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TESI DI LAUREA

"THE DELISTING PHENOMENON IN ITALY: AN EMPIRICAL ANALYSIS OF THE MAIN FEATURES AND CONSEQUENCES"

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INTRODUCTION

Since the late 1980s, an increasing number of companies started to consider the delisting process as a strategic decision. The term "delisting" refers to the phenomenon of the removal of a listed company from the exchange in which it trades. Despite the importance of this phenomenon in the life of an organization and the increasing number of companies that in the 21st century decide to go private, the delisting process is still little studied, in particular in less mature Stock Exchanges such as the Italian one. Different motivations can explain this gap: on one hand, this can be due to "the internal characteristics of the capitalist system" (Onesti *et al.*, 2013, pp.2) and to the low number of both traded and delisted companies. On the other hand, there is still resistance to see the delisting as a possible winning strategy: the announce of an IPO is seen by a company as reason of proud, and the delisting is still considered as a traumatic and negative event by management.

Given the complexity and heterogeneity of the public-to-private transactions (PtP), it is usually useful to distinguish between *voluntary* and *involuntary delisting*. The focus of our research will be the former case, even if we will introduce some concepts about involuntary delisting when considered worthwhile for comparison purposes. The voluntary delisting occurs when the parties that have the control of the company decides to revoke its listed status; on the other hand, as the name suggests, *involuntary delisting* is triggered by the Exchange's regulators because the firm does not have any more the minimum requisites for being listed. In theory, the distinction between the two groups seems clear and straightforward; however there are some kinds of transactions, such as M&A, LBOs and tender offers, which fall midway between the two, and scholar do not agree about their classification. According to Geranio (2004) and Tutino et al., (2013) these transactions have to be considered *involuntary delisting* because their primary rationale is not to go public, thus the delisting is just a consequence, and they must go private for a decision of the Stock Exchange. However, according to the view of the majority (for instance, Chaplinsky et Ramchard 2007; You, 2008) LBOs, M&A, and tender offers have to be classified as *voluntary* because often the companies are willing to go private or, in any case, are aware of the inevitable delisting due to the lack of necessary floating. In our paper we decide to follow this latter interpretation, keeping however in mind the contribution of Chaplinsky and Ramchard (2007) according to whom it is important to look at each individual situation in order to classify a transaction.

The choice of concentrating on voluntary delisting is driven by the fact that previous researches document that this is the **most common type of PtP transactions in the Continental Europe**. Moreover, this case is the most interesting from an administration point of view because it involves a management decision.

The aim of this dissertation is to cover two main aspects that until now have been poorly debated:

- To understand and to describe the main features of the voluntary delisting in Italy.
- To help managers to comprehend whether and when the delisting creates value for the company.

This paper is organized as follows. The first part (Chapters I to III) is about the literature review of the most relevant papers. The survey of the literature analyses the phenomenon from an international point of view, highlighting in particular the differences between the Anglo-Saxon markets and the Continental European ones. **Chapter I** provides an overview of the delisting process over time. The difficulties in finding researches about the topic are partially due to the fact that it is a quite recent phenomenon: the first delisting has been recorded only in the early 1980s in the U.S., and it has been necessary to wait until the late 1990s to observe its emergence in Europe. These events usually occur in waves and the latest researches document that the recent financial crisis has determined an increase in the number of delistings relative to the number of IPOs. This part of the dissertation will illustrate the reasons of these waves; in other words, we collect the macroeconomics elements that could have an impact on the phenomenon.

Chapter II looks at the pre-transaction and post-transaction context. In other words, first of all it is important to understand the reasons why some management has started to consider the surrender of the public status as a valuable strategy. The delisting occurs when the costs of listing exceed its benefits. The different explanations proposed by the literature have been reorganized in four groups: i)traditional incentives related; ii)agency theory; iii)financial structure; iv)defensive strategy against hostile takeovers. In addition, we will present the empirical studies that support or discredit each hypothesis. As it is, the European phenomenon emerges to be completely different from the Anglo-Saxon one; and this restates the importance of studying the Italian case, given the predominance of papers about the U.S. and the U.K. markets. The second part of this chapter focuses on the consequences of delisting: unfortunately, a topic less studied than the previous one. Contrary to involuntary delisting, voluntary delisting is overall associated with wealth gain for shareholders. The benefits come

mainly from three sources: i)tax benefits; ii)asymmetric information and agency costs reduction; and iii)improvement in operating performance. This last point, however, is still well debatable and scholars do not agree about the impact of delisting on the financial indexes.

Finally, in **Chapter III** we describe the most important techniques adopted to delist. In order to analyse this topic, it results more useful to divide the dissertation by geographical areas because they are strongly influenced by the legislations and by the shareholders' identity and composition. This part is about the laws and the most common practices that regulate the going private transactions, and wants to outline the advantages and disadvantages of the different ways available in order to understand which elements the management should consider in order to find the best solution for his specific company.

After having review the existing literature, the second part of this dissertation gives a contribution to the lack of studies on the Italian phenomenon. The structure of **Chapter IV** recalls the organization of the first two chapters of the literature review: first, we analyse the companies that delist from Borsa Italiana between January 1995 and 30th April 2015 (264 companies) in order to provide a **systematic picture of the Italian phenomenon**. The intent is to underline in particular the differences and the similarities with other countries and with previous researches. Then, in the second paragraph, the study investigates the **reasons and the consequences of PtP transactions** using information gathered from financial statements of a subsample of Italian companies that went private from 2006 until 2012. The aim of this paragraph is twofold:

1. We want to understand whether there are some financial indicators that distinguish delisted companies from companies that remain in Borsa Italiana. If we will be able to find such characteristics, we will have some clues on the issues that the companies are trying to solve trough the delisting.
2. Given the scarcity of clarity about the impact of delisting in terms of performance, we want to examine how the financial statement items change after the delisting. Moreover, we want to ascertain whether the variations are actually due to the PtP transactions or if they are cause by other factors.

Our results have two main limits: the first one is about the number of observations available in particular for the second part of the analysis of Chapter IV (28 observations). However, "this is an inherent problem in the going private research" (Michelsen et Klein, 2011, pp.57) due to the recent emergence of this phenomenon. Moreover, Italian stock exchange market trades a considerable fewer stocks than more developed markets. The second limit derives

from the difficulty to have access to some data, in particular about the information of the trading activity of the corporations before the delisting event. For these reasons, this dissertation should be regard as a starting point for next researches.

CHAPTER I: THE PHENOMENON OF DELISTING COMPANIES

Delisting is quite a new phenomenon since the first delistings have been registered in the early 1980s in the US markets. You (2008) counts 73.254 worldwide delisted companies until 2008. During this period, delisting process has been driven by different reasons and characterized by different features. In addition, this chapter highlights that the Public-to-Private transactions phenomenon in the Anglo-Saxon markets (the USA, Canada, and the US) is extremely different from the one in the European markets.

1.1 DELISTING WAVES

Figures 1.1a and 1.1b track the number of delisting companies in the US and in the UK until 2002. They show that there have been periods characterized by a higher number of PtP transactions than others; indeed, many scholars (Bettinelli *et al.*, 2011) describe delisting as a **phenomenon that occurs in waves.**

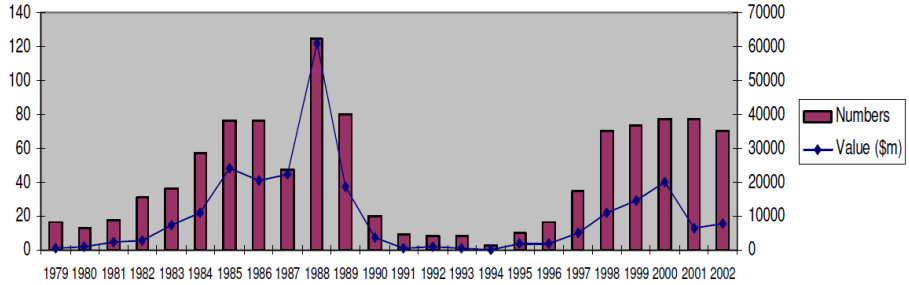


Figure 1.1.a Number of PtP transactions (left hand scale) and the value in million USD (right hand scale) in the US between 1979-2002
Source: Renneboog et Simons (2005), pp.4

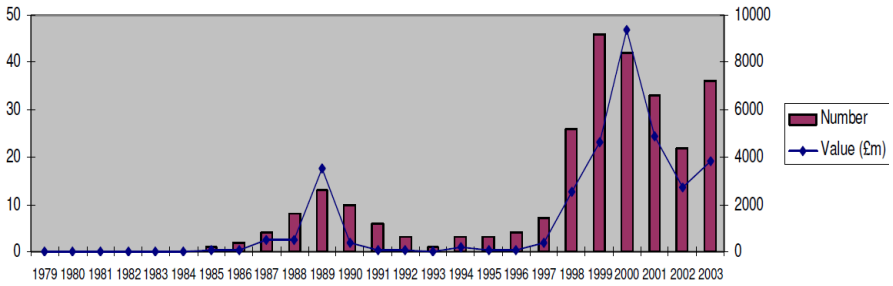


Figure 1.1.b Number of PtP transactions (left hand scale) and the value in million GBP (right hand scale) in the UK between 1979-2002
Source: Renneboog et Simons (2005), pp.5

The first wave of delisting is observed in the United States in the 1980s. According to Mitchell and Mulherin (1996) between 1982 and 1989, 57% of listed US companies became

the targets of takeovers (mainly hostile takeovers) or were subjected to restructuring. The PtP transactions were mainly performed through LBOs, but the high level of debt involved and the absence of regulations produced many bankruptcies in the second half of the 1980s. The high number of companies' failure triggered anti-takeover regulations, control over corporate high leverage, higher interests, and a credit crunch, which determined the end of the first PtP wave.

The delisting phenomenon quickly reached the London Stock Exchange (the first management buyout is registered in 1985). Even if smaller in scale, the UK wave resembled the American one, with the peak also reached in 1989.

The delisting trend decreased until the **end of the 1990s, when both the US and the UK experienced a second going-private wave, which peaked in 1997**. In both countries the total value of activity was lower than the previous period (USD 65 billion in 1997-2002 compared with approximately USD 250 billion of the first wave (Renneboog et Simons, 2005; and Bettinelli *et al.*, 2011)). The delisting's increase this time was mainly due, on one hand, to small companies that could not benefit from the Regulated Markets because of the low trading volume (due to decrease in institutional investors' coverage) and on the other hand to the introduction of unfavourable regulations that increase the costs of being listed (such as the Sarbanes-Oxley Act in the US). In addition, according to Renneboog and Simons (2005) another important determinant of the second wave had been the increased confidence of private equity and debt financiers that take over some companies.

The end on the 1990s was also the period when **PtP transactions emerged in the Continental Europe markets**, since during the first wave they had only experienced the first cases of delisting companies (Figure 1.2). During this period, the total value of LBO activity in Europe was Euro 28 billion and from 1995 to 2005, 25% of European listed companies delist through LBOs and non-LBOs (Macey et O'Hara, 2008; Martinez et Serve, 2011).

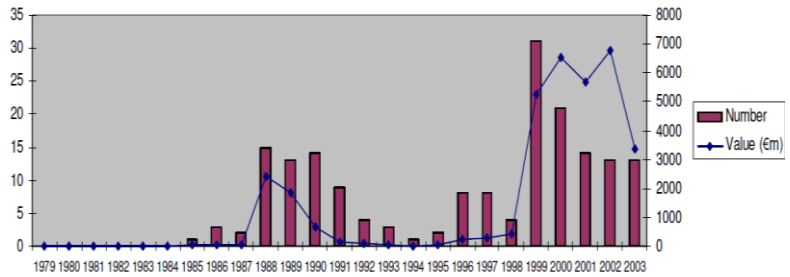


Figure 1.2. Number of PtP transactions (left hand scale) and their value in million Euros (right hand scale) in Europe between 1979-2002
Source: Renneboog et Simons (2005), pp.5

Compared to the UK, the PtP activity in the Continental Europe was **less pronounced both in the number of deals and in the value**. Several reasons for this difference have been

proposed by scholars. First of all, private equity firms were more reluctant to undertake the risky and costly delisting process. Secondly, the above graph does not distinguish between different European countries that actually behaved differently due to cultural influence. For instance, German managers usually are reluctant to list their companies because they do not recognize advantages; while Italian managers are proud if they are able to list their firms, and thus are less inclined to delist (Renneboog et Simons, 2005). Finally, as we will see in chapter II, European legal and fiscal regulations are less favourable to LBOs than the UK ones.

The evidence that delisting occurs in waves has been theorized by Helwege and Liang (2004) which state that in periods when the markets are characterized by positive trends (***hot market***) there is a higher number of IPOs, and delisting occurs when markets is experiencing negative results (***cold market*)**. In other words, they suggest that when the economy is expanding, firms judge projects with higher expected cash flow, and usually investors are overoptimistic, thus companies have more incentive to list. On the other hand, different reasons can explain the higher number of delistings during cold market periods: during these periods markets are characterized by few underpricing, few cases of oversubscriptions, and large offerings: all elements that make survival more difficult. In addition, according to some scholars (Loughran et Ritter, 1994) the *cold and hot market theory* implies that the companies that enter the market during the hot phase are often characterized by managerial opportunism and investors irrationality, and therefore firms are not selected on the base of their quality at the time of IPOs, and that cause higher probability of delisting when markets slow down.

Among the few researches that we have found about the phenomenon in the Italian market, figure 1.3 shows how the listing waves appear to be symmetrical to PtP transactions, suggesting that investors' decisions are in part influenced to macro events that are more or less favourable to listing or delisting. This elaboration can be used to suppose the applicability of Helwege and Liang's theory to the Italian context. The concept will be further debated in Chapter IV.

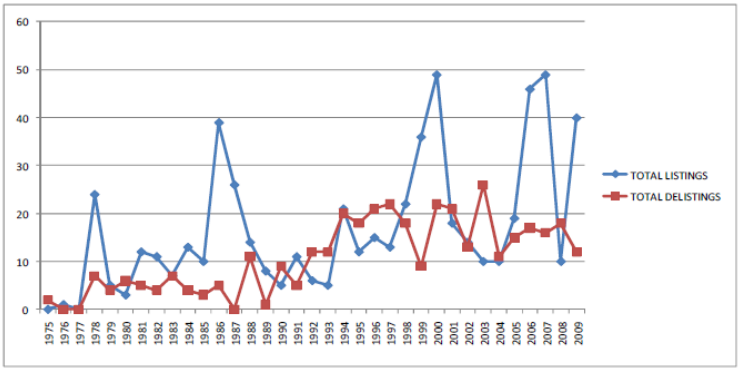


Figure 1.3. Delisting and Listing from Italian Stock Exchange Market 1975-2009
Source: Bettinelli et al. (2011), pp.241

1.2 THE FEATURES OF DELISTING IN THE XXI CENTURY

Starting from 2000, the public-to-private transactions become a more and more common process both in the US and Europe (see Table 1.1 and Figure 1.4). According to the research conducted by You (2008), **80% of the 73.254 worldwide delisted companies occurs after 2000**.

Table 1.1: Delisting in some worldwide Stock Exchanges

	1996	1997	1998	1999	2000	2001	2002
Nasdaq	121	717	906	873	700	815	535
NYSE	98	171	194	254	286	215	145
Toronto Stock Exchange	103	96	103	121	151	181	118
Euronext	85	82	88	75	112	140	99
London	320	235	292	336	299	287	261
Spanish Exchange	35	40	61	63	62	0	33
Swiss Exchange	20	21	20	32	24	25	20
Tokyo	19	19	32	30	45	48	82

Source: Geranio (2004), our elaboration

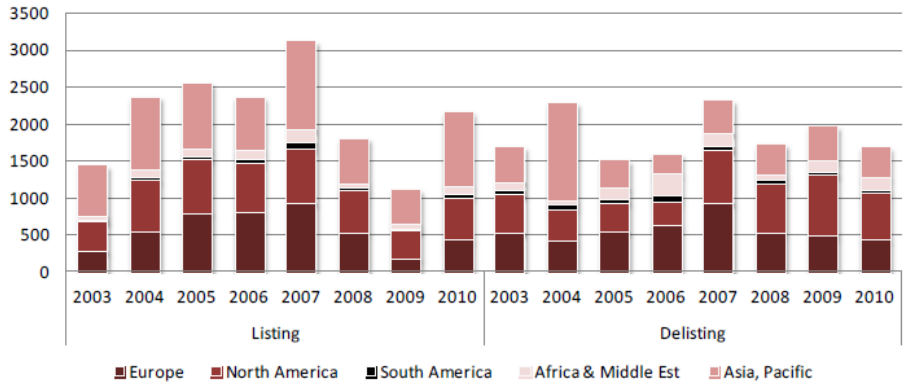


Figure 1.4. Worldwide listing (left) and delisting (right) phenomenon outlook, 2003-2010
Source: Tutino et al. (2013), pp.59

One could argue that the higher number of delisted companies could be due to the increase in the absolute number of listed firms, but Chaplinsky and Ramchand (2006) state that in the five year intervals between 2001-2005 the ratio between the number of delistings and listings rose over time. In the UK, the largest PtP transaction occurred in 2000 for a total value of £3.5 billion IBO (Renneboog et Simons, 2005). On average, 12,3% of total companies that were

traded in the London Stock Exchange were delisted every year during the period 1997-2008 (Croci et Del Giudice, 2014).

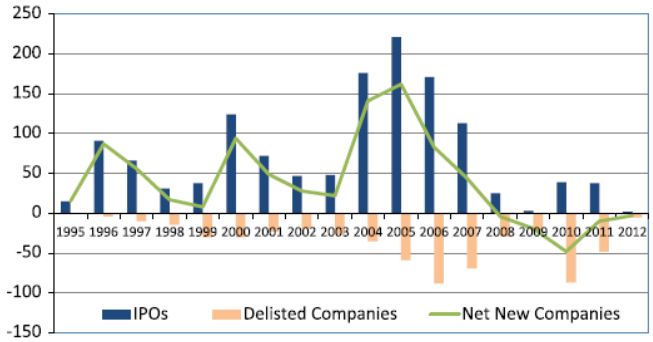


Figure 1.5. Annual distribution of listed and delisted IPO companies in AIM during 1995-2012
Source: Pour et Lasfer (2012) pp.4851

Also the Continental European markets experience a significant boost in the number of firms going private during the last decade; for instance, in Germany an average of 50 companies delist every year from 2000 to 2010 (Croci et Del Giudice, 2014). The peak of the activities of the XXI century mainly occurred during the **years before the financial crisis of 2007-2009 and 2010-2011** (Martinez et Serve, 2011).

Different reasons are at the base of the going private phenomenon that dramatically increases during the XXI century. According to You (2008) and You *et al.* (2012) the main driving forces can be summarized as follow:

a) **CAPITAL MARKETS INEFFICIENCY**. Higher price volatility and lower investors' confidence due to the burst of the dot.com bubble and to the financial crisis of 2008 and 2011. These facts reduce that trade volumes and the stock's performance.
b) **REGULATIONS**. The introduction in many countries of more strict standards and requirements to be listed, which determine higher costs to be listed. In Europe, in addition, the introduction of new merger laws provides a stimulus to the PtP transactions. In Italy, for example, from 2003 thanks to a new legislation, the bidder can "use the target company's assets to secure their debt" (Renneboog et Simons, 2005, pp.6).

It is important to note that the reasons at the ground of the phenomenon are very different according to the different markets. In mature and well established markets such as the USA, Canada and the UK, the delisting is most of the time involuntary. According to Djama *et al.* (2012) the primary reasons for this type of going private transactions are "the violation of stock exchange requirements" or "poor firm performance" (pp.9). On the other hand, in the Continental European markets, companies usually delist voluntarily, most of the time through

Buyout offer with squeeze-out (BOSO) or M&A activities. The differences between voluntary and involuntary delisting will be debated in more detail in Chapter III.

Comparing the most important markets of Continental Europe countries and the ones of the US and the UK, Geranio (2004) concludes that the delisting phenomenon is more relevant in the latter, even taking into account the higher number of companies listed in these markets. According to him, the more pronounced impact in developed markets such as Nasdaq could be due to the less strict rules required to go public, which allow to list also low quality firms. Moreover, another explanation of the different level of delisting could be the fact that in the more active markets there is a higher number of foreign firms that over the last years delisted themselves in particularly from the US markets. Indeed, by the end of 2002, cross-listed companies had decrease to 50% relative of what it was in 1997 (Karolyi, 2006 cited in You *et al.*, 2011).

