Department of
Business and Management

Chair of
Performance measurement
and Financial Reporting

The Link Between Board Characteristics and The Possibility To Undertake An M&A Transaction

SUPERVISOR
Prof.ssa Barbara Sveva Magnanelli

CANDIDATE
Andrea Cecchini
Student Nr.684931

ASSISTANT SUPERVISOR
Prof.ssa Elisa Raoli

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Summary

Introduction

The aim of this work is to analyse how the companies' governance affects the number of M&A transactions undertaken by firms. The focus will be on the characteristics of the board of directors with particular attention to three main variables: the number of independent directors, the board size and the number of female directors. Those variables will be the starting point for the creation of the three hypotheses that this work is going to evaluate.

The topic has been chosen considering the importance that the (so called) "extraordinary finance operations" have in the strategies' decision-making process. The M&A is increasingly becoming one of the strategies more often adopted by firms because of the advantages they bring to the acquirer company. However, many risks are linked with those operations if the transactions are not managed considering the effective value of the ownership stakes of the target company and the intrinsic difficulties of the integration of different corporate cultures.

The work is divided in three main parts:

1. The first chapter provides an overview about the M&A activities analysing separately mergers and acquisitions and the forms that they can assume. Moreover, it gives some information about the history of the M&A and the trend of this strategy worldwide and in Italy.
2. The second chapter focuses on the board of directors. It outlines the board's main characteristics and its role in the M&A transactions.
3. The third and last chapter reviews the phases of the empirical study, starting from the hypotheses to arrive at the results of the computations.

CHAPTER 1: An overview of M&A activities

Many companies are struggling to survive in today's business environment, which is uncertain, fast changing, and in continuous evolution. Competition has become fiercer and as a consequence, in order to overcome their rivals, firms are seeking growth opportunities to gain optimal market share, acquire knowledge, skills and capabilities, which enable them to obtain a sustainable competitive advantage. In this context, the solution adopted by many companies is to pursue external growth strategies namely, M&A operations which are considered to be the easiest and fastest way to grow (Snichelotto and Pegoraro, 2009). The increase in the dimension of a company relies on "extraordinary finance operations[1]" these operations are aimed at rebuilding and innovating the structure, the management and the organization of a firm. This becomes extremely relevant also in the Italian context, mainly characterized by numerous firms of small and medium size, which, in the new globalized business environment, need to adapt and pursue growth strategies in order to acquire the features needed for survival.

1.1 Growth Strategies

The increase in the dimension of a firm can be internal or external.

1.1.1 Internal Growth

Firms use the internal growth strategy mainly to create production capacity in new businesses through vertical or/and horizontal integration[2]. This strategy generally brings to:

- The development of new products (adding new products to the portfolio)
- The development of related strategies (like extending a line of product adding incremental or complementary products)

[1] These are operations that increase the amount and the composition of the companies' liabilities because they are financed in unusual ways.

[2] Vertical integration: when a firm expands its business acquiring companies that operate in different steps of the same value chain (suppliers and/or distributors).
Horizontal integration: when a firm expands its business acquiring companies that are at the same level of the value chain in different or similar business.

- The international expansion (export or FDI)

It is important to understand the main pros and cons linked to internal growth strategies.

Pros:

- Incremental growth: the firms develop competences and knowledge inside the company
- Provides maximum control: the firms that decides to grow internally has the perfect control over the growth process because it does not have to deal with an external partner
- Preserves organizational culture: because there is no need to involve other firms in the process and the firm can follow its procedures and its habits
- Encourage internal entrepreneurship: it is a way to stimulate employees creativity and motivation at each level of the organization

Cons:

- Time: the internal growth takes a lot of time to become effective and for this reason it is not appropriate in market where there are fast changes or when there is an opportunity that has to be caught rapidly.
- Need to develop new resources: the development of new resources sometimes requires knowledge that might take too much time and too many investments to be developed internally.
- Path-dependency: the internal growth could force the firms to follow that path because they might still have invested a lot on that strategy and they need to catch back the investments.
- Adds to industry capacity: the risk is to add more supply to an industry that is already mature and is going to decline.

1.1.2 External Growth

External growth strategies are used to increase the firms' dimensions through the establishment of relationships with external partners. Firms are increasingly moving towards external growth strategies to speed up the dimension increase process, using competencies and knowledge that they do not have inside.

There are pros and cons linked with the development of an external growth strategies.

Pros:

- Reducing competition: through an agreement with a competitor it is possible to reduce the competition pressure because you are moderating the competition effects.
- Access to proprietary products: firms can use partners' licenses to develop new products.
- Gaining access to new markets: through partnerships it is possible to expand the firm's business in new markets without investing big capitals.
- Access to technical expertise or/and to an established brand name: external growth gives firms the access to expertise, resources and knowledge that they do not have inside.
- Economies of scale: it helps firms to increase the scale effects because they are increasing their dimension.
- Diversification of business risk: this is also a way to split the risks of the activity with a partner.

Cons:

- Incompatibility of top management and clash in corporate culture: external growth strategies can bring companies to troubles in terms of different managers, cultures, values and internal assets.
- Operational problems: there might be operational problems because the increase in the dimension can bring to the redundancy of some activities.
- Increased business complexity and loss in organizational flexibility: more coordination costs, more time needed by the coordination.
- Antitrust implications: formal and institutional constraints or disadvantages arise during the operations.

It is possible to outline four main external growth strategies:

1. *Strategic alliances*: are formal relationships among two or more firms that decide to share strategies even if they remain independent one each other.

2. *Joint Venture*: are contractual agreements among two or more firms aimed to seek a specific goal without compromise the independence of the companies involved in the agreement.

3. *Licensing and Franchising*: are business arrangements in which one company gives another company permission to manufacture its products for a specific payment.

4. *M&A*

   One way to increase the size of a company using external resources is the acquisition of a completely different firm or the merger with it. Through this strategy, the firms involved in the process decide to lose their independence to increase the dimension and hence gain market power. This extraordinary finance operation has attracted many companies in recent years due to its various and relevant advantages. However, this strategy is very complex and sometimes instead of having positive effects it may lead to the decline and failure of a company. Both risks and opportunities of engaging in M&A activity will be described in the following sections.

1.2 Definition

Even if merger and acquisition are two different strategies most of the literature tends to talk about them together because their goals in most of the cases are the same. They are both mainly aimed at improving the management of a company and to build a competitive advantage sustainable over time. They both allow firms to explore new markets and business through the development of new products or technologies.

However, there are many differences between mergers and acquisitions.

1.2.1 Mergers

A merger is an extraordinary finance operation that involves two or more firms and it is a voluntary fusion among them, aimed to create a completely new company (Campobasso, 2015). The companies that decide to merge move all their capital to the new company and they participate to the earnings in the size of the capital given. Generally, the firms that agree to merge have a lot of similarities in terms of dimension, structure, customers and organization. The goals of this strategy are to gain market share, reduce costs of operations, expand in new territories and/or explore new products and obviously increase profits.

1.2.2 Acquisitions

An acquisition is a corporate strategy in which a firm buys all or most of the ownership stake of another firm (Campobasso, 2015). This "extraordinary finance operation" is aimed to obtain the control of the target company through the acquisition of 50% or more of its shares. This strategy allows firms to obtain economies of scale[3] or of scope[4], to increase market share, to vertical integrate with a supplier or a dealer and to change the structure and the organization of the firm to make it more efficient.

There are different ways to finance an acquisition:

- Private equity financing: the money comes from private investors (venture capital) interested in the profits coming from the increase in the share value of the corporate financed. Generally, it occurs when there are entrepreneurial opportunities.
- Equity financing: the buyer firm sells securities or assets to gain the money to proceed with the acquisition on its own without asking money to external financers.

[3] When a firm increasing, the output reduces the cost per unit of a product.
[4] When it is cheaper for a firm to produce a variety of products together instead of on their own.

- Bank financing: this form of financing can assume many forms. The most common is the cash flow-based loan where the amount of money given by the bank is calculated on the profitability of the target company.

There are many ways to realize acquisition operations:

- Tout court: generally, it takes place out of the stock market and the payments are in cash
- Leverage buy out (LVO): this acquisition strategy is based on the loans. Most of the costs of the operations are covered by borrowed money and the assets of the target company are used as warranty for the loans. This strategy allows the acquisition of big company without the commitment of huge capitals.

- OPA: it is an offer aimed to buy most the ownership stake of the target firm. It can assume many forms:
  - Voluntary: when the offer comes from the buyer company
  - Mandatory: when the regulator impose to buy all the target company's share
  - Friendly: when the board directors of the target company approve, the acquisition offer
  - Hostile: when the acquiror offers to buy shares at a price 20% higher than the market price. It is a hostile offer because the buying company do not ask the permission to the player that owns most OF the ownership stakes. Generally, the acquiror buys a minority amount of shares before trying a hostile OPA.

- Raid: the buying company tries to acquire controlling stakes gathering minority stakes gradually

1.2.3 Forms of M&A

There are various types of M&A operations:

- *Conglomerate*: it occurs among two or more firms that operate in unrelated business. This is a diversification strategy because the companies that merge want to approach new market with new products and different technologies. There are two types of conglomerate merger:
    1) Pure conglomerate: when the firms have nothing in common
    2) Mixed conglomerate: when the firms are trying to acquire new product or more geographical extension through the merger even if they still operate in unrelated business.

- *Congeneric or (Product Extension Merger*): this kind of merger is done among companies that have overlapping factors such as technology, R&D, production process, marketing etc. to increase the number of available customers. Generally, this kind of merger is aimed to put together different product lines coming from different firms.
- *Market Extension:* this kind of merger is aimed to expand in other market and it is done from companies that sell the same product in different geographical area or market.
- *Horizontal:* horizontal mergers involve firms operating in the same market and producing the same product. This strategy allows companies to acquire a bigger market share, to eliminate effective or potential competitors and to acquire new competencies.
- *Vertical:* vertical mergers occur when companies operating at different level of the same supply change decide to merger. This merger increase the communication and the synergy among the firms and reduce the overall cost of production.

1.3 Phases of the M&A process

The M&A process is complex and it is divided in several phases that must be analysed carefully by firms in order to understand if undertaking this strategy could actually create additional value or not. It is an extremely expensive and risky activity and for this reason, companies should take into consideration every aspect before investing. In fact, engaging in M&A can be a great opportunity to increase market power and acquire a competitive advantage but, at the same time, it can even lead to bankruptcy and failure of the acquirer. There are four main phases in the M&A process: the selection of the partner firm, the evaluation, the negotiation and the integration.

1) **Selection Phase**

   This phase starts with the identification of the firms that have the requirements established for the selection. Generally it is carried out on the documents of the company. The first screening of the firms arises at the beginning of the negotiation. Indeed, not all firms are interested in the M&A process or they ask conditions unacceptable for the acquirer.

   There are some variables that influence the selection of the partner. These variables are:

   - The strategy: the firm tries to identify possible synergies with the target company and the consequences that the process could have on the overall strategy.
   - Strengths and weaknesses: the analysis of the strengths and the weaknesses of the target firm.
   - Goals: in this sub-phase the goals of the M&A process are defined with particular attention to the overall situation of the market. It is important to deeply analyze the features of the target company to understand how to fully exploit its strengths and characteristics (dimension, geographic area, industry etc.)

2) **Evaluation Phase**

After the selection of the target firm, the due diligence phase begins. It consists in the evaluation of the target company value and in the evaluation of the cost of the overall operation. This detailed investigation is aimed to collect information about the target firm using the documents (budget, business plan, strategic plan) to define a strategy and the positioning in the market. Moreover, through the evaluation of the earnings and of the assets, the price of the target company is defined. Other important parameters that should be evaluated are: clients, competitors, costs and competences.

Table 1 – Evaluation parameters of the target company

PARAMETERS	***Stage 1***	***Stage 2***	***Stage 3***	***Stage 4***
CLIENTS	*Identify the portfolio of clients of the target company*	*Identify the company's target*	*Identify the growth rate of the customers*	*Identify the geographical distribution of the customers*
COMPETITORS	*Identify direct competitors*	*Identify competitors' market share*	*Evaluate the reaction of the direct competitors*	*Evaluate the consequences of the M&A process on the industry*
COSTS	*Evaluate if the operation has cost advantages*	*Evaluate the performance considering the market share*	*Identify the best positioning in terms of costs*	
COMPETENCES	*Evaluate intangible assets (competences, knowledge, capabilities)*			

Moreover, in this phase are analyzed the possible synergies[5] that can arise among the firms involved in the process but also the problems that derive from the integration of different corporate culture. Other important variables are the time that the M&A need to become effective and the costs that the acquirer firm has to sustain to implement the strategies without the target firm price. To conclude, the due diligence process gives to the acquirer firm all the information about the target company needed to draw up a concrete proposal to acquire or to merge with a target company.

3) **Negotiation Phase**

Once the target company has been selected, the strategic goals have been defined and the financial evaluation has been conducted the last step consists in the price definition, which will be established in the negotiation phase. Taking into account the value of the target company and possible benefits and synergies that could be created, a reference price is established. Obviously both parties should agree the price of the deal; the management teams of acquirer and acquired companies will make their final evaluations on both benefits and risks and the way in which the operation will be financed. Finally after defining al economic and financial aspects, the new management team is created.

4) **Integration Phase**

The most important and difficult phase of the whole operation is the integration process between acquirer and acquired. Even if the previous steps have been conducted perfectly, if this phase is not successful the whole deal may lead to terrible results and complete failure of the M&A activity. It is necessary that the management carefully analyses and defines clear objectives and a strategy in order to succeed in the integration process.

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[5] When the combined value and performance of two companies, will be greater than the sum of the separate individual parts.

Integration can be analysed under 3 different points of view:

1) Under a mere financial point of view M&A can serve as a way to increase value in particular if the acquirer is able to acquire a company at a price lower than the fair value.
2) The strategic point of view concentrates on the possible synergies that can be created, which is the principal factor and motive to undertake such operation. The aim of combining two or more companies is to strengthen the overall competitive advantage of the company and reduce the level of rivalry.
3) The organizational aspect is key; it refers to the change that in particular the acquired company will have to face under an operational and managerial point of view after the transaction has taken place. It is of fundamental importance that there is a reciprocal understanding of the cultural and organizational differences among the parties involved in the deal. This aspect should not be taken for granted since it is among the most frequent causes of M&A unsuccess.

Haspeslagh and Jemison, 1992, identified a model, which divides integration in different phases.

- **The beginning of the integration**

  Integration is an interactive process in which organizations and individuals collaborate to realize the benefits rather than a mere exchange of physical resources. In this view, it is important to establish in the initial phase an atmosphere that enhances mutual understanding of the organizations and culture, the willingness to collaborate after the acquisition and the ability to transfer and receive resources and skills. The pillars for the achievement of an effective integration are the following:

  - Cultural and organizational integration
  - The consensus generation: the need of an effective communication plan to obtain the consent of the company while maintaining an open attitude
  - The transferability of resources and skills
  - The containment of the time of adaptation and response

- **Managing the integration**

  During this phase it is necessary to pay utmost attention to the synergies created. The ability to achieve synergies and transfer skills and resources constitutes the heart of the integration process. The success depends on the management's ability to reconcile the needs of strategic interdependence between the companies involved with the need for organizational autonomy. It is a matter of conserving and strengthening the assets of resources and competencies and at the same time ensuring the transfer of strategic capabilities between them.

- **Interdependence and organizational autonomy**

  This concept allows ensuring the transfer of strategic capabilities for value creation. The relationship between interdependence and organizational autonomy, allows identifying four types of different approaches of integration.

  1) For storage: this involves a great need for organizational autonomy. In these situations the main purpose of the integration process is to safeguard the source of the benefits that are intended to be realized.
  2) For absorption: high need for strategic interdependence and a poor need for organizational autonomy. These are acquisitions that require a complete unification of the activities, the organisation and the culture of the companies involved in the deal.
  3) By symbiosis: mainly are characterized by a high need of strategic interdependence and a great need for organizational autonomy. This is the most complex and challenging approach to integration.
  4) Holding: the buyer company is not intended to proceed to any integration for the creation of value; the main focus is on the financial transfers and enhancement of risk sharing.

