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"THE OWNERS' PERSPECTIVE IN INITIAL PUBLIC OFFERINGS: A THEORETICAL REVIEW AND EMPIRICAL ANALYSIS OF THE ITALIAN STOCK EXCHANGE"

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INTRODUCTION

The decision to list on a stock market is crucial for every company: it affects the firm itself, the initial owners of the entity, the new investors acquiