on itself, a company cannot accelerate its activities to counterbalance this complexity and rate of growth within the industry (Išoraitė, 2009).

But here, in this study, we mainly focus on the influences and antecedents of why a firm cooperates with another particular firm and make a strategic alliance. The reasons for such behavior were the subject of previous studies. Richardson once pointed out to resource complementarity as a driver for the inter-firm alliance formation (Richardson, 1972). Chung et al. stressed the importance of status similarity in alliance formation showing that there is a

positive correlation between the firms with a similar status allying together. Different studies have also emphasized the effects of firms' social networking with alliance formation (Chung, Singh, & Lee, 2000; Coleman, 1990; Gulati, 1995b; Podolny, 1994).

This research focuses on the U.S investment banking industry and will study the initial public offerings made from 1997 until 2014. The history of IPO goes back to 1898 when investment banks used syndication for the establishment of Federal Steel Company to pool their abilities for creating markets and distributing securities (Eccles & Crane, 1988). In syndication, underwriters (i.e. investment banking firms) take control of new stocks offering as if their capital. The difference between the market price of a share being sold and the price they underwrite is the margin they can benefit from. The risk and uncertainty of a new stock issue is the main and principal feature of this offering and it requires the underwriters to operate market-making activities and boosting the prices in capital markets (Chung et al., 2000).

In an offering, investment banks take different roles to better create value. Lead managers take the most contribution to the offering and their role is to generate the deal, pricing the offer and to allocate each underwriter's position within the syndication. They also underwrite and distribute the biggest share of the deal and take the responsibility and risk of buying the shares which may not be bought after the announcement of offering price. Co-managers and other participants are other constituents of the syndication, sharing and reducing the risks of security issuance (Baker, 1990). These participants are often selected based on three attributes they can make to the offering. Their distribution capacity, customer base, and area of expertise in the issuer's industry are those important factors that a lead manager relies on to select other investment banks as a strategic alliance. Consequently, these syndications are exemplars of strategic alliances.

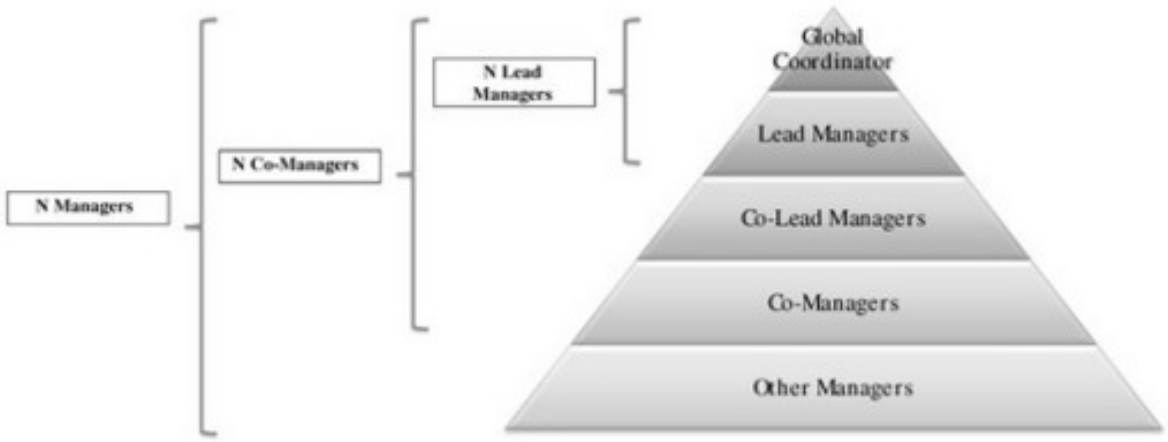

Figure 1- Syndicate structure based on Thomson SDC data adapted from Bernoussi et al., 2013

Traditionally, it is known that firms conservatively form alliances with others as the alliance partners are selected by the strict measures (Gulati, 1995; 1999). We aim to investigate this issue for investment banks by addressing resource complementarity, status similarity, and social capital.

2. Literature review

2.1. Strategic alliance formation

Strategic alliances are based on mutual collaboration and will ultimately lead the organizations to their predefined goals (Mockler, 1999). It is also explained that firms create an alliance formation with each other to be able to reduce the uncertainties about their strategic objectives by exploiting synergies. The members of an alliance share the costs, profits, and uncertainties of alliance formation together and they are indeed financially involved (Douma et al., 2000). It is believed that there are key indicators affecting alliance formation which are called opportunism, necessity, and speed (Dussauge & Garrette, 1995). While Gulati implies that alliance formation encompasses an exchange, sharing or co-development of new products or technologies (Gulati,

1995a), Porter points out to the forms of an alliance formation. He categorizes alliances to joint ventures, licenses, long term supply agreements and other types of inter-firm relationships (Porter, 1990). Furthermore, Isoraite explains that strategic alliances appear in the shape of joint ventures, outsourcing, affiliate marketing, technology licensing, distribution relationship, product licensing, distributors, franchising, and R&D (Išoraitė, 2009).

Defined above, strategic alliances have been also described to have common characteristics or similarities. The agreement of alliance formation can be contractual or non-contractual. Each of the partners has commitment and access to the resources of the other partner(s). At least two organizations are participating in the agreement. The participated members are holding common and clear strategic goals (Išoraitė, 2009).

The essential need for making an alliances arises when the partners conceive that they need to access to the competencies that they cannot develop internally. On the other hand, when there is not a possibility to acquire another company to achieve the predefined goals, firms often adopt an alliance formation option. The question here appears that, whether, the acquisition will benefit the parent company better than alliance formation or not. While having a strategic alliance together, the participated organizations are supposed to preserve their independence from each other (Bitran et al., 2002).

The organizations participated in a strategic alliance seek to achieve organizational objectives better through their cooperation rather than competition. Meanwhile, there are also some plausible problems generated at different levels of an alliance existence. To mention some, they are determinative on a scale that each member of the alliance has partial control over the investment and will benefit only to the extent they invest. It anticipates higher risks and expenses due to the inter-organization's appropriateness between two firms and as a consequence may cause lower co-operation and lead to alliance failure (Wheelen & Hunger, 1995).

Hoffman and Schlosser explained in their article that, managers and owners of a business can reduce the risk of alliance failure by having more knowledge regarding the detailed critical success factors. They believe that *soft* facts such as building a trust relationship with the partners along with *hard* facts (e.g. appropriateness of organization design and strategic compatibility) are those factors needed to achieve success in alliance formation (Hoffmann & Schlosser, 2001).

Biggs (2006) has explained the CSFs (critical success factor) that affect strategic alliances between firms. These factors are depicted in figure 2.

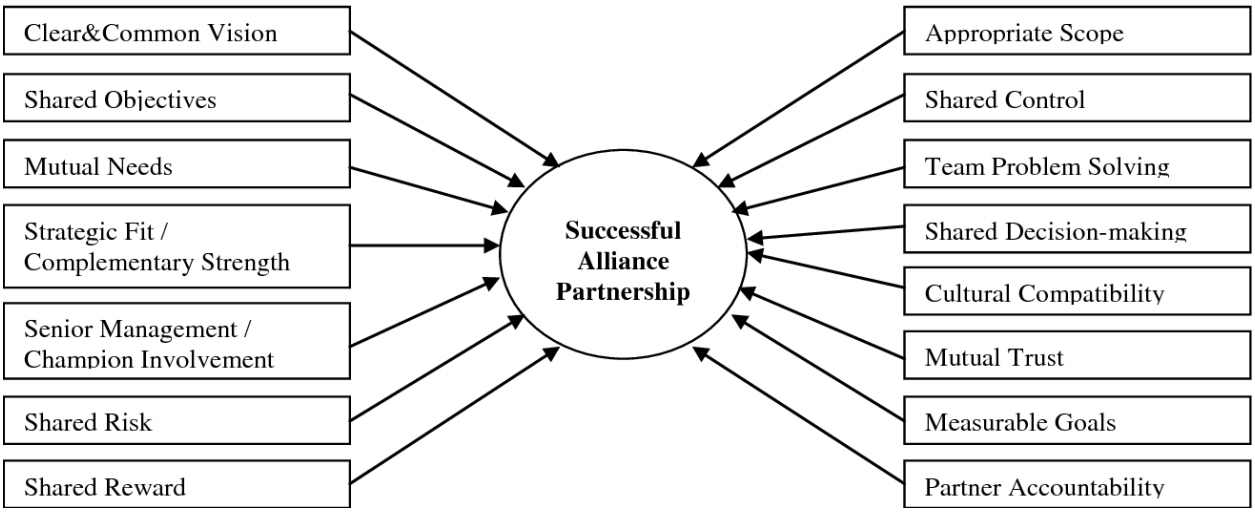

Figure 2 - Critical Success Factors affecting Strategic Alliances (Biggs, 2006)

There is a prevalent strategy for companies to establish a strategic alliance with another company that holds a good reputation and fame in the market to improve the brand image and distribution networks. Often, this strategy helps smaller firms to enter the market more quickly (Išoraitė, 2009).

Furthermore, in a previous study, four benefits of strategic alliance formation are described which comprehend the same beliefs for the motivations of creating a strategic alliance between firms.

The researcher has demonstrated that by making strategic alliances, firms will overcome the difficulties of entering a market, hence joining the market easier and at a greater pace. Second, the risks affiliated with the new business or a new product will be shared accordingly and the uncertainties which are the nature of entering a market will be reduced. Third, each firm has a lack of knowledge or expertise and by this alliance formation, the knowledge and expertise will be shared and the firms will be complementary to each other's lack of expertise. And finally, the

synergy brought by this alliance formation will lead to better competitive advantage in the market (Soares, 2007).

This thesis covers the effects of antecedents of strategic alliance formation on the case of the investment banking industry. Previous studies primarily focused on resource complementarity, status similarity, and social capital as prominent factors that are counted by the firms to form an alliance (Chung et al., 2000).

2.2. Resource complementarity

The literature on complementarity has often compared the situation of complementarity effects on strategic alliance formation and acquisitions. For instance, Harrison et al. (2001) express that in the case of a high level of uncertainty, alliances are preferred over acquisitions as the former provides more strategic flexibility and may reduce risk. In an alliance formation, partners generally provide resources to each other; hence there is access to the partner resources freely. Thus, in this situation, the firms look for those partners that can complement their lack of resources. As an approval to this claim, Teece proves that established companies within the technology-intensive industry which often lack exclusive control over rent-generating make strong alliances with emerging firms that lack sufficient distribution capabilities (Teece, 1986). Stuart has also demonstrated that younger companies with lower technology knowledge are inclined toward making an alliance with the older and larger firms with leading technology profiles (Stuart, 2000). In other words, he argues that the resource profile of a firm is an important factor for other firms to rely on while deciding with whom to co-operate. Other scholars have stressed that mutual benefits can be obtained for a partner of an alliance only when they are complementary to each other's weaknesses because accessing each other's complementary capabilities could be easily possible (Hamel et al., 1989). Doz (1988) believes that what brought the firms for an alliance formation negotiation was the primary essence of complementarity in assets and resources.

In another study of international alliances, researchers have found that the main driver of alliance formation for a developed market differs from what attracts a firm within an emerging market. While the prior insists on leveraging their resources by factors such as unique competencies and local market knowledge, the latter focuses on financial assets, technical capabilities, intangible assets and tendency to share knowledge and expertise (Lane & Lubatkin, 1998).

Previous scholars also explained that companies enter inter-organizational relationships to enhance their legitimacy by improving their fame in institutional environments (Eisenhardt & Schoonhoven, 1996; Lin, Yang, & Arya, 2009).

In his research, Inkpen has concentrated on the learning benefits of an alliance formation which will become in hands of all the partners. He describes that knowledge is transmitted through reciprocal interdependence, problem solving and observations of alliance activities. Then he suggests that, when a firm learns from an alliance, it can internalize such knowledge within the value chain activities of itself and is applied to the outside of the alliance's activities. Therefore it will be interesting enough to have an alliance formation once necessary and grasping skills that would not have been acquired if the alliance has not been formed (Inkpen, 1996; Khanna, Gulati, & Nohria, 1998). He continues stressing out the importance of complementarity in the alliance formation and expresses that the firms have brought together in the shape of alliance formation due to the strategic complementarity, different skills, and knowledge required by the partners (Inkpen, 2009). Though, it is a principle that alliances need to be managed effectively to create and capture the value as poor management can lead to a failure of alliances and the fame of participants (Harrison et al., 2001; Ireland et al., 2002).

The resource complementarity and its effects on alliance formation have been under study within different industry contexts. For instance, Shan and Hamilton's (1991) finding supported the logic of complementarity in forming strategic alliances within the biotechnology industry (Shan & Hamilton, 1991). On the other hand, it has been demonstrated that in the automobile industry, organizations form alliances in a complementarity manner (Nohria & Garcia-Pont, 1991).

2.3. Status similarity

According to Washington and Zajac (2005), Status implies *"a socially constructed, intersubjectively agreed-upon and accepted ordering or ranking of individuals, groups, organizations, or activities in a social system"*. It is noteworthy to refer that status is different from the economic concept of fame. Previous scholars have separated status into two different categories: societal and network status (Lin et al., 2009).

Societal status refers to society-related factors. For instance, the social ranking will be based on the extent that a firm conforms to the social norms. Corporate social responsibility, innovativeness, financial robustness, ability to preserve talents, etc. are examples of this category. Network status is defined based on an organization's positional situation in its inter-organization networks. A firm is supposed to have a high network status as it holds strong ties with other firms in its inter-organization networks that preserve strong ties with their inter-organization networks and so on (Jensen, 2003; Lin et al., 2009).

Stuart et al. argued in their research that, making technology alliances with a high-status organization will have an endorsement by the audiences and will have a positive image regarding the quality of the smaller firm (Stuart, Hoang, & Hybels, 1999). In another research, Stuart explains that making an alliance with a high-status organization is costly and requires a timely and rigorous negotiation. The organizations with a high-status are selective in their alliance formation since forming an alliance with a lower-status organization might degrade the reputation in the case of a stigmatist partner (Stuart, 2000). Podolny also supports the claim that new ventures prefer to form an alliance with higher-status organizations to improve their social standing. For example, forming an alliance with IBM or Microsoft will result in the new firm to have more benefits rather than forming an alliance with a partner of similar status. In contrast, organizations with higher-status tend to form an alliance with the organizations of similar status as it yields less risk of image deterioration (Lin et al., 2009; Podolny, 1994). Findings of another research demonstrate that organizations with low societal status will benefit from forming an alliance with higher-status organizations, while organizations with a low network-status may not be able to benefit from such an alliance (Lin et al., 2009).

The literature on strategic management has also contributed to another notion to the firm's status and its relationship to the alliance formation. For instance, Chung et al. identified that in the banking industry, firms with a similar status tend to form an alliance and extracting value from it better than with other-status organizations. Three possible explanations employed to illustrate this behavior. The first explanation bespeaks of the same manner that happens for individuals and is due to the signaling role of social interaction. It is believed that, when the quality measure of status for a firm is vague, the perceived status by others is related and dependent on other organizations that the focal firm interacts with (Camic, 1992; Chung et al., 2000; Podolny, 1993). As in the case of IPO, since the uncertainty of the transaction is ambiguous, therefore, the signaling role of firms persuades them to form an alliance with investment banks of similar status. Besides, as in the case of junk bonds underwriting (Podolny, 1994; Weston & Copeland, 1992), it can be generalized for the new common stock issue underwriting that investment banks tend to form alliances with organizations of similar status.

The second rationale behind this claim is the process of competitive isomorphism which suggests that firms of similar status having similar operating systems. These similar operating systems will catalyze the effective cooperation between the partners of a potential alliance. For instance, companies with a similar administrative system will find it easier to cooperate and extract value from their alliance formation (Chung et al., 2000; Hannan & Freeman, 1977).

Third, it is proposed that organizations with similar status will perform a homogenous level of fairness and commitment to sharing the benefits and costs of the alliance. Accordingly, the dissimilarity between firms' status may discourage partners of an alliance from being committed to the progress of alliance goals and to not devote the same level of resources to their cooperation. Therefore, the anticipated conflict of interests between organizations with different levels of status may lead to an ineffective alliance formation (Chung et al., 2000).

The explanations above are convincing enough to conclude that organizations with similar status have a tendency toward alliance formation and are supposed to perform more effectively but the findings of Lin et al. are opposed to this notion.

2.4. Social Capital

Relying on a previous scholar's definition of a firm's social capital, social capital implies the relationships with external parties which will be beneficial for the future of the firm(s) (Burt, 1992; Chung et al., 2000; Coleman, 1990). The current situations of a firm's social capital are dependent on the previous relationships/alliances that a firm has established, thus, the firm's future social capital will be defined by the contemporary social relations of the firm. Engaging in social activities and maintaining social relations with other players of the market will save firms significant costs for accessing important information and knowledge and will provide them economic opportunities (Baker, 1994; Chung et al., 2000; Uzzi, 1996).