- **The consolidation of integration**

  Finally, the management must ensure that the acquisition achieves and sustains the desired and expected competitive advantage, as well as encouraging a unique enterprise culture that promotes processes of change for the future of the organization as a whole.

1.4 M&A risks and opportunities

As previously mentioned, mergers and acquisitions have become a common business tool for companies that want to diversify in terms of markets and geography, compete effectively, or acquire new set of skills and technologies (Frederiksen, 2018). Indeed, many companies all over the world implement M&A. Despite the advantages and positive effects that such activity may create, it is also important to keep in mind that the failure rate of such activities is high. For this reason it is fundamental to highlight benefits but also key risks, which are various and strictly linked to the type of industry and strategy execution that each company pursues. The following paragraphs will provide a general and concise description of some of the principal motives, advantages and disadvantages of M&A activity.

1.4.1 Main motives and benefits

In general, mergers and acquisitions are undertaken with the main intent of gaining market power, reducing costs by achieving economies of scale and scope and/or to acquire complementary resources and capabilities which can be leveraged (Caiazza and Volpe, 2015).

Above all, growth and achieving market power is one of the principal strategic motives for M&A. Generally speaking, vertical and horizontal integration are strategies, which, in different ways, lead companies to reduce the overall level of competition in the market they are currently operating in. Moreover, diversification on products and/or territories allows firms to grow outside their formal business category, reducing risks by hedging against fluctuations in different sectors and overall strengthening their position in other sectors and regions. Moreover, companies are able to obtain a competitive advantage, increase their market share and create entry barriers, which hinder future competition.

Considering a shareholder perspective, which aims at maximizing the overall amount of the organization, if the deal leads to the creation of synergies, for sure the activity should be undertaken. Synergies are mainly linked to economic motives, by integrating two or more businesses; the result of this combination should lead to increased competitive advantage and overall value (Porter, 1985). Synergies allow for increased efficiency, which could take the form of cost savings and increased returns.

According to DePamphilis, 2003 there are two main types of synergies: operational and financial.

1) Operational synergy refers to the economies of scale and of scope, which can be developed by sharing resources thus reducing costs and creating a competitive edge.
2) Financial synergy refers to the impact on the cost of capital of the acquiring firm or the new firm resulting from the transaction.

Another important reason to keep in mind is that through these operations companies have the possibility to acquire new set of tangible and intangible resources in a relatively fast way. As previously mentioned, M&A allows companies to meet stakeholder expectations quickly indeed; it is among the most time-efficient growth strategy. In today's dynamic and fast changing business world, speed is a fundamental factor. This strategy enables companies, not only to gain relevance in specific sectors and locations, but also to acquire resources and competencies both physical and intangible in a timely manner. In particular, it is worth mentioning that among intangible assets[6], the value and the importance of knowledge-based assets have grown geometrically, becoming a core organizational resource necessary in the new business environment (Tamosiuniene and Duksaite, 2009).

[6] According to Saint-Onge and Chatzkel, 2009, intangible assets include: human captal, custumer capital and structural capital.

According to Snichelotto and Pegoraro, 2009, the benefits of M&A can be divided in three macro categories: operational, financial and fiscal benefits.

- **Operational benefits**:
  These benefits are found mainly in those operations were we have firms with similar, complementary but also different products, basically in any case in which a unitary management and a combination of businesses may lead an advantage. The union should lead to the creation of synergies both tangible and intangible, which in turn contribute to an overall increase of value.

- **Financial benefits**
  Other than the costs savings and financial gains, which can be derived from the creation of synergies between the surviving and acquired organizations, other financial benefits can be identified. Some companies may have excess cash but a lack of investment opportunities to pursue. In these cases, investing in M&A can be a way to use productively cash, which was lying idle.

- **Fiscal benefits**
  In general, there may be fiscal incentives linked to M&A, which play an important role in engaging or not in such activity. Indeed, the study undertaken by Ghosh and Jain in 2000, emphasizes and concludes that these activities may be an effective way to secure tax benefits.

1.4.2 Risks and disadvantages

As previously stated M&A is a great growth strategy, which leads to several advantages. Nevertheless, it represents a deep transformation of the company's business; it is a challenging and chaotic event that hides insidious disadvantages (Koi-Akrofi, 2016). Most of the issues arise from the difficulties in the integration process of management, communication systems, employees and corporate structure in general. Research has demonstrated that less than 50% of M&A actually succeed.

A study conducted by KPMG shows that the failure rate[7] is higher, about 83%. There are various reasons and perspectives, which explain why M&As fail, the causes are to be found both before and after the M&A has taken place.

- **Pre transaction**

  A very important aspect in M&A operations is for sure the analysis and investigation that must be conducted before committing to the transaction, namely the business due diligence, which is one of the phases in the M&A process previously explained. In this phase the acquirer gains knowledge of the target company, trying to reduce the asymmetry of information between the parties involved in order to understand how to evaluate the deal in terms of price and future gains. Unfortunately, in this step lies one of the biggest disadvantages, which is the impossibility of quantifying with certainty the possible benefits that the transaction will generate. Indeed, it is extremely difficult to set the price of the premia, understand the value of the assets acquired and the synergies that, in some cases, may not be created (Fontana e Boccardelli, 2015). Overall, these uncertainties may lead to an overpricing and overestimation of the deal itself.

- **Post transaction**

  Even if the due diligence process has been conducted in the best way, resulting in a fair evaluation, the acquiror may incur in post integration risks. Poor strategic rationale for the merger together with poor integration planning and execution is one of the most significant issues to overcome (Gadiesh and Ormiston, 2002). Integration is a critical factor, which may hinder the ability of the company to exploit synergies and benefits deriving from the deal.

  Research has concluded that the unsuccessful integration of employees is one of the key factors contributing to M&A failures moreover, its' importance and relevance is still underemphasized (Koi-Akrofi, 2016). These transactions create a chaotic and uncertain environment where the human factor should not

[7] Failure is defined as the unsuccess in the enhancement of shareholder value.

be taken for granted. The psychological effect is ambiguous, in some cases there may be positive reactions such as loyalty and commitment enhancement, but in other cases it may lead to negative behaviours like absenteeism and, in some cases acts of sabotage[8]. Indeed, employees may find it challenging to cope with the new corporate culture and activities, especially when there is a lack of effective communication and management.

Issues concerning integration may also refer to the combination of the same or unrelated products and markets. In both cases, if a clear and adequate planning was not set prior to the acquisition, difficulties in managing resources and capabilities may arise.

1.5 History

M&A always occurs in a series during the life cycle of a company. The reason behind this is that each process gives the firm the knowledge and the competences needed to improve the acquisition or merger processes in the future.

Economic literature identifies that M&As occur in waves, called "Merger waves", cyclically over time. It is possible to outline six merger waves from the end of the 1800 till today:

1. FIRST WAVE 1895-1904

   It is considered the first wave and it is linked to the American industrial system before the first World War. During this period, there were a huge development of the transport network and the improvement in the communication technologies. Moreover, there was the creation of the first real estate market and some industries rapidly improved as the metallurgy industry. This situation brought to many merger operations in the market especially horizontal merger and to many acquisition. The endorsement of the Sherman Antitrust Act (1890), that abolished the monopolies and the

[8] Different studies have dealt with this issue such as: Bruckman and Peters 1987, Cartwright and Cooper, 1992, Hubbard and Purcell, 2001

monopoly agreements among firms to guarantee a fair competition in the market, increased the usage of M&A strategies during this period.

2. SECOND WAVE 1916-1929

   The post-war period was characterized by many vertical mergers and acquisitions. There was the consolidation of the operations started before the war but stopped because of the disruption of the conflict. Huge conglomerates and corporations arose during this period as General Motors, IBM and Union Carbide Corporation

3. THIRD WAVE 1960-1970

   A huge economic development characterized this period worldwide. The third wave was the biggest in the American history. In the USA, the conglomerate was the merger type most used by companies that started thinking that the key for the success, in an increasingly more competitive market, was the diversification of the businesses to reduce the corporate risks. While in Europe there was mainly the implementation of horizontal merger strategies.

4. FOURTH WAVE 1980-1989

   The third wave was different from the others because of the type of acquisition that took place mostly during this period. In fact, there was an amazing diffusion of hostile OPA. The idea was to speculate on the acquisition strategy. This kind of acquisitions was aimed to buy a company, increase its value, and sell it to earn from the plus-value created. Banks played an important role in this period and the speculation strategy was enforced by the positive trends of the stock market of these years.

5. FIFTH WAVE 1992-2000

   The fifth wave was characterized by concertation strategies aimed to diversify the business and to expand in new markets. Even if USA still was the biggest player in the M&A market there was the disruption of two big players: Japan and Europe. Both these countries were active especially in cross-border operations [9] to develop globalization processes. This period was called "Megamerger wave" because of the number of operations that arose in that period and because of the dimension of the companies involved. In fact, most of the biggest M&A of the history took place in the fifth wave, as McDonnel Douglas, Chrysler and Daimler Benz. In Italy during this period Olivetti acquired Telecom Italia and Banca Intesa acquired Banca Commerciale Italiana.

6. SIXTH WAVE 2003-2009

   After a negative trend between 2000 and 2003, a period of huge expansion began. During this period was easy to collect borrowings. This situation increased the cross-border operations especially in Europe and Asia in some industries as telecommunication, finance, energy, pharmaceutical and high-tech. The expansion brought in 2007 to the financial crisis that started form the bursting of the speculative bubble[10] of the American real estate market and had consequences on all the world. The crisis continued during all the 2008 and brought the investment bank Lehman Brothers to the bankruptcy. This event can be considered as the starting point of the financial crisis. The number of the M&A operations decreased of the 16% and their value decreased too of the 35%. The crisis lasted till 2009 when there was a little economic improvement, compared to the previous year, even if the situation remained critical. The crisis irremediably changed the way the world see the extraordinary finance operations. Investors became more prudent and the time required exploiting M&A operation increased.

[9] Trades that occur between companies in different countries.

[10] It is a spike in asset values within a particular industry, commodity or asset class fueled by speculation.

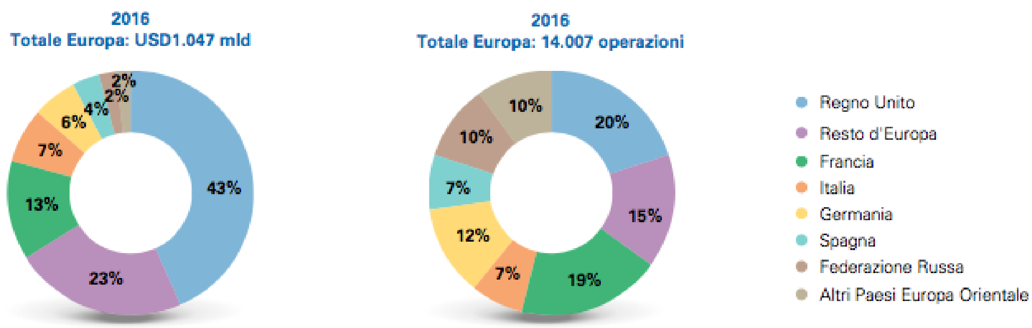
1.6 Recent trends of M&A activity

The KPMG report on Mergers & Acquisitions, 2016, provides a comprehensive understanding of the main trends and evolutions in M&A activity. The overall uncertain and unsteady climate due to the Brexit referendum in Europe and presidential elections in USA did not impact on the development and consolidation of M&A activity in the world. Indeed, 2016 concluded with a new record, an increase of 11% in the number of transaction and a growth of 3% in terms of values (a total of USD 3265 billion) with respect to the previous year. This confirms the fact that nowadays, many firms and multinational companies pursue external growth strategies in order to build and acquire new sources of competitive advantage. This overall positive trend in M&A activity was also influenced by the presence of mega deals with 38 concluded operations for a value greater than USD 10billion. Another factor influencing the global market was the presence of cross boarder[11] activities both in and out, which have influenced more or less significantly all regions. Such activities grew of 19% in value and 6% in volume globally. Overall, Europe is the country where cross boarder activity has had the biggest incidence generating within the region a total of 80% and at a global level 22%. This vitality is mainly due to the huge growth experienced in UK in contrast with the period of contraction experienced mainly by Spain, France and Germany with contributed negatively.

In general Europe continues to grow in M&A activity recording in 2016 the best results and confirming its importance as the principal actor and contributor in the market. Indeed, the contribution share of European M&A activity to the overall global market is of about 40%. Nevertheless, there is variance between different countries within Europe. Indeed, in opposition with the steady growth of Western Europe, mainly led by UK, which is emphasized by the following chart, Eastern Europe is loosing dramatically. It is the Russian federation, which has recorded the lowest results in the last 10 years, USD22 miliardi (-9%).

[11] Cross-border transaction refer to the deal in which the Italian company is purchased by the foreign investors, partially or total.

Chart 1 – European M&A market in 2016 by country: % impact of the value and number of completed transactions involving bidders and targets in the countries indicated



Fonte: elaborazioni KPMG Corporate Finance su dati Thomson Reuters (M&A completed, target or acquiror)

Another interesting factor that can be mentioned is the M&A intensity in Europe by sector. In 2016, the Consumer Markets confirms itself as the leader in Europe with a growth share of 26% with respect to 2015. The deal, which has greatly influenced this result, is the deal between Belgian Anheuser-Busch Inbev NV[12], first producer of beer globally, and the Anglo- South African SABMiller Plc, number two in the industry. Another sector, which has been growing steadily with respect to previous years is the Telecommunications Media & Technology, with a total contribution to the European market of 18% and more than 2700 operations completed. In third place we find the Energy & Utilities with a total of 886 deals completed and an increase in values with have doubled with respect to 2015.

The following paragraphs will concentrate on the Italian situation highlighting important trends and in particular focusing on the years 2011- 2016, which are the reference periods for the study.

1.6.1 M&A activity in Italy

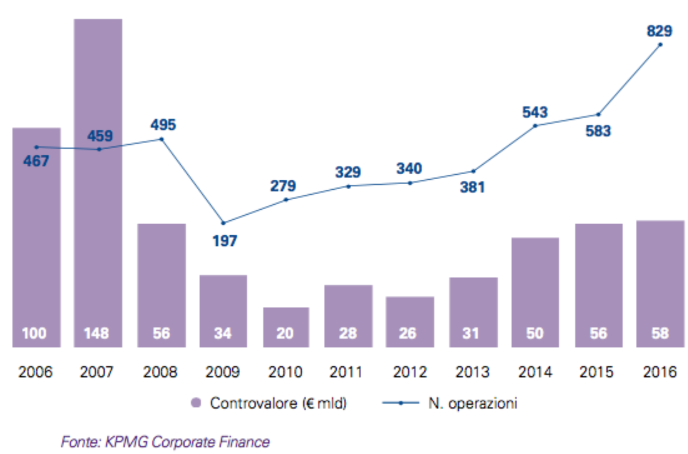
Italy has been one of the European countries mostly hit by the economic recession (EU report on employment and social situation, 2012). Indeed, since the global financial crisis in 2008, the country experienced a succession of recession and

[12] Also owns brands such as: Stella Artois, Beck's, Quilmes, Corona e Budweiser

stagnation periods. This negative situation was intensified by the European sovereign debt crises, which lead to an extremely slow and ardours recovery. During this period, engaging in M&A was difficult and unattractive mainly due to the increased cost of financing and uncertainty which, can be identified as some of the factors that have lead to a significant drop in volumes of such activities (Gaughan, 2010). However, in 2015, Italy has finally started its recovery, experiencing a positive growth trend and also resurgence and revitalization of M&A activity.

Recently the global M&A market has consolidated its position, in line with this global trend; also Italy has experienced great activism. As evidenced by chart 1, between 2009 and 2013, the country experienced a drastic and significant slow down in M&A deals, both in terms of values[13] and volumes, mainly due to the crisis.

Chart 2 - Italian M&A market in 2006-2016: value and number of completed deals



The situation has substantially changed, indeed in recent years and in particular between 2015 and 2016, there has been an outstanding increment in which Italy reached an all-time record of 829 completed deals with a value approximately of €58 billion, highest result since 2008. Nevertheless, even though volumes have increased steadily year over year, we have to mention that there was not an equivalent

[13] Value in euro of total deals concluded. Calculated as the number of deal * deal price.

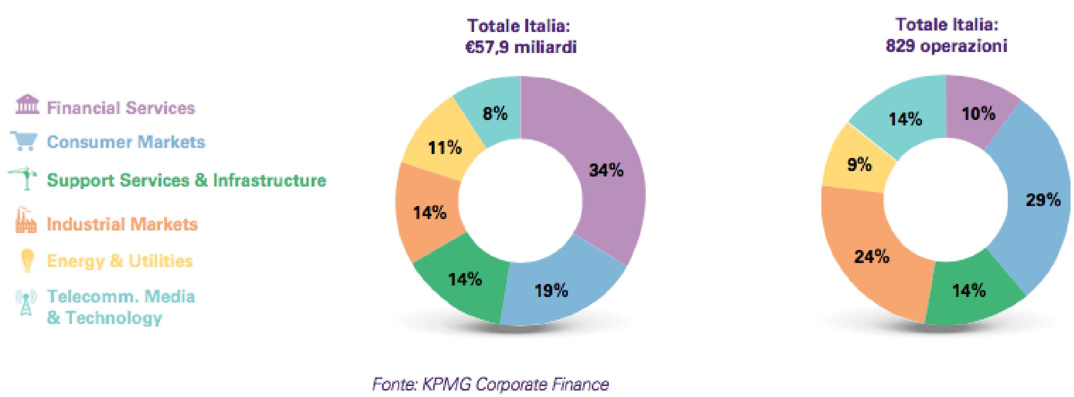
proportional increase in values. Indeed, if we consider the deal values in pre crisis years they are at least, twice as times bigger. This is mainly caused by the complete absence of mega deals in recent years.

The report also provides insights on the direction of these deals. The Italian M&A market positive performance in 2016 was particularly strong in the domestic sector, with Italy-on-Italy deals rising in both volume and value. Indeed, domestic activity grew, contributing 44% of value. There has been an increase also in Italian acquisitions abroad, +19% in terms of volumes and 20,9% in terms of values, which highlights how Italian companies are pursuing growth through internationalisation and is part of their strategic growth plans. Nevertheless, cross-border transaction was down both in terms of volumes and values with respect to the previous year.

1.6.2 M&A Industry Analysis in Italy

The KPMG report 2016 provides interesting insights on M&A operations considering the industry in which the target company operates. The main industries analyzed are: Financial services, Consumer markets, Support services and Infrastructure, Industrial Markets, Energy and Utilities and Telecomm. Media & Technology.

Chart 3 - The Italian M&A market in 2016: % impact of the number and value of completed deals by the target's macro business sector



- **Financial Services**

  E19.6 Billions – 84 Deals

  The financial Services involve all the banks, the insurance companies and all the firms that trade financial securities. During the 2016, it has been the most important industry in terms of the importance of the M&A transactions undertaken during the year. In fact, there are five important M&A operations that involved the Financial Services in the 2016 that can be classified in the *Top Ten Deals* of the year.

  1. Exor Spa - Gruppo riassicurativo PartnerRe Ltd: it was the first deal of the year and the most expensive for the Italian market with a value of E5.4 billions.
  2. Banca Popolare di Milano Scarl – Banco Popolare Società Cooperativa: E2.9 billions.
  3. Fondo Atlante (Quaestio Capital Management SGR Spa) – Banca Popolare di Vicenza: Fondo Atlante signed an agreement for an increase of E1.5 billions in the capital of the Banca Popolare di Vicenza, gaining the 97.6% of the ownership stakes of the bank.
  4. Gruppo Intesa Sanpaolo – Satefi Spa (Division: Securities Acquiring for Captive and Non-captive Customers): E1.0 billion
  5. Azimut Holding Spa:
     - Australia: RIT Toowomba Pty Ltd (E4,9 milions), Empowered Financial Partners Pty Ltd (E1,8 milions), Wealthwise Pty Ltd (E6,4 milions), Priority Advisory Group Pty Ltd (E6,3 milions), Sterling Planners Pty Ltd (E2,7 milions), Logiro Unchartered Pty Ltd (E2,9 milions), Domane Financial Advisors Pty Ltd, Aspire Pty Ltd, TKT Pty Ltd, On-Track Financial Solutions Pty Ltd (circa E4,0 milions), Sigma Funds Management Pty Ltd (E1,4 milions)
     - Brasile: BRZ Gestao de Patrimonio (E1,1 millions)
     - Svitzerland: Sogenel Capital Holding SA
     - Singapore: Athenaeum Ltd (E0.6 millions)

- **Consumer markets**

  E11.0 Billions – 238 Deals

  The consumer market is made of textile, food and beverage, pharmaceutical, leisure, touristic and hospitality as well as all the consumer goods. This industry has reaffirmed its importance during the 2016. It has been the most important industry for the numbers of deals of M&A operations closed in the 2016. It was the first contributor to the Italian Gdp with the following deals closed:

  1. Private Equity Investindustrial – Artsana Spa: E780 millions in exchange of the 60% of the ownership stakes
  2. Antin Infrastructures Partners, Borletti Group and ICAMAP International Capital Meijer Aquien Poitrinal – Grandi Stazioni Retail Spa: E762 Millions
  3. Carte Noir – Davide Campari Milano Spa, Granarolo Spa, Gruppo Cremonini
  4. Chiesi Farmaceutici – The Medicine Company: the operation had an overall cost of $694 millions divided in two tranche: the first one of $260 millions and the second one of $434 millions.

- **Support Services and Infrastructure**

  E8.1 Billions – 115 Deals

  This industry is made of firms and activities linked with the infrastructure market, transport and logistics, real estate and other services provided to companies. Half of the overall M&A transactions have involved the real estate market. This industry became the third most important contributor to the Italian GDP in the 2016. It is possible to outline some important M&A transactions undertaken during this year:

  1. Atlantia Spa – Aéroports de la Cotè d' Azur: E1.3 billions. With this operation Atlantia Spa acquired the 64% of the ownership stake of the French company that give it the right to control the firm.

2. Abertis SA – A4 Holding Spa: E594 millions.
3. FSI Fondo Strategico Italiano Spa – Saipem Spa: E463 millions.
4. IDeA Fimit SGR Spa – Gruppo Milano 90 Srl: IDeA Fimit SGR Spa acquired some important buildings in Rome as Palazzo Marini for E750 millions.

- **Industrial Markets**

  E8.0 Billions – 201 Deals

  The industrial market includes constructions, chemicals productions, automotive industry, iron and steel, mechanical and plant building industry. The industrial market faced an increase of the 48% compared to the previous years, becoming the second sector in Italy in terms of deal closed during the year and the fourth in terms of value. The most important M&A transactions of the year are 2 and they are cross border operations aimed to buy Italian industry:

  1. HeidelbergCement AC – Italcementi Spa: E3.7 Billions. The acquisiton of the 100% ownership stakes brought to the creation of a huge company that operates worldwide in the plant building industry
  2. LKQ Corporation – Rhiag Inter Auto Partners Italia Spa: E1.0 Billions

- **Energy & Utilities**

  E6.5 Billions – 73 Deals

  The energy and utilities industry is active in the production and delivery of water, energy and methane, in the waste management and in the petrol extraction. The most important actor in the industry was Enel who implemented many M&A transactions and brought the industry in the top 5 most important industry for M&A value in Italy.

  1. Enel – Enel Green Power Spa: E3.0 Billions
  2. Enel – Endesa Generation Spa: E1.2 Billions
  3. Enel – Hydro Dolomiti Enel Srl: E313 millions
  4. Enel – AleAnna Resources: E30 millions

During the 2016 started a process of integration of the energy national system through the acquisition of the small and medium firms by the big players of the industry.

- **Telecommunication Media and Technology**
  E4.8 Billions – 118 Deals

  This sector includes telecommunication, software development, information technology and media. It was during the 2016 the third industry in Italy for the number of M&A deals concluded.

  Let' s see some of the most important transaction in the industry:

  1. Vivendi Sa – Mediaset Spa: E1.2 Billions
  2. Apax e NB Renaissance Partners – Engeneering Ingegneria Informatica: E802 Millions
  3. Enel Spa – Metroweb Italia Spa
  4. Fintech Advisory Inc. – Telecom Italia Spa:E480 Millions

1.6.3 Main Drivers and Regulation in Italy

With reference to regulation, there is no particular legislation, which favours M&A activity, nevertheless the Italian legislator understands the importance of such activities and tends to view them as an important economical growth opportunity for the country.

Mergers and acquisitions are regulated in the same way under the Italian legislation. The civil code is the primary source for the regulation of such operations. The main articles, which deal with these extraordinary finance operations, are artt. 2501 – 2505-*quarter*. The Italian regulation on this matter was implemented in 1991 by the Cee directive (d.lgs 16-1-1991, n.22), which provides guideline for M&A activity not only domestically but also internationally.

The legal procedure to complete and M&A operation is divided in three phases:

1) The project: the civil code requires that the companies' involved in the deal have to draw up an M&A project (art. 2501-*ter*), which identifies all of the

conditions and the procedures[14] of the act that will have to be approved by shareholders.

2) The resolution: this phase consists in the formal approval of the deal. It is mandatory that all the parties involved approve the document in order to become effective (art. 2502).

3) The deed: this is the final step of the process, which consists of the draft of the M&A's deed (art. 2504).

The positive performance of M&A activity in Italy is a result of different factors, which have recently affect the local market:

- Consolidation, rationalization and reorganization strategies can be identified as one of the factors. In recent years, major Italian groups in the utilities and banking sector have started a restructuring process by mainly absorbing small companies in order to focus on core business activities. The main aim is to enhance overall efficiency; these operations have been undertaken by different companies in many sectors and in particular in the Italian energy sector. (e.g. Eni, Enel). Moreover, small and medium-size Italian companies have integrated in their growth plans M&A activities in order to internationalize and consolidate in their businesses.

- The increasing interest by private equity national and international funds for Italian assets is another important reason. Recently, there has been a stable presence of foreign investments and intense acquisitions by private equity funds. In particular, M&A activity by equity funds has contributed a lot in both volumes and values in 2016. With reference to inbound M&A, Italy has been able to attract foreign investors mainly thanks to the implementation of

[14] General information of the companies involved in the process, the certificate of incorporation and the rate of exchange in terms of shares.

the Investment Compact Act implemented in 2015. The legislation has encouraged foreign investments and boosted M&A activity especially in the financial services sector (Grant Thornton report, 2016).

CHAPTER 2: Board Characteristics and M&A Performance

M&As are complex corporate strategies that require a strong commitment both by the board of directors and the executive management. During the years, literature has outlined the important role that corporate directors have during the process that brings to the development of an M&A strategy. In 2013 McKinsey e Co[15]. published a survey to point out that boards are increasingly spending less time on M&As projects compared to other strategies. It happens because the 30% of the directors have limited or no understanding of the risks that their companies are facing and they do not understand the potential that M&A have to redesign the future of a firm. In 2009 the NACD (National Association of Corporate Directors)[16] itself stated that the role of the board in the extraordinary finance operations is merely reduced to produce financial reports of the operation, while it should be deeply involved in all the process to provide a wide range of strategies to manage the transaction.

2.1 Corporate governance overview

The corporate governance is the framework of rules, practices and processes that are used to control and to curb the companies' operations and performance. All corporate decision and strategies are established by the corporate governance to satisfy the shareholders' need of shares' value maximization and the interests of all the firm's stakeholders (management, customers, suppliers, financers, government and also the community).

The most important actors in the corporate decision making process are the CEO and the board of directors.

- The CEO is the one who takes most of the decision about the financing investment and organizational strategies. He has the full responsibility over

[15] McKinsey & co is an American worldwide management consulting firm founded in the 1926 by James O. McKinsey.

[16] NACD (National Association of Corporate board Directors) is a nonprofit membership organization for corporate board members founded in 1971.

the company performance and is the one who decide to undertake an M&A transaction or not, with the support of the board of directors.

- The board of directors is the other important actor in corporate governance decisions. It plays a crucial role because it chooses the managers that have to run ordinary firm' s operations and it controls the CEO's actions and results on the behalf of the shareholders. Moreover, it has to give suggestions over the strategies proposed every time there is the need.

Both the CEO and the board of directors play a crucial role in M&A transaction.

2.2 M&A performance

The measurement of M&A performance do not use fixed parameters and there is no agreement about the variables that have to be taken into consideration for the evaluation (Zollo and Meyer, 2008). The negative or positive outcomes of an M&A depend on the intention and aims (Bruner, 2004). However it is possible to outline the most important variables that are generally taken into consideration when an M&A transaction is valued:

1. Market value creation
2. Financial stability
3. Improved strategic positioning
4. Increased organizational strength

Generally the aim of an M&A transaction is the long term-value creation. The idea behind it, is the creation of a plus value higher than the mere sum of the components. This is the shareholders' perspective and it is the first evaluation that can be done on the performance of an M&A.

2.3 CEO role in M&A performance

The CEO is responsible for most of the financing, investment and organizational strategies of the company he is leading. In particular he is involved in process such as M&A, diversification strategies, dividends and cost-cutting policies. As CEOs' approaches to strategies change, the performances that follow change too (Bertrand and Schoar, 2003).

The CEO' s decisions have a large impact on the corporate; they can bring to huge profits but they can also bring to bankruptcy. The more the CEO has influence within the firm, the more his decision will impact on the companies behaviour and profitability; however, the more the CEO has power within the company, the less he is able to judge his work objectively; in this context the role of the board of directors acquires a particular relevance.

The importance of the CEO is not the same for all the companies. Sometimes, a strong CEO could be better to speed up the decision-making process, while in other situations it is better to have a less powerful CEO to involve top managers in the decision process, when there are technical issues to be solved or technical strategies to be implemented (Child, 1972; Hambrick and Mason, 1984; both cited in Adams, Almeida and Ferreira, 2005:1404). However, the choice between powerful leader or less power leader is not easy and the wrong decision could bring to weak performances.

Another important element that influences corporate performance is the personality of the CEO. Literature takes into consideration a lot of variable. It is important to notice how CEO's with previous CEO experience do not perform better than CEO with no experience. However, the market has more trust on old CEO than on younger, and for this reason older CEO are sometimes preferred to new ones (Elsaid, Wang and Davidson III, 2011). Another study pointed out that older CEO are more risk-averse and they tend to prefer diversification strategies while younger CEO frequently undertake M&A activities (Yim, 2013). Moreover, CEOs with an achieved high social status prefer to not face a M&A process to avoid risks and protect their social position (Lucey, Plaksina and Dowling, 2013). Even the gender influence the behaviour of the CEO; male CEOs tend to undertake more M&As than female ones (Levi, Li and Zhang, 2010).

The decisions of the CEO strongly influence the company's behaviours especially in M&A process and for this reason they are not always accepted. Sometimes, a conflict of interests arise between the CEO and the shareholders if the CEO is pursuing his personal interest instead of maximizing shareholders' value.

2.3.1 Theory of Agency costs

Many authors studied the theory of the agency cost as Coase (1937), Jensen and Meckling (1976), Fama and Jensen (1983). The theory of Agency costs analyses the relationships between the owners (shareholders) and the managers (CEO). The role of the managers is to run the company in a way that maximizes the shareholders' value (Jensen and Meckling, 1976). The problem arises when the manager's actions diverge from the aim of the shareholders' value maximization, to pursue personal interests. The owners require to managers to execute as agents the actions needed to run the firm. In fact, as shareholders are those who provide the capital for the investment, they want to steer managers' actions. However, the managers sometimes behave in an opportunistic way that benefits their image but could cause a loss for the shareholders. This loss is called agency loss and it is defined as "the extent to which returns to the residual claimants, the owners, fall below what they would be if the principals, the owners, exercised direct control of the corporation" (Jensen, Meckling, 1976).

The agency loss arise because managers purse opportunistic behaviour in a way that increase their reputation and their earnings. CEO compensation is often related to the size of the company he is running. In fact, the larger is the size of the firm the bigger might be the CEO's reputation and remuneration. For this reason, they are prone to M&A strategies because they bring to managers incentives and huge visibility. Sometimes these operations are done regardless of the performance and the consequence is the destruction of the shareholders' value. This problem is called empire building theory (Jensen, 1986a, 1986b, 1988; Mann and Sicherman, 1991:214). Another way that managers generally use to increase their earnings and visibility is to reinvest the cash flow generated by the company to increase or improve the performance or the dimension of the firm instead of distributing the plus value as dividend to the shareholders.

The theory of the agency costs is aimed to find a way to decrease the agency loss. Shareholders could sign a contract with the CEO where he takes a fixed remuneration and an extra earnings if he reaches predetermined goals. Moreover, in case of agency costs of free cash flow they could rise the debt level of the firm to enhance the monitoring of the creditors. However, the best way for shareholders to prevent the CEO's opportunistic behaviours is the board of directors. It is nominated directly by the owners and it operates on the behalf of shareholders. Its tasks include the monitoring and the support to the managers actions.

2.3.2 Theory of Hubris and Overconfidence

The theory of Hubris and Overconfidence is aimed to explain CEOs' behaviour especially when they deal with M&A transaction. This theory goes against the theory of agency cost because it states that not always the CEO destroys the shareholders' value on purpose.

In the market managers compete to gain more power and the control over strategic resources. It could be that managers "view themselves as better than the average" (Shefrin, 2005:6) in terms of capabilities and knowledge. These overconfident managers often overestimate the potential synergies of an acquisition and underestimate the risk associated with the transaction. The consequence is that they overestimate the value of target company offering a premium higher than the average premium charged by the other competitors in the market (Roll, 1986).

According to Malmendier and Tate (2005), the factors that bring managers to be overconfident are three:

1) The illusion that they can control the outcome of the transaction.

2) High degree of commitment to good outcomes. CEO's overconfidence may increase during the year, especially if the manager has completed other M&A transactions during his career with positive results.
3) When the target company has limited disclosed information and the CEO has to rely on his understandings and beliefs.

CEO overconfidence is also the result of the life experience of the manager. It is possible to analyse the learning effects on CEO behaviour. Managers with previous negative M&A transaction are more averse to this operation, and generally they prefer diversification or internationalization strategies. While CEOs without negative experience, in this field, tend to undertake a huge amount of M&A transaction (Roll,1986; Doukas and Petmezas, 2007)The gender is another variable that have to be considered. Male CEOs are more overconfident than female ones (Barber and Odean, 2001).

Hence, when a CEO can be defined overconfident? Doukas and Petmezas, in 2007, classified a CEO as overconfident when he purse five or more acquisition within three years. While Kolanski and Lee, in 2013, defined a CEO as overconfident when he purchases his own company's shares and earn a negative abnormal return over the next 180 days.

As for the agency cost theory, the best weapon that the shareholders have to curb the negative effect of the managers' overconfident, is the board of director. For this reason is important to complement a CEO with a strong and independent board, because it is able to reduce the number of M&A transaction undertaken by an overconfident manager (Kolasinski and Lee, 2013).

2.4 Boards of directors role in M&A performance

The board of directors is directly nominated by the owners and it operates on the behalf of the shareholders. It chooses the managers that have to run ordinary firm' s operations and it controls the CEO's actions and results. Moreover, it has to give suggestions over the strategies proposed by the managers every time there is requested or needed.

The corporate board is a mix of expertise, independence and legal power (Byred and Hickman, 1992). It has to represent the shareholders' interests honestly, to be independent from external pressures and to judge the decision of the managers and the CEO regardless of their personal feelings or commitments. It is called the common duty of trust and care.

It is possible to divide the directors in two categories:

1) Executive directors: they have an executive management role within the company.
2) Non-executive directors: they are not part of the executive management of the corporation. They can be further more distinguished in:
    - Independent: if they do not have a personal interest or a connection with the company they are managing.
    - Affiliated: if they are connected in some extent with the company (Tricker, 2012). For example, if they are relatives of the CEO or of another directors, or if they are directors in a supplying firm, they are considered affiliated non-executive board directors.

The heterogenous composition of the board of directors is really important to guarantee a smooth running of the operations. In fact, the executive directors provide to the assembly knowledge that comes from a deep understanding of the company' s processes and activities; while the non-executive directors, and especially the independent ones, give the board those characteristics of independence and objectivity that are the bases to control the development of good strategies and the actions of the CEO.

The role of the board is even more relevant in M&A transaction.

2.4.1 The Board's role during the pre-acquisition phase

After the M&A's selection phase, once the target company has been chosen, the due diligence starts. In this phase the managers of the company start the analysis of the target company to identify possible synergies and to understand if the two companies are complementary under several aspects (financial structure, risk and corporate governance profile, organizational culture, strategic fit, and tangible and intangible resources match). The board has to evaluate the results of the due diligence phase and to outline if there are additional risks that the managers in their analysis did not take into consideration. Moreover, it has to ask for a detailed plan about the implementation of the M&A transaction. This plan should include the performance measurement of the project and a specific time schedule. Moreover it has to outline the leadership team, the costs of the operation, the communication process, the governance, the customers and the suppliers. Hence, it has to be very detailed and specific to allow the board of directors to give a clear feedback about the M&A transaction.

Table 2: Board's role in M&A premerger phase

Board's role in M&A premerger phase:

- *Perform extensive due diligence*
- *Examine risk profile of the target company*
- *Examine potential bias and strategic fit*
- *Evaluate strategic implementation plan*
- *Tie executive compensation to successful implementation of new acquisition*

2.4.2 The Board's role during the deal-closing phase

In this phase the role of the board is crucial. When the deal is near the closing, tensions between the managers of the two companies may arise. The board has to support the management during the negotiation and to provide suggestions and alternatives. Moreover it has to keep the deal's strategic and financial goals on the target. The managers during the negotiation must frequently provide information to the board about the progress of the strategic acquisition plan. In this way it can continuously submit issues or solutions to speed up the transaction. Sometimes outside experts are hired by the board to support the managers in the M&A transaction.

Table 3: Board's role in M&A deal-closing phase

Board's Role in M&A Deal-Closing Phase*:*
• *Review and advise management team about the strategic implemen- tation plan*
• *Verify performance of outside consultants hired to help close the deal*
• *Advise management team on the composition of the acquisition lead- ership team*
• *Help management team keep negotiations on target*

2.4.3 The board's role post-acquisition

The board of directors have to control the acquisition process also after the resolution of the deal. In fact, his role is to control that the managers and the leadership team reach the goals programmed for the acquisition and in case of issues it has to intervene to solve the situation. Another problem is linked with the integration; is not easy to integrate different culture and the board has the role to speed up the process. Together, managers and directors have to decide the best communication strategy. It is important to communicate in the right way after the M&A transaction to be sure that internal and external stakeholders fully understand the changes in terms of strategy and resources' usage.

Table 4: Board's Role in M&A Postdeal Phase

Board's Role in M&A Postdeal Phase • *Monitor risk and value drivers to assure that key human and physical capital of the target company are part of the new organization* • *Advise leadership team on its communication strategy to internal and external stakeholders*

2.5 Board's Characteristics

After the analysis of the board of director's tasks and role in the M&A transactions, it is possible to outline the board' s characteristic to see how those variables influence the M&A performance.

2.5.1 Board Size

In many cases the board size influences the company performance and the M&A performance. The role of the board is to provide important intangible resources (as knowledge and competences) to the firm' s governance, being an intermediary between the shareholders and the management (Fox,1998; Barosso and et. al. 2011) . For this reason many studies have been conducted on this topic and many different opinions have been published to explain the relation between the board size and the M&A transaction performance.

Board with a large number of members can provide more bonusses and resources to their company, compared to those that are smaller because they can bring less advantages, in terms of competences, to their firm. Moreover, bigger board have more possibilities to hire new members because the directors' turnover is more frequent. The consequence is frequent diversification of competences, capacity and experiences. It can be useful to improve the process of taking strategical important decision.

The board size should be big enough to ensure the balance between the advantage of competence diversification and the disadvantages of hiring too much directors. In fact, there are many disadvantages linked with big boards. The degree of influence and political affiliation is higher and for this reason the board independence is lower. Moreover, in large board the coordination and communication costs are higher (Liu, 2013) and the decision making process complicates and significantly slows down (Rodriguez-Fernandez, 2014)

Large boards have better monitoring competencies and capabilities but among them is more frequent that information asymmetry and problems arise as well as communication difficulties (Dunn, 1987; Yermak, 1996; De Andres, 2005; Haniffa and Hudaib, 2006).

As explained previously[17], the CEO is the most important player in the decision making process of a firm. He is part of the board and sometimes he is not the only top-manager that is a director too. The CEO has less influence over large boards that generally are more independent. This is the main reason that brings to the arise of agency problems (Jensen, 1993).

Most of the economic literature identifies a relationship between the number of directors and the firm's size and performance. For all the reasons above and comparing advantages and disadvantages of a large board, the theory that is commonly shared by the academics is that the board size and the corporate or M&A performance are inversely related[18]. (Yermack, 1996; Haniffa & Hudaib, 2006; De Andres et al., 2005; Arslan, Karan & Eksi; 2010).

Moreover, as Lipton and Lorsch (1992) stated, it is possible to identify the best size of the board. They said that the maximum number of directors should be 10 so that the board can be efficient and effective. Less than 10 would be the optimal solution.

Some academic studies question these two views (Boone et al., 2007; Coles, Daniel and Naveen, 2008; Guest, 2009; Limk et al., 2008). They found that the board size is influenced by specific firms' variables. For instance, Coles, Daniel and Naveen, 2008 found a positive relation between large board and performance when dealing with

[17] Paragraph 2.3

[18] When the number of the directors increase the performance decreases.

large firms. It is true because bigger firms have a bigger need of information and capabilities that only a larger board can provide them. Another theory states that the institutional environment plays a crucial role when companies have to decide the board size. Different institutions bring to different role of the board, and for this reason the relation between the number of the directors and the firm's performance could be expected to differ too (Guest,2009).

2.5.2 Board Composition

As analysed previously[19], the board of directors is made up of two different directors categories:

1) Executive directors: they have an executive management role within the company.
2) Non-executive directors: they are not part of the executive management of the corporation. They can be further more distinguished in:
    - Independent: if they do not have a personal interest or a connection with the company they are managing.
    - Affiliated: if they are connected in some extent with the company (Tricker, 2012).

The composition of the board is one of the key factor for the success of a firm especially if the company is dealing with extraordinary finance operation as M&A transactions. His role is to help the CEO every time there is the need giving suggestions and providing competences and knowledge. Moreover, it is directly nominated by the shareholders to protect their interests when there is the risks of agency costs. Both executive and non-executive directors add a positive value to the company performance. Executive directors provide specific expertise and knowledge of the operations and of the industry. While non-executive, and especially independent non-executive board directors, provide impartiality and a better capacity of monitoring over the CEO's actions.

[19] Paragraph 2.3

In the field of the board composition, the role of independent non-executive board directors is crucial. They are not engaged with the company or with other directors and, except from a fixed remuneration, they do not have an interest in the company; it makes them able to judge impartially the CEO's actions and the board works. For this reason the presence of independent directors, improving the management in the way of shareholder's value maximization, also improves the value of the capital shares (Zighang and Xiuhua, 2009). Quiang and Pan (2005) found from empirical studies that companies with high levels of income, generally hire more independent directors. However, some academic studies stated the opposite: even if the independence of the board leads to a better monitoring over the activities and the transactions, it negatively impacts the value of the company and the performance (Vance, 1968; Pfeffer, 1972; Liang, 2009). In fact, the presence of too much independent directors could bring to a lack of executive directors and in a loss of specific knowledge and expertise within the company.

Most of the academic literature shares the hypothesis that the number of independent directors has a positive effect on the M&A transactions. Byrd and Hickman (1992) stated from empirical studies that if the 40% of the board is made of independent directors there is a positive linear relationship with the performance of M&A transactions, if the number of the independent member is 40%-60% it has positive exponential relationship with the efficiency of M&A deals, while if the number is higher than 60% the relationship with M&A performance is negative.

2.5.3 Board ownership

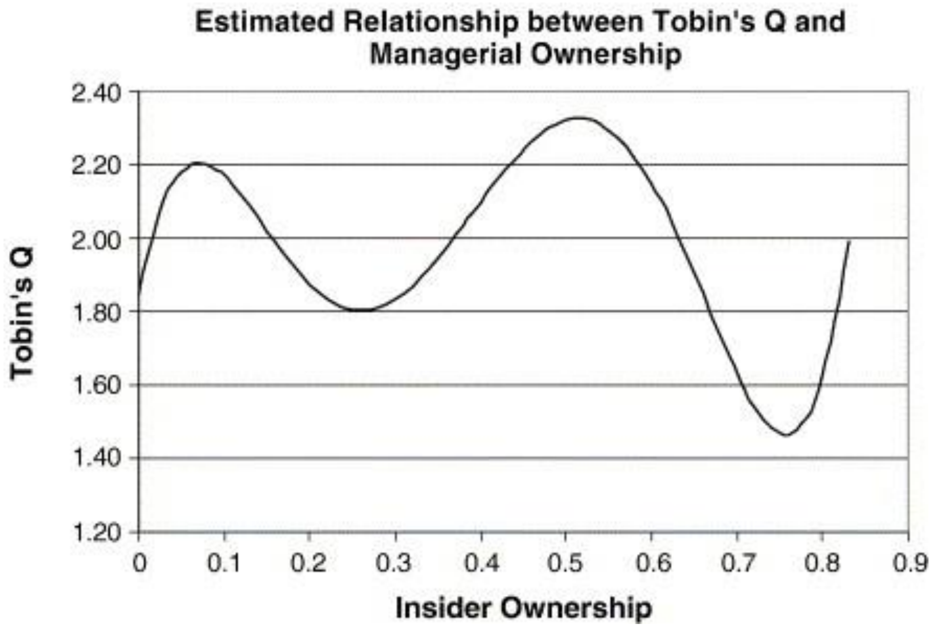
Part of the remuneration for the director's work can be made of ownership stakes. In that case the amount of money they earn is linked with the overall performance of the society that, as previously stated, is strictly linked with the CEO actions. In fact, in case of board ownership the decisions of the management affect their own wealth. For these reason the directors' holding of shares and options is an incentive for the board members to work efficiently and to carefully monitor managers' actions (Brickley et al. 1988). Therefore it is also an advantage for the shareholders because directors are less prone to decrease the shares value and the amount of the dividend distribution. Moreover, Vafeas and Thepdorou (1998) found a positive relation between board ownership and corporate performance because, as a consequence of what said previously, the stock ownership of board members reduce the agency loss and the conflicts between shareholders and managers.

However not all the academic studies arise to the conclusion that the correlation between board ownership and company's performance is positive. For instance, Demsetz and Lehn (1985), studying a sample of firm, did not find any correlation.

Considering the Tobin's Q[20] the measure for the company value, it is possible to find a significant relationship between this value and the percentage of ownership stakes hold by the executive directors. Mcconnel and Serveas (1990) represented this relationship as a curve; this curve shows that the company value at first increases when the percentage of the directors' shares increases, then it reaches an optimum point and after this point it starts decreasing. It means that there is a positive relationship between executive directors' ownership and company performance. However, when the directors commitment becomes too strong the performance of the company start decreasing because they start focusing only on short term returns to monetize as soon as possible the company's output.