The current century is not only characterized by an increase in the number of public-to-private transactions, but also by important differences in the listing and delisting companies. As Figure 1.6 shows, during 1961-2006 foreign companies listed in the US experienced a **decline in the length of listing time**. During the 1980s, foreign companies on average stayed in a US exchange for 33 years, in 1996-00 foreign companies delist after 6 years (Chaplinsky et Ramchand, 2006). Looking at both domestic and foreign companies that are listed in the main USA markets, in 1980 about 98% of firms stayed in the market for more than 10 years, but the percentage decreases to 30% considering firms listed after 1990. The main reason for this steady and persistent shift seems to be the worst quality of the later entrants, both in terms of size and of performance, compared to early entrants. Other reasons that must be considered to explain this change are the burst of the dot.com bubble and the enforcement of stricter standards and regulations (even if this last point is countries' dependent and cannot be applied indiscriminately worldwide).

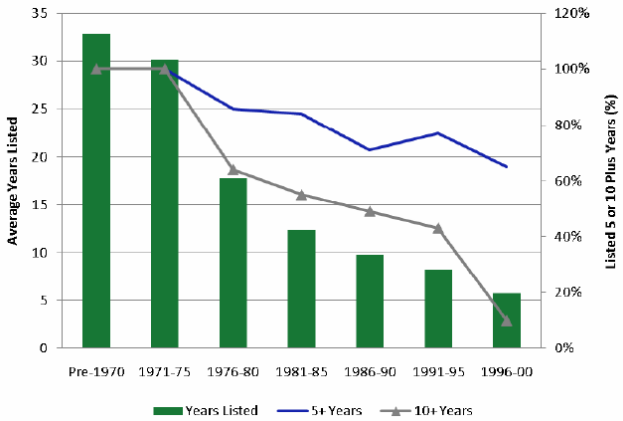


Figure 1.6. Duration of Listing in the US for Foreign Firms Listing from 1961-2006
Source: Chaplinsky et Ramchand (2008), pp.18

There is a paucity of work on the **impact of financial crisis on delisting process**. However all scholars (Croci et Del Giudice, 2014; Ventoruzzo, 2010) forecast that the current financial turmoil should lead to an **increase in the number of firms that go private** since this strategy can be attractive for different reasons. Ventoruzzo (2010) explains that, on one hand, the financial crisis has reduced the availability of liquidity that is necessary to leveraged buyout. On the other hand, however, due to the declining stock market it could be cheaper for controlling shareholders or institutional investors to buy out minorities. If the price paid is fair, the deal could also be valuable for the minorities, who receive a higher consideration than what they would have received form the market. According to Gupta *et al.* (2013) during crisis the stock markets are "less efficient in incorporating firm-specific information" (pp.87) and, as we will see in Chapter II, this fact can be a reason for deciding to delist. The 2012 vice-president of Aiaf (Associazione Italiana degli Analisti Fianziari), Antonio Tognoli, states that information is even more important in period of crisis, when investors want to invest in companies that have a credible plan to grow, and not in companies that raise capital in order to repay debt (Il Sole 24 Ore, 02/02/2012). In particular context, the problem is not only the lack of information, but also the absence of specialists able to guarantee liquidity in the market. This is the case, for example, of Italian small and mid-caps that are the more subjected to delisting process than bigger companies: almost 40% of the overall Italian trading is focused on large caps (Il Sole 24 Ore, 02/02/2012). Instead, Anglo-Saxon delisted companies are characterized by varied market capitalization. Finally, Ventoruzzo (2010) asserts that during crisis companies should be more willing to delist because of the uncertainty about future regulations and policy makers' decisions.

1.3 THE CROSS-DELISTING EVENT

During the second half of the 1980s the increasing integration among worldwide capital markets promoted the spread of **cross-listing**. Cross-listing can be convenient (in particular if carried out in more active markets) for several reasons:

- **Portfolio diversification** and therefore risk reduction;
- Firms that cross-list in financial developed countries have access to a larger amount of **foreign investments** and thus more capital flows. Often the US markets allow to raise capital at lower costs;
- The announcement of cross-listing in the US or the UK markets is usually welcomed with **optimism** by investors. According to the ***bonding hypothesis***, when management

cross-lists the company in a more regulated market, investors appreciate the fact that the risks of agency costs diminish and they are more protected due to the stricter information requirements;

- To use the cross listed shares for **acquiring other companies**;
- **Prestige;**
- **Tax benefits**

Companies located in countries with poor regulations and less strict disclosure requirements usually benefit from cross-listing registering high abnormal return at the announcements (Witmer, 2005).

However, in the late 1990s, when the markets experienced the second delisting wave, "international cross-listing started to lose some of its momentum" (You *et al.*, 2011, pp.200). There are several explanations of this trend reversal.

Concerning the US markets, the main reason seems to be the **introduction of Sorbanes-Oxley Act (SOX)** in 2002. SOX legislation forces companies to stricter disclosure, increased corporate governance and accounting standards, in effect **raising listing costs**. In theory, the introduction of stricter regulations should guarantee higher quality of listed companies and stronger bonding. In practice, foreign firms have to evaluate if the additional regulatory requirements, and the associated costs, are worth the bonding benefit. The costs for compliance can be higher for foreign companies than for domestic ones because they should need to change some "organizational components of their daily operations in order to comply with SOX" (Daugherty et Georgieva, 2011, pp.209). On the other hand, US capital markets can be still attractive for firms from countries with weak investor protections that being listed in these markets bond themselves with stronger regulations. Moreover, the higher number of delisted companies from the US markets could be due to the fact that "the role of US institutions has been exaggerated" (Witmer, 2005, pp.5) or that the hosting country's regulations have not been equally enforced against the cross-listed foreign firms. Indeed, You *et al.* (2011) do not find support to the bonding hypothesis. Moreover, multiple listing often creates **liquidity problems**, thus companies decide to delist from the market considered less strategic (that is often the foreign one).

An additional dimension that must be taken into account as a factor that influences delisting decision of foreign firms is the **cultural dimension**. Culture distance and individualism of the home country have been indicated as a predictor of delisting decision (Daugherty et Georgieva, 2011). The former is related to the fact that companies usually list in markets that are culturally similar and that have similar language, business structure, and common history. The latter (measured by Hofstede's index) is relevant because individualistic societies tend to

value more personal gain than the group's success, causing a high risk of agency problems and hence a greater need of strong regulations: post-SOX, organizations from individualistic societies are less likely to delist.

During the 1990s, 18 German companies cross-listed their shares on NYSE and NASDAQ; since 2000, however, 13 of the 18 cross listed German firms have delisted (Bessler *et al.*, 2012). In the table below, we have reported examples of justifications that some of these companies gave for cross-listing and subsequent delisting:

Table 1.2: Examples of German companies that have cross-delisted from US markets

COMPANY	CROSS-LISTING STATEMENT	CROSS-DELISTING STATEMENT
BASF The Chemical Company	By listing BASF shares on the NYSE we are not only emphasizing our global orientation, but also broadening our shareholder base and creating additional strategic options for making acquisitions on the American market.	Our decision to delist from the NYSE underlines BASF's continuous efforts to reduce complexity and costs.
BAYER	This listing creates a number of new advantages and opportunities for Bayer. For example, it gives us direct access to the US capital market. In addition, Bayer shares can now be used as a currency to finance possible acquisitions in the future. The listing also makes it easier for US stockholders to purchase Bayer shares, which is consistent with our goal of increasing the number of shareholders in that country. What's more, the Wall Street listing gives Bayer the opportunity to initiate stock ownership programs for employees at our US subsidiaries.	Bayer will maintain a high level of transparency in its reporting and thus continue to satisfy the requirements of international investors. Delisting and deregistration will enable us to achieve this with fewer formalities and therefore at lower cost.
DAIMLER	For major corporations active on an international level it is absolutely essential to be represented in all of the important capital markets. This is the only way to make sure that sufficient capital can be raised at acceptable cost.	Our analyses have shown that a listing on the New York Stock Exchange does not offer Daimler any significant advantages that would justify the work and expense connected with the listing.
Infineon technologies	Infineon's IPO has provided the company an access to additional forms of financing. It has also given the company with an "acquisition currency", available to finance acquisitions especially also in the USA.	The Frankfurt Stock Exchange represents Infineon's principal trading market, with trading on the NYSE accounting for a relatively low percentage of trading of its ADSs and ordinary shares on a worldwide basis. Infineon has therefore weighed the benefits of listing on the NYSE

		against the associated costs and reached the decision that continuing the listing of the ADSs is no longer commercially justifiable.
	Accessing the US capital market will enhance our global visibility as we build Qimonda into the world's leading creative memory company.	NYSE Regulation announced today that it determined that the American Depositary Shares of Qimonda AG should be suspended immediately. This decision was reached in view of the fact that the Company announced on January 23, 2009, that Qimonda AG filed an application with the local court in Munich today to open insolvency proceedings. In addition, the Company was below compliance with the NYSE's continued listing standards.
	This step [NYSE listing] is a reflection of our commitment to fulfil the demanding requirements posed by the international capital markets and to meet the need of North American investors, who own nearly 40% of the Company.	Following a detailed cost/benefit analysis, we reached a decision at the end of May to delist from the NYSE as quickly as possible. Delisting is a necessary precondition for exemption from the reporting requirements specified by the US Security Exchange Act of 1934.

Source: Bessler et al., (2012). Our elaboration

CHAPTER II: REASONS AND CONSEQUENCES OF VOLUNTARY DELISTING

According to the view of the majority (for instance Baharat et Dittmar, 2010), as the decision to list involves an analysis of the trade-off between the costs and the benefits of going public, the choice to delist usually occurs when the costs of listing exceed its benefits. On one hand, some scholars (Chaplinsky et Ramchard, 2008) suggest that the entry characteristics of the firms influence the probability that they will survive or not in the Exchange markets. In other words, the companies must have a "sufficient quality to realize the expected benefits" (Chaplinsky et Ramchard, 2008, pp.3). On the other hand, the delisting waves described in the previous chapter suggest that the overall economic conditions and national markets' characteristics have a relevant weight in the costs-benefits balance. For example, Geranio (2004) analyses a sample of Italian delisted companies over time, and concludes that often companies decide to go public without a long term strategy, but simply to take advantage of temporarily positive trends in the public markets. In the first paragraphs of this chapter we want to analyse both these factors: we describe the more mentioned delisting hypotheses and we analyse if they are supported by empirical studies and/or under which circumstances they are verified.

A wide range of reasons for going private has been presented by different scholars. We decide to follow the general framework provided by Tutino *et al.* (2013) that ranked the different reasons into three different streams, and we combine it with further studies.
The three main streams are:

a) Traditional incentives related
b) Agency theory
c) Financial structure

The first group is usually common to all types of PtP transactions, the latter two usually differ by geographical location and way of delisting (see Diagram 2.1, pp.28).
After these three clusters we have added a fourth motivation, which considers the delisting decision as a defensive strategy against hostile takeovers. Diagram 2.2 (pp.29) gives a schematic view of the different hypotheses.

The second part of the chapter is devoted to analyse what are the consequences of the delisting. In other words we are interested in understanding if the benefits expected from the

deal actually appear or if the going-private transactions must be considered as a traumatic event for the company.

2.1 TRADITIONAL INCENTIVES RELATED

LIQUIDITY HYPOTHESIS & FINANCIAL VISIBILITY

Since one of the main reasons driving firms to go public is the possibility to **access liquidity**, if this benefit decreases, the firm will be more likely to go private. Many firms go public to fund their growth opportunities; for example, if the firm has already reached his maximum line of credit, but needs capital in order to finance positive NPV projects. Witmer (2005) argues that companies are more likely to delist when the availability of liquidity decreases because liquidity is negatively correlated with the firm's bid-ask spread, and thus with the valuation of the firm.

The **liquidity reduction can be due to the low financial visibility**, an indicator that many economists suggest as a measure to forecast the probability for the delisting of a company. Indeed, "firms with decrease in analyst coverage, institutional ownership and turnover are more likely to go private" (Tutino *et al.*, 2013, pp.219). Visibility is necessary to create consensus, credibility, and transparency in the markets upon the company and thus to increase the shareholder base. Financial visibility also reduces the stock price volatility (Pour et Lasfer, 2013). Moreover, financial visibility and the requirement for enhanced transparency should "enables firms to have a greater bargaining power with banks, resulting in lower borrowing constraints and diversification of sources of financing" (Pour et Lasfer, 2013, pp.4852).

Firms may also decide to delist if they do not need liquidity anymore. According to the **life cycle stage theory**, mature companies that decide to delist can avoid the costs of being listed, while financing the few investing opportunities by internal capital generation or low cost debt. The funding costs can be particularly low for these companies since "they may benefit for an easier assets assessment which can be used as security for debt financing" (Tutino *et al.*, 2006, pp.220).

EMPIRICAL EVIDENCE

Pour et Lasfer (2013) conduct a research on 380 voluntary delisted companies from the London Stock Exchange in 1995-2009 and they conclude that many of these firms have decided to list in order to rebalance their capital structure, but they failed to raised equity

capital in the markets, and this fact leads to delist. As figure 2.1 shows, the result is supported by the observation that, on average, the companies that will delist are over-leveraged when they are public because they had to use debt to finance their investment. Even if someone could argue that the leverage is due to losses, the hypothesis is not supported by the fact that ROA of the voluntary delisted firms does not shows significant differences with the ROA of control firms. The same result is also supported by Tutino *et al.* (2013) according to whom also the Italian delisted firms are marked by a high capital needs since they show higher leverage compared with control sample. Looking at the European markets in general, according to Pour et Lasfer (2013) firms delist "to enhance their bargaining power with banks and to reduce their leverage, while firms that are not able to rebalance their leverage decide to go private" (pp.4852).

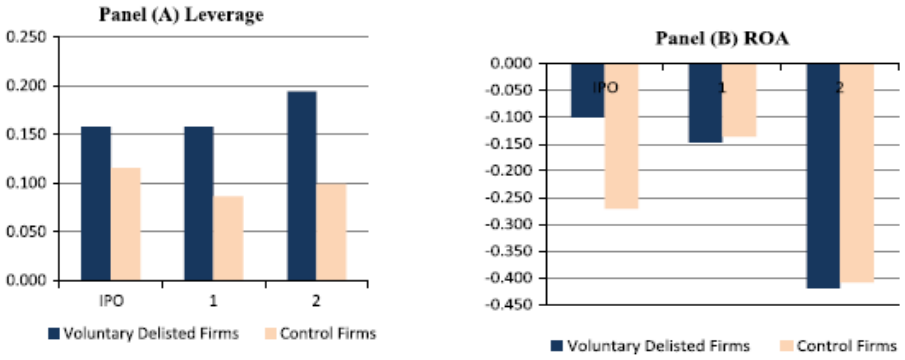


Figure 2. 2. Trends in firms' characteristics in post-IPO period
Source: Pour et Lasfer (2013), pp.4856

Tutino *et al.* (2013) also find that Italian firms that decide to delist are usually operating in mature markets that experience slow growth, supporting the idea that in these sectors companies do not require high liquidity because of the absence of profitable projects.

Looking at the financial visibility hypothesis, Witmer (2005) reports that foreign companies that decide to list in the US increase their shareholder base by 29%. As a consequence, the reason of lack of analysis coverage seems not to be applicable in the case of larger regulated markets. Partially in contrast with Witmer's article, Chaplinsky and Ramchand (2008) suggest that the capability of the US market to attract analysts' interest could decreases as the number of listed foreign firms increases over time and "the rarity value of foreign new lists diminish and the threshold for uniqueness could increase" (pp.3).

When the number of listed companies increases, another dimension that influences the visibility is the firms' dimension. Low visibility is usually a characteristic of smaller firms, since the costs of research for these companies is too high in comparison to their marginal

market share. According to Geranio (2004) who reports a survey conducted by Business Week (August, 1999), companies traded in Wall Street with capitalization between $50 and 250 million, were followed by 2.5 analysts, while companies with a capitalization above $250 million, had a coverage of 10 analysts.

RISK SHARING HYPOTHESIS

In addition to have access to liquidity, another benefit of listed companies is the risk sharing. Trading in the Exchanges is a good alternative when the **assets' idiosyncratic risk** is high and the owner is either sufficiently risk adverse or sufficiently optimistic about the assets' expected return. Looking at the assets' specific risk, when it is low and being listed does not provide **risk-sharing through portfolio diversification**, the company may prefer to go private. In addition, the lower the owners' risk aversion the lower the benefits of risk reduction and consequently the higher the costs linked to be listed.

EMPIRICAL EVIDENCE

Beker and Pollet (2008) validate the risk sharing hypothesis for US companies that decide to go private through LBO. Martinez and Serve (2011) find that firms with low beta risk (commonly used as a measure of idiosyncratic risk) are more likely to experience PtP transactions, concluding that risk sharing hypothesis is one of the main determinants of delisting decision.

This motivation seems to be the more relevant in the case of **family businesses**, which are high risk adverse but cannot eliminate idiosyncratic risk through portfolio diversification. Therefore, they decide to go public to share the risk with minority shareholders when the risk is high, and delist when risk is low.

These first reasons that can be at the base of the decision to delist are mainly linked to the decrease in benefits that a firm has planned to gain from the Exchange. The following reasons, on the other hand, lead to costs increase for the company.

UNDERVALUATION HYPOTHESIS

The undervaluation hypothesis is based on the adverse selection problem due to asymmetric information between managers and investors that is wider in public markets. In the equity markets, corporate managers have access to most **inside information**[1] and thus can buy

[1] Inside information can be defined as material information about the value of a security that is not available to public traders (Larry, H., 2003).

shares when they know that the stock prices are undervalued in order to gain private benefits at the expense of the other less informed shareholders. This problem can negatively impact firm's quality and the share price (increasing bid/ask spread), thus shareholders may decide to delist to avoid the transaction costs' increase. According to this hypothesis, companies will delist when market prices do not fully reflect the real value of the firm. Shares that are less liquid are more likely to be undervalued.

Another way through which uninformed investors could be hurt by the private information that managers have, is during the listing and delisting process. Lamba and Khan (1999) suggest that insiders act on their private information before exchange listing and delisting in order to gain private benefits. In other words, since it has been verified that exchange markets usually react positively (negatively) to the announcement of an imminent IPO (delisting), it could happen that corporate insiders who know of a formal listing (delisting) application before its announcement buy (sell) stocks to their own benefit.

However, Boot *et al.* (2006) are sceptical about the explanation for PtP transactions based on insider information, indeed they argue that "if this undervaluation is due to the manager possessing private information, then going private is rather drastic way to deal with a possibly ephemeral situation" (pp.809) and suggest that a tender offer repurchase may be a less costly solution to the problem.

Regarding the undervaluation hypothesis, it is also important to underline that the negative influence of insiders over stocks prices is partially attenuated because in many jurisdiction insider trading is illegal. Even if "enforcing insider-trading laws is quite difficult" (Larry Harris, pp. 588), it is likely that managers weight the trade-off between benefits and penalties when decide to trade on their private information.

The adverse selection also leads to the so called **lemons principle** (Akerlof, 1970). This principle states that, whenever a seller has private information about the value of a good, the buyers will discount the price in order to recover the risk. Due to the information asymmetry, investors expect that managers sell their shares only when they are overvalued, so investors will be willing to buy only at a lower price to reflect the possibility that managers know bad news. The lemon principle creates a cost for companies that want to raise money for new investments and diminish the advantage to be public in order to raise new financing capital.

Finally, in addition to the reduced shareholders' value due to asymmetric information, it could also happen that managers themselves decide to delist the company if they believe that it is undervalued and that it can be developed with greater freedom once went private.

EMPITICAL EVIDENCE

Bettinelli *et al.* (2011) support the undervaluation hypothesis reporting a study on a sample of US companies conducted by Maupin *et al.* (1984) that found that companies which went private had a lower price-to book ratio then the other companies. However, according to Croci and Del Giudice (2014), the stocks' undervaluation is not caused by controlling shareholders exploiting private information at the expense of minority investors, indeed the operating performance of firms that go private because of an offer of their controlling shareholders, remain stable after delisting.

Looking at the characteristics of Italian market, undervaluation seems to be a possible cause of delisting even if not the main one.

TRANSACTION COSTS HYPOTHESIS

The second type of costs' increase is due to the high fixed costs to trade in the Regulated Markets. The so called transaction costs hypothesis (Renneboog et Simons, 2005) suggests that for many small firms the **amortization of direct and indirect costs** has become unbearable and thus they have been forced to delist. Direct costs are the ongoing costs following the IPO, i.e. the costs of registration and underwriting fees; indirect costs include information production costs, the compliance costs to meet regulatory and corporate governance standards, and opportunity costs. On average, PwC (2012) estimates that companies incur $1 million on one-time costs in order to convert the organisation from a private to a public company, and $1.5 million of recurring costs as a result of being public[2].

Recently, the regulations on corporate governance have increased both in the US and in Europe, increasing the costs of compliance. For instance, for the US, the introduction of the **Sarbanes-Oxley Act** in 2002 is frequently seen as a reason that pushes firms to go private. This act introduces new disclosure costs, auditing standards, and criminal penalties for governance fraud.

EMPIRICAL EVIDENCE

Most studies (Pour et Lasfer, 2013; Bettinelli *et al.,* 2011) on the American and European Markets find support for the transaction costs hypothesis in the fact that voluntary delisted companies are usually small in size (using the market value of equity as a proxy). However, the relationship seems to be weak. Also in country such as Italy where the small size of the firms is likely to result in higher costs in percentage, "costs savings will probably be appreciated but cannot lead to a going private transaction" (Bettinelli *et al.*, 2011, pp.237).

[2] This valuation does not include the costs associated to the IPO process.

In the recent years, many scholars have focused their researches on the impact of SOX, however the actual role of the increasing regulations on the process of delisting is still not clear. On one hand, according to Marosi and Massoud (2007) the introduction of SOX is one of the major determinants of PtP transactions in the US. On the other hand, Chaplinsky and Ramchand (2007) suggest that SOX alone cannot lead to the decision to delist, but that the rationale for delisting must be found in "a combination of factors affecting the relative attractiveness of the US and home market" (pp.6).

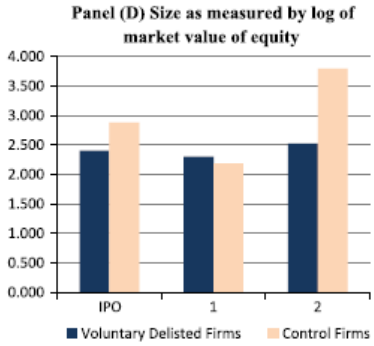


Figure 2.3. Trends in firms' characteristics in post-IPO period
Source: Pour et Lasfer (2013), pp.4856

2. 2 AGENCY THEORY

This second group of motivations interprets the decision to delist as a way to get the manager to act in the best interest of the shareholders. Managers are the agents of shareholders, and they are incentivized to increase the firm size beyond its optimal level. The larger the firm, the larger managers' power (the so called *empire building*), and higher growth usually is associated with increase in managers' compensations.

From the agency theory, three main hypotheses can be at the base of public-to-private transaction: free cash flow hypothesis, control hypothesis, and incentive realignment hypothesis.

FREE CASH FLOW HYPOTHESIS

According to this hypothesis, the delisting decision decreases the risk that managers will invest in **unprofitable projects**, especially in those markets that have low growth opportunities. Managers could invest in projects with negative NPV in order to enlarge the company, or could invest FCF at below the cost of capital. Some scholars (Bettinelli *et al.*, 2011) suggest that, since the PtP transactions often involved high leverage level (especially in

case of LBO transactions), managers are incentivized to handle the company in a more effective way since they have less liquidity. In other words, indebtedness increases the firms' value because a part of the FCF must be used to repay debt (Berk and DeMarzo, 2012).
Moreover, conflicts of interest may also arise when the investors would prefer that free cash flow is distributed as **dividends**, instead then kept in the company or invested in unprofitable projects (payout policies). Jensen (1986) points out that the issuing of debt in exchange for stock can be considered as an alternative substitute of dividends. In this way, managers are obliged to respect their promise to pay out future cash flow because otherwise shareholders recipients of the debt "have the right to take the firm into bankruptcy court if managers do not maintain their promise to make the interest and principle payments" (Jensen, M.C., 1986, pp.324).

EMPIRICAL EVIDENCE

According to the researches that we have reviewed, all agency theory' hypotheses are strongly influenced by ownership differences between the Anglo-saxon markets and the Continental Europe markets.
The free cash flow hypothesis holds in the American and in the UK markets, but does not hold in the Continental Europe and in particular in Italy. The first main difference is that Public companies in the US and UK usually have a lot of shareholders that own small portions of equity. On the other hand, in Continental Europe the ownership structure of companies is generally characterized by a large dominant shareholder whose stake is almost "twice as large as that on Anglo-Saxon LBO targets" (Tutino *et al.*, 2003, pp.219) and who exercises significant control. In addition, one of the peculiarities of the Italian market is that most of the time there is not an actual separation between ownership and management. For these reasons, in the Continental Europe and in Italy there is no benefits to go private for efficiency reasons and thus it seems that the FCF hypothesis does not hold (Bettinelli *et al.*, 2011; Tutino *et al.*, 2003). On the other hand, the studies on the London Exchange markets reveal that, compared to the control firms, voluntary delisted companies have lower growth opportunities (Pour et Lasfer, 2013), suggesting that these firms experience difficulties in finding profitable projects in which invest their excess FCF and so they have higher risk of underinvestment managers' attitude.

<u>CONTROL HYPOTHESIS</u>

Another issue correlated with the agency theory is the control hypothesis that is related to the problem of monitoring managerial actions. Public companies are usually owned by a

multitude of investors, each of which has only a minority stake. Disperse shareholder structure may lead to **underinvest in monitoring activities** (Reeneboog et Simons, 2005). According to Ventoruzzo (2010) this problem nowadays is even more severe since the increased use of derivative instruments, which require high skills in order to be monitored. Going private, equity ownership is reunified in fewer hands that usually have more interest and capability to monitor managers' work. In some cases, the reunification of control can resolve agency problems.

Thus, if public governance is so slack that permits excessive managerial autonomy, investors prefer private ownership. However, according to the **bonding hypothesis** (Coffee, 1999), when a company is listed, the management bonds itself to a better governance regime because it is subject to more restrictive monitoring and to higher probability to be caught.

Boot *et al.* (2006) demonstrate how the contrary is also true: if in the Exchange Markets regulations and investors impose too heavy restrictions to managers' autonomy or are considered too intrusive, the managers themselves should favour private ownership structure because it allows to contract decisions with few large investors and because it is easier to accept only shareholders "whose views about optimal decisions are aligned with those of managers" (Boot *et al.*, 2006, pp.806).

Another cost of the control hypothesis is that, since the control is lower when ownership is not concentrated, the risk that a manager is fired is not significant, thus manager is more willing to pursue its own interest instead that company interest. The so called **management entrenchment** suggests that, in addition to the lower risk to be discovered that characterizes private companies, managers of public companies may invest in assets which have a higher value under him control than under an alternative manager. As a result, since replacing the current manager becomes even more expensive, they "can extract from shareholders higher compensation, in the form of higher salary or grater discretionary behaviour" (Shleifer et Vishny, 1989, pp.124). The higher level of debt typical of private firms will reduce management entrenchment because it is more likely that with a collapse the managers lose their work.

EMPIRICAL EVIDENCE

Also in this case, the strength of the hypothesis is strongly influenced by the different geographical markets.

First of all, as we have already said, US and UK companies have a lot of shareholders that generally own small portions of equity, which means that the interest in management monitoring is low. In such cases, going private allows for a more concentrated ownership and thus shareholders are more interested in the supervision of management activities.

Secondly, the incentive for the controlling shareholders for delisting depends on their identity. In particular, one of the key characteristics of Italian firms is that they are family owned. Families are more concerned about company control and they want to maximize private benefits not available to minority investors. In addition, families are usually risk-adverse. As a consequence, Italian firms (but also Continental Europe ones) go private when threats for their control increase, as can happen when companies are small and undervalued, since they are more likely to be the target for an hostile acquisition (Tutino *et al.*, 2013).

The studies on the bonding hypothesis are mixed. Witmer (2005) finds that, consistent with the bonding hypothesis, Nasdaq-listed companies are more likely to cross-delist. However, he also finds that "firms from countries with poorer investor protection, and firms with the Post-SOX period are more likely to delist" (pp.29), which is in contrast to the bonding hypothesis. We can assert that this hypothesis depends from country to country because it is influenced by the national regulations. For instance, in the US regulation is drafted in order to regulate unsolicited takeover and thus management may decide to delist in order to have more freedom; on the other hand, in the UK the markets are more self-regulated, favouring "the unrestricted functioning of market forces" (Renneboog et Simons, 2005, pp.31).

INCENTIVE REALIGNMENT HYPOTHESIS

Different stakeholders of a company usually have different incentives to keep the organization as a going concern. These incentives can be considered the result of the possession of private benefits (for instance reputation, control, the value expropriated from shareholders, and salary). When managers sell parts of the claims to outsiders, the divergence of interests between shareholders and managers increases and managers may increase their private benefits at the expense of firm's value. A PtP transaction allows for reunification of ownership and control and, as a consequence, "will improve the incentive structure and is expected to increase managerial motivations and efforts to maximize firm value" (Renneboog *et al.*, 2007, pp.7).

However, many scholars (Renneboog *et al.*, 2007, Franks et Nyborg, 1996) highlight that the actual contribution of the incentive realignment hypothesis to the decision to going private is controversial because entrenchment effect may render managers immune to organizational

change. For example, the switching costs of changing job, or the risks of lower salaries in case of poor management, may incentive managers to take decisions that maximize the value of the firm.

EMPIRICAL EVIDENCE

Since the ownership structure of most Continental European firms is characterized by a large dominant shareholder, the incentive realignment hypothesis is weaker in this context and especially in Italy where most of the times dominant shareholders exceed 50% (Bettinelli *et al.*, 2011). Tutino *et al.* (2013) suggests that the incentive alignment and monitoring role motivations of going private in Continental Europe is more likely driven by the will to resolve conflicts between large and minority shareholders, rather than between shareholders and management. For instance, going private family controlling shareholders eliminate the probability that minority shareholders may sell their shares to hostile acquirers.

2.3 FINANCIAL STRUCTURE

The third main issue investigated by scholars refers to the benefits that a delisted company may gain in terms of financial structure.

TAX BENEFITS HYPOTHESIS

Tax benefits that can arise from the leverage entails in a LBO transaction is often seen as a key factor in driving the decision to going private (Tutino *et al.*, 2013; Reeneboog et Simons, 2005). The large amount of debt used to finance this type of transaction can generate significant **interest deductions**. The annual gain for interest deduction can be calculated as follow:

$$tax\ shield\ = marginal\ tax\ rates\ \times interest$$

Looking at the formula, it is clear that the wealth gain strongly **depend on the country's fiscal regime** and the marginal tax rates that the company is subject to.

However, it is important to keep in mind that if the shareholders of the listed company will be also the owners of the delisted company and thus the lenders of the LBO process, the deduction benefit is partially diminished because the interest income increases their taxable basis as individuals.

Another important limit on the possibility to exploit the tax benefits that may be gained through delisting process is about the capability of the company to use all the deductions,

which is not always possible. In order to benefit from the tax shield, a company must have taxable income; if interests regularly exceed EBIT, there are no tax benefits. Nevertheless, this observation is probably more a theoretical issue than a practical one, because in many countries (such as in the US) companies can carry back net operating losses occurred after the LBO in order to "offset taxable income earned in the three years before the buyout. […] or can be carried forward to offset future taxable income to up to 15 years" (Kaplan, 1989, pp.625). Tutino *et al.* (2006) suppose that due to interest deduction, companies "pay almost no tax for a long period" (pp.219). On the other hand, Kaplan (1989) argues that "a public company could obtain many of the tax benefits without going private" (pp.613).

EMPIRICAL EVIDENCE

As we have argued analysing the formula of tax shield, the tax benefit hypothesis does not hold everywhere. Scholars agree that in the US there are great tax advantages of using debt sourcing (Bettinelli *et al.,* 2011), but that in the UK these advantages are smaller.

In Italy, even if empirical studies on the topic have not been carried out yet, it seems that regulations are not in favour of companies that choose to delist (if we do not take into account the fiscal avoidance policies that private companies can conduct because of the lower transparencies regulations).

DIVIDEND HYPOTHESIS

This theory is based on the "rules" that if companies do not want to see a reduction in their shares' price, they have to **pay regular and high dividends**, otherwise investors would look for more remunerative companies. Most of the market's participants will not appreciate companies that retain profits, even if this strategy is required in order to finance projects during period of high growth (Geranio, 2004). Going private, companies can decide to reinvest their profit without facing the risk of shares' price undervaluation and reduces the conflict between dividends long term strategies.

EMPIRICAL EVIDENCE

There are very few researches that verify the extent by which the dividend hypothesis is actually a reason of delisting. Given the fact that this motivation is seldom cited in the literature, we suppose that it is not one of the main reasons. Our conclusion is supported by a sample of Italian delisting companies analysed by Tutino *et al.* (2013) that shows that they do not pay higher dividends when they are in the Regulated Markets and that they are characterized by policies of retaining earnings.

Diagram 2.1: Validity of agency cost and financial structure's hypotheses in different markets.

HYPOTHESIS	ANGLO-SAXON MARKETS	EUROPEAN MARKETS
Free cash flow hypothesis	✓	✗
Control hypothesis	✓	✗
Incentive realignment hypothesis	✓	✓
Tax benefits hypothesis	US ✓ / UK ✗	✗
Dividend hypothesis	?	?

2.4 TAKEOVER DEFENSE HYPOTHESIS

PtP transactions can be considered as a strategy of last resort in order to protect the company from a hostile tender offer. In this case the process of delisting can be initiated by shareholders or by managers if they fear to lose their jobs after the takeover.

EMPIRICAL EVIDENCE

Since the existence of majority owners and large shareholders decreases the probability that unrelated bidders are able to take over the company or that private equity can acquire it, the takeover defence hypothesis is probably the less applicable motivation in the Italian context. This reasoning is also supported by the fact that in Italy the majority of PtP transactions are concluded by the same owner that controls the company before the listing process.

Diagram 2.2: Summary of delisting's reasons

Traditional incentive related
- liquidity hypothesis and financial visibility
- risk sharing hypothesis
- undervaluation hypothesis
- transaction costs hypothesis

Agency theory
- free cash flow hypothesis
- control hypothesis
- incentive realignment hypothesis

Financial structure
- tax benefits hypothesis
- dividend hypothesis

Takeover defense hypothesis

2.5 IMPACT AND CONSEQUENCES OF DELISTING

After having understood the main reasons that push a company to delist, this paragraph reviews the existing literature on the consequences of delisting in order to realize if it is actually valuable. In other words, we want to study whether the benefits expected by listed companies when they decide to delist have been meet or not. According to our researches, scholars focused more on ex-ante analysis of the phenomenon rather than on ex-post studies. Indeed, we found few articles about the consequences and most of them are about involuntary delisting or LBOs. In particular, the deals promoted by existing shareholders are seldom analysed.

It is first of all important to distinguish the impact caused by voluntary and involuntary delisting. In general term, in fact, **voluntary delisting has positive outcomes for the firm and for the shareholders**; on the other hand, involuntary delisting usually has negative economic consequences. Since involuntary delisting is not the main topic of this paper, we show just a summary of most important results about it; and we focus more in detail on voluntary delisting.

INVOLUNTARY DELISTING

To analyse the consequences of involuntary delisting, many scholars focus their attention on the impact that the delisting announcement has on the market, mainly in terms of impact on stock prices, volume, spread, and volatility.

All surveys reviewed reported that the impact of the announcement of an involuntary delisting is a **traumatic event** for the firm and for the investors. Different explanations can help to explain the loss of value. One of the possible reasons can be the **decrease in liquidity and marketability** caused by the exit from the Stock Exchange. Another explanation can be the **negative signal** that the exchange agents' decision to delist the firm has on the company's quality. Indeed, since involuntary delisting usually is due to companies' poor performance, it is considered a bad news by shareholders. Meera *et al.* (2000) document that in some Asian markets, the value of equity declines by 8.5% on the announcement day. They also report that according to data, the fall in value is not recovered in the subsequent periods, suggesting that the negative impact is permanent. In addition, according to Macery *et al.* (2008) the detrimental effects are particularly evident looking at the trend of the spread. Since they analyse a sample of firms delisted from the NYSE that move to the non-regulated Pink Sheet market, they have been able to compare the average percentage spreads before and after the

delisting (Chapter III will face the issue of the trading on over the counter markets after the delisting). They find that the spread increases from 5.84 percent pre-delisting to 15.31 percent post-delisting. Also Angel *et al.* (2004), using different proxies, verify that involuntary delisting is associated with lower liquidity:

- Volumes decline by 2/3
- Quoted spread almost triple (from 12,1% to 33,6%)
- Effective spread triples (from 3,3% to 9,9%)
- Volatility more than triples (from 4,4% to 14,3%)

Regarding the **cross-delisting** phenomenon, when the company is delisted from a foreign market where its shares were heavily traded, the volume of stocks traded in the local market increases significantly (Meera *et al.,* 2000).

Obviously, it is important to underline that the impact on the stocks is linked to the reason that determines the delisting, with the case of bankruptcy leading to the worst decline in market quality (Harris *et al.*, 2008).

However, analysing the consequences of involuntary delisting it is important to consider also the impact on the **economy as a whole**. In effect, even if firms can be harmed by the delisting, the effects on other parties can be mixed:

- The *Exchanges* may increase profits because infrequently traded stocks that are expansive to trade are eliminated; on the other hand revenues may decrease because of the elimination of trading opportunities. The Exchanges also benefit from a reputation point of view.
- *Current investors* undergo a reduction in liquidity as a consequence of delisting; but *potential investors* are favoured because they can be surer about the firms' quality.
- *Issuers* are negatively affected because the increase in spread and volatility and the reduction in volume traded boost the cost of capital.
- *Brokerage firms.* In the event of cross-delisting, the higher level of activities in the home market can increase revenues in other industries, such as in the brokerage sector.

VOLUNTARY DELISTING

Common measures used by the existing literature to understand the shareholders' wealth creation after voluntary delisting are the **average premium paid to pre-delisting shareholders** (the difference in the firm value at the beginning and at the end of the transaction) and the **cumulative abnormal returns** (CARs) of the day when the delisting is

announced. The premium represents the additional value that the firm is expected to produce once it goes private; instead the CAR is useful to understand the effects that information has on the firm's value and includes the probability that a bid can fail.

According to the results reviewed by Serve *et al.* (2012) the companies delisted from Anglo-Saxon markets usually have a premium higher than 40%, while the European transactions' premium is about 21%. Moreover, all studies analysed report positive CARs around the announcement, even if their value depends on the length of the event window considered: +9.60% in the window (-1; +1) and +21.82% in the longer event window (-30; +30) (Croci et Del Giudice, 2014). In the case of LBOs, the highest impact on share price is usually registered "one day before until one day after the event date" (Renneboog et Simons, 2005, pp.18). Also in this case, the CARs are lower in Continental European countries.

These results support the hypothesis of wealth gain for shareholders from going private transactions. But where do these benefits come from? According to the empirical literature, there are three main sources of gain, which refer to some of the hypotheses that have been presented as reasons for delisting:

a) **TAX BENEFITS**. As noted in the previous paragraphs, voluntary delisting is often performed through mechanisms that involve high level of debt (especially in the case of LBOs, as the next chapter will explain) and thus interest payments which are tax deductible. However, it is important to remark that this source of benefits depends on the fiscal regime, the marginal tax rate, and the way through which delisting is carried out. For instance, analysing Western European PtP transactions, Boubaker *et al.* (2014) do not find that tax incentive has any significant impact on shareholders wealth.

b) **ASYMMETRIC INFORMATION** and **AGENCY PROBLEMS**. Asymmetric information between managers and investors determines a misalignment between the market price of the shares and the true value of the firm (undervaluation). It is quite obvious that the current shareholders will sell their shares only if they will receive more than the current market price, thus causing high premiums.

   Several scholars suggest that the wealth gain mainly comes from the reduction of the costs associated with agency theory. Zahra (1995) states that the benefits are due to the incentive realignment. Gou *et al.* (2011) show that the increase in cash flow, net of tax benefits, is higher for the companies that increase their debt because of the buyout. This observation can be explained through the "benefits of debt in reducing agency costs" (pp.479). Also Boubaker *et al.* (2014) argue that the reduction in agency problems between dominant and minority shareholders is one of the main sources of

benefits, in particularly in Western European markets. They come to this conclusion after having observed that when the listed companies had a higher separation between cash-flow and control rights, CARs and premium were higher. In addition, they also strengthen their results highlighting that the parameters used to measure operating performance were lower in the presence of multiple large shareholders (MLS) prior to the going-private transaction. A possible explanation of this data is that MLS are more efficient in monitoring the allocation of rare resources, therefore there is "less room for operating performance improvements after the buyout" (Boubaker *et al.*, 2014, pp.227). These findings are partially rejected by the studies of Croci and Del Giudice (2014) that focus their analysis on the performance of family firms and those delisted by large shareholders, showing that in these cases the performance does not increase. The result suggests that the hypothesis that controlling shareholders could take the company private in order to exploit future better performance because they have more information is not verified. In other words, the identity of the pre-delisting owners does not determine the change in operating performance.

c) **OPERATING PERFORMANCE**. For instance, the firm could gain benefits through increased profitability and efficiency, elimination of worthless assets, or strategic acquisitions. The impact that delistings have on operating performance is **not clear** and scholars provided mixed evidence. On one hand, some studies reported an increase in performance looking at index such as ROA or operating margin (Cumming *et al.*, 2007; Kaplan et Stromberg, 2009). Renneboog and Simons (2005) document that analysing the accounting variables, the increase in operating performance in these cases comes mainly from **cost cutting**, rather than from more revenues. According to Jones (1992) the increased in performance is due to the **modification of the organizational structure** because going private companies are able to better tailor the strategy with the company's context.

Kaplan (1989) documents mixed results that depend on the situation of the firm before the delisting. In particular, looking at a sample of MBOs that took place during 1980-86, he affirms that capital expenditures usually decrease after buyout, validating the hypothesis of managers' empire building tendencies in firms that had high free cash flow before the going private transactions. This result is also confirmed by Boubaker *et al.* (2014) focusing on going private transactions in some European countries. However, Kaplan (1989) also notices that the reduction in capital expenditures for companies that did not generate high FCF is more likely to be due to problems derived from debt burden. Finally, Croci and Del Giudice (2014) try to understand the

elements that determine the change operating performance of delisted companies, measured through the variation of ROA pre- and post-delisting. They conclude that the identity of who carries out the transaction (existing shareholders or external individuals) does not influence the operating result.

It is evident that there is no a unanimous understanding neither on the positive or negative impact on performance, nor on the source of operating improvement. These inconsistencies among analyses can be partially explained because of the different measures that can be used to assess the operating performance. For instance, a company that, after delisting, sells its non-productive assets does not change EBITDA on sales, but the return on assets (ROA) increases.

It is important to notice that the three sources of gain in the reality overlap. For example, if the delisting is carried out through high level of debt, the cash flow benefits of lower taxes, and also of better governance due to the discipline of debt (monitoring by the financial sponsor, concentrated ownership, etc.).

Substantial less academic research focuses on abnormal returns for **bondholders**. Exceptions are Baran and King (2010). They argue that pre-delisting bondholders suffer negative returns at going private announcements, and that these losses are partially due to the *wealth transfer effects* from bondholders to stockholders. Anyway, it is important to know that the bondholders and deal's characteristics are fundamental elements to consider when forecasting the potential abnormal negative returns. For instance, bondholders losses are significant when the management is the acquirer; in effect, in this case management tends to be more aligned with shareholders, but the resulting asset substitution and riskier investments can be detrimental for bondholders. On the other hand, bondholders can be protected if they have some kind of covenants, such as change of control covenants[3] (Asquith et Wizman, 1990).

Another important aspect to judge the efficiency of the delisting process is the impact that it has on **employment level**. According to our literature reviewed (Kaplan, 1989; Muscarella et Vetsuypens, 1990; Renneboog et Simons, 2005), going private transactions do not cause reduction in the workforce. On the contrary, Kaplan (1989) documents that on average employment rises by 0.9% post-transaction. In addition, the factor grows by "8.3% above the industry mean over the three years following a going-private transaction" (Renneboog et Simons, 2005, pp.24).

[3] "The change of control covenant enables the bondholders to sell the bonds back at par in the event of a change of firm control" (Baran et King, 2010, pp.1860).

CHAPTER III: TECHNIQUES FOR DELISTING

Broadly speaking, the mechanisms available to delist a company can be divided into those that are carried out through open market operations, and those requiring the approval of the board of directors and/or of the shareholders' meeting. Within these groups, the prevalent literature (De Angelo *et al.*, 1984; Martinez et Serve, 2011) recognizes two main methods to accomplish this proposal: the *buyout offer with squeeze-out* (**BOSO**) is the most used approach in the Continental European countries, and the *leveraged buyout* (**LBO**) which is more developed in the U.S. and U.K. markets. The former is usually initiated by the existing controlling shareholders that seek to complete equity ownership through a tender offer in order to cash out minority shareholders. This outcome can be achieved through merger, asset sales, tender offer, or reverse stock split. The latter can be initiated by many different parties, who acquire and subsequently delist the company and it is usually financed through high leverage and new capital. It is usually carried out through mergers or asset sales.

In this paragraph the most common techniques are presented. The choice to distinguish them according to geographical markets is due to the recognition that the mechanisms are strongly influenced by the stock exchange regulations and by the jurisdiction of the State in which the markets are located. However, it is important to keep in mind that even if less common, it is not excluded that some instrument covered in the section about the U.S. market can also be applied, with the necessary adjustments, also to the European one (and vice versa). For example, leveraged buyout is illustrated in the American part because it is an important characteristic of this market, but it does not mean that LBOs are not allowed in the European markets.

A consistent part of the jurisdiction has the aim to **protect the minority shareholders' interest** that is usually negatively affected by delisting. The US rules are characterized by greater flexibility and less minority protection, and for this reason the deals are subject to a greater number of *ex post* lawsuits. On the other hand, the stricter *ex ante* regulations of European countries diminish the dissenters' complaints. The comparison between the regulations to protect investors in Europe and in the U.S. allows to conclude that there are two main approaches to protect minorities when the delisting is performed through a corporate operation:

1) Where the delisting decision must be taken or is usually taken by the board of directors or a similar corporate organ, shareholders are usually protected by the *doctrine of fiduciary duties of directors*. This solution has been adopted by most

American markets (NYSE, NASDAQ, Toronto Stock Exchange) and some European ones (NYSE Euronext Paris, NYSE Euronext Amsterdam).

2) Otherwise the minorities can be protected through the requirement of *shareholders vote* for delisting (for examples, Borsa Italiana, Bolsa de Madrid, Hong Kong Stock Exchange, Singapore Stock Exchange, Buenos Aires Stock Exchange). In this case, rules must also determine whether the decision is approved by *ordinary resolution* (simple majority of votes) or *special resolution* (qualified majority of votes in 2/3 of votes or 75% from the majority of votes). As the Italian case will document, in some countries dissent shareholders have *exit* (or *appraisal*) *rights* and in this case the problem is how to fairly price stocks distributed to these shareholders.

These are the most common minority protection solutions; however there are many other intermediate approaches that stock markets can adopt. For instance, in India if the company has an alternative stock exchange market in which to trade after delisting, the board of directors has the power to decide for delisting; but if the company has not an alternative market, the board of directors' decision must be approved by shareholders. In some countries, shareholders have even veto rights to delisting decision.

3.1 WAYS TO DELIST IN EUROPE: THE ITALIAN CASE

This paragraph analyses in detail the legislation about delisting techniques applicable in Italy that, with some clarifications, can be considered representative of the European legislations. The Italian stock market is regulated and supervised by two institutions: *Borsa Italiana* S.*p.a*, and the *Commissione Nazionale per le Società e la Borsa* (CONSOB). The table below shows their most important responsibilities:

Borsa Italiana	CONSOB
• defining the organization and functioning of the markets; • defining the conditions and procedures for admission and contiuned inclusion of issuers, and exclusion and suspension thereform; • managing the information communicated by the listed companies; • supervising and managing the market so as to allow the correct course of trading.	• regulating the procedures for carrying out offerings; • defining the listed company disclosure obligations, including periodic information and information on significant events; • authorizing the operation of regulated markets; • controlling of the information contained in the accounting documents of listed companies and the information that the companies provide to the maerket.

Source: Borsa Italiana website, own elaboration

Voluntary delisting in Italy can be achieved through three techniques:

1. Shareholders' decision;
2. Merger with a private company or newco;
3. Tender offer (the so called "Offerta Pubblica di Aquisto" *(OPA)* in the Italian legislation).

In the first two methods, shareholders' meeting has to approve the operations that lead to the delisting of the company and the pre-transaction shareholders usually receive shares of the private company. In both cases, the shareholders that do not approve the deliberation have the right of withdrawal. On the other hand, the last method is an open market operation that does not require the consent of the target's shareholders. As we will see, in this case the delisting is the consequence of the failure to meet the minimum level of free float[4] required to trade in the regulated markets.

It is important to know that, more often than not, the delisting occurs through steps that can involve more than one technique in order to increase the probability of the success of the process.

3.1.1. SHAREHOLDERS' DECISION

Italian legislation provides the possibility for shareholders to decide to delist the company without any capital's change or extraordinary operation. Indeed, **art.133 of the Consolidate Law of Finance (T.U.F)** considers the chance of the E*xclusion upon request from trading*: "Subject to approval by an extraordinary shareholders' meeting, Italian companies with shares

[4] The free float of a company represents the portion of the shares that can be publicly traded

listed on regulated markets in Italy may request that their own financial instruments be excluded from trading, in accordance with the provisions of the rules of the market, where they are admitted to listing on other regulated markets in Italy or another EU country, provided investors are ensured equivalent protection, according to standards established by Consob in a regulation". Consob regulates the process of delisting upon request through **Art.2.5.6 of the Rules of the Markets organized and managed by Borsa Italiana Spa** (thereafter, the Rules). According to this article, the company has to send to Borsa Italiana a written request and Borsa Italiana has 10 days to arrange the delisting that, in any case, cannot take place before three months from the submission of the request. Moreover, fifteen days before the date of delisting the company has to publish a notice in a national newspaper in order to remind the imminent delisting to the public. The aim of these deadlines is to guarantee to all shareholders an appropriate time to decide whether they are willing to remain shareholders of the private company or, alternatively, to have enough time to sell their shares. Regarding the required quorum for the decision, the extraordinary shareholders' meeting of listed companies requires the approving vote of at least two thirds of participating shareholders, and the meeting is established with the participation of at least half of the corporation stock (Art.2368 Italian Civil Code (c.c.)).

Until 2004, some scholars interpreted art.133 T.U.F as if shareholders could request to list the company in another Italian or European exchange market, but could not ask to completely delist the company from all markets. This interpretation came from the combined reading of art.133 and art.131 T.U.F. Article 131 T.U.F. arranged that shareholders that did not vote in favour of the merger with a private company could ask the right of withdrawal to protect themselves from the loss of benefits coming from the public status. The absence of a similar protection in the case of exclusion upon request suggested to some scholars that article 133 was only about migration to different markets, and that the scenario suggested by art.131 was the only way to completely exclude a company from the public trading with a decision of the shareholders' meeting.

The plausibility of this strict interpretation has been removed with the introduction of **art.2437-*quinquies* c.c.** and the **abrogation of art.131 T.U.F** in 2004. The new provision of the Italian Civil Code allows shareholders of a listed company to withdraw whenever they have not taken part in the decision to delist. As Pomelli (2009) states, the new rule focuses on the outcome of the decision (the delisting), rather than the subject of the resolution (the merger or the request of exclusion). However, if the delisting from Borsa Italiana is aimed to the listing in another Italian market or in an European market that provides equivalent

guarantees, the withdrawal right is not ensure because shareholders that do not agree can sell their shares in the new markets and the right of withdrawal could be detrimental for the society.

With the introduction of the new article in the Italian Civil Code and the abrogation of the article from the Italian Consolidate Law of Finance in mind, it is reasonable to extend the procedures gathered from art.133 T.U.F. (extraordinary shareholders' meeting quorum, disclosure requirements, …) to all cases in which the shareholders decide to delist the company, and not only in the case of migration to different markets.

Another important aspect that must be considered whenever the delisting follows a shareholders' decision is **how to calculate the shares' value** once a shareholder has decided to exercise his right of withdrawal. **Art.2337-*ter* c.c.** establishes that the settlement should be equal to the arithmetic mean of the closing prices in the six months before the notice of the convocation of the meeting that leads to the delisting decision. This is the only mechanism permitted and it has two main advantages. The first one is linked to the objectivity of the results that prevents any possible *ex post* notification of shareholders that could be detrimental for the company, for the other shareholders, and for creditors. The second one is that, assuming that markets are efficient, the market price should be the best approximation of the value of the company. Nowadays most scholars support the hypothesis that markets are semistrong-form efficient, meaning that prices incorporate all publicly available information: not only accounting information, but also the forecast of the firm's performance, and industry and economic trends. Moreover, since the market price is the result of the value assessment of several investors with different knowledge, they usually "estimate fundamental values more accurately than any individual trader can" (Harris, 2008, pp.224). However, Pomelli (2009) explains the reason why the market price of the date of the announcement of the meeting may not be the fair price for outgoing shareholders and thus why the legislators introduce the average over six months. The problem is that if the markets do not appreciate the prospect of the delisting when they receive the notice of the convocation of the meeting that will decide on the topic, the prices fall and thus the right of withdrawal at the market price does not provide any advantages compared with the immediate sale of the shares through open market operations. The reason for the rather long time span of six months is that usually information about the possibility of the delisting arrives in markets well before the date of the notice of the convocation of the meeting. In order to make the right of withdrawal meaningful, the arithmetic mean is intended to remove the impact that the news about delisting could have had on prices.

3.1.2. MERGER BY ACQUISITION WITH A PRIVATE COMPANY OR A NEWCO

The second mechanism to delist a company is the merger of the public company with a private one or the establishment of a new company (newco) with the unique aim of absorbing the public firm. The process provided for this technique is similar to the process described in the previous case: the decision requires the approval of the extraordinary shareholders' meeting, the shareholders of the public company receive shares of the new private company, and those that do not participate to the decision have the right of withdrawal (as already described, this right has been guaranteed until 2004 by art.131 T.U.F., and nowadays by the application of art. 2437-*quinquies* c.c.).

It is important to notice that, differently from the U.S. case, in Italy and in most European countries, **cash-out mergers are not permitted** (the merger with the possibility of *freeze-out* the minority shareholders will be analysed in detail in the paragraph about the ways of delisting in the U.S. markets). **Art.3 of the Directive 78/855/CEE** states that: "Merger by acquisition shall mean the operation whereby one or more companies are wound up without going into liquidation and transfer to another all their assets and liabilities in exchange for the issue to the shareholders of the company or companies being acquired of shares in the acquiring company and a cash payment, if any, not exceeding 10% of the nominal value of the shares so issued or, where they have no nominal value, of their accounting par value". From this definition it is possible to gather that a European listed company cannot set an exchange ratio so high that the majority of small investors do not receive any shares of the private corporation. The limit of 10% on the cash payment allows to buy the shares only of a small fraction of the outstanding shares.

The significant difference between European and American legislations comes from the already mentioned different approaches on minority protection. The European regulation is particularly restrictive on freeze-out because of the belief that shareholder always has an "untouchable property rights in his shares" (Ventoruzzo, 2010, pp. 5) and therefore tries to protect them *ex ante*. In order to protect minorities, most jurisdictions determine that the exchange rate must be set by a "court-appointed expert before the shareholders' meeting called to vote on the merger" (Ventoruzzo, 2010, pp.39).

To conclude this dissertation about the two methods that involve corporate operations, we argue that delisting carried out through E*xclusion upon request* is easier, faster, and less expensive. However, as documented earlier, the uncertainty about the validity of this kind of procedure when it does not cause the migration to another regulated market encourages many corporations to delist through the *Merger by acquisition* mechanism.

3.1.3. TENDER OFFER

The European prohibition of cash-out mergers depicts one of the main disadvantages of the first two mechanisms used to go private: minority shareholders can decide to hold their ownership position, participate in the operation management, and share the corporate's results, which might be unfavourable from the point of view of the controlling shareholder. For example, these techniques do not fit if the reason that pushes controlling shareholder to go private is to acquire the ownership of the outstanding shares or to reacquire the shares that he has sold during the IPO. Both in the case of the shareholders' meeting decision and in the case of the merger with a private company, if the minority shareholders do not exercise the withdrawal or if they do not sell their shares before delisting, they have the right to maintain their ownership stake, with an almost unchanged stock dilution. Moreover, due to the strict protection rules on these delisting mechanisms, every indirect attempt to exclude minorities has a high risk of litigations on its legitimacy.

Data shows that minority shareholders usually do not want to hold the stake once the company delist because of the illiquidity of the shares. However, given the high ownership concentration of Italian (and European) firms and the consequent common desire to delist in order to achieve the complete control of the company, **the most used technique in the Continental Europe is the tender offer (also called takeover bid).** For example, over the period 1997-2006 in France 300 firms out of 350 went private through tender offer (Martinez et Serve, 2011). Given the widespread use of tender offers among European markets, the jurisdictions of the different countries have been harmonized with **Directive 2004/25/EC** (**Takeover Directive**). As we will see, through tender offer there are circumstances under which controlling shareholders can squeeze-out minorities (the so called ***Buyout offer with squeeze-out*** (BOSO)). Even if BOSO is very common, it is important to notice that the tender offer can, in theory, lead to delisting even without the necessity to *freeze-out* the minorities.

The key characteristic of this mechanism is that it does not require the approval of the shareholders or of the board of directors because it is an **open market operation**, and each individual shareholder can decide if he is willing or not to sell his shares. In the case of the tender offer, the reason that leads to the delisting is the reduction of the free float under the minimum level required by law (in Italy the threshold is 25% of the total shares). Through the tender offer, a shareholder that already hold a majority stake in the company makes a public offer to buy all the outstanding shares at a price higher than the current market price[5].

[5] Article 15 of the Takeover Directive states that an investor that acquires the control of a listed corporation has the duty to launch a tender offer on all outstanding voting shares (Mandatory Bid).

The shareholder that promotes the tender offer decides its duration that, in any case, cannot be shorter than 15 days or longer than 25 days[6] (Art.40, Regolamento Emittenti CONSOB).

Borsa Italiana identifies four main types of tender offer:

- *Opa volontaria.* Public takeover bid voluntarily proposed by an individual that wants to acquire the company's shares.
- *Opa obbligatoria.* The shareholder that acquires more than 30% of the corporate's capital is obliged to launch the tender offer on all outstanding shares. The purpose of the legislator is to guarantee to minority shareholders that do not appreciate the new control the possibility to sell their position.
- *Opa preventiva.* It allows to obtain the control of the company without the duty to launch a tender offer on all outstanding shares. The conditions to pursue this solution is that the investor does not hold 30% of voting rights and he has not purchased stakes higher than 1% in the twelve months before the communication to the CONSOB about the intention to launch the tender offer. Moreover, the procedure must be approved by the other shareholders that own the majority. If these conditions are satisfied, the shareholder can try to acquire up to 60% of the shares though a takeover bid, without the need of the mandatory offer for the other 40%.

  However, the controlling shareholder can be still obliged to pursue a mandatory takeover bid if in the twelve months after the closing of the *opa preventiva* he acquires additional shares for an amount higher than 1%, or if the target company approves a merger or a spin-off.
- *Opa residuale.* If an investor acquires more than 90% of the voting rights he is forced to launch a tender offer on all outstanding shares. In effect, in this case the minority shareholders run a risk to hold illiquid shares if the required free float is not restored. This type of takeover bid is analysed in more detail below.

Therefore, based on the level of minority shareholders' subscription, the promoter of the takeover bid can be able to purchase an ownership's percentage high enough to force also the shareholders that do not accept the tender offer to sell their shares in exchange for an indemnity. This situation is called *freeze-out* (or *squeeze-out*)[7], and can be performed either because of a statutory provision, or because the controlling shareholder has been able to create de facto strong incentives for minority shareholders.

[6] The CONSOB has the authority to extend the duration of the tender offer if required by the market's circumstances until a maximum of 55 days (Art. 40, Regolamento Emittenti Consob)

[7] Following the view of the majority (Pomelli, 2009; Investopedia.com), in this paper the two terms are used interchangeably. However some scholars (Ventoruzzo, 2010) argue that "squeeze-out" should be more appropriately used if the minority shareholders remain members of the organization even if they are hit by the value expropriation of the managers and/or controlling shareholders that launch the tender offer.

It is possible to identify three different cases:

The controlling shareholder acquires a stake of **voting rights higher than 95%**: implementation of **Art. 111, paragraph 1, T.U.F.**

"Any person who, as a result of a public offer to buy all shares with voting rights, owns more than ninety-five per cent of such shares shall be entitled to acquire the remaining shares within three months of the close of the offer, provided he declared his intention to exercise this right in the offer document". This provision of the *Testo unico delle disposizioni in materia di intermediazione finanziaria* mirrors **art.15 of the Takeover Directive**, according to which freeze-out right must be recognized to the shareholder that following a voluntary or mandatory tender offer holds "not less than 90% of the capital carrying voting rights and 90% of the voting rights". Italy sets a threshold of 95% because paragraph 2 of the aforementioned article considers the possibility for a Member State to "set a higher threshold that may not, however, be higher than 95% of the capital carrying voting rights and 95% of the voting rights". This is known as **"Single Threshold" Freeze-out.** Art.15 of the Takeover Directive also provides for an alternative scenario, the so called **"Majority of the Minority" freeze-out** which entails a "(super)majority of the minority approval" (Ventoruzzo, 2010, pp.40).

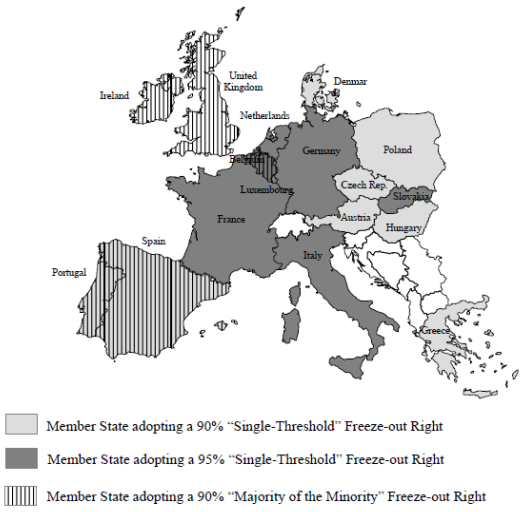


Figure 3.4. Implementation of freeze-out rights in some European countries
Source: Ventoruzzo (2010), pp.48

The controlling shareholder acquires a stake of **voting rights higher than 90% but lower than 95%:** implementation of **Art. 108, paragraph 2, T.U.F.**

In this case, the promoter of the tender offer has to buy all outstanding shares from investors that ask for this; alternatively, he has to restore a free floating sufficient to ensure regular trading.

If, even after the application of article 108 T.U.F., the controlling shareholder does not possess a percentage of voting rights that allows to squeeze-out the minorities ex Art.111 T.U.F., the company is delisted and the remaining shareholders will receive shares of the private company. It is evident that in this case the problem of the exclusion of minorities is still on hand. However, differently from the two delisting mechanisms that require the shareholders' meeting decision, in this case the shareholders that do not sell their shares during the takeover bid do not have the right of withdrawal. Consequently, according to Pomelli (2009) the minority shareholders are subsidized to sell their shares through the provision of art.108 T.U.F. rather than to risk to be tricked in an illiquid investment. If the hypothesis of Pomelli (2009) is true, the promoter has high probability to reach the 95% threshold.

The controlling shareholder gains **less than 90% of voting rights** with the tender offer.

In this case it is difficult to close a voluntary delisting. However, the takeover bid could trigger one of the motivations that lead to the involuntary delisting dictated by Borsa Italiana ex art. 2.5.1 of the Rules (for a better understanding of involuntary delisting, see paragraph 3.3). In particular, if some minority shareholders have a stake higher than 2%, it is likely that the free float will not meet the required level to remain in the market.

In theory, delisting through BOSO should be more advantageous for minority shareholders rather than the shareholders' meeting decision or the merger by acquisition. Indeed, the tender offer lets share's owners free to decide whether they want to sell their position or not. Instead, through the other mechanisms a shareholder that has the majority of the voting rights can provoke the delisting without the acceptance of the other shareholders. However, as already touched on, also in the BOSO case the minority shareholders can be disadvantaged by the cash-out and legislators should protect them.

A still problematic issue regarding minorities' protection is about the determination of the **offer price of the tender offer**. The Takeover Directive only requires that the price must be **fair**. If the tender offer has been launched as a consequence of the acquisition of control (*mandatory tender offer*), **art.5 of the Takeover Directive** states that the equitable price shall be "the highest price paid for the same securities by the offeror […] over a period, to be determined by Member States, of not less than six months and not more than 12 before the bid. If, after the bid has been made public and before the offer closes for acceptance, the offeror purchases securities at a price higher than the offer price, the offeror shall increase his offer so that it is not less than the highest price paid for the securities so acquired". On the

other hand, in the case of a voluntary takeover bid, the directive does not provide any minimum price. Given the compliance with the criteria set by Art.5 of the Takeover Directive, different strategies can be applied. It is important to notice that, even if the controlling shareholder has not been able to acquire the required ownership stake to freeze-out minorities through the tender offer, it is likely that he has reached a share of voting rights that assures him the majority in shareholders' meeting so that he may try to reach his goal through one of the other two techniques. Therefore, one profitable solution from the point of view of the shareholder that launches the tender offer could be to put in a bid a price slightly higher than the amount that minority shareholders would receive exercising the withdrawal right if the delisting is pursued though a corporate operation. Since Art.2337-*ter* c.c. clearly defines how to calculate the possible settlement, the promoter can carefully time the takeover bid in order to minimize the premium he has to pay. Another possibility could be to offer a price at a premium over the current market price, but lower than what the minority shareholders would receive in case of withdraw. In this case, the minority investors have to consider the likelihood of the success of the tender offer, which is often difficult to establish. Considering these possible strategies, it is evident that the delisting through takeover bid not only increases the probability of eliminating minority shareholders, but also allows to achieve this result paying lower costs than the merger by acquisition. Croci and Del Giudice (2014) argue that the higher the ownership percentage of controlling shareholder, the lower the premium that is paid to minorities. In addition, European legislation does not recognize the right of withdrawal in the context of tender offer, and thus the shareholders that do not take part to the auction are subjected to higher risk. At the end, the occurrence of this risk limits *ex ante* the freedom of the minority shareholders.

3.2 WAYS TO DELIST IN THE U.S.

An important distinction in the U.S. context is the difference between "**going private**" and "**going dark**". Going private transactions includes all those dealings where minorities are cash-out. On the other hand, through going dark transactions, companies decide to reduce the number of shareholders so that they can remove themselves from the stock exchange, but not all shareholders are cash-out. Going-dark firms after the date of deregistration usually continue to trade in non-regulated markets such as the Pink-Sheet. In other words, going dark transactions allow to benefit from the delisting and deregistration advantages, without going completely private.

3.2.1 GOING PRIVATE TRANSACTIONS

As we will soon see, a going private transaction can be performed through different types of transactions. All these procedures, even if usually initiated by controlling shareholders or external acquirer, require a shareholder vote, disclosure, and board considerations. In order to be eligible to delist and deregister, companies must fill documents described in the SEC Schedule 13e-3 ("going private" rule), and this usually involves the cash-out of all of the company's public shares.

First of all, we analyse freeze-out transactions and in particular the delisting through tender offer and through statutory merger freeze-out, focusing on the differences with the European regulation. Then, in the second part of this dissertation about going private transactions, we will analyse the most used technique used by American corporations to go private, which is the leveraged buyout (LBO).

FREEZE-OUT TRANSACTIONS. As already explained for the European case, in order to freeze-out minorities controlling shareholders have to own at least 90% of voting rights. There are different ways through which controlling shareholders can achieve the required amount of shares to squeeze-out other shareholders:

1. TENDER OFFER

   The easiest approach to complete the going private transaction is to launch a tender offer on all outstanding shares, which can be or can be not previously approved by the board of directors of the target. If, after the tender offer, the bidder is able to own at least 90% of the outstanding shares, the deal can be completed with a ***short-form merger*** without the need for the approval neither of the company's remaining shareholders nor of the target' board of directors. According to the U.S. Federal Securities rules, the tender offer cannot last less than 20 business days.

   A recent trend in negotiated tender offer is to grant the acquirer a "**top-up option**". After the tender offer's closure, an acquirer that has bargained a top-up option can acquire additional shares from the company in order to reach the 90% threshold. Usually, the additional shares are purchased at the price of the shares of the takeover bid. A common "top-up option" agreement provides that for every 1% that a bidder's tender offer falls short of 90%, the target has to issue that number of stocks which is equal to 10% of its outstanding share prior to the tender offer. There are two main conditions to use the top-up option. The first one is that the company must have in place sufficient reserves of authorized but not issued stock in order to cover the option.

Secondly, the shareholder approval is necessary when the target has to issue shares for an amount equal or higher than 20% of the outstanding shares.

The reason of the current increase on this instrument is that it may be beneficial both for the bidder and for the target company. Indeed, the option usually provides that it can be exercised only if the acquirer has reached a certain amount of the target's capital stock through the tender offer so that, even if the bidder has not the right to perform a short-form merger, the approval of the shareholders' meeting required for the long-form merger is just a fait accompli. In such a case, it could be convenient also for the remaining shareholders of the target to avoid the costly process of the merger freeze-out.

2. LONG-FORM, STATUTORY MERGER FREEZE-OUT

Through the ***statutory merger freeze-out***, controlling shareholders decide for a merger with a private company and the minority shareholders will not receive any shares of the new entity, but rather will receive cash or other non-equity securities. The acceptance for this mechanism, not permitted under the Italian (and European) jurisdiction, is rooted in the belief of American legislators that nowadays the minority's dictatorship can be more expensive and dangerous than the risk that controlling shareholders can abuse of their power.

In order to analyse cash-out merger, Delaware General Corporation Law (DGCL) is considered the most complete jurisdiction at which many other States look at because of the extensive number of case law that it covers. **Section 251 and 259 of DGCL** provide that statutory merger must be approved by the board of directors as well as by more than half of the votes at the shareholders' meeting. However, a simplification of the procedure is contemplated if "each share of stock of such constituent corporation outstanding immediately prior to the effective date of the merger is to be an identical outstanding or treasury share of the surviving corporation after the effective date of the merger" and if "securities of obligations to be issued or delivered under such plan do not exceed 20% of the shares of common stock of such constituent corporation outstanding immediately prior to the effective date of the merger" (§ 251(f), DGCL). In this case the vote of the shareholders of the constituent corporation is not required.

Minority shareholders who are not willing to exchange their shares for the cash offered are protected though the **appraisal rights**, according to which they can ask the liquidation of their shares at a fair price determined by the *Court of Chancery*. This provision is usually used when the minorities judge the offered cash less than what the company is worth. The fair value of the shares must be determined taking into account

"any element of value arising from the accomplishment or expectation of the merger or consolidation […]. In determining such fair value, the Court shall take into account all relevant factors" (§ 262(h), DGCL). However, in practice, the minority shareholders find difficulties in enforcing appraisal rights because the procedure is rather complex and expensive: shareholders that are looking for appraisal must "notify the corporation of their intent *before* the shareholders' meeting that trigger the right" (Ventoruzzo, 2010, pp.14) and then they have to dissent at the meeting. Moreover, the fair value of the shares is usually computed without considering the potential synergies of the merger and minorities do not have enough information to determine the probability that the post-acquisition gains will be higher than the fair value of the appraisal rights. An alternative solution for dissenting shareholders to appraisal rights is to **complain for some form of illegality**, such as the lack of authority or abuse of power.

LEVERAGED BUYOUT

Paragraph 3.1 documents that European companies usually delist through BOSO. In the U.S. the most common technique for PtP transactions is the leveraged buyout (LBO). LBO can be defined as "an acquisition of a corporation as a whole or a division of a corporation mostly with cash, the cash being raised with a preponderance of debt raised by the acquirer"[8] (Sudarsanam, 2003, pp.268). In the case of delisting through LBO, the public company is first of all acquired and subsequently delisted. The reason of the predominance of LBO over other kinds of mechanism can be attributed to the fact that this organizational form allows to overcome some of the shortcomings of being listed that have been presented in Chapter II:

- **Discipline of debt**: the high leverage forces management to carefully evaluate the investments so that they are able to generate the cash necessary to repay interests and the principal. In addition, the free cash flow must be used to pay off debt rather than being used to empire-building.
- **Efficient corporate governance**: LBO removes the conflicts between ownership and control, which are the source of the agency conflict. Usually the acquirers that have invested in the target own the majority of seats on the board. Also in the case of an institutional buyout, the alignment is guaranteed by the incentives given to managers in the forms of stock options or ratchet payments.

[8] It is important to remember that LBO does not necessarily imply delisting since LBO can also refer to private firms that are bought through an increase in leverage. In the paper, the term LBO refers to the cases where the target firm is a company listed on a stock exchange.

Michael Jensen (1976) hypnotizes that the raise of leveraged buyout would be a new organizational form that will substitute the inefficient public corporation.

LBO can be initiated by different parties. When the firm is taken over by incumbent management the LBO is called **management buyout (MBO)**; when the corporation is acquired and then delisted by an outside management team, it is known as **management buyin (MBI)**. MBIs are usually hostile transactions since they occur when the current managers do not want or are not able to realize the full potential of the firm. It can also happen that the acquired firm is managed by some old target management and by some new management (the so called **buyin management buyout, BIMBO**). These types of processes are usually supported by private equity firms. Finally, when the only promoter of the going-private transaction is an institutional investor or a private equity firm, the deal is called **institutional buyouts (IBOs).** In this hypothesis, the pre-transaction management can be replaced by a new team or can be confirmed. In all these cases, it is common that managerial performance is reward with equity stakes in the new private company (*equity ratchets*).

Different reasons can explain why PtP through LBO predominates in the US (and in the UK), but not in Continental Europe. A first explanation is that European listed companies are highly concentrated and family sponsored; in this case the probability of being acquired by unrelated bidders or private equity firms decreases. Another limit faced by European corporations is the lower availability of sources of debt. In the US, for instance, the LBO's trend has been boost by "junk bonds", which are not equally developed in Europe. Finally, private equity firms, key players in the implementation of LBOs, are not widespread in the old continent.

3.2.2 GOING DARK TRANSACTIONS

Going dark transactions do not contemplate neither the necessity of shareholders' approval in order to go private, nor the need of any shareholder cash out. The corporation, **without becoming completely private, delist and deregister its shares**. In other words, the important advantage of going dark transactions is that they allow to maintain a certain number of "public" shareholders, although being relieved both of the stock exchange regulations and of the SEC reporting requirements (the U.S. Exchange Act of 1934 and Sarbanes-Oxley Act impositions). The board of directors of U.S.-listed companies has the right to voluntarily delist the securities if the firm records fewer than 300 shareholders, or fewer than 500 holders *and* less than $10 Million of assets in the previous three years. In this case, NASDAQ requires that the board of directors has simply to demonstrate that the PtP transaction is in the

best interest of the company and its shareholders; NYSE requires the approval of the audit committee of the board of directors. Companies usually decide to undertake this solution when they do not have enough cash in order to perform a tender offer or a repurchase program.

The assumption that going dark transactions do not involve shareholders cash out does not mean that freeze-out is not performed as a required step in order to meet the criteria to go dark. If this is the case, firms can try to reduce its shareholders of record though two strategies. The first one is the **reverse stock split** with a sizable split ratio. This means that a certain number of outstanding shares are exchanged for one share of a greater value; minority shareholders that do not own enough shares to receive at least one share can receive a cash equivalent of their fraction of shares. This approach requires the shareholders' approval and often triggers litigations for the determination of the exchange ratio. The second possibility is a **tender offer**, whereby the company tries to repurchase its shares. Even though this approach is usually faster and gives raise to less litigation, the company cannot be sure to decrease the number of record holders below 300.

One of the biggest issues of going dark transactions is about the aforementioned criteria of the number of shareholder of record in order to be eligible to these types of deals. Indeed, first of all the thresholds required to have access to the procedure can be misleading: a shareholder of record often includes hundreds of beneficial shareholders, for example if the financial institution holds shares in street name. Secondly, whenever the company no longer satisfies the limit on the number of record holders, it is immediately subject again to reporting obligations. For instance, this problem can arise if the institution that holds shares in street name transfers the property back to the beneficial owner for whom it holds the shares; in this case, the beneficial owner is a new record shareholders and the threshold can be surpassed.

A **delisted corporation** can still trade in non-regulated markets such as the OTB Bulletin Board, but a deregistered one cannot. The only solution for a **deregistered company** that want to be publicly traded is to "be listed" in the **Pink Sheets market**.
It is important to keep in mind the difference between **delisting** and **deregistering**. U.S. listed companies must be in line both with the listing requirements of the Stock Exchange in which they are traded and with the requirements of the Security Exchange Act of 1934 governed by the Security Exchange Commission (the SEC). The delisting process eliminates the obligation to meet the exchange requirements, but in order to eliminate also the reporting obligations to

the SEC firms have to deregister. Usually companies start the delisting and the deregistration process simultaneously; however, since the latter is a more complicated and time consuming process, it can happen that a delisted company continues to be exposed to strict reporting rules. Empirical researches reports that "the bulk of compliance costs involve SEC registration" (Chaplinsky et Ramchand, 2008, pp.25) and, as mentioned in Chapter II, the increasing costs derived from the introduction of SOX have been seen as a strong incentive for delisting. The delisting and deregistering processes are not easy and, even more important, they are time consuming. Moreover, the introduction of the SOX in 2003 has further added difficulties in the deregistration process. The delisting and deregistering procedures start filling **Form 25**. The corporation has to inform the public (through a press release) about its intention to file Form 25 with 10 days in advance. The delisting is effective 10 days after the submission of the document; since that date, the firms' duties under Section 13(a) of the U.S. Exchange Act are suspended. The actual termination of registration (under Section 12(b)) occurs only after 90 days since the delisting. However, also after having file Section 25, the firm is still subjected to obligations of Section 12(g)[9], which are eliminated only filling **Form 15**. Form 15 proves that that the limits on the number of shareholders of record are respected.
The **Pink Sheets** is an electronic quotation system that lists bid and ask prices for unlisted stocks, began in 1904, operated by a private company that does not require any Exchange Act or SEC reporting. As an alternative to the Pink Sheets, delisted companies can trade on the **Nasdaq OTC Bulletin Board** (OTCBB). However, on January 1999 the SEC approved the *eligibility rule*, according to which in order to trade in this market the company has to meet the reporting requirements under the Security Exchange Act of 1934. Delisted corporations issue a request to the SEC and simultaneously ask broker-dealer firms to be registered to quote their securities on the OTCBB. With the introduction of the eligibility rule, the firms that were not in line with the SEC have either to update their disclosures, or to move to the Pink Sheets.

To conclude the dissertation about the U.S. delisting techniques, we recall the minorities' protection rules available in addition to the described appraisal right. We have already mentioned that in the U.S. there is a litigation-based system where the board of directors has a high decision-making freedom, but the deals are usually associated with a higher number of ex-post lawsuits compared to European context. In practice, in the U.S. minority investors can

[9] All companies with more than 300 shareholders and assets above 10 million $ have to register in Section 12(g). In the same section, must be registered companies that have less than 10 million $, but more than 500 shareholders.

protect their stake in two ways: the first one is in the hand of the SEC that can impose additional conditions on the issuers in order to increase investors' protection. In other words, the SEC may postpone the delisting procedure in order to verify the regularity of the application of Form 25, under section 12 (b) of the Act. However, in practice the SEC seldom intervenes to delay the delisting, providing that an appropriate protection is given to minority shareholders whenever they have had sufficient time to sell their shares in the regulated markets. The second mechanism involves litigation against the board of directors who approved the delisting if there is the suspect of a breach of their fiduciary duties. The directors have to act in good faith and to take decisions that are in the best interest of the company and of its shareholders. The prohibition of "self-dealing" wants to ensure the director's independence with respect to a particular proposal. However, also the effectiveness of this protection is doubtful. Indeed, American courts judge a director liable only if his/her decisions are completely irrational. However, despite the appearances, Bates et al. (2006) report that in the U.S. target shareholders gain a premium of about 14,9% from freeze-out bids even when the bidder is the controlling shareholders.

3.3 INVOLUNTARY DELISTING

The definition of "delisting companies" embraces different types of transactions. The first broader distinction is between voluntary and involuntary transactions. As stated in the introduction, the present paper is focused on the voluntary phenomenon. The intent of this paragraph is to briefly describe the elements that trigger the involuntary delisting both in the U.S. and in Italy.

Most studies on involuntary delisting are focused on the US markets; maybe because it is more common than voluntary delisting, contrary to what happen in Europe. According to Djama et al., (2012) the primary reasons for this type of going private transactions are "the violation of stock exchange requirements" or "poor firm performance" (pp.9).
There are a wide range of reasons that allow an exchange to delist a company and they can be distinguish between those that are designed to guarantee that the relationship remains profitable for the exchange, and those that have the aim to protect investors and the trading venue's reputation. Involuntary delisting strongly depends on the peculiar rules of every exchange market. The NYSE, for instance, requires that the listed companies consider delisting if one of these **3 numeric standards** are no longer meet:

1. Number of total stockholders < 400

Number of publicly held shares < 600˙000

Average monthly trading volume for the previous 12 months < 100˙000 shares

2. Markets capitalization requirements
3. Average closing price of a security < $1.00 for consecutive 30 trading's day

Moreover, a company can be delisted from the NYSE if their operating assets dramatically decrease or if it files for bankruptcy. The NASDAQ's delisting requirements are very similar to the ones on the NYSE.

In addition to these objective requirements, both the NYSE and the NASDAQ contemplate the possibility to delist a company on the base of **subjective criteria**, such as failure in accounting practices or prolonged conflicts of interests with the creditors: "Nasdaq may deny initial inclusion or apply additional or more stringent criteria for the initial or continued inclusion of particular securities or suspend or terminate the inclusion of particular securities based on any event, condition, or circumstance which exists or occurs that makes initial or continued inclusion of the securities in Nasdaq inadvisable or unwarranted in the opinion of Nasdaq, even though the securities meet all enumerated criteria for initial or continued inclusion in Nasdaq" (NASDQ, sec. 4300). The subjectivity of the involuntary delisting process is also attested by the high variability in the period between the time when the violation occurs and the effective delisting date. This disparity is partially due to the "cure period" that can be given to the company by the Stock Exchange in order to remediate the deficiency (Macery *et al.,* 2008). Using a sample of 150 AMEX delisted firms, Chen and Schoderbek (1999) suggest that only 21,7% of the firms were delisted in the year of the first violation. Two reasons could be at the base of this delate: first, regulators could be reluctant to delist big companies fearing a negative impact and a loss of reputation of the market; secondly, the process required to detect violations can be costly and it is difficult to obtain exact information (Djama *et al.*, 2012).

Looking at the involuntary delisting in the European context, we consider the regulations of Borsa Italiana. Borsa Italiana may ***suspend*** the listing of a financial instrument, or permanently ***revoke*** the listing. Differently from the American's rules, in Italy there are no numerical standards to decide about revocation, but there are some elements that must be considered (art.2.5.1, paragraph 5; Rules of the Markets organized and managed by Borsa Italiana):

a) The average daily turnover in the market and the average number of securities traded over a period of at least eighteen months;
b) The frequency of trading in the same period;

c) The distribution among the public of the financial instruments in terms of value and number of holders;
d) The involvement of the issuer in insolvency proceedings;
e) An adverse opinion by the statutory auditor or a disclaimer rendered by the statutory auditor for two consecutive financial years;
f) The liquidation of the issuer;
g) Suspension from listing for a period of more than eighteen months.

When Borsa Italiana judges that there are the conditions for the revocation, it sends the issuer a written notification to explain what the reasons of the choice are, and establishes a time limit of no less than 15 days for the submission of briefs.

Also the suspension is a quite common phenomenon in Italy, performed especially when the markets are very volatile in order to avoid excessive risks for investors. For instance, in 2003, there had been 49 suspensions of 39 companies, meaning that some firms had been suspended more than once in the same year (Geranio, 2004).

CHAPTER IV: EMPIRICAL ANALYSIS

4.1 THE ITALIAN PHENOMENON

As realized reviewing the main existing literature, few studies analyse the Italian phenomenon of the delisting companies. Therefore, first of all we describe the Italian context throughout own elaboration of data coming from a sample of firms delisted from Borsa Italiana. The main purpose of this section is to understand if and to what extent it is similar to the features of the delisting phenomenon in other countries described in Chapter I.

DATA SOURCES AND SAMPLE SELECTION

In this section the sample selection procedure and the lists of data sources for the first part of empirical analysis are presented. In order to present the Italian phenomenon, we start from the list of all companies delisted from the Italian stock exchange (Borsa Italiana) between January 1995 and the 30th April 2015. The time span has been determined by the data available in Borsa Italiana website. **The overall number of delisted firms is of 337.** From these companies, **we count out involuntary delisting** since, as already mentioned, the focus of this paper is on voluntary delisting. This has been possible because the aforementioned list also provides the reasons that lead to the delisting. We consider involuntary delisting the organizations that go private because of:

1) They do not meet the stock exchange requisites;
2) They go bankrupt;
3) They are subjected to liquidation;
4) They are under the so called *amministrazione straordinaria* procedure;
5) There is lack of specialists or nominated adviser (Nomad) for the particular stock.

They turn out to be 73. This screen leaves us with a **sample of 264 companies**.

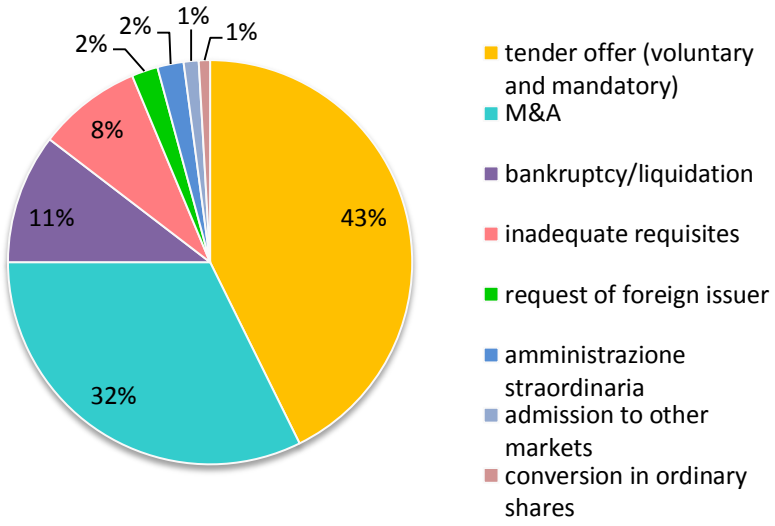
We collect most of the information needed for the first part of the empirical analysis from the **website of Borsa Italiana** and in particular from the *Analysis and Statistics* section which includes historical data. In addition to the delisting list, particularly suitable for the purpose of our study have been the list of the Italian IPO occurred in the period 1995-2015, and several other data on the overall condition of the market. Another important data source, in particular for the second part of the analysis, has been the database **AIDA (Analisi Formatizzata delle Aziende)**; a service provided by Bureau van Dijk S.p.a which pools information on more than 1.000.000 private and publicly Italian listed companies. This instrument will be presented more in detail in paragraph 4.2; in this section the database has been useful to classify the

companies by industries. We finally use ***Il Sole 24 Ore* journal** to verify pertinent deal information, in particular when the consultation of Borsa Italiana and/or AIDA leads to doubt interpretations.

SAMPLE DESCRIPTION

Since we have decided to focus our attention on the voluntary delisting because empirical literature affirms that it is the predominant type of delisting in the Continental Europe (pp.10), Chart 4.1 is aimed at illustrating which share of the phenomenon we are considering.

Chart 4.1: Delisting mechanisms



The delistings originated by a decision outside the willingness of the company's stakeholders counted for about 21% of the overall deals in the period 1995-2015. For a better understanding of the chart, we have incorporated the reasons "lack of specialists/Nomad[10]" (6 cases) and "prolonged lack of trading" (2 cases) in the category of "inadequate requisites" because they all refer to one of the criteria set by art.2.5.1, paragraph 5 of the *Rules of the Markets organized and managed by Borsa Italiana S.p.A.* for the revocation of the corporation (pp.54 of this dissertation). Instead, companies subjected to "Amministrazione Straordinaria" have been considered separately from "bankruptcy/liquidation" because according to the Italian legislation the rational of this procedure is preservative, whereas in the case of bankruptcy the company is liquidated. Therefore, since Harris *et al.* (2008) document

[10] A Nomad is a market player who has the duty to check the appropriateness of the firm to be admitted to the market, helps the company to maintain the required level of transparency, and provides advice so that the listed organization can meet Borsa Italiana's rules. A Nomad can be a bank, an intermediary or a company that operates in the corporate finance sector. *(Source: Borsa Italiana official website)*

that the magnitude of the consequences of the involuntary delisting is strictly related to the reasons that provoke the delisting (refer to pp.30 of this thesis), we believe that for further analysis it is valuable to keep the two cases separate.

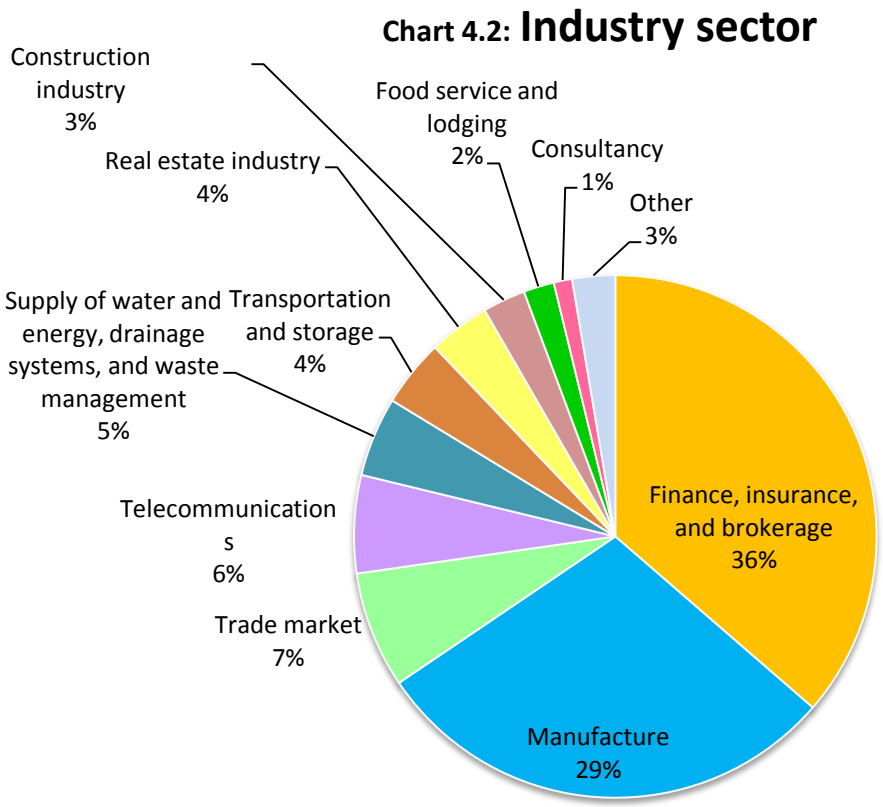
Looking at the main **delisting techniques**, we confirm that Italian companies mainly go private through **tender offers**, as most European firms do (Martinez et Serve, 2011 and documented in Chapter III). Most of the tender offers performed in Borsa Italiana are ***OPA residuali*** (two-third), meaning that they have been launched once the controlling shareholder already owns 90% of the voting shares; 23% of takeover bids are *voluntary*; and the remaining part is due to the achievement of 30% of shares in the hand of an unique shareholder (*OPA obbligatoria*). Also the **delistings through mergers and acquisitions** appear to have an important role in the Italian context (32% of all PtP transactions). Given the legal prohibition to cash-out minority shareholders using this mechanism and therefore the actual risk that minorities can continue to own a stake in the company (pp.40 of this paper), we suggest that future studies should investigate whether the control hypothesis is actually one of the most important factors that pushes Italian companies to delist, as the literature review suggested (Tutino *et al.*, 2013).

Reviewing the previous researches on the international going private transactions, we notice that not one analysis looks at the extent of the phenomenon distinguishing companies by **industry sectors**. At first glance this scarcity could suggest the conclusion that the industry is irrelevant to describe the delisting events. However, our sample demonstrates that delisting does not occur proportionately in all industries. In order to classify the companies we progress through the following steps. Aida uses the Adeco 2007 categorization that is the most adopted Italian classification system used, among others, for official statistics by *Istat* and for fiscal issues by the *Agenzia delle Entrate*. This classification is organized in six levels, labelled by a number (each digit corresponds to a level) and a brief description. The problem faced was that Aida provides the *subcategories*, which are the maximum level of detail with 1226 possible different titles: too much variety for a sample of 264 companies. For this reason, the second step has been the allocation of each subcategory to the respective *activity* looking at the Adeco website (Adeco 2007 recognized 18 activities).[11] Chart 4.2 documents that delisting is

[11] For a better understanding of the Adeco 2007 classification see:

- www.infocamere.it/movimprese/-/asset_publisher/ueRnd4KL4Z0I/content/classificazione-attivita-economica-ateco-2007
- http://ateco.infocamere.it/ateq/ricercaGruppi.action

more likely to occur among companies that have businesses in the **finance and in the manufacturer sectors** (respectively, 36% and 29% among all the companies that delist during the period). Moreover, a sizable percentage of delisted companies belongs to the trade market (7%) and telecommunications industry (6%). The industries that report less than 2 companies (primary sector, services, and leisure activities) have been grouped in the category "other".



As far as we know, the reasons that explain the prevalence of delisting in the financial sector have not been covered by any existing neither theoretical nor empirical study. We believe that part of the phenomenon is due to **M&A activities** that characterized the financial sector. Indeed, 49% of going private deals in this sector is performed through merger and/or acquisition, a rather higher percentage than what reported for the overall sample in Chart 4.1. Without the pretention of giving a complete dissertation about the topic of M&A among banks, it is relevant to know that in the last years several financial and technological changes have "altered the optimal production functions of financial firms" (De Young *et al.*, 2009, pp.88), making **consolidation particularly profitable** both in terms of operational efficiency and of market power.

On the other hand, the predominance of delistings in the manufacturer sector can be due to the rules used to categorize the businesses. According to the Adeco classification, indeed, this label comprises a wide range of activities. Therefore, it is plausible that applying Adeco to all companies listed in Borsa Italiana, we would find an overall prevalence in manufacturer sector.

RESULTS:

Geranio (2004) documents that the going-to-private transactions became **particularly relevant in Italy since 2000**. The table below (Table 4.1) reports the number of IPOs and the number of voluntary delistings occurred in Borsa Italiana during the analysed period, and the annual delta (calculated as the difference between IPO and delisting).

Table 4.1: Listing and delisting events occurred in Borsa Italiana between January 1995 and 30th April 2015

Year	IPO	DELISTING	DELTA
1995	14	17	-3
1996	15	17	-2
1997	14	17	-3
1998	26	17	9
1999	38	8	30
2000	49	18	31
2001	19	20	-1
2002	15	13	2
2003	12	26	-14
2004	10	5	5
2005	19	9	10
2006	46	15	31
2007	49	13	36
2008	10	17	-7
2009	8	10	-2
2010	10	7	3
2011	10	8	2
2012	7	10	-3
2013	20	7	13

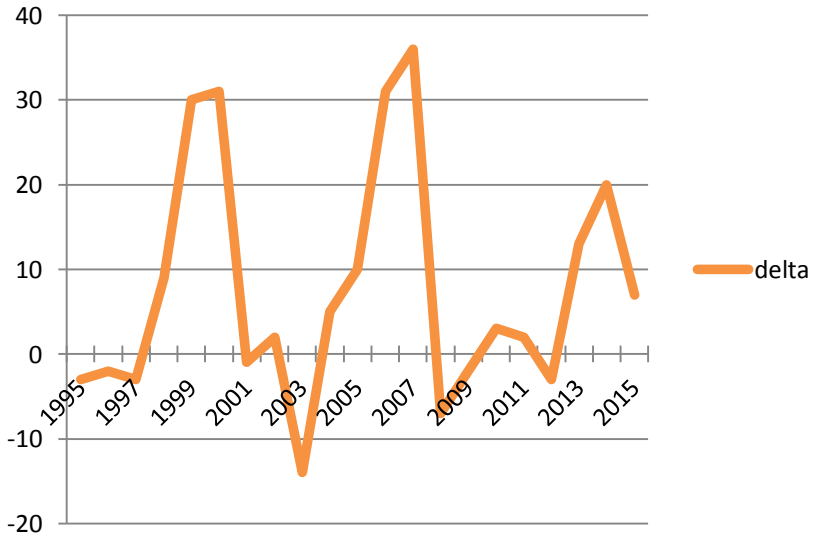
2014	28	8	20
2015*	9	2	7
TOT	**359**	**264**	MEAN: 7,8

Source: Borsa Italiana, our elaboration

*until April 2015

As we can note (considering also Chart 4.3), during the last two decades the Italian market has been characterized by a **heterogeneous number of listing and delisting companies**. The prevailing trend is a delta that oscillates between +2 and -3; however there are periods during which the difference is strongly positive or strongly negative.

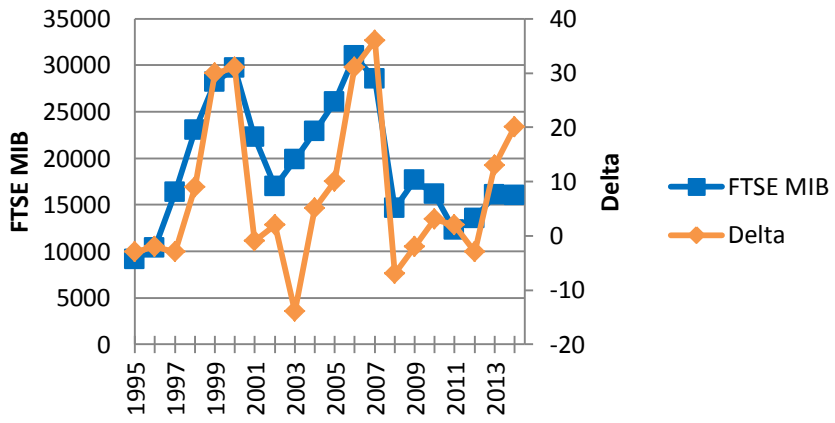
Chart 4.3: Delta



The **two-year periods 1999-2000 and 2006-2007 can be defined as periods of *hot market,*** during which the IPOs exceed the PtP transactions. On the other hand, **the year 2003 and the period 2008-2009 are defined as *cold market period*** (in our sample the widest differential is reached in 2003 when the delisting surpassed the listing by 14 units). The idea that financial downturns provoke higher numbers of delisting is not surprising and it has been already documented in researchers presented in paragraph 1.2 (see pp.8 for the hot and cold market theory). In Italy, the negative peak of 2003 could be due to the delayed effects of the **dot-com bubble** that characterized the American markets in the late 1990s and the beginning of the XXI century. This explanation is realistic since many studies point out that in various aspects the Continental Europe markets remark the U.S. ones with some delay. Moreover, **the financial crisis that hurt the country in 2008** boosts the phenomenon of delisting companies. The number of delistings around this year is not as negative as we expected, however we must remark that the sample excluded involuntary going private transactions,

which could be a substantial number in situations like this. Finally, to conclude the analysis of the graph, nowadays (2013-2015) delta is returning positive with a **new phase of hot market.** Comparing the Italian situation with Figure 1.5 (pp.10) regarding the UK market, it becomes evident that our sample is characterized by more frequent negative balance of annual listed and delisted companies: in the English case, the unique period of negative delta is reported during the financial crisis that hit the economy in the years 2009-2011, while in Italy there are 8 cases. One possible explanation is that the companies listed in Borsa Italiana are particularly vulnerable to the speculative behaviour of the management. Geranio (2004) states that companies that trade in the Italian market often go public or private without a clear long term strategy. According to the **speculative hypothesis**, when the market experiences a bull period, the management that decides to go public can sell the stocks at particularly high prices (also due to investors' optimism), gathering high amount of capital. On the other hand, when the markets are in a downturn period, such as during the financial crisis of 2008, several parties can be interested in repurchasing the shares in order to benefit from the lower prices due to factors not correlated with the company's situations or with sector's problem. In the first chapter we have reported Figure 1.3 (pp.8) that shows how the Italian listing waves move symmetrically to the delisting waves; scholars suggest that these trends support the hypothesis that there may be some macro events that boost the number of listing or delisting. In order to further understand if the delisting phenomenon is influenced by periods of bear and bull (***hot and cold market theory***), we plot the differential between the number of IPO and the number of delisted company with the FTSE MIB Index (at the end of the year) for the years 1995-2014 (Chart 4.4). The FTSE MIB is the benchmark stock market index for Borsa Italiana. This index can be considered representative of the Italian national stock exchange performance because it includes 40 of the most-traded Italian stocks, which correspond to almost 80% of the market capitalization of the Italian market.

Chart 4.4: FTSE MIB and Delta



It is clear that the two variables move roughly symmetrically, indeed the Pearson correlation coefficient is equal to 0,735954. In other words, when the market is poorly performing, the difference between admission and delisting is low or negative, meaning that there have been more delistings than listings. In some cases, the reaction of management to the performance of the market seems delayed of one year. This can be due either to the fact that the index is measured at the end of the year and to the time required for the implementation of the delisting process (some time limits are compulsory by law, as observed in Chapter 3, pp.38 and 42). Overall, **we can conclude that it is reasonable to mention the speculative hypothesis and the application of hot and cold market theory as reasons that push delisting in the Italian context.**

The literature review suggests that one of the main reasons for the growth of importance of the delisting phenomenon could be the low interest rates that facilitate LBO transactions. Other researches underline that at the end of the XX century, going public became a reason of pride and it was considered "trendy" by many companies. It is likely that ex-post the market selected only the more suitable companies and that new-entered firms characterized by poor performance suffer in periods of downturn. Similarly, Chaplinsky and Ramchand (2006) believe that the relative high number of delisted companies of the last decades could partially be due to the **worsen quality of the recent listed companies** that provoke an early delisting. The list provided by Borsa Italiana about the delistings does not include the IPO's date of the sample. Therefore, we start from the list of IPOs occurred in the years 1995-2012[12] and we compute the annual percentage of PtP transactions among them (Table 4.2). In order to verify the assumption, we expect that companies that go public during the earlier years are less likely to delist than the IPOs of the more recent years.

[12] We exclude the years 2013-2014-2015 because the lack of available years after the IPOs may have an influence of the analysis.

IPO year	Delisted until 2015 (%)
1995	21,4
1996	60
1997	50
1998	73,1
1999	42,1
2000	24,5
2001	31,6
2002	40
2003	25
2004	30
2005	31,6
2006	15,2
2007	10,2
2008	10
2009	0
2010	0
2011	20
2012	14,3

Table 4.2: Annual percentage of delistings among companies that enter in Borsa Italiana in different years.

However, as we can observe in the above table, there is not a clear trend along time and the companies listed during the XXI century are not more subjected to delisting. Overall, **we tend to reject the hypothesis** that Chaplinsky and Ramchand (2006) proved to be true in the American market, for the Italian one. Moreover, looking at Table 4.3 (below) another observation that can be gathered by this analysis is that the great majority of Italian corporations delist within 10 years from the IPO's year.

IPO year	Delisted until 2015 (%)	Within 5 years	Within 10 years
1995	21,4	33,33%	66,67%
1996	60	55,56%	100%
1997	50	71,43%	85,71%
1998	73,1	72,73%	100%
1999	42,1	43,75%	81,25%
2000	24,5	58,33%	100%
2001	31,6	50%	83,33%
2002	40	50%	100%
2003	25	100%	100%
2004	30	n.s	n.s.
2005	31,6	n.s	n.s
2006	15,2	n.s	n.s
2007	10,2	n.s	n.s
2008	10	n.s	n.s
2009	0	n.s	n.s
2010	0	n.s	n.s
2011	20	n.s	n.s
2012	14,3	n.s	n.s

Table 4.3. Years of permanence in the Stock Exchange before delisting.

Undoubtedly the result must be enriched with future data, however, among companies that go public in 1996 all the delisted companies do that before 10 years; the same for IPOs occurred in the years 1998 and 2000. In other words, it seems that the earlier years of the public experience are those that give the more arduous threats.

When we have described the main **delisting techniques**, we confirm that Italian companies mainly go private through **tender offer**. However, Chart 4.1 aggregates all the delisting during the sample period 1995-2015. But, if we look at the trend among years, it is interesting to note that it has not always been the same. First of all, it is observable that the predominance of tender offer over M&A is a phenomenon of the last years; indeed, until 2005, several years have a substantial higher percentage of M&A than takeover bids (for instance, in 2002, mergers amount to 60% of the total annual deals). A second consideration is that, as we expected, the impact of PtP transactions due to bankruptcy is higher in periods of downturn (for example, years 2004 and 2011). Finally, also the last period analysed shows an annual steady increase of companies delisted because of failure or bankruptcy. As suggested in the sample description's part, given that these companies have not been included in our sample they can partially explain the particular positive and high delta of the last years. In other words, it could be that nowadays the involuntary delisting phenomenon is gaining ground over the voluntary deals.

4.2 REASONS AND CONSEQUENCES OF DELISTING

Following the structure of Chapter II of the literature review, the aim of this section is twofold: on one hand we want to investigate which are the **reasons** that have the greater impact in the delisting decision. In order to do that, we will analyse some variables that the literature has suggested as proxies to measure the costs and benefits of listing for a subsample of delisted organizations and other comparable firms that remain listed. We want to understand which is (are) the problem that the companies that operate in Borsa Italiana try to overcome through the delisting process. Then, we will look at the **consequences of delisting.** Given the predominance of voluntary delisting, we hypothesize that management that decides to go private expects to gain some benefits in terms of overall performance. In this part the comparable companies will be used to reduce the eventuality that changes in financial measures are due to the overall industry performance, rather than by the delisting event. In other words, in our analysis we used the non-delisted companies as benchmarks.

To answer these questions, we will first of all adopt **descriptive statistics** analysing and comparing the data collected. Then we will use some more **sophisticated statistical analyses** to investigate particular aspects.

DATA SOURCES AND SAMPLE SELECTION

The first compulsory reduction of the previous sample is due to the availability of financial data. As already mentioned, data used in this section come from Aida. The database provides Italian companies' financial information only for a restricted period: the first year available is 2005, and the last year available is 2013. Since to conduct the analysis we need the accounting number of one year before and one year after the delisting, it is possible to analyse only the **companies delisted from 2006 until 2012**. This screen leaves us with **80 companies**.

Moreover, in order to pursue our goal, it is necessary that all the elements of the sample can be evaluated as standalone items after delisting. For this reason, and following what suggested in the paper of Croci and Del Giudice (2014), **the reduced sample excludes also the delisting due to mergers and acquisition (30 firms).** We also control that there are no cases in which the firms that delist from Borsa Italiana migrate in other regulated markets because otherwise we would have to exclude them since their performances would be still influenced by the possibility to trade their shares in a stock exchange. After these adjustments, the new sample consists of 50 companies.

Finally, as suggested by several previous researches on the phenomenon (Croci et Del Giudice, 2014; Tutino *et al.*, 2013), **we remove the remaining organizations that operate in the financial industry** because they could introduce biases in the measures that we have selected to evaluate the reasons and consequences of delisting. For instance, these firms are usually more leveraged than those operating in other industries and their Return on assets (ROA) is barely comparable with those of other sectors. **This reduces the available firms to 36 industrial companies.**

Unlikely, for 8 of these corporations we do not find enough data in Aida and thus we have been forced to eliminate them from the sample. **The final subsample is of 28 organizations**. The number of observations is not large, however "this is an inherent problem in the going private research" (Michelsen et Klein, 2011, pp.57).

For each variable of the subsample we need to establish **the average performance of industry in which it operates**. Since our aim is to minimize any sector bias in the results, we select all the current listed companies that operate in similar sectors. Borsa Italiana classifies

stocks into 10 industries: 1) oil and gas; 2) basic materials; 3) industrials; 4) consumer goods; 5) health care; 6) consumer services; 7) telecommunications; 8) utilities; 9) financials; 10) technology. Some of these categories are then further detailed in subcategories[13]. This classification is more commodity-related compared to the classification used in the previous section; however the detailed Adeco 2007 classification provided by Aida allows us to link each delisted company to one of these groups. In addition, we judge every listed company and whenever its activity is too different from the pertinent delisted company we remove it from the control group. We also check whether the companies listed nowadays were already listed in the period when the matched company has been delisted. After having allocated each firm to an industry, we calculate the mean and the median of the selected measures for all listed companies in that particular sector. The sector median has also been used when Aida misses few data for a particular organization or where the numbers were not significant.

VARIABLES AND SAMPLE DESCRIPTION

In order to understand which firms' characteristics lead to delisting, and to investigate whether the companies can glean benefits, we define key variables based on financial statement information. Considering the database available, we report these measures on firm profitability one year before (T-1) and one year after (T+1) the occurrence of delisting.

One of the more intuitive reasons for going public is the access to new sources of finance and the possibility to have greater bargaining power with banks. We hypothesize that the firms that have a median **leverage** higher than that of their sector are more likely to delist because it means that they have not been able to take advantage of the listing status to rebalance their debt position. Other scholars (for example Tutino *et al.*, 2014) suggest that a lower level of debt can incentivize LBO transactions. Looking at the consequences of delisting, we expect a higher leverage after delisting for two reasons: first, because companies could decide to finance the transaction through debt (see leveraged buyout in Chapter III); secondly because companies could need to replace part of the capital that was raised among public investors. The leverage has been computed as: $total\ debt/total\ assets$.

Linked to the issue about the possible increase in debt to sustain the transaction, many scholars argue that one important source of performance improvement is the decrease **in taxes paid** (tax benefits hypothesis). The taxes paid reported in the financial statements have been standardized dividing them for the total assets.

[13] For more information visit:
http://www.borsaitaliana.it/azioni/cercatitolo/ricercaavanzata/indexricercaavanzata.htm

Related to the idea that the necessity of new sources of finance can encourage companies to go public, it is reasonable to suppose that for a company that is experiencing high **growth rate** is more convenience to be listed. Mature firms may have more incentive to delist because the low growth can be probably financed through capital internally generated. To prove this hypothesis we use the **revenue growth rate** and the **ROE** $((net\ income/book\ value\ of\ equity) * 100)$ as indicators of stable businesses (Tutino *et al.*, 2014).

Many scholars and previous researches on different countries have suggested that small companies are more likely to delist. The first reason is that for small firms is more difficult to amortise the high direct and indirect costs linked to the listing status. Moreover, the dimension of the firms can be used as a good predictor of the coverage of financial analysts (Pour et Lasfer, 2013), which is an element that reduces the risk of asymmetric information (the smaller the company, the lower the likelihood to be followed). In our analysis we use **total assets** and **the number of employees** as proxies for the dimension of the company. Even if previous surveys are contradictory on the topic, Croci and Del Giudice (2014) suggest that companies are forced to downsize after delisting in order to keep efficiency. On the other hand the number of employees usually turns out to be stable or even slightly higher after the deal.

Finally, to judge the impact of PtP transactions on operating performance we use the **ΔROA** and the **ΔEBIT margin** (computed as EBITDA on sales)[14]. The operating performance will be content of particular attention since it is the more debatable in the literature review and there is no consensus about the impact of the delisting.

Diagram 4.1a summarizes the expected impact of the different variables on the probability of delisting. Diagram 4.1b recaps the forecasted behaviour of the measures after the deal.

Diagram 4.1a

PRE-TRANSACTION	VARIABLES	If...	PROBABILITY DELISTING
	Leverage	High	⇧
Stable business	Revenue Growth	High	⇩
	ROE	High	⇩
Dimension	Tot. assets	High	⇩
	Number employees	High	⇩

[14] The variations have been defined as the difference between the index in the first year after delisting and the one in the year before delisting.

Diagram 4.1b

POST-TRANSACTION	VARIABLES	CONSEQUENCE OF DELISTING
	Leverage	↑
	Tax paid	↓
	Tot. assets	↓
	Number employees	↔ ↑
Operating performance	ΔEBIT	?
	ΔROA	?

Table 4.4 describes the selected subsample of 28 firms delisted between 2006 and 2012 in terms of annual mean and median for the selected set of variables. For a better understanding of the phenomenon it is more appropriate to take into consideration the median rather than the mean because the delisted firms are very different from each other and therefore the mean may be influenced by outlier values. The last two columns report the results of the Wilcoxon Signed-Ranks Sum Test. The nonparametric test has been preferred to the t-test because it is not possible to presume a normal distribution of the data, and because of the small dimension of the sample.

Table 4.4. Annual mean and median of the variables for the delisted companies one year before and one year after the delisting.

	T-1		T+1			
	Mean	Median	Mean	Median	V	p-value
EBITDA margin (%)	-23,30	7,72	- 15,34	4,94	224	0,6406
Leverage	0,50	0,49	0,52	0,55	188	0,7451
Tax paid	0,039	0,009	0,004	0,001	213	0,3538
Revenue growth (%)	4,55%	0,85%	65,56%	-3,90%	238	0,4321
Employment	1110	540	1223	594	199	0,9365
ROA (%)	1,20	1,18	-0,81	-0,69	237	0,4456
ROE (%)	-0,90	4,99	-2,43	0,92	274	0,1085
Tot assets	360.074.660	342.898.377	437.620.340	415.637.000	149	0,2231

Contrary to what we have supposed (an improvement in operating performance), the **EBITDA margin** decreases after the PtP transaction. At a first glance this result could suggest that the operating performance gets worse because of the new private status. However, the difference between the data is not significant at a confidence level of 95%, and

thus we tend to conclude that the delisting event has any impact on this index. The nature of this change will be studied more in detail thereafter.

The **level of indebtedness** does not demonstrate significant changes, supporting the theory that the Italian companies rarely finance the transactions through additional debt, as happen in the case of leveraged buyout. It is more likely that the debt growth is due to the necessity to replace the capital that was raised through the public investors of the Exchange. The Italian sample reports a **decrease in taxes** (in particular if we look at the mean), even if probably this cannot be attributed to the increase in interests' payment as the literature review suggests. The low impact that the delisting event has on these variables is supported by the p-values that suggest accepting the hypothesis about the equivalence of the two samples. The result is not surprising and quite in line with the literature review that underlines the fact that in Europe the fiscal policy is not really advantageous for these types of transactions.

The industrial companies analysed are characterized by a median of **revenue growth before the delisting in line with the median of the Italian GDP growth** in the period 2006-2012 (mean= -0,5; median=0,4. Source: Istat), suggesting that these organizations have reached the maturity stage. On the other hand, the rate becomes negative after the PtP transaction. Given this data, we can suppose that the reduction in taxes previously documented has been provoked more by a decrease in revenues rather than a benefit linked to a higher debt. Also in this case, however, the difference between the two periods is not statistically significant. Likewise, the **ROE** is lower after the deal both in the mean and in the median, but once again the p-value is too high to conclude that the decrease is due to the delisting. This result is particularly surprising because most researches report a positive impact on this index.

As we have seen, in many countries delisting is not detrimental in terms of the number of employees. Indeed, in the Italian **context the median number of employees increases in T+1**. This improvement can be partially due to the necessity to increase the organic in order to face the **increase in total assets**, used in this analysis as a proxy for the dimension of the company. However, the increase in total assets is not due to the going private transaction.

Finally, the **ROA** of the subsample decreases after the delisting operation. Also in this case, however, we want to investigate through regression analysis if the change is due to the going-private transaction or to other external factors because the difference does not appear to be significant. We must remember, indeed, that Table 4.4 does not consider the overall trend of the economy.

EMPIRICAL RESULTS

Table 4.5.a shows the median of the indexes divided by industries for going private companies in the period 2006-2012 and for the control group for the year *before* the delisting. Table 4.5.b does the same for the year *after* the deal. The selected subsample and the control sample are ranked by industry in Table 4.6.

Table 4.6. Sample description by industries

INDUSTRY	GOING PRIVATE	CONTROL SAMPLE	N
Industrials	5	12	17
Fashion	5	7	12
Building and materials	4	5	9
Telecommunications	3	3	6
Technology	3	7	10
Journey	3	2	5
Health care	2	6	8
Chemistry	1	2	3
Public services	1	10	11
Cars and equipment	1	5	6
Samples	28	59	87

The first important consideration is that **it is not possible to find clear trends in the variables across the industries**. This observation lets us to suppose that the delisting phenomenon is influenced by the different markets in which the companies have business.

Looking at the characteristics that could boost the decision to delist (Table 4.5.a), the data about the *industrial* and the *public services sectors* confirm the results of previous researches: the delisted companies on average have a higher leverage than the control sample, a lower revenue growth and are smaller and less efficient than the comparable firms. These results are partially confirmed also in the *fashion sector* (with the exception of the total assets that are higher for the firms that go private), and in the *chemistry* and *cars and equipment*[15] *sectors* (in these cases, however, the leverage is lower for the companies subjected to the deal). Completely different is the case of the *building and materials industry* where the delisted companies report median revenue growth significantly higher and they are bigger than the comparable ones. Moreover, the two samples are almost equally efficient and indebted.

[15] In this comparison, however, some variables are not significant because the going private firm that operates in this sector misses several observation in T-1 and we have replaced them with the median of the control sample.

Similar results (with minor differences) characterize the *technology* and the *health care sectors*.

On the other hand, Table 4.5.b illustrates the median of the performance in the years after the delisting. In some sectors (industrials, fashion, chemistry and public services) the operating performance computed through the EBITDA margin, the revenue growth, and the ROA is negatively affected by the delisting transaction in comparison to the median of the sector. In other industries the operating performance improves: telecommunications, technology, health care, and cars and equipment. Finally, we have two cases (Building and materials, and journey) where the EBITDA margin gets worse, but the revenue growth increases. This last group of industries is partially in contrast with what reported in Chapter II about the study of Renneboog and Simons (2005), who document that the benefits in terms of operating performance comes mainly from cost cutting, rather than from more revenues. Analysing the leverage, we can conclude that overall the companies once delisted have a level of debt more in line with the mean of the sector (excluding the telecommunications and technology cases), and in many cases there is actually a tax reduction attested by the negative level of tax paid.

The last two columns of each table report the t-statistic and the p-value of the two samples (going private and control sample) irrespective of the industry. None variables result to be statistically significant considering a confidence level of 95%. Only the ROE variable is significant after the delisting if we increase the parameter α at 10%. In other words, considering the sample of 28 Italian companies that delist during the period 2006-2012, it is possible to gather that accounting numbers play a secondary role in the decision to delist. The absence of a corporate financial analysis that support the going-private decision may be one of the reasons why there is no evidence for causality between the firms' performances and ad the delisting event (last two columns of Table 4.5.b).

		Industrials	Fashion	Building	Telecom.	Techn.	Journey	Health care	Chemistry	Services	Cars	*t*	*p-value*
EBITDA margin	Going private	8,68	5,17	13,035	8,28	18,31	8,48	7,34	-423,68	-5,94	0,12	0,9289	0,3652
	Control sample	9,82	16,76	12,74	21,4	-2,285	3,07	-45,025	10,745	16,88	0,12		
Leverage	Going private	0,610	0,497	0,451	0,634	0,306	0,589	0,485	0,003	0,483	0,183	0,5814	0,5814
	Control sample	0,494	0,475	0,494	0,164	0,611	0,423	0,412	0,501	0,575	0,527		
Tax paid	Going private	0,000	-0,002	0,008	0,019	0,034	0,000	0,019	0,000	-0,010	0,033	0,1449	0,8864
	Control sample	0,025	0,005	0,000	0,019	0,003	0,025	-0,002	-0,005	-0,001	0,023		
Revenue growth (%)	Going private	4%	-2,70%	8,35%	-3,10%	11,40%	-7,45%	33,15%	3%	4,30%	-8,00%	1,2384	0,2315
	Control sample	5,10%	8,00%	-5,10%	-3,35%	-0,90%	-7,45%	0,00%	3,45%	0	-8,00%		
Employment	Going private	348	335	333	3407	293	1739	706	437	1691	1460,5	0,0892	0,9299
	Control sample	548	422	883	36	98,5	5781	97	436,5	423	1460,5		
ROA (%)	Going private	0,57	-0,14	2,58	2,67	9,43	1,12	3,54	-0,18	-7,26	-21,52	1,1539	0,2636
	Control sample	3,29	6,14	1,85	1,63	-2,52	5,035	-0,98	1,95	2,995	3,22		
ROE (%)	Going private	2,05	8,73	7,6	7,02	8,17	5,29	14,855	-20,45	-15,22	-30,08	1,3115	0,2062
	Control sample	8,48	11,00	7,34	1,11	-4,11	15,79	0,495	0,56	4,535	10,135		
Total assets	Going private	144.132.404	399.994.000	609.967.500	489.541.285	38.366.000	546.185.000	366.772.676	950.203	13.046.071	8.977	0,3623	0,7214
	Control sample	253.966.341	99.494.000	226.321.000	84.446.580	151.637.000	1.022.696.066	351.090.301	288.883.500	15.492.992	555.935.086		

Table 4.5.a: Median of the indexes *one year before* the delisting divided by industries.

		Industrials	Fashion	Building	Telecom.	Techn.	Journey	Health care	Chemistry	Services	Cars	*t*	*p-value*
EBITDA margin	Going private	3,41	- 0,93	-6,6	10,84	17,58	5,31	5,51	8,14	-3,02	17,9	0,9052	0,3773
	Control sample	8,765	10,76	9,88	-3,57	-0,14	5,46	-61,38	9,9	3,61	8,26		
Leverage	Going private	0,552	0,418	0,612	0,729	0,379	0,568	0,476	0,644	0,431	0,462	0,7946	0,4372
	Control sample	0,511	0,475	0,500	0,158	0,591	0,475	0,425	0,526	0,601	0,545		
Tax paid	Going private	-0,001	0,001	-0,003	0,007	0,008	-0,001	0,031	-0,010	-0,005	0,005	1,0959	0,2876
	Control sample	0,060	0,001	0,000	0,011	0,002	0,022	-0,001	-0,005	0,000	0,020		
Revenue growth (%)	Going private	-4%	-5,20%	10,55%	1,50%	-3,80%	-4%	4,00%	-3,79%	-12,90%	-4,90%	0,6848	0,5022
	Control sample	-1,30%	-5%	-4,40%	-6,10%	-2,30%	-8,65%	4,75%	-8,50%	-2,20%	-4,90%		
Employment	Going private	187	459	327	3213	312	1390	720	877	1574	1055	0,5357	0,5987
	Control sample	506	516	883	19	77	4364,5	86	435	311	236		
ROA (%)	Going private	-0,63	-7,49	0,85	0,88	0,46	-1,68	2,61	-2,26	-3,37	4,55	1,0486	0,3082
	Control sample	2,265	4,61	0,71	0,54	-1,38	1,88	-1,905	0,42	-0,285	-0,17		
ROE (%)	Going private	0,14	7,63	0,915	0,56	2,02	4,14	2,135	-18,36	1,29	4,27	1,7537	0,0965
	Control sample	5,455	9,51	7,00	-1,27	-0,47	5,98	1,17	5,32	6,9	9,35		
Total assets	Going private	157.452.405	429.945.000	600.604.015	766.982.246	75.254.000	789.698.000	419.722.616	675.222.504	11.929.121	775.728.301	1,2471	0,2283
	Control sample	263.059.500	98.036.000	294.838.000	89.313.000	135.861.000	1.383.986.513	225.468.500	310.161.000	17.509.495	617.114.000		

Table 4.5.b: Median of the indexes *one year after* the delisting divided by industries.

Finally, we calculate the **adj.ΔROA** in order to "distinguish between expected and unexpected changes in performance" (Croce et Del Giudice, 2014, pp.387). This index is the change of ROA previously reported minus the variation in the median ROA of the listed firms in the same industry of the delisted company. The median variation of this measure is equal to 0,3525 and therefore we suppose that it is not the delisting process to reduce the operating performance (as gathered by the observation of Table 4.4), once having controlled the trends of the different industries. On one hand, we exclude for the Italian sample the hypothesis suggested by some scholars that the companies that go private are more efficient because they are subject to more rigid control and tailored strategies. On the other hand, we also reject the theory according to which the delisted companies suffer because of the reduction of invested capital and collective control on their activities.

In order to determine the variables that have an effect on the delisting probability, we decide to use the method of **logit model by maximum likelihood**, similarly to what performed in previous researches such as Tutino *et al.* (2013) and Michelsen and Klein (2011). In this model, the dependent variable is equal to zero when we are considering a company that remains listed and one if the company goes private. Following the methodology of Michelsen and Klein (2011) and Chaplinsky and Ramchand (2008) among all the companies of the control sample, we select the listed companies on Dec. 31, 2012 (the last year considered in the subsample).
After having check for possible correlation of the measures (Table 4.7) we have estimated two different model specifications that differ in respect to the inclusion of different variables.

Table 4.7. Correlation among variables

	Leverage	Revenue growth	ROE	Total assets	Employment
Leverage	1,000000000	-0,01113671	-0,008952145	0,006646014	0,26440970
Revenue growth		1,000000000	-0,275162992	0,108024475	0,06144197
ROE			1,000000000	0,190668436	0,06936603
Total assets				1,000000000	0,35067909
Employment					1,000000000

The first model (Table 4.8) includes all the variables that according to studies applied to different countries could change the probability of a company to delist. Not one of the measures proves to be statistically significant.

Table 4.8. Logit model - Model 1

```
Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept) -7.799e-01  6.965e-01  -1.120    0.263
leverage    -2.101e-01  1.280e+00  -0.164    0.870
rev.grow     8.498e-01  8.351e-01   1.018    0.309
ROE         -9.070e-03  1.137e-02  -0.797    0.425
tot.assets   2.881e-10  7.026e-10   0.410    0.682
employment   7.733e-05  1.683e-04   0.460    0.646
```

The ***leverage*** variable proves to be the less significant. In other words, a high level of indebtedness does not increase the probability that a company delist; thus we can infer that the Italian companies do not go private because they want to enhance their debt position. Moreover, the very low significance of this parameter can be due to the lack of delisting through LBO transactions that, as we have already demonstrated, characterize the Italian context.

Therefore, in the second model (Table 4.9) we exclude this variable.

Table 4.9. Logit model - Model 2

```
Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept) -8.813e-01  3.262e-01  -2.702   0.0069 **
rev.grow     8.520e-01  8.341e-01   1.021   0.3071
ROE         -9.015e-03  1.135e-02  -0.795   0.4269
tot.assets   2.967e-10  7.006e-10   0.423   0.6720
employment   6.986e-05  1.617e-04   0.432   0.6658
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

As the table shows, the only element that results significant in this case is the intercept, which however has not practical meaning in our model. It is quite surprising the result about the revenue grow and the ROE. According to our analysis, organizations that operate in **a mature and stable business do not have greater incentive to delist** than companies that require high investments to sustain the growth stage (differently to what reported by Tutino *et al.*, 2013). We suppose that this result is partially due to the fact that the public status is reason of pride for management of Italian corporations, and so they could decide to remain in the Stock Exchange even if they are no more dependent on the external capitals.

Finally, not even the **dimensions of the firms** turn out to be predictors of the likelihood of incurring in a delisting.

To conclude, these results support the intuition presented in the previous paragraph according to which the Italian companies that voluntarily delist do that without a long term strategies but

instead they follow the trend of the markets. **Appendix A** reports other models that we have tested, changing the variables included: overall, our results do not change. The absence of deeper rational behind the decision to go private remark the difference of the Italian market compared to the cases analysed until now in other researches.

In order to address the topic of the **change in the operating performance**, we perform a regression analysis to ascertain the causal relationship between the variations in ROA occurred between the year before and the year after the PtP transactions[16] and some variables that could have determined the change. In order to test the hypothesis that the delisting event has a negative impact on operating performance, we formulate the following linear regression:

$$\Delta ROA = \Delta revenue\ growth + \Delta EBITDA + \Delta tax + industry + delisted + \varepsilon$$

The selection of these variables has been driven by the hypotheses that according to the literature can better fit the Italian context. The variable *industry* has been introduced as a control variable. Table 4.10 shows that the dummy variable of delisting that takes value 1 if the company has been delisted and 0 otherwise, is not statistically significant. In other words, it seems that **the event of the delisting does not provide any significant contribution in the variation of the return on assets**.

Table 4.10. Linear regression with ΔROA as dependent variable

```
Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)        1.748e+01  7.582e+00   2.305   0.0270 *
delisted1          9.639e-01  2.809e+00   0.343   0.7335
industrychimica   -1.665e+01  1.014e+01  -1.642   0.1093
industryedilizia  -1.625e+01  9.253e+00  -1.756   0.0876 .
industryedlizia   -1.141e+01  1.063e+01  -1.073   0.2904
industryindustria -1.917e+01  8.177e+00  -2.344   0.0247 *
industrymoda      -2.209e+01  8.304e+00  -2.660   0.0116 *
industrysalute    -2.101e+01  9.171e+00  -2.290   0.0280 *
industryservizi   -1.767e+01  1.022e+01  -1.730   0.0923 .
industrytecn      -2.241e+01  8.568e+00  -2.616   0.0129 *
industrytelecom   -2.194e+01  8.359e+00  -2.625   0.0126 *
industryviaggi    -1.724e+01  8.613e+00  -2.002   0.0529 .
g.rev              1.909e-03  5.625e-02   0.034   0.9731
EBITDA             1.050e-02  1.359e-02   0.773   0.4447
tax                3.055e+01  1.944e+01   1.572   0.1248
total.assets      -1.501e-08  7.385e-09  -2.033   0.0495 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

[16] This variable has been used by Croci and Del Giudice (2014) as proxies for operating performance. They also used the change in ROA in the year before the delisting and three years after the delisting, however our dataset does not allow to perform this analysis and we suggest that future studies should take into consideration also this measure.

It is noteworthy to explain the interpretation of the R^2 of this model that is equal to 0,3107. R^2 is a measure of the percentage of the variation of the dependent variable explained by the set of independent variables. The value of the goodness of fit of our model results quite low. However, in our case this measure is not particularly important because we have not the intent to use the model for forecasting purposes, but we are simply looking at the *delisting* parameter estimates. In other words, we are not interested in defining all variables that have an impact on the variation of operating performance, but to look at the importance of going-private transactions.

Appendix A illustrates other models in which we gradually delate some of the variables that are non-statistically significant in the above model.

Our results extend the theory of Croci and Del Giudice (2014) according to whom the ROA of delisted Italian companies is not influenced neither by the identity of the investors that carry out the transactions nor by the size of the firm. We add an extremely important piece to the analysis of operating performance of Italian firms: the delisting event by itself does not have any significant impact on the operating results.

Finally, we decide to change the indicator of operating performance, using the change in EBITDA margin. In this case, obviously, the *tax paid* variable has been excluded because of the construction of this dependent variable. The linear regression of this model is:

$$\Delta EBITDA\ margin = \Delta rev.growth + \Delta ROA + \Delta total\ assets + industry + delisted + \varepsilon$$

Table 4.11. Linear regression with ΔEBITDA margin as dependent variable

```
Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)       -3.358e+01  9.668e+01  -0.347   0.7303
delisted1          8.185e+00  3.370e+01   0.243   0.8094
industrychimica    2.261e+02  1.201e+02   1.882   0.0677 .
industryedilizia   2.480e+01  1.152e+02   0.215   0.8307
industryedlizia   -2.766e+02  1.211e+02  -2.284   0.0282 *
industryindustria  8.764e+01  1.032e+02   0.849   0.4014
industrymoda       3.086e+01  1.089e+02   0.283   0.7784
industrysalute     2.616e+01  1.169e+02   0.224   0.8241
industryservizi    2.382e+01  1.269e+02   0.188   0.8522
industrytecn       3.638e+01  1.113e+02   0.327   0.7457
industrytelecom    3.184e+01  1.087e+02   0.293   0.7712
industryviaggi    -4.998e+00  1.084e+02  -0.046   0.9635
g.rev              3.015e-01  6.732e-01   0.448   0.6568
ROA                1.460e+00  1.920e+00   0.761   0.4517
total.assets       6.184e-08  9.280e-08   0.666   0.5093
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

However, also in this case the event of delisting does not appear to be the cause of the negative variation in the EBITDA margin of the Italian sample.

The displayed analysis allows us to conclude that the operating performance does not appear to be influenced by the phenomenon. This result is particularly relevant considering that previous researches do not cover this particular aspect of the Italian phenomenon.

CONCLUSION

The merit of this dissertation is twofold. First, we gather together and reorganize the more recent theoretical and empirical researches on delisting. Second, we contribute to describe from a qualitative and quantitative point of view the Italian phenomenon, which has been poorly analysed in previous papers. The importance of filling the doctrinal gap on this topic has been increased by the observation that the delisting process is extremely heterogeneous because it depends on a variety of elements such as macroeconomic conditions, markets' regulations, and firm's governance. Therefore, the European market is completely different from the Anglo-Saxon ones, and it is not possible to employ the studies and models based on the US market neither to interpret the Italian cases nor to support management in taking decisions.

The phenomenon arose in the early 1980s in the US, and since its emergence the worldwide markets have been experienced several delisting waves. In the literature review we have tried to give a systematic description of the **macro-elements that boost the waves**:

- easy access to credit;
- low interest rates;
- favourable regulations;
- private equity firms' activity.

Moreover, during the late 1990s also the number of **cross-delisting** increases because of:

- the introduction of stricter regulations,
- increase in listing costs,
- liquidity problems,
- cultural bias.

More difficult is to find contributions about the reasons why the recent financial crisis produces the last waves. A hypothesis mentioned in some papers but barely verified by empirical analyses, is that during recession companies are undervalued, either because the declining markets or because of the inefficiency of the market in evaluating firm-specific information, and thus it could be easier and cheaper to cash out minorities.

After having described the elements that boost or depress the delisting phenomenon from a macro-economic point of view, we looked at the reasons of delisting from the **firm's perspective**. The decision to delist is the result of the evaluation of the balance of the costs and benefits of being listed: whenever the costs exceed the benefits, the company can take advantage by the going-private transaction. In order to understand delisting, the hypotheses

"traditional incentive related" can be applied to all companies. On the other hand, according to our study, the magnitude of the hypotheses related to "agency costs" and "financial structure" depend on two elements: i) the firm's ownership structure, and ii) country's regulations. According to the existing empirical researches, the European companies can gain less benefits than Anglo-Saxon ones because their ownership structure is more concentrated (therefore they are less subjected to agency theory's costs) and the fiscal policies for these types of transactions are less favourable. We believe that this element has not been sufficiently investigated in order to judge the differences in the evolution of the phenomenon in the two geographical areas.

The following step has been the evaluation of the consequences of delisting. Generally speaking, the voluntary delisting has a positive effect on companies and on shareholders, while involuntary delisting destroys value. There are three non-mutually exclusive sources of profit: i) tax benefits; ii) asymmetric information and agency problems; iii) operating performance. Many empirical analyses demonstrate that the **reduction of the costs associated with agency theory** is one of the most important benefits also for highly concentrated companies. For instance, due to their organizational structure, of Western European firms is so concentrated that the divergence between owners and management is not an issue, but the delisting can be worthy to eliminate the conflicts between the controlling and the minority shareholders. The impact on operating performance is instead still debated and there is not agreement on the accounting levers that are involved.

To conclude the description of the delisting phenomenon from an international point of view, we have illustrated the different mechanisms that can be used to go private and the jurisdictions that regulate them. We conclude that the European companies prefer to delist through tender offer for two main reasons: on one hand, it is the only way that permits to have the possibility to cash-out minorities; on the other hand, it can be cheaper for controlling shareholders. Instead, Anglo-Saxon companies go private mainly through leveraged buyout. It is important to remember that in the American markets companies that delist and deregister have still the opportunity to continue to trade in non-regulated markets, such as the Pink Sheet. We believe that this is an element that should be taken in greater consideration when evaluating the phenomenon because it means in the case of "going dark transactions" they have the possibility to keep some advantages deriving from the public status, without being subject to the costs related to the compliance to regulations. Finally, another important distinction between the two types of jurisdictions is on the minority shareholders' protection: the U.S. and U.K. systems are more flexible, with less minority protection, and thus with a

greater number of ex post lawsuits. We suppose that the European stricter laws make the delisting process more expensive for the controlling shareholders.

To summarize, nowadays the delisting process is becoming an increasingly important phenomenon of the international markets. However, there are deep differences between the Continental European and the Anglo-Saxon markets. The main contribution of our literature review is to underline that these differences are not only due to the fact that the European markets are less mature, but also because: a) they have less sources of benefits when considering delisting; b) they do not have over-the-counter markets where they can trade once delisted; c) the process can be more expensive and tedious due to the laws to safeguard minority shareholders.

As illustrated, many aspects of this emerging phenomenon are still debated and/or obscure, in particular in some markets. In the first part of the empirical analysis about the Italian companies we have described a market characterized by a heterogeneous number of delisting and IPOs: overall, the new issues exceed the going-private transactions (the mean of the annual difference between listing and delisting is 7,8), however there are also several negative peaks. Italian companies usually delist within the first 10 years after delisting, suggesting a **difficulty in adapting to the new status**. We confirm that the voluntary delisting is more frequent than the involuntary one, and that Italian corporations go private mainly through the mechanism of *OPA residuale*. The predominance of this type of tender offer strengthens the expectation that the process is usually **initiated by the controlling shareholders**. We suppose that this trend is strongly correlated with the peculiarities of Italian companies: first, the high ownership concentration makes difficult to external players to acquire the stake necessary to dictate the delisting; second, since the companies are often family businesses, the owners could be reluctant to share the control and the results with other investors. We also notice that a significant percentage of delisted firms operate in the financial sector. Looking at the features of these deals it may be that this tendency is partially due to the M&A activity that characterizes this industry; however, to our knowledge this aspect has not been analysed in previous papers, therefore it is difficult to test our intuition.

According to us, one of the most important conclusions gathered by our analysis is that the Italian companies that delist often **do not have a long term strategy** that supports this solution, but instead the decision is driven by the overall trend of the markets. The intuition that the ***hot and cold market theory*** **and the** ***speculative hypothesis*** **are the primary reasons that push companies to go private** comes from two observations. First of all, the difference between the number of IPOs and delistings moves symmetrically with the FTSE MIB Index,

suggesting that firms are more likely to go private when the Stock Exchange is underestimating the companies and it is cheaper for the controlling shareholder to acquire the stocks from the minorities[17]. Secondly, the logit model applied to a sample of delisted and still listed firms does not identify any pre-transaction financial measure that has a significant influence in the delisting decision. In other words, accounting numbers play a secondary role in the decision to delist.

Finally, we try to understand which benefits a delisted company can gain. From an accounting point of view, we have demonstrated that the different industries have different deal's outcome; however, roughly speaking, we can conclude that going-private companies pay less taxes, but this is probably due to the lower revenues rather than interest deduction. Also the operating performance of the Italian sample decreases after the transaction, however the regression analyses performed do not support the causal nexus between these negative impacts and the delisting process. Since the operating performance does not appear to be influenced by the phenomenon, we believe that the main advantages for Italian companies are to the possibility to keep the control of the business without the interference of third parties, and the desire to resolve the conflicts between large and minority shareholders, as suggested by Bettinelli *et al.* (2011). This decision is possible because the delisted companies analysed in the sample have reached a mature stage, and thus they do not require any more external capital (remembering, however, that the **life cycle stage theory** does not find confirmation in our logit model).

From a managerial point of view, our analysis suggests that Italian companies could take many other advantages, in addition to those correlated to the ownership control, if they learn to analyse their peculiar situation in order to tailor the timing and the best mechanism for the delisting. On one hand, the trends of the market and speculation are not sufficient reasons to undertake the delisting process. On the other hand, the pride for the public status is not always enough to justify the decision to remain listed in the Stock Exchange, and our analysis demonstrates that the voluntary delisting should not be seen as a traumatic event. We recommend a professional analysis of the costs and benefits of being listed in order to continuously assess whether the current status of the company is the best one.
Our analysis leaves open some questions that deserve to be examined in future research in particular on the plausibility of the free cash flow and dividend hypotheses. Moreover,

[17] This hypothesis is supported also by the fact that the main technique to go private in Italy is through the tender offer.

because of data limitation, we do not investigate the impact that the announcement of delisting has on the stock price that, as we have reported in the literature review, could bring benefits for some categories of stakeholders.

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RELEVANT LEGISLATION

- Art.108, 111, 133 of the Consolidate Law of Finance (T.U.F)
- Art.2.5.1, 2.5.6 of the Rules of the Markets organized and managed by Borsa Italiana Spa
- Art.2337, 2368, 2437 of the Italian Civil Code.
- Art.3, 5, 15 of the Directive 78/855/CEE (Takeover Directive)
- Art.40, Regolamento Emittenti CONSOB

APPENDIX A

In this Appendix different models of the **logit model** are reported. The key difference among them is the inclusion or exclusion of different variables.

This model excludes the variable *employment* because some scholars (Michelsen et Klein, 2011) suggest that the validity of the logit model could be undermined by multicollinearity of independent variables. They find that the only variables that manifest this problem are *employment* and *total assets*. Their result could be explained by the fact that these measures have been included as proxies of the same information: the size of the company. However, even after having removed the number of workers, the results do not change (the same if we keep employment and remove total assets). These result is supported by the fact that in our sample the two variables do not appear to be particularly correlated: correlation (tot.assets, employment) = 0,3506791 (in its paper, Michelsen et Klein (2011) consider problematic a correlation coefficient higher than 0,5).

```
Coefficients:
             Estimate Std. Error z value Pr(>|z|)
(Intercept) -8.191e-01  6.919e-01  -1.184    0.236
leverage    -5.618e-02  1.233e+00  -0.046    0.964
rev.grow     7.911e-01  8.180e-01   0.967    0.333
ROE         -8.956e-03  1.134e-02  -0.790    0.430
tot.assets   4.132e-10  6.485e-10   0.637    0.524
```

We also try to use the natural logarithm of total assets, as Croci and Del Giudice (2014) suggest. Once again, however, the model does not seem useful to forecast the probability that a company will delist.

```
Coefficients:
                Estimate Std. Error z value Pr(>|z|)
(Intercept)    -0.6252377  2.0279226  -0.308    0.758
leverage       -0.2491534  1.2719174  -0.196    0.845
rev.grow        0.9418617  0.8110318   1.161    0.246
ROE            -0.0080761  0.0113895  -0.709    0.478
log(tot.assets) -0.0038071  0.1038081  -0.037    0.971
employment      0.0001038  0.0001544   0.673    0.501
```

We also test different models for the **regression analysis**. The idea of these new models is the same of the logit model: we exclude some variables in order to overcome the possible bias of collinearity, which could affect our regressions given the low number of observations. We start eliminating the revenue growth variable that, not considering the variable delisting that we cannot delate otherwise the study will not have meaning any more, has the lower significance. The significance does not change.

```
Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)         1.747e+01  7.475e+00   2.337   0.0250 *
delisted1           9.772e-01  2.743e+00   0.356   0.7237
industrychimica    -1.666e+01  1.000e+01  -1.665   0.1043
industryedilizia   -1.625e+01  9.128e+00  -1.780   0.0833 .
industryedlizia    -1.139e+01  1.048e+01  -1.087   0.2839
industryindustria  -1.920e+01  7.999e+00  -2.401   0.0215 *
industrymoda       -2.209e+01  8.191e+00  -2.696   0.0105 *
industrysalute     -2.100e+01  9.047e+00  -2.322   0.0259 *
industryservizi    -1.767e+01  1.008e+01  -1.753   0.0878 .
industrytecn       -2.241e+01  8.452e+00  -2.652   0.0117 *
industrytelecom    -2.194e+01  8.245e+00  -2.661   0.0115 *
industryviaggi     -1.724e+01  8.495e+00  -2.030   0.0496 *
EBITDA              1.054e-02  1.337e-02   0.788   0.4355
tax                 3.057e+01  1.917e+01   1.594   0.1194
total.assets       -1.501e-08  7.284e-09  -2.060   0.0465 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Different other regressions have been tested following the same mechanism, but the results do not change.