The process of alliance formation starts with selecting an appropriate partner, thus, having established a prior relationship with firms will reduce the cost of searching for the potential partner. In other words, having strong social capital relationships will save the costs of firms and help them to find a suitable partner in no time. By this, we believe that social capital is another important factor for the strategic alliance formation. Ben-Porath (1980) has argued in its research that, firms are likely to establish a relationship and exchange economic opportunities with the firms they had collaborated with before. Considering that finding a partner with a complementary resource is costly and takes time, the prior direct and indirect alliance relationships will be a good alternative for the selection of a partner in alliance formation.

In their research, Chung et al. (2000) classified a firm's social capital into three distinctive categories: 1- Direct prior alliance experience 2- Indirect prior alliance experience 3- Reciprocity in exchanging alliance opportunities.

2.4.1. Direct prior alliance experience

Studies in strategic management have explained that forming an alliance with a reliable partner that has previously participated in a strategic relationship with the firm is a rational decision and can be an alternative to searching for the new partners (Chung et al., 2000). Gulati also describes the same situation happening for the companies which had formed an alliance in joint venture experience (Gulati, 1995b). It is again reported in another research that Japanese carmakers reoriented toward the same supplier relationship when they were opening their production line in the U.S. (Martin, Mitchell, & Swaminathan, 1995).

Consistent with their primary literature on direct prior alliance experience, Chung et al. discussed further theories about the orientation of firms toward alliance formation. They demonstrated that a firm's direct prior alliance experience with a particular partner has an inverted U-shape relationship with the probability of the firm giving another chance for the alliance formation to that partner. In other words, there is an optimum number of direct prior alliance experiences for every alliance and after that, the probability of making the same alliances together gets reduced (Chung et al., 2000). They proposed two arguments and supporting evidence which can describe the drawbacks of this reality. The first argument is the marginal information value and was suggested by Gulati explaining that the more the numbers of prior alliance experience between two particular firms happen, the less the information and knowledge-sharing between two firms can happen. In other words, it is the saturation of information exchange between two firms and the principal motivation for forming an alliance which has been taken down (Chung et al., 2000; Gulati, 1995a).

The second argument is the balanced network which is explained under scrutiny by Uzzi and Baker. It is believed that each firm needs to maintain an arms-length relationship with other partners along with preserving embedded ties with other firms. This describes the exact definition of an inverted U-shape relationship for the alliance formation and prior ties. Firms that keep their relationship with only a few partners have limited options of information exchange and make alliance formation, consequently, they miss the opportunity of having various inter-organization information and lower prices (Baker, 1990; Uzzi, 1997). These are the negative consequences of holding an arms-length relationship with other partners which will not be gracious for the firms in the long term. On the other hand, holding an embedded relationship with other firms may have negative consequences that will not be embraced for a long term

strategy by the firm. Depending on the fact that changing the partners over time will result in a lower trust between firms and there won't be any convincing reason to continue the partnership. In this situation, the firm will lose the advantage of having a long-term relationship with a firm, hence losing the benefits of having critical information in hand, entering a trial and error process of partner selection which yields more risk and uncertainty.

Therefore, it is suggested that firms keep a balancing relationship strategy to benefit opportunities to the optimum level. However this optimum level is not measured by previous scholars, there are traces of firms adopting this strategy by employing neither few nor many particular partners in their alliance strategy (Baker, 1990). A mixed strategy of arm-length relationship which causes flexible adaption to market demands and embedded relationship which enriches the network for the firm is necessary for their alliance formation strategy (Chung et al., 2000; Uzzi, 1997).

2.4.2. Indirect prior alliance experience

Two firm's indirect prior relationship is formed through third parties. In our case of study, investment banking, the lead underwriters can be suggested a potential partner (syndicate member) through a referral of co-managers. The indirect tie may be efficient due to the reason that both partners can get information about the counterpart simultaneously thanks to the existence of the third party in the alliance. In this scenario, partners can understand, evaluate and trust each other through the mediation and representation of the third party. After a trustworthy relationship between the potential partners, the third party can extend its referral to the other firms seeking a reliable partner. Here, the third parties' referral network acts as a driver of direct ties. Due to the referral system and the network of relationships between firms, opportunistic behavior by each of the partners is inhibited and thus this increases the likelihood of this type of alliance formation. As a result, it is perceived that if the number of indirect prior alliance formation between two particular firms increases, there will be more likely to the partners to form future alliances (Chung et al., 2000).

Again, the arguments about direct prior alliance experience are applicable. As long as an indirect prior alliance can be alternative to the direct prior alliance, the balancing network argument and marginal information value logic appear.

2.4.3. Reciprocity in opportunity exchange

Reciprocity in opportunity exchange is an effect of the long term and repetitive partnership between organizations. A long term partner prefers a firm which has played the role of new business opportunities' informant, as a future partner in the alliance over the ordinary firms. Sharing benefits of an economic opportunity in risky conditions and tolerating the uncertainties and costs involved in the collaboration are the fundamentals of reciprocity. The tendency toward such behavior is the principle of trust and therefore, an essential part of long term alliance partnership. Trust is gained by the persistence of partnership through reciprocal exchanges. Being a trustworthy partner in an alliance will benefit firms and in the case of a third party existence within the alliance, mutual trust will attract the interests of third parties. Repetitive cooperation and partnership will improve the reputation of the firms and it will increase the likelihood of an alliance formation proposal by a third party. Thus, it is hypothesized that the chances of an alliance formation between two certain partners increase with reciprocal exchanges of alliance opportunities (Chung et al., 2000).

3. Methodology

This study is a reconfiguration and adaptation of Chung et al. (2000) research on alliance formation for the specific case of the investment banking industry. Further, this research selected data for IPO deals and contrary to the previous research, it does not concentrate on secondary

offerings. Besides, we have gathered data for the years 1997 – 2014 while previous researchers had selected data between the years of 1980 until 1989.

This research aims to answer the question that *"what are the effects of strategic alliance formation antecedents on the gathering of investment banks during the initial public offerings?"*

3.1. Data Collection

An IPO consists of investment banks that ally together by sharing the risk of uncertainty about the deal and to divide its investment costs to finally make a benefit. Therefore the constituents of an IPO are the investment banks that are willing to cooperate and share the benefits and costs of the underwriting of a deal. In other words, the choice of the investment banking industry facilitates the study of the firm's selection of partners in alliance formation.

Our first task was to gather data regarding the IPO process in the U.S. market. We have gathered a complete dataset of U.S. firms that have entered the stock exchange market between the years of 1997 and 2014. This dataset consists of each IPO with their diverse underwriters' roles and their corresponding investment banks, the number of shares and the price of deal for each IPO, etc. This dataset consists of 5440 number of companies going through an IPO process in the U.S. market. Particular attention has been paid to stay far from error and inaccuracy. Therefore, we used two reliable sources for data collection which were complementary to each other and helped us to stay sure about the robustness of data. NASDAQ which is abbreviated for the National Association of Securities Dealers Automated Quotations gives free access to a website platform and all the data regarding an IPO is archived on the website. The website offers a varied range of information about an IPO such as an overview of the company, offer price, shares offered, price date and CIK number. CIK number is a unique number and the symbol of a specific IPO deal. In

Financials and Filings section of an IPO, different files are provided. These files include registration files and the final prospectus file. However in the NASDAQ website, for some IPOs the final prospectus is not available, thus, we have used SEC company filings' portal to find

accurate information about the underwritings. SEC is the abbreviation for the Securities and Exchange Commission and provides an even bigger range of information about an IPO in comparison with NASDAQ and is more organized and accurate.

To achieve a better and more reliable data, we checked the match between NASDAQ and SDC database to add missing plausible IPOs. To get the data more organized and for the sake of ease, each IPO in the list was associated with a unique integer identifier. Detailed data on syndicate participation was provided for each IPO. For the missing IPOs, each underwriter's role allocation was prepared through the final prospectus files available on SEC pages. These investment banks play different roles in an IPO. Lead underwriters, Co-managers and Syndicate members are three categorizations of the underwriting procedure. Although different people used different labels for each role explained above. According to Cowin & Schultz, we utilized the same classification roles of underwriters as in their research (Corwin & Schultz, 2005):

• **Book manager:** Lead underwriter, Lead manager, Book runner, Joint book runner, Lead placement agent, Lead bank

• **Co-manager:** Co-manager, Joint lead manager, Co-placement, Co-lead manager

• **Syndicate member:** Syndicate member

However, duplication of results was visible in our dataset, thus we aimed to remove the redundant results. To do so, every IPOs collected through NASDAQ were double-checked in the final prospectus.

The issuer could also offer shares outside the United States. In other words, international investment banks were participating in the deal as international underwriters. These two distinct underwriters were not separated through the dataset and were combined because in most cases the investment banks were the same for both domestic and international underwritings. Therefore we removed the duplications and created a separate identifier for the international underwritings and domestic underwritings.

In the next step, we collected data regarding the measures which will be defined in the next chapter of this research. The headquarter location for every investment banks participated in the underwriting deals got collected through Bloomberg website to assess one measure of complementarity. For the locational strength and industry strength, again we collected the relevant data on the location of the firms and the industry they were operating through the SEC webpage of the deal. For the direct tie, co-participation and reciprocity which are all social capital's constructs, we used STATA software to separate and analyze the pre-prepared data.

Overall, we can summarize the data that we have collected for our IPOs as below:

IDX number (unique identifier), company name, ticker, SDC name, deal number, date priced, shares offered, US company, SIC code, exchange, offer price, original middle of the filing price range, stock price 1 day after, change stock price 1 day after, offering type.

For the syndication table, the data were in these shapes:

Underwriters, underwriter roles, number of shares, IDX, normalized name, ID (normalized name 7 digit code), headquarters location for the banks, state location of the company and industry code in which company operates.

3.2. Measurement

3.2.1. Complementarity

Gulati (1995) has explained that complementarity between firms within the same industry is the non-overlap of the niches that the firms manipulate. Although different concepts can be made for the niche of the investment banking industry, we rely on the definitions utilized in previous research of Chung et al. (2000): issuers and investors.

Therefore, the type of investor and headquarters location are the measures used for the issuer-base definition and locational strength and industry strength are two other constructs used by the previous study for the investor-base definition of complementarity.

3.2.1.1. Type of investor

Banks are specialized in their distribution networks to individual investors or institutional investors. From the bank perspective, some bankers deal with individual investors and are called retailing registered representatives (RRR) and on the other hand, some bankers are specialized in dealing with institutional investors and are called institutional registered representative (IRR). It is believed that a firm is specialized in the market for individual investors if the proportion of IRRs among all representatives that a bank employs becomes less. 1988). Described by Chung et al. we refer to their definition for measuring this variable:

"The variable type of investors measures the degree of non-overlap by the absolute difference between the proportion of IRRs [IRRs / (IRRs+RRRs)] of the lead bank and that of a potential partner."

3.2.1.2. Headquarters location

This is explained by the fact that, when two banks' headquarters are located in a similar state, their customer base is anticipated to overlap, therefore indicating a lower level of complementarity to each other.

3.2.1.3. Locational strength

It is defined as the degree of non-overlap between an issuer location and a bank's dyad issuer location.

3.2.1.4. Industry strength

Like the previous variable, the degree of non-overlap in the industry sector between the bank dyad's issuers.

3.2.2. Status similarity

Following Bonacich (1987), Podolny (1994) and Chung et al. (2000), there is a formula that evaluates the similarity of status between two investment banks based on their position within underwriting a deal. In 'tombstone advertisement' which is available in *Investment Dealer's Digest*, brackets are defined to separate each investment banking roles and those banks within the same bracket are considered to be of similar status.

3.2.3. Social capital

3.2.3.1. Direct tie

This variable is measured by the number of alliance formation for a lead bank offering to a potential partner for syndicate participation. We also evaluate the square meter of this term to assess the inverted U-shape hypothesis soundness.

3.2.3.2. Co-participation

This variable explains the number of deals managed by third parties in which both lead underwriters and potential partners participate as syndicate members.

3.2.3.3. Reciprocity

The measurement notion of this variable lies behind the number of deals given to the lead bank by the potential partner and the reciprocity action from the lead bank to the potential partner.