[20] The Tobin's Q ratio hypothesizes that the combined Market Value of all the companies on the Stock Market should be about equal to their replacement costs. The Q ratio is calculated as the market value of a company divided by the replacement value of the firm's assets.

Chart 4: Relationship between company's value and board ownership



Not only the executive ownership equity is important, but also the ownership stakes of non-executive board members have to be investigated. Vafeas and Thepdorou (1990) believe that the increase in the stocks owned by non-executive directors increases the independence of the board and brings to a better alignment between managers and shareholder interests. The consequence is an increase in the company's value.

However, Hermalin and Weisbach (1991) found that there is no relationship between company performance and non-executive directors' ownership.

2.5.4 Leadership structure

The last board characteristics concern the leadership structure of the board of directors. It is possible to refer to this characteristics also as CEO duality. It happens when the CEO of the company is also the Chairman of the board.

Academic literature has always had controversial opinion about the argument. Pi and Timme (1993) found that the company value is higher when the role of CEO and chairman are separated. The result to which Brickley et al. (1997) arise is the opposite; the CEO duality improve the firm performance.

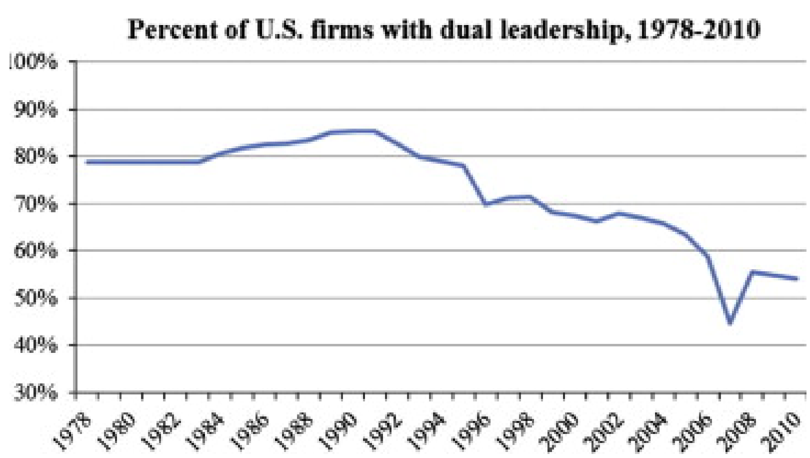
Most of the classic studies support the idea that the CEO duality, speeding up the decision making process, also improves the company performance (Baliga, Moyer and Rao, 1996; Finkelstein and D' Aveni, 1994). It is a great advantage especially when the company is dealing with an M&A transaction. The CEO, being also the chairman, has more influence on the board and generally he is able to accelerate the conclusion of the M&A deals (Boyd, 1995).

On the other hand a lot of studies state that the CEO separation from the Chairman is far more convenient for the companies because it often results in an improvement in the performance of the firms and in the corporate governance (Vafeas and Theodorou, 1998). Moreover the monitoring function is more effective because the influence of the CEO is lower. For what concern M&A transactions the CEO separation helps the acquirer company to estimate the target company and the deal proposal; it also improves the efficiency of the M&A transactions.

As analyzed above, controversial is the opinion on the consequences that the CEO duality has on the M&A performance. Coles (2001) found that the relation is positive, while Heracleous (2001) and Adams (2005) found it is negative.

This last theory is supported by many empirical studies conducted by Vuyst and Ooghe (2001) on a sample of firm. These studies outline that firms with CEO separation perform better than companies with CEO duality.

Chart 5: Trend CEO duality. Percentage U.S. firms



2.5.5 Number of female directors

The gender diversity within the board of directors has always been a problem. Many government imposed that the quotas of male and female directors have to be the same to guarantee no discrimination.

The gender diversity has always been a controversial issue in the literature; the empirical evidence are not always clear and not always have brought to significant results. However, is possible to outline some concepts that are shared by most of the studies. Huang and Kisgen (2013) performed a number of test on male and female directors to understand how they behave. The result was that male directors undertake an higher number of M&A transactions so they are more risk prone and overconfident in corporate financial decision. On the other hand female directors are risk adverse and generally tend to be more careful in the decision process. This is the reason why female corporate finance operations have higher announcement returns for shareholders than male ones.

Another controversial topic is the relation between the presence of female directors in the board and the performance of a firm. Most of the studies reports a positive correlation (Carter et al., 2003; Erhardt et al., 2003; Campbell and Minguez-Vera 2007; Luckerath-Rovers; 2013). They thought that increasing the female number of the board will increase the differentiation in knowledge competences and expertise which lead to an improvement in the performance and in the corporate governance. The opposite thesis was supported by Adams and Ferreira (2009) that found that firms with a high number of female directors have performance lower than the competitors (the analysis was done on the US market). While other studies conducted by Haslam (2010) and Gregory-smith et al. (2013) did not find any evidence that the presence of female in the boards of directors is associated with higher performance.

As said above, female directors are more risk averse than male directors. For this reason the number of M&A transactions undertaken by those firms that have an higher number of female directors are lower. This thesis was demonstrated by Chen, Crossland and Huang (2014) studying a sample of US firms. Their studies also demonstrate that *"greater female board representation will be associated with* *smaller acquisition"*[21].

Considering the correlation of the number of female directors and the performance of the M&A deals, Levi et al. (2014) studied *"the likeliness of the board to go through with acquisitions, as well as the risk of paying an higher bid premium*[22] *for the acquisition"*[23]. The result of his studies was that for each 10% of female members in the board of directors the bid premium decrease by 7.6%. for this reason is possible to say that the presence of female directors improve the M&A performance.

2.5.6 CEO characteristics

The CEO is part of the board of directors and for this reason his characteristics influence the board structure and its performance. it is possible to outline tree main characteristics that can have a correlation with M&A transaction, that are CEO compensation, CEO tenure and CEO equity ownership.

1. **CEO compensation**

   The CEO compensation has always been a critical issue. For sure he has to be paid more than other directors because he takes decisions with high rate of risks and for this reason he has higher responsibilities. However there is a big difference between the compensation of European CEOs and American CEOs. Italian regulation, for instance, establishes that the CEO cannot earn more than twelve times a worker of the firm.

   Yermack (1996) studies the relationship between the CEO compensation and the firm performance. He did not find any relevant evidence about this correlation. At the same conclusions arose Berger et al. (1997). He found a positive correlation only if the compensation is linked with the company performance. it is possible to conclude that CEO compensation has positive outcome over M&A transaction only when his remuneration includes

[21] Chen et al. 2014:p306

[22] An acquisition premium is the difference between the estimated real value of a company and the actual price paid to obtain it. Acquisition premium represents the increased cost of buying a target company during a merger and acquisition. There is no requirement that a company pay a premium for acquiring another company; depending on the situation, it may even get a discount.

[23] Marcus Wallain and Andrea Holmberg, 2017;p29

performance-related bonus.

2. **CEO tenure**

The CEO tenure is measured as the number of years a CEO has been in the position. Berger et al. (1997) found a negative correlation between managerial proxies and the amount of debt of a firm. He said that the more a CEO maintain his position the more he retains low amount of debts to keep the company flexible in the management of the cash flow, without been stuck in the repayment of debts. One of the proxies analyzed by Berger is the CEO tenure. For what concern M&A transaction a CEO that has been in the position for long time has more probability to became overconfident and to overestimate the value of a target company. For this reason it is possible to state that there is a negative correlation between the CEO tenure and the M&A performance.

3. **CEO equity ownership**

According to the academic literature CEO equity ownership has a positive impact on the company value. As Jensen and Meckling (1976) found the CEO is more exposed to the firm's shares he will not undertake M&A transactions or operations that could influence negatively the company's value. He will try to maximize the share value to maximize his income too. Mork et al. (1988) found that if the shares owned by the CEO are too much he becomes too committed and too interested in maximizing his profit. Hence, it is possible to state that there is a positive decreasing correlation between CEO equity ownership and M&A performance.

CHAPTER 3: Empirical study, findings and discussion

3.1 Research hypotheses

After an analysis of the features of the M&A transaction in general and a look at the board role and characteristics, it is now possible to go deeper in the topic with an empirical analysis conducted on a sample of 165 Italian firms. This study is aimed to integrate the literature on the topic giving a clear indication about which characteristics have a significative impact on the conclusion of an M&A transaction and which do not.

The discussion about the influence and the role of the board of directors on the M&A transactions is far from a conclusion. The literature outlined many board characteristics but it did not reach a shared opinion about how the changes in those characteristics affect M&A operations.

The study takes into consideration just few of all the variables analyzed in the previous chapter. The reason is that the data collected are not sufficient to draw up a link between all the characteristics and the M&A performance. Only those variables who have a strong influence on firm performance will be analyzed. Those variables are: the board size, the board independence and the number of female directors.

In this chapter are introduced some hypotheses that are the expression of the most shared theories in the literature as previously explained.

Hypothesis 1 (board size)

Large boards have more competencies and capabilities and their monitoring ability is higher. However, among them is more frequent that information asymmetry and communication problems arise (Dunn, 1987; Yermak, 1996; De Andres, 2005; Haniffa and Hudaib, 2006). Comparing advantages and disadvantages of a large board, the theory that is commonly shared by the academics is that the board size and the M&A performance are inversely related. (Yermack, 1996; Haniffa & Hudaib, 2006; De Andres et al., 2005; Arslan, Karan & Eksi; 2010). However, some studies outlined a positive relation between larger board and firm performance when dealing with big companies. It is true because bigger firms have a bigger need of information and capabilities that only a larger board can provide them (Coles, Daniel and Naveen, 2008). *The Hypothesis 1 is that the board size positive influences the number of M&As undertaken by firms. Especially, larger boards increase the number of M&A transactions undertaken.*

Hypothesis 2 (board composition)

Most of the academic literature shares the hypothesis that the number of independent directors has a positive effect on the M&A transactions. Byrd and Hickman (1992) stated from empirical studies that if the 40% of the board is made of independent directors there is a positive linear relationship with the performance of M&A transactions, if the number of the independent member is 40%-60% it has positive exponential relationship with the efficiency of M&A deals, while if the number is higher than 60% the relationship with M&A performance is negative. For all these reason *the Hypothesis 2 is that the number of independent board directors increase the number of M&As undertaken by firms, because those finance operations have better performance when at least the 60% of the board is made of independent directors.*

Hypothesis 3 (number of female directors)

Female directors are more risk averse than male directors. For this reason the number of M&A transactions undertaken by those firms that have an higher number of female directors are lower. This thesis was demonstrated by Chen, Crossland and Huang (2014) studying a sample of US firms. Their studies also demonstrate that *"greater female board representation will be associated with smaller acquisition"*[24]. *The Hypothesis 3 is that the number of female directors negatively influences the number of M&A transactions undertaken because generally female directors are more risk averse than male directors.*

[24] Chen et al. 2014:p306

Table 5: Hypothesis

Hypothesis 1 **(Board size)**	*The Hypothesis 1 is that the board size positive influences the number of M&As undertaken by firms. Especially, larger boards increase the number of M&A transactions undertaken.*	(Coles, Daniel and Naveen, 2008)
Hypothesis 2 **(Board composition)**	*The Hypothesis 2 is that the number of independent board directors increase the number of M&As undertaken by firms, because those finance operations have better performance when at least the 60% of the board is made of independent directors.*	Byrd and Hickman (1992)
Hypothesis 3 **(Number of female directors)**	*The Hypothesis 3 is that the number of female directors negatively influences the number of M&A transactions undertaken because generally female directors are more risk averse than male directors.*	Chen, Crossland and Huang (2014)

3.2 Data collection

The data used for the empirical study were collected using a software called ZEPHIR. On that software was possible to collect all the information about merger and acquisition undertaken by a panel of 165 Italian firm active in different market in the period 2011-2016. Of course not all the information was perfectly disclosed. Moreover, the data taken into consideration are only about the completed M&A transactions. Rumored, announced and not completed operation are not part of the database. This process brought to the collection of 929 observations.

The first row of the table indicates the acquirer firm, the second the target company the third the announce date of the transaction and the fourth the completed data.

The first important distinction that is possible to highlight is the deal type. It is divided in “Acquisition and Merger”. The acquisition registered in the database are those who grant to the acquirer firm the 50%or more of the ownership stakes of the target company. In the database are indicated also the acquisitions that have an overall amount lower than the 50% but that allow the acquirer firm to own the 50% or more of the target firm shares. In some cases the amount of the operation is not disclosed and the acquisition reports the label of the “acquisition majority stake”. However, in the database is reported only the final percentage of the acquisition to make easier to calculate the statistical regression. For what concern the merger they indicate an overall value of 100% and the companies involved are reported as acquirer and target without a particular criteria.

When there are multiple target in one operation they are reported more times according to the number of the target firms showing the details of each operation.

The deal value represent the cost of the M&A transaction that is the cost of the shares exchanged. While the deal equity value when reported is the value of the equity of the target company. If the percentage of ownership stocks acquired is the 100% the deal value and the deal equity value are equal.

Then there are the country of the target company, the deal method of payment (deferred payment, cash, liabilities and earn-out), the offer price and the bid premium. The next data collected are used to understand the performance of the M&A transaction analyzing the stock price 3months prior the announcement, after the completion, 1 month after the completion and 3 month after the completion.

The column called rationale identifies the aim behind the M&A transaction. The number 1 identifies vertical integration, when the firm expand within the same supply chain but a different level in the direction of the suppliers or the customers. The number 2 is assigned to horizontal integration operations when the company acquire an activity of a different business but in the same industry. Finally, the number 3 is used to identify unrelated diversification transaction when the company buy an operation active in a different business and industry.

The last column called "Asset/stock purchasing" use the number 1 to identify an M&A operations concluded with the purchase of asset while the number 2 to identify an M&A transaction settled with stocks purchase.

3.3 Research methodology

The next phase of the empirical part of the study was the utilization of a statistical linear regression model to connect the data collected in the database with the theory expressed in the hypothesis 1,2 and 3. The software used to implement the linear regression is STATA. Through the use of this software it is possible to translate data in results useful to arise to some conclusion or findings

3.3.1 LOGIT

To confirm or refuse the hypotheses made at the beginning of this chapter, it is possible to use a regression analysis. The analysis takes into consideration the three independent variables expressed in the hypotheses that are "the board size", "the board composition" and "the number of female directors" and the dependent variable of the analysis that is "the possibility to undertake a M&A transactions".

The dependent variable is a dichotomous (dummy) variable that means it can give only two result:

1. The company undertakes the M&A
2. The company does not undertake the M&A

The best way to deal with dummy variables is using the binary logistic model. The logistic model, also called LOGIT, is used to understand if the independent variables have a significant impact on the dependent variable.
The general (linear) regression model is:

$$Y = \beta_0 + \beta_{01} X_1 + \beta_2 X_2 + \cdots + \beta_\rho X_\rho + \mu$$

However, if the independent variable Y is dummy the linear regression model does not work well in many situations. In fact, the general linear regression model could provide results that are less than 0 or greater than 1, results that are out of the range when dealing with a binary dependent variable like the dummy variable.
In this case the Logit model is more adequate:

$$P_i = \mathrm{E}\,(Y = 1|X_i) = F(Z_i) = F\left(\alpha + \sum_{i=1}^{n} \beta_i X_i\right) = \frac{1}{1 + e^{-z}}$$

which is the cumulative logistic density function where:

$$Z_i = \alpha + \sum_{i=1}^{n} \beta_i X_i + \varepsilon_i$$

$$P_i = \frac{e^{Z_i}}{1+e^{Z_i}} \text{ and } (1 - P_i) = \frac{1}{1+e^{Z_i}}$$

The odds ratio is given by

$$\frac{P_i}{1 - P_i} = e^{Z_i}$$

Taking the natural logarithm of the last equation we obtain:

$$Z_i = \ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \sum_{i=1}^{n} \beta_i X_i + \varepsilon_i = L_i$$

where

P_i is the probability that $Y_i = 1$, ‘ the company undertakes an M&A’

$(1 - P_i)$ is the probability that $Y_i = 0$, ‘the company does not undertake an M&A’

β_i is the coefficient of the explanatory variables to be estimated;

X_i is the independent variable which includes also control variables;

e is the base of the natural logarithm;

ε_i is the stochastic error term;

$\ln\left(\frac{P_i}{1- P_i}\right) = Li$ is the log odds ratio of the probability that a company undertakes an M&A (also called Logit).

3.3.2 Panel data analysis: Random and Fixed effect

The study of the data collected and the effect that the independent variables and the control variables (that are explained forward in the chapter) have on the dependent variable, is made using the panel data analysis.

The “panel data analysis” is a dataset in which the behavior of entities (state companies, individuals etc.) are observed across time. It allows you to monitor variables that cannot be measured (i.e. cultural factors, business practices) or variables that change over time but remain within the same entities (i.e. polices, international agreement). Moreover, the panel data analysis can include variables at different levels of analysis (i.e. suppliers, producers, customers), adequate for multilevel models.

The most important techniques used for the panel data analysis are:

- Fixed effects
- Random effects

The STATA command used to run fixed and random effect is *xtreg*. Before using this command you have to set up: *panel variable*, *time variable* and *delta*.

3.3.2.1 Fixed Effect

The Fixed Effect is an analysis that is focused on the impact of variables that vary over time. It analyzes the variation of predictor and outcome variables that operate within the same entity. With the Fixed Effect it is possible to evaluate the net effect of the predictors on the outcome variables because it removes the characteristics that cause the bias. Moreover, it is important to highlight that the model is based on entities that have unique characteristics and for this reason the error term and the constant should not be correlated with the others. Otherwise is not possible to compute the Hausman test explained later.
The Fixed Effect equation is:

$$Y_{it} = \beta X_{it} + \alpha_{it} + u_{it}$$

Where:

- α_{it} (i = 1…. n) is the unknown intercept for each entity (n entity-specific intercepts).
- Y_{it} is the dependent variable
- X_{it} represents the independent variables;
- β is the coefficient for that IV;
- u_{it} is the error term.
- i = entity;
- t = time;

3.3.2.2 Random effect

The Random effects analysis is used when there is the belief that differences across entities have some influence on your dependent variable. Moreover, those differences are uncorrelated, and for this reason random, with the predictor and with the independent variables included in the model.

The Random Effect equation is:

$$Y_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it}$$

Where:

- u_{it} is the Between-entity error
- ε_{it} is the Within-entity error

3.3.3 The Hausman test

The Hausman test is computed to decide between Fixed and Random Effect. The test is made of two hypotheses:

1. Ho=null hypothesis=the preferred model is Random Effect
2. Ha=alternative hypothesis=the preferred model is Fixed Effect

The probability resulting from the Hausman test can be:

- Prob>0.05

  Hence the preferred model is the Random Effect (=Ho)
- Prob<0.05

  Hence the preferred model is the Fixed Effect (=Ha)

To compute the Hausmann test it is important to run a Fixed Effect and a Random Effect and save the estimates. Than use the following formula:

$$\chi^2 = (b - B)'[(V_b - V_B)^{-1}](b - B)$$

Where:

- b= Fixed Effect coefficient
- B= Random Effect coefficient
- V_b= variance of b
- V_B= variance of B

Using STATA the Hausman test is computed using the following command:

- *xtreg y x1, fe*
- *estimates store fixed*
- *xstreg y x1, re*
- *estimates store random*
- *hausman fixed random*

3.4 The study

This paragraph is aimed to link the theoretical concepts expressed in the first part of the chapter with the data collected using the software ZEPHIR. Firstly, there is an overview of the variables including their role and the results computed. Then there will be the explanation of the phases that brought us to the conclusions that will be analyzed in the next paragraph.

3.4.1 Variables

The study takes into consideration many different variables that have diversified roles in the analysis process. Let's analyze them deeper:

- Dependent variable: (the impact on the dependent variable is the aim of the study)
    1. possibility to undertake an M&A transaction
       The dependent variable is a dichotomous (dummy) variable that means it can give only two result:
        1. The company undertakes the M&A
        2. The company does not undertake the M&A

- Independent variables: (are those variables that directly influence the possibility to undertake an M&A)

1. Number of independent directors = It indicates the number of directors that does not have a direct interest in the company. The number of total observations collected are 966; the mean of the number of directors is 4,38 that includes board that have 0 independent directors (min) and board that have 17 independent directors (max). the standard deviation is equal to 2,44.
2. Board size = It indicates the total number of directors of the board. The number of total observation is 966; the average dimension of the board is 9,58 that includes with the smallest board with only 3 directors and the largest one with 24 directors. The standard deviation is equal to 3,36.
3. Number of female directors = It indicates the number of female directors in the board. The number of total observations collected are 966; the mean is 1,79 with a minimum number of female directors of 0 and a maximum of 24. The standard deviation is 3,36.

- Control variables: (are those variables that strongly impact the possibility to undertake an M&A, even if they do not influence it directly)

1. Return on Assets (ROA) = Net income / Total assets. It is an indicator of how profitable a company is relative to its total assets. The total number of observations is equal to 947; the mean is 1,55 with a minimum value observed of -79,49 and a maximum value of 227,56 and a standard deviation 1,48.
2. Financial Leverage = It is the degree to which a company uses fixed income securities such as debt and preferred equity. The total number of observation is equal to 963. The mean of the observations is 1,55 the minimum value registered is -7767,84 and the maximum is 7014,9. The standard deviation is 5,9.
3. Tobin’s Q = The Tobin's Q ratio hypothesizes that the combined Market Value of all the companies on the Stock Market should be about equal to their replacement costs. The Q ratio is calculated as the market value of a

company divided by the replacement value of the firm's assets. The number of total observation is 966 with an average value of 1,29. The lowest value registered is -1,1 and the maximum is 7,18. With a standard deviation of 0,8.

4. Firm size = It indicates the firm dimension. The total number of observations is 966, the mean is 1,31 with the smallest firm with a dimension of 1,89 and the biggest with a dimension of 8,29. The standard deviation value is 1,91

Table 6: Variables computations

Variables	Obs	Mean	Std. Dev.	Min	Max
N. independent directors	966	4,37681	2,44374	0	17
Board size	966	9,58385	3,36250	3	24
N. female directors	966	1,79400	1,29807	0	7
ROA	947	1,54449	1,48042	-79,49	227,56
Financial leverage	963	1,54976	5,89525	-7767,84	7014,9
Tobin's Q	966	1,29136	0,8031385	-1,0998	7,1755
Firm size	966	1,31441	1,9069	1,8924	8,2883

3.4.2 Computation

After the data collection and after the variables calculation, the study continues with the computation of the Hausman test to decide which between the Fixed Effect and the Random Effect is the model that should be applied.

As mentioned above the Hausman test is made of two hypotheses:

1. Ho=null hypothesis=the preferred model is Random Effect
2. Ha=alternative hypothesis=the preferred model is Fixed Effect

Using the function *xtlogit* in STATA, it was possible to compute the following calculations

Table 7: Fixed and Random Effect Computation

	b	*B*	*(b-B)*	*Sqrt(diag(V_b-V_B))*
Variables	**Fixed**	**Random**	**Difference**	**S.E.**
N. independent directors	0,0225037	-0,0045445	0,0270483	0,0567006
Board size	0,0905044	0,1012606	-0,0107563	0,0405795
N. female directors	-0,1128779	-0,0535456	-0,0593323	0,0449023
ROA	0,0227994	0,0166662	0,0061332	0,0149217
Financial leverage	-0,0007687	-0,0002407	-0,000528	0,0004156
Tobin's Q	-0,1132948	-0,0672624	-0,0460325	0,2938933
Firm size	0,3702719	0,2167474	0,1535245	0,3929132

The regression gave us two results:

- b= consistent under Ho and Ha
- B= inconsistent under Ha, efficient under Ho

To understand which one of the two result obtained from the regression we have to take into consideration we compute the Hausman test using the formula seen in the previous paragraph.

The result obtained was:

$$\chi^2 = (b - B)'[(V_b - V_B)^{-1}](b - B) = 3.89$$

The probability registered was:

$$Prob(\chi^2) = 0.7925$$

The probability is >0.05 and for this reason we take into consideration the regression result B (that means the Random Effect results). This result is inconsistent under Ha but efficient under Ho. Hence, we consider Ho as the result of our computation and we take into consideration only the Random Effect coefficients. We can now use the LOGIT[25] linear regression for the other computation.

[25] Paragraph 3.3.1

3.5 Results

Table 8: Results

Variables	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
N. independent directors	-0,0045445	0,0606351	-0,07	0,94	-0,1233872	0,114298
Board size	0,1012606*	0,0456259	2,22	0,026	0,0118356	0,190686
N. female directors	-0,0535456	0,0819143	-0,65	0,513	-0,2140947	0,107004
ROA	0,0166662*	0,0073946	2,25	0,024	0,0021732	0,031159
Financial leverage	-0,0002407	0,0002268	-1,06	0,289	-0,0006853	0,000204
Tobin's Q	-0,0672624	0,1728482	-0,39	0,697	-0,4060387	0,271514
Firm size	0,2167474**	0,083811	2,59	0,01	0,0524808	0,381014
Constant	-5,349154***	1,072116	-4,99	0	-7,450462	-3,247846

+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001
p= "p value", z= "z score"

The table 8 shows the results of the calculation made in the previous paragraphs. It is now possible to analyze the relation among dependent, independent and control variables.

Firstly it is possible to analyze the results dividing them in independent and control variables:

- The independent variable results are:
  1. Number of independent directors: the coefficient registered is equal to -0,0045445 that is out of the confidential interval that goes form -0,1233872 to 0,114298. The "z score" is equal to -0,07 and the "p value" is equal to 0,94; so it is possible to state that the P>z. The standard error is equal to 0,0606351.

2. Board size: the coefficient registered is equal to 0,1012606 that is in the confidential interval that goes form 0,0118356 to 0,190686. The “z score” is equal to 2,22 and the “p value” is equal to 0,026; so it is possible to state that the P<z. The standard error is equal to 0,0456259.
3. Number of female directors: the coefficient registered is equal to -0,0535456 that is out of the confidential interval that goes form -0,2140947 to 0,107004. The “z score” is equal to -0,65 and the “p value” is equal to 0,513; so it is possible to state that the P>z. The standard error is equal to 0,0819143.

- The control variable results are:
  1. ROA: the coefficient registered is equal to 0,0166662 that is in the confidential interval that goes form 0,0021732 to 0,031159. The “z score” is equal to 2,25 and the “p value” is equal to 0,024; so it is possible to state that the P<z. The standard error is equal to 0,0073946.
  2. Financial Leverage: the coefficient registered is equal to -0,0002407 that is out of the confidential interval that goes form -0,0006853 to 0,000204. The “z score” is equal to -1,06 and the “p value” is equal to 0,289; so it is possible to state that the P>z. The standard error is equal to 0,0002268.
  3. Tobin’s Q: the coefficient registered is equal to -0,0672624 that is out of the confidential interval that goes form -0,4060387 to 0,271514. The “z score” is equal to -0,39 and the “p value” is equal to 0,697; so it is possible to state that the P>z. The standard error is equal to 0,1728482.
  4. Firm size: the coefficient registered is equal to 0,2167474 that in the confidential interval that goes form 0,0524808 to 0,381014. The “z score” is equal to 2,59 and the “p value” is equal to 0,01; so it is possible to state that the P<z. The standard error is equal to 0,083811.

The understanding of the legend under the table is useful in the data analysis. It highlights when the value are significative and how strong is their influence on the independent variable:

- p<0,05 = * = significative low influence
- p<0,01 = ** = significative medium influence
- p<0,001 = *** = significative strong influence

Moreover, it is necessary to say that positive variable coefficient means a positive relation with the independent variable, while negative variable coefficient means that the dependent and the independent/control variables are inversely related.

- Coefficient>0 = positive influence on the dependent variable
- Coefficient<0= negative influence on the dependent variable

Let's start the analysis form the independent variables.

The independent variables are the number of independent directors, the board size and the number of female directors. The only one who is significative is the board size. The other two are not significative; it means that the data collected and the results obtained with the statistical regression are not sufficient to understand if those independent variables affect the dependent variables positively or negatively.

The analysis outlined that the board size is significative and it influences the dependent variables. The board size "p value" is 0,026 that lead to 0.05<p>0.01. The value of the "p value" and the positive sign of the coefficient mean that this independent variable increases directly the probability that companies undertake M&A transactions, even if it has a low positive influence.

The number of independent directors is not significative because its "p value" is 0,94 that is higher than 0,1 (p>0,1). It means that is not possible to say if this independent variable positively influence or negatively influence the dependent variable .

The number of female directors is not significant too. In fact, its "p value" is 0,513 that is higher than 0,1 (p>0,1). So, also the number of female directors does not influence the possibility to undertake an M&A transaction.

The empirical study takes into consideration four control variables that are: ROA, Financial leverage, Tobin's Q and the Firm size.

The Financial leverage and the Tobin's Q are not significative and for this reason it is not possible to state how those variables impact on the possibility to undertake an M&A transaction. While the ROA and the Firm are both significative variables that impact on the dependent variable

The Financial leverage has a "p value" that is equal to 0,289 that is higher than 0,1 (p>0,1). The Tobin's Q has a "p value" that is equal to 0,697 that is higher than 0,1 (p>0,1). For this reason both of them are not significant.

The ROA and the Firm size are significative and both have a positive coefficient that means positive impact. The ROA has a low positive impact on the dependent variables. Its "p value" is 0.05<p>0.01. The Firm size has a medium positive impact on the dependent variable because its "p value" is 0.01<p>0.001.

It is possible to do some more statements about the variables that are significant (both independent and control variables):

- They have a "z score">0 and all with values close to 2.5, while the other variables have a "z score"<0.
    1. Board size "z score" = 2,22
    2. ROA "z score" = 2,25
    3. Firm size "z score" = 2,59

- The "z score" of the significative variables is always bigger than the p value, while for the non-significative variables the "p value" is always higher than the "z score":
    1. Board size: P<z = 2,22<0,026
    2. ROA: P<z = 2,25<0,024
    3. Firm size: P<z = 2,59<0,01

- Moreover, the coefficients of the significant variables are all in the confidential interval, while the non-significant variables coefficients are all out of it.
    1. Board size coefficient = 0.1012606

       Confidential interval = [0,0118356 - 0,190686]
    2. ROA coefficient = 0.0166662

       Confidential interval = [0,0021732 - 0,031159]
    3. Firm size coefficient = 0.2167474

       Confidential interval = [0,0524808 - 0,381014]

Conclusions

Thanks to the empirical study it is now possible to draw up some conclusions. In fact, the results obtained from the Random Effect clearly answer to the hypotheses made at the beginning of the chapter.

The Hypothesis 1 (*the board size positive influences the number of M&As undertaken by firms. Especially, larger boards increase the number of M&A transactions undertaken*) has been confirmed by the empirical study. It highlights that the board size positively influence the possibility to undertake M&A transactions.
Most of the literature shares the idea that small boards increase M&A performance and hence the number of transactions undertaken (Yermack, 1996; Haniffa & Hudaib, 2006; De Andres et al., 2005; Arslan, Karan & Eksi; 2010). However, the empirical study outlines that an increase in the board's dimension increases the number of M&A transactions undertaken by firms. The reason is that generally larger boards are associated to big companies. As it is possible to see from the data collected on Zephir, the companies that undertake an higher number of M&A transactions, are those who have bigger dimension. The reason is that bigger firms have more necessity of diversification (in terms of businesses and risks) and they are more profitable. Moreover, the CEOs of big companies tend to undertake an higher number of M&A transactions because of the visibility and the remuneration these kind of operations bring, in some cases pursuing opportunistic behaviors.
Moreover, bigger boards are associated to higher ROA as well as bigger firm. M&A transactions are really expensive and for this reason companies with high profitability (that means high Return on Assets) have more funds to undertake this kind of operations.
Hence, it is possible to conclude that larger boards of directors undertake an higher number of M&A transactions than small board. Considering that larger boards are generally associated to bigger companies as well as to higher ROA, it is possible to state that bigger firms with high ROA generally are those who undertake an higher number of M&A transactions.

The empirical study results support the theory of Coles, Daniel and Naveen (2008) that found a positive relation between large board and firm performance when dealing with large companies. It is true because bigger firms have a bigger need of information and capabilities that only a larger board can provide them. The empirical study takes into consideration the Tobin's Q as a measure of the firm performance. However, the variable result is not significative and for this reason is not possible to say if it impact or not the possibility to undertake an M&A transaction, neither if there is a link between the firm size, the firm performance and the dependent variable.

The results obtained are not sufficient to support or refuse the Hypotheses 2 (*the number of independent board directors increase the number of M&As undertaken by firms, because those finance operations have better performance when at least the 60% of the board is made of independent directors*). The number of independent directors variable is not significant because the number of observation and data collected are not sufficient to state how and if this independent variable affects the possibility to undertake an M&A transaction.

As for Hypothesis 2, it is not possible to arise to a clear statement about the Hypothesis 3 (*that the number of female directors negatively influences the number of M&A transactions undertaken because generally female directors are more risk averse than male directors*). The number of female directors variable is not significative. This means that the data collected are not sufficient to draw up some results to confirm or refuse the hypothesis. It is possible to say that the number of female director does not influence the number of M&A transaction undertaken.

The last variable that is not significant is the Financial leverage. The impact that this variable has on the possibility to undertake an M&A transaction is not clear and not it is not deducible from the results obtained.

This work have deeply analyzed the board characteristics and how their changes affect the possibility to undertake an M&A transaction. With the data collected was not possible to confirm or refuse all the hypothesis made at the beginning of the third chapter. However, the empirical study arose to some important conclusions about a controversial topic. The study has demonstrated that larger boards undertake an higher number of M&A transaction. Moreover, the positive results obtained from two control variables, that are the firm size and the ROA, seem to validate the Hypothesis 1 about the effect of the board size on the possibility to undertake M&A transactions.

References

Bruckman, J., & Peters, C. (1987), "*Mergers and acquisitions: the human equation",* Employment Relations Today, Vol. 14, pp.   55-63.

Cai Ye, (2010), *"Board Connections and M&A Transactions"*, Chapel Hill

Cai Ye, Sevilir Merih, (2012), *"Board Connections and M&A Transactions"*

Caiazza, R., & Volpe, T. (2015) "*M&A process: a literature review and research agenda"*, Business Process Management Journal, Vol. 21 Issue: 1, pp.205-220

Campobasso, G., (2015), "*Manuale di diritto commerciale", UTET,* 6th edition.

Cheng Su-Jane, Dampere Juan m., *"Do Corporate Governance Affect M&A Decisions for Banks?"*, Journal of Global Business and Technology, Vol.1, N.1, 2009

Cheng Yao, (2017), *"Corporate Governance and Bidder Abnormal Returns in M&A"*

DePamphilis, D. (2003), "*Acquisitions and Other Restructuring Activities: An Integrated Approach to Process, Tools, Cases, and Solutions"*. Butterworth-Heinemann.

EU Employment and Social Situation report, 2012.

Fontana, F., & Boccardelli, P. (2015). Corporate Strategy. "*Una prospettiva organizzativa e finanziaria per la crescita"*, Hoepli.

Frederiksen, L. (January 8, 2018), "*Mergers and Acquisitions as Part of Your Growth Strategy"*, Hinge website

Gadiesh, O., Ormiston, C., et all, (2002), "*A CEO's guide to the new challenges of M&A leadership"*, Strategy & Leadership, Vol. 30 Issue: 3, pp.13-18.

Gaughan, P. (2010), "*M&A resurgence: Good or bad?"*, Corporate, Accounting and Finance, Vol. 22, no. 2 pp. 3-8.

Gaughan Patrik A., (2013), *"Maximizing Corporate Value Through Mergers and Acquisitions: a Strategic Growth Guide"*, Ch.9: "Role of Corporate Governance in M&A", pp. 233-261

Goronova Maria L., Priem Richard L., Ndofor Hermann A., Thrams Cheryl A., (17 Jen 2017), *"Is There a Dark Side to Monitoring? Board and Shereholder Monitornig Effects on M&A Performance Extremeness"*, Strategic Management Journal

HASPESLAGH, P.C., JEMISON, D.B., (1992), La gestione delle acquisizioni. Successi e insuccessi nel rinnovamento delle imprese. Milano: Etas Libri.

Killian Susanne, Schindler Anna, (2014), *"Influence of CEO Characteristics on Short-term M&A Performance"*

Koi-Akrofi, G. (2016), "*Mergers and Acquisitions failure rates and perspectives on why they fail"*, International Journal of Innovation and Applied studies, vol. 17 no. 1 pp. 150-158.

Kpmg. (2016). Rapporto Mergers & Acquisitions.

KPMG (1999), "KPMG identifies six key factors for successful mergers and acquisitions; 83% of deals fail to enhance shareholder value," 29 November, Vol. 9 No. 17, PR Newswire.

Parikh, V. (July 24, 2016), Advantages and Disadvantages of Mergers and Acquisitions, available at, http://www.letslearnfinance.com/advantages-and-disadvantages-of-mergers-and-acquisitions.html

Pasaribu P., *"Female Directors and Firm Performance: Evidence From UK Listed Firms",* Gadjah Mada, International journal of business, Vol.19, N.2, 2017, pp. 145-166

Porter, E. (1985), "*The Competitive Advantage: Creating and Sustaining Superior Performance*." NY: Free Press.

Saint-Onge, H., & Chatzkel, J. (2009), "*Beyond the Deal: Mergers & Acquisitions that Achieve Breakthrough Performance Gains"*. McGraw-Hill.

Sevastyanov M., (2016), *"The Role of Corporate Governance in Mergers and Acquisitions: How Boards Structure Affects M&A Performance"*

Schmidt Alexandra S., Carol M. Sanchez, and Stephen R. Goldberg, (2014), *"M&A Roundup: What is the Board Role?"*, Wiley Periodical inc.

Snichelotto M., Pegoraro Alessandro *"Le operazioni di M&A come strumento del vantaggio competitivo"*, RiVista, 3,2009.

Tamosiuniene, R., & Duksaite, E. (2009), "*The Importance of Mergers and Acquisitions in Today's Economy"*, KSI Transactions on Knowledge Society, 2(4), pp.11-15.

Teti Emanuele, Dell' Acqua Alberto, Etro Leonardo, Volpe Michele, *"The Impact of Board Independency, CEO duality and CEO Fixed Compensation on M&A Performance"* Emerald Publishing limited, Vol.17, N.5, 2017, pp.947-971

Torres-Reyna O., (2007), *"Panel Data Analysis Fixed and Random Effect Using Stata"*.

Van Hoorn F., Van Hoorn N., (2011), *"Mergers & Acquisition, Firm Performance and Corporate Governance"*

Wallin M., Holmberg A., (2017), *"Board Diversity and Its Effects on Corporate Acquisition"*.

Yong Liu, Yongqing Wang, *"Performance of Mergers and Acquisition under Corporate Governance Perspective"*, Open Journal of Social Sciences, 2013, Vol.1, No.6, 17-25

Zollo M. & Meier D., (2008). *"What Is M&A Performance? Academy of Management Perspectives"*, 55-60.

Sitography

www.datastream.com

www.stata.com

www.zephyr.com

Thesis summary

Introduction

The aim of this work is to analyse how the companies' governance affects the number of M&A transactions undertaken by firms. The focus will be on the characteristics of the board of directors with particular attention to three main variables: the number of independent directors, the board size and the number of female directors. Those variables will be the starting point for the creation of the three hypotheses that this work is going to evaluate.

The topic has been chosen considering the importance that the (so called) "extraordinary finance operations" have in the strategies' decision-making process. The M&A is increasingly becoming one of the strategies more often adopted by firms because of the advantages they bring to the acquirer company. However, many risks are linked with those operations if the transactions are not managed considering the effective value of the ownership stakes of the target company and the intrinsic difficulties of the integration of different corporate cultures.

The work is divided in three main parts:

1. The first chapter provides an overview about the M&A activities analysing separately mergers and acquisitions and the forms that they can assume. Moreover, it gives some information about the history of the M&A and the trend of this strategy worldwide and in Italy
2. The second chapter focuses on the board of directors. It outlines the board's main characteristics and its role in the M&A transactions.
3. The third and last chapter reviews the phases of the empirical study, starting from the hypotheses to arrive at the results of the computations.

CHAPTER 1: An overview of M&A activities

Many companies are struggling to survive in today's business environment, which is uncertain, fast changing, and in continuous evolution. Competition has become fiercer and as a consequence, in order to overcome their rivals, firms are seeking growth opportunities to gain optimal market share, acquire knowledge, skills and capabilities, which enable them to obtain a sustainable competitive advantage. In this context, the solution adopted by many companies is to pursue external growth strategies namely, M&A operations which are considered to be the easiest and fastest way to grow (Snichelotto and Pegoraro, 2009). The increase in the dimension of a company relies on "extraordinary finance operations[26]" these operations are aimed at rebuilding and innovating the structure, the management and the organization of a firm. This becomes extremely relevant also in the Italian context, mainly characterized by numerous firms of small and medium size, which, in the new globalized business environment, need to adapt and pursue growth strategies in order to acquire the features needed for survival.

Mergers

A merger is an extraordinary finance operation that involves two or more firms and it is a voluntary fusion among them, aimed to create a completely new company (Campobasso, 2015). The companies that decide to merge move all their capital to the new company and they participate to the earnings in the size of the capital given. Generally, the firms that agree to merge have a lot of similarities in terms of dimension, structure, customers and organization. The goals of this strategy are to gain market share, reduce costs of operations, expand in new territories and/or explore new products and obviously increase profits.

Acquisitions

An acquisition is a corporate strategy in which a firm buys all or most of the ownership stake of another firm (Campobasso, 2015). This "extraordinary finance operation" is aimed to obtain the control of the target company through the acquisition of 50% or more of its shares. This strategy allows firms to obtain economies of scale[27] or of scope[28], to increase market share, to vertical integrate with

[26] These are operations that increase the amount and the composition of the companies' liabilities because they are financed in unusual ways.
[27] When a firm increasing, the output reduces the cost per unit of a product.

a supplier or a dealer and to change the structure and the organization of the firm to make it more efficient.

Forms of M&A

There are various types of M&A operations:

- *Conglomerate*: it occurs among two or more firms that operate in unrelated business. This is a diversification strategy because the companies that merge want to approach new market with new products and different technologies. There are two types of conglomerate merger:
    3) Pure conglomerate: when the firms have nothing in common
    4) Mixed conglomerate: when the firms are trying to acquire new product or more geographical extension through the merger even if they still operate in unrelated business.
- *Congeneric or (Product Extension Merger*): this kind of merger is done among companies that have overlapping factors such as technology, R&D, production process, marketing etc. to increase the number of available customers. Generally, this kind of merger is aimed to put together different product lines coming from different firms.
- *Market Extension:* this kind of merger is aimed to expand in other market and it is done from companies that sell the same product in different geographical area or market.
- *Horizontal:* horizontal mergers involve firms operating in the same market and producing the same product. This strategy allows companies to acquire a bigger market share, to eliminate effective or potential competitors and to acquire new competencies.
- *Vertical:* vertical mergers occur when companies operating at different level of the same supply change decide to merger. This merger increase the communication and the synergy among the firms and reduce the overall cost of production.

[28] When it is cheaper for a firm to produce a variety of products together instead of on their own.

CHAPTER 2: Board Characteristics and M&A Performance

Corporate governance overview

The corporate governance is the framework of rules, practices and processes that are used to control and to curb the companies' operations and performance. All corporate decision and strategies are established by the corporate governance to satisfy the shareholders' need of shares' value maximization and the interests of all the firm's stakeholders (management, customers, suppliers, financers, government and also the community).

The most important actors in the corporate decision making process are the CEO and the board of directors.

- The CEO is the one who takes most of the decision about the financing investment and organizational strategies. He has the full responsibility over the company performance and is the one who decide to undertake an M&A transaction or not, with the support of the board of directors.
- The board of directors is the other important actor in corporate governance decisions. It plays a crucial role because it chooses the managers that have to run ordinary firm' s operations and it controls the CEO's actions and results on the behalf of the shareholders. Moreover, it has to give suggestions over the strategies proposed every time there is the need.

Both the CEO and the board of directors play a crucial role in M&A transaction

Board characteristics

1. Board Size

In many cases the board size influences the company performance and the M&A performance. The role of the board is to provide important intangible resources (as knowledge and competences) to the firm' s governance, being an intermediary between the shareholders and the management (Fox,1998; Barosso and et. al. 2011) . For this reason many studies have been conducted on this topic and many different opinions have been published to explain the relation between the board size and the

M&A transaction performance.

Board with a large number of members can provide more bonusses and resources to their company, compared to those that are smaller because they can bring less advantages, in terms of competences, to their firm. Moreover, bigger board have more possibilities to hire new members because the directors' turnover is more frequent. The consequence is frequent diversification of competences, capacity and experiences. It can be useful to improve the process of taking strategical important decision.

The board size should be big enough to ensure the balance between the advantage of competence diversification and the disadvantages of hiring too much directors. In fact, there are many disadvantages linked with big boards. The degree of influence and political affiliation is higher and for this reason the board independence is lower. Moreover, in large board the coordination and communication costs are higher (Liu, 2013) and the decision making process complicates and significantly slows down (Rodriguez-Fernandez, 2014)

Large boards have better monitoring competencies and capabilities but among them is more frequent that information asymmetry and problems arise as well as communication difficulties (Dunn, 1987; Yermak, 1996; De Andres, 2005; Haniffa and Hudaib, 2006).

The CEO is the most important player in the decision making process of a firm. He is part of the board and sometimes he is not the only top-manager that is a director too. The CEO has less influence over large boards that generally are more independent. This is the main reason that brings to the arise of agency problems (Jensen, 1993).

Most of the economic literature identifies a relationship between the number of directors and the firm's size and performance. For all the reasons above and comparing advantages and disadvantages of a large board, the theory that is commonly shared by the academics is that the board size and the corporate or M&A performance are inversely related[29]. (Yermack, 1996; Haniffa & Hudaib, 2006; De Andres et al., 2005; Arslan, Karan & Eksi; 2010).

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[29] When the number of the directors increase the performance decreases.

Moreover, as Lipton and Lorsch (1992) stated, it is possible to identify the best size of the board. They said that the maximum number of directors should be 10 so that the board can be efficient and effective. Less than 10 would be the optimal solution.
Some academic studies question these two views (Boone et al., 2007; Coles, Daniel and Naveen, 2008; Guest, 2009; Limk et al., 2008). They found that the board size is influenced by specific firms' variables. For instance, Coles, Daniel and Naveen, 2008 found a positive relation between large board and performance when dealing with large firms. It is true because bigger firms have a bigger need of information and capabilities that only a larger board can provide them. Another theory states that the institutional environment plays a crucial role when companies have to decide the board size. Different institutions bring to different role of the board, and for this reason the relation between the number of the directors and the firm's performance could be expected to differ too (Guest,2009).

2. Board Composition

The board of directors is made up of two different directors categories:

3) Executive directors: they have an executive management role within the company.
4) Non-executive directors: they are not part of the executive management of the corporation. They can be further more distinguished in:
    - Independent: if they do not have a personal interest or a connection with the company they are managing.
    - Affiliated: if they are connected in some extent with the company (Tricker, 2012).

The composition of the board is one of the key factor for the success of a firm especially if the company is dealing with extraordinary finance operation as M&A transactions. His role is to help the CEO every time there is the need giving suggestions and providing competences and knowledge. Moreover, it is directly nominated by the shareholders to protect their interests when there is the risks of agency costs. Both executive and non-executive directors add a positive value to the company performance. Executive directors provide specific expertise and knowledge of the operations and of the industry. While non-executive, and especially independent non-executive board directors, provide impartiality and a better capacity of monitoring over the CEO's actions.

In the field of the board composition, the role of independent non-executive board directors is crucial. They are not engaged with the company or with other directors and, except from a fixed remuneration, they do not have an interest in the company; it makes them able to judge impartially the CEO's actions and the board works. For this reason the presence of independent directors, improving the management in the way of shareholder's value maximization, also improves the value of the capital shares (Zighang and Xiuhua, 2009). Quiang and Pan (2005) found from empirical studies that companies with high levels of income, generally hire more independent directors. However, some academic studies stated the opposite: even if the independence of the board leads to a better monitoring over the activities and the transactions, it negatively impacts the value of the company and the performance (Vance, 1968; Pfeffer, 1972; Liang, 2009). In fact, the presence of too much independent directors could bring to a lack of executive directors and in a loss of specific knowledge and expertise within the company.

Most of the academic literature shares the hypothesis that the number of independent directors has a positive effect on the M&A transactions. Byrd and Hickman (1992) stated from empirical studies that if the 40% of the board is made of independent directors there is a positive linear relationship with the performance of M&A transactions, if the number of the independent member is 40%-60% it has positive exponential relationship with the efficiency of M&A deals, while if the number is higher than 60% the relationship with M&A performance is negative.

3. Number of female directors

The gender diversity within the board of directors has always been a problem. Many government imposed that the quotas of male and female directors have to be the same to guarantee no discrimination.

The gender diversity has always been a controversial issue in the literature; the empirical evidence are not always clear and not always have brought to significant results. However, is possible to outline some concepts that are shared by most of the studies. Huang and Kisgen (2013) performed a number of test on male and female directors to understand how they behave. The result was that male directors undertake an higher number of M&A transactions so they are more risk prone and overconfident in corporate financial decision. On the other hand female directors are risk adverse and generally tend to be more careful in the decision process. This is the reason why female corporate finance operations have higher announcement returns for shareholders than male ones.

Another controversial topic is the relation between the presence of female directors in the board and the performance of a firm. Most of the studies reports a positive correlation (Carter et al., 2003; Erhardt et al., 2003; Campbell and Minguez-Vera 2007; Luckerath-Rovers; 2013). They thought that increasing the female number of the board will increase the differentiation in knowledge competences and expertise which lead to an improvement in the performance and in the corporate governance. The opposite thesis was supported by Adams and Ferreira (2009) that found that firms with a high number of female directors have performance lower than the competitors (the analysis was done on the US market). While other studies conducted by Haslam (2010) and Gregory-smith et al. (2013) did not find any evidence that the presence of female in the boards of directors is associated with higher performance.

As said above, female directors are more risk averse than male directors. For this reason the number of M&A transactions undertaken by those firms that have an higher number of female directors are lower. This thesis was demonstrated by Chen, Crossland and Huang (2014) studying a sample of US firms. Their studies also demonstrate that *"greater female board representation will be associated with smaller acquisition"*[30].

Considering the correlation of the number of female directors and the performance of the M&A deals, Levi et al. (2014) studied *"the likeliness of the board to go through with acquisitions, as well as the risk of paying an higher bid premium*[31] *for the*

[30] Chen et al. 2014:p306

[31] An acquisition premium is the difference between the estimated real value of a company and the actual price paid to obtain it. Acquisition premium represents the increased cost of buying a target

acquisition"[32]. The result of his studies was that for each 10% of female members in the board of directors the bid premium decrease by 7.6%. for this reason is possible to say that the presence of female directors improve the M&A performance.

CHAPTER 3: Empirical study, findings and discussion

Research hypotheses

After an analysis of the features of the M&A transaction in general and a look at the board role and characteristics, it is now possible to go deeper in the topic with an empirical analysis conducted on a sample of 165 Italian firms. This study is aimed to integrate the literature on the topic giving a clear indication about which characteristics have a significative impact on the conclusion of an M&A transaction and which do not.

The discussion about the influence and the role of the board of directors on the M&A transactions is far from a conclusion. The literature outlined many board characteristics but it did not reach a shared opinion about how the changes in those characteristics affect M&A operations.

The study takes into consideration just few of all the variables analyzed in the previous chapter. The reason is that the data collected are not sufficient to draw up a link between all the characteristics and the M&A performance. Only those variables who have a strong influence on firm performance will be analyzed. Those variables are: the board size, the board independence and the number of female directors.

In this chapter are introduced some hypotheses that are the expression of the most shared theories in the literature as previously explained.

Hypothesis 1 (board size)

Large boards have more competencies and capabilities and their monitoring ability is higher. However, among them is more frequent that information asymmetry and

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company during a merger and acquisition. There is no requirement that a company pay a premium for acquiring another company; depending on the situation, it may even get a discount.

[32] Marcus Wallain and Andrea Holmberg, 2017;p29

communication problems arise (Dunn, 1987; Yermak, 1996; De Andres, 2005; Haniffa and Hudaib, 2006). Comparing advantages and disadvantages of a large board, the theory that is commonly shared by the academics is that the board size and the M&A performance are inversely related. (Yermack, 1996; Haniffa & Hudaib, 2006; De Andres et al., 2005; Arslan, Karan & Eksi; 2010). However, some studies outlined a positive relation between larger board and firm performance when dealing with big companies. It is true because bigger firms have a bigger need of information and capabilities that only a larger board can provide them (Coles, Daniel and Naveen, 2008). *The Hypothesis 1 is that the board size positive influences the number of M&As undertaken by firms. Especially, larger boards increase the number of M&A transactions undertaken.*

Hypothesis 2 (board composition)

Most of the academic literature shares the hypothesis that the number of independent directors has a positive effect on the M&A transactions. Byrd and Hickman (1992) stated from empirical studies that if the 40% of the board is made of independent directors there is a positive linear relationship with the performance of M&A transactions, if the number of the independent member is 40%-60% it has positive exponential relationship with the efficiency of M&A deals, while if the number is higher than 60% the relationship with M&A performance is negative. For all these reason *the Hypothesis 2 is that the number of independent board directors increase the number of M&As undertaken by firms, because those finance operations have better performance when at least the 60% of the board is made of independent directors.*

Hypothesis 3 (number of female directors)

Female directors are more risk averse than male directors. For this reason the number of M&A transactions undertaken by those firms that have an higher number of female directors are lower. This thesis was demonstrated by Chen, Crossland and Huang (2014) studying a sample of US firms. Their studies also demonstrate that *"greater female board representation will be associated with smaller acquisition"*[33]. *The*

[33] Chen et al. 2014:p306

Hypothesis 3 is that the number of female directors negatively influences the number of M&A transactions undertaken because generally female directors are more risk averse than male directors.

Variables

The study takes into consideration many different variables that have diversified roles in the analysis process.

Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
N. independent directors	966	4,37681	2,44374	0	17
Board size	966	9,58385	3,36250	3	24
N. female directors	966	1,79400	1,29807	0	7
ROA	947	1,54449	1,48042	-79,49	227,56
Financial leverage	963	1,54976	5,89525	-7767,84	7014,9
Tobin's Q	966	1,29136	0,8031385	-1,0998	7,1755
Firm size	966	1,31441	1,9069	8,2883	1,8924

Computation

After the data collection and after the variables calculation, the study continues with the computation of the Hausman test to decide which between the Fixed Effect and the Random Effect is the model that should be applied.

As mentioned above the Hausman test is made of two hypotheses:

3. Ho=null hypothesis=the preferred model is Random Effect
4. Ha=alternative hypothesis=the preferred model is Fixed Effect

Using the function *xtlogit* in STATA, it was possible to compute the following calculations

	b	*B*	*(b-B)*	*Sqrt(diag(V_b-V_B))*
Variables	**Fixed**	**Random**	**Difference**	**S.E.**
N. independent directors	0,0225037	-0,0045445	0,0270483	0,0567006
Board size	0,0905044	0,1012606	-0,0107563	0,0405795
N. female directors	-0,1128779	-0,0535456	-0,0593323	0,0449023
ROA	0,0227994	0,0166662	0,0061332	0,0149217
Financial leverage	-0,0007687	-0,0002407	-0,000528	0,0004156
Tobin's Q	-0,1132948	-0,0672624	-0,0460325	0,2938933
Firm size	0,3702719	0,2167474	0,1535245	0,3929132

The regression gave us two results:

- b= consistent under Ho and Ha
- B= inconsistent under Ha, efficient under Ho

To understand which one of the two result obtained from the regression we have to take into consideration we compute the Hausman test using the formula seen in the previous paragraph.

The result obtained was:

$$\chi^2 = (b - B)'[(V_b - V_B)^{-1}](b - B) = 3.89$$

The probability registered was:

$$Prob(\chi^2) = 0.7925$$

The probability is >0.05 and for this reason we take into consideration the regression result B (that means the Random Effect results). This result is inconsistent under Ha but efficient under Ho. Hence, we consider Ho as the result of our computation and we take into consideration only the Random Effect coefficients. We can now use the LOGIT linear regression for the other computation.

Results

Variables	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
N. independent directors	-0,0045445	0,0606351	-0,07	0,94	-0,1233872	0,114298
Board size	0,1012606*	0,0456259	2,22	0,026	0,0118356	0,190686
N. female directors	-0,0535456	0,0819143	-0,65	0,513	-0,2140947	0,107004
ROA	0,0166662*	0,0073946	2,25	0,024	0,0021732	0,031159
Financial leverage	-0,0002407	0,0002268	-1,06	0,289	-0,0006853	0,000204
Tobin's Q	-0,0672624	0,1728482	-0,39	0,697	-0,4060387	0,271514
Firm size	0,2167474**	0,083811	2,59	0,01	0,0524808	0,381014
Constant	-5,349154***	1,072116	-4,99	0	-7,450462	-3,247846

+ p<.10, * p<0.05, ** p<0.01, *** p<0.001
p= "p value", z= "z score"

The table 8 shows the results of the calculation made in the previous paragraphs. It is now possible to analyze the relation among dependent, independent and control variables.

The understanding of the legend under the table is useful in the data analysis. It highlights when the value are significative and how strong is their influence on the independent variable:

- p<0,05 = * = significative low influence
- p<0,01 = ** = significative medium influence
- p<0,001 = *** = significative strong influence

Moreover, it is necessary to say that positive variable coefficient means a positive relation with the independent variable, while negative variable coefficient means that the dependent and the independent/control variables are inversely related.

- Coefficient>0 = positive influence on the dependent variable
- Coefficient<0= negative influence on the dependent variable

Let's start the analysis form the independent variables.

The independent variables are the number of independent directors, the board size and the number of female directors. The only one who is significative is the board size. The other two are not significative; it means that the data collected and the results obtained with the statistical regression are not sufficient to understand if those independent variables affect the dependent variables positively or negatively.

The analysis outlined that the board size is significative and it influences the dependent variables. The board size "p value" is 0,026 that lead to $0.05<p>0.01$. The value of the "p value" and the positive sign of the coefficient mean that this independent variable increases directly the probability that companies undertake M&A transactions, even if it has a low positive influence.

The number of independent directors is not significative because its "p value" is 0,94 that is higher than 0,1 ($p>0,1$). It means that is not possible to say if this independent variable positively influence or negatively influence the dependent variable .

The number of female directors is not significant too. In fact, its "p value" is 0,513 that is higher than 0,1 ($p>0,1$). So, also the number of female directors does not influence the possibility to undertake an M&A transaction.

The empirical study takes into consideration four control variables that are: ROA, Financial leverage, Tobin's Q and the Firm size.

The Financial leverage and the Tobin's Q are not significative and for this reason it is not possible to state how those variables impact on the possibility to undertake an M&A transaction. While the ROA and the Firm are both significative variables that impact on the dependent variable

The Financial leverage has a "p value" that is equal to 0,289 that is higher than 0,1 ($p>0,1$). The Tobin's Q has a "p value" that is equal to 0,697 that is higher than 0,1 ($p>0,1$). For this reason both of them are not significant.

The ROA and the Firm size are significative and both have a positive coefficient that means positive impact. The ROA has a low positive impact on the dependent variables. Its "p value" is $0.05<p>0.01$. The Firm size has a medium positive impact on the dependent variable because its "p value" is $0.01<p>0.001$.

Conclusions

Thanks to the empirical study it is now possible to draw up some conclusions. In fact, the results obtained from the Random Effect clearly answer to the hypotheses made at the beginning of the chapter.

The Hypothesis 1 has been confirmed by the empirical study. It highlights that the board size positively influence the possibility to undertake M&A transactions.

Most of the literature shares the idea that small boards increase M&A performance and hence the number of transactions undertaken (Yermack, 1996; Haniffa & Hudaib, 2006; De Andres et al., 2005; Arslan, Karan & Eksi; 2010). However, the empirical study outlines that an increase in the board's dimension increases the number of M&A transactions undertaken by firms. The reason is that generally larger boards are associated to big companies. As it is possible to see from the data collected on Zephir, the companies that undertake an higher number of M&A transactions, are those who have bigger dimension. The reason is that bigger firms have more necessity of diversification (in terms of businesses and risks) and they are more profitable. Moreover, the CEOs of big companies tend to undertake an higher number of M&A transactions because of the visibility and the remuneration these kind of operations bring, in some cases pursuing opportunistic behaviors.

Moreover, bigger boards are associated to higher ROA as well as bigger firm. M&A transactions are really expensive and for this reason companies with high profitability (that means high Return on Assets) have more funds to undertake this kind of operations.

Hence, it is possible to conclude that larger boards of directors undertake an higher number of M&A transactions than small board. Considering that larger boards are generally associated to bigger companies as well as to higher ROA, it is possible to state that bigger firms with high ROA generally are those who undertake an higher number of M&A transactions.

The empirical study results support the theory of Coles, Daniel and Naveen (2008) that found a positive relation between large board and firm performance when dealing with large companies. It is true because bigger firms have a bigger need of information and capabilities that only a larger board can provide them. The empirical study takes into consideration the Tobin's Q as a measure of the firm performance. However, the variable result is not significative and for this reason is not possible to say if it impact or not the possibility to undertake an M&A transaction, neither if there is a link between the firm size, the firm performance and the dependent variable.

The results obtained are not sufficient to support or refuse the Hypotheses 2. The number of independent directors variable is not significant because the number of observation and data collected are not sufficient to state how and if this independent variable affects the possibility to undertake an M&A transaction.

As for Hypothesis 2, it is not possible to arise to a clear statement about the Hypothesis 3. The number of female directors variable is not significative. This means that the data collected are not sufficient to draw up some results to confirm or refuse the hypothesis. It is possible to say that the number of female director does not influence the number of M&A transaction undertaken.

The last variable that is not significant is the Financial leverage. The impact that this variable has on the possibility to undertake an M&A transaction is not clear and not it is not deducible from the results obtained.

This work have deeply analyzed the board characteristics and how their changes affect the possibility to undertake an M&A transaction. With the data collected was not possible to confirm or refuse all the hypothesis made at the beginning of the third chapter. However, the empirical study arose to some important conclusions about a controversial topic. The study has demonstrated that larger boards undertake an higher number of M&A transaction. Moreover, the positive results obtained from two control variables, that are the firm size and the ROA, seem to validate the Hypothesis 1 about the effect of the board size on the possibility to undertake M&A transactions.