For some of the constructs explained above, we were not able to capture relevant data and as our study aims to examine the same structure of previous research and to replicate the same elements in a greater scale, due to the sake of ease we did not consider those measures in our research but we suggest further scholars consider those constructs in their studies. Thus, in table 1, the variables used in our study and their related measures are provided:

Variable	Definition
Headquarters location	1 if Lead bank and Partner bank are located in different headquarters; 0 otherwise
Locational strength	Degree of non-overlap in clientele's location between Lead bank and Partner bank
Industry strength	Degree of non-overlap in clientele's industry between Lead bank and Partner bank

Direct tie	No. of deals offered to Partner bank by Lead bank
Indirect tie	No. of co-participations by Lead bank and Partner bank in third parties' deals
Reciprocity	(Number of deals offered to Lead bank by Partner bank + 1)/ (Number of deals offered to Partner bank by Lead bank + 1)

Table 1 - Constructs of the study (based on Chung et al., 2000)

4. Conclusion

This research aimed to describe the effects of prominent factors and antecedents of strategic alliance formation on this matter. Therefore, this thesis provides some important propositions for the case of the investment banking industry based on this theoretical knowledge.

In our case of study (investment banking industry), different levels of investment are required and the small investment banks will not be able to participate in an underwriting of an IPO. They rather making an alliance with other banks who retain bigger portfolios. In fact, as the volume of transactions is relatively high, not any banks can merely join the underwriting procedure without making an alliance with other investment banks. From another point of view, the associated risks of an IPO are sufficiently high that an investment bank does not take the mere responsibility of underwriting the offer. Accessing to the required and complementary resources is not feasible through market mechanisms and relying on the internal resources of the firm is not an optimal choice for an organization within the investment banking industry. Therefore, the leading underwriters of an IPO have sufficient willingness to make alliances with those firms that can provide complementary assets/resources to the book runner of an IPO (Chung et al., 2000). Consequently, we propose that investment banks with higher levels of complementarity (assets/resources) are more likely to make an alliance together. In other words, the more resource

complementarity between investment banks, the more the probability of strategic alliance formation between them.

Besides, this study explained that higher status similar organizations may form strategic alliances to achieve their goal. It is proposed that investment banks with a similar degree of organizational status may be the plausible allies for underwriting the initial public offerings.

Concerning the social capital factor, this thesis proposes that an investment bank's direct prior alliance experience with a particular partner has an inverted U-shape relationship with the probability of the investment bank giving another chance for the alliance formation to that partner.

The same pattern is proposed concerning the indirect ties construct. The high number of indirect ties between lead manager and syndicate member in the past will demotivate the lead manager to continue the alliance with that particular partner. This behavior again is demonstrated within Chung et al. (2000) study and it is anticipated that an investment bank's indirect prior alliance experience with a partner has an inverted U-shape relationship with the probability of the firm having future alliance formation with that partner.

The reciprocity construct follows the same paradigm. As it is known that the investment banks increase their tie's strength with previous partners by offering them to ally, they preserve the trust element for the further coalitions. Therefore, by reciprocating the transfer of opportunities, the likelihood of an investment bank alliance formation with another bank gets increased.

5. Limitations

This thesis was not without limitations. While it was a reconfiguration and a replication of a previous study, it aimed to study the contemporary relations between investment banks in recent ages. However, this study focused on the 1997 - 2014 period of IPO underwriting, and during this period, the financial crisis hit the U.S. and global economy. It is anticipated to observe fluctuations in the volume of transactions for that period. Should the crisis affects the alliance

formation between investment banks, it is unknown to us and needs to be investigated. Further research can aim at focusing on this subject.

Further, recent developments both in academia and practice resulted in an emergence of open innovation phenomenon which is based on alliance formation. However, the transfer of knowledge and technology may happen in different forms. In case the investment banks lack knowledge that can be appropriated through open innovation means, it would be hard to figure the alliance formation merely based on an IPO syndicate. However, in this study, we intentionally addressed the issue of strategic alliance formation by looking at the underwriting of IPOs in the recent ages of the U.S. economy.

Also, neglecting the effect of social capital on the future alliance of an investment bank, their potential partners in forming an alliance will be shaped by the resource complementarity and status similarity subjects. This list, we expect, to be consisting of the same of their social capital. After all, the circle of a trusted network whom they made coalitions before is based on the mentioned factors (direct tie, reciprocity, and indirect ties). Therefore, we cannot confirm if the social capital constructs weighted heavier than two other measures for the investment banks selecting their strategic alliance partner(s).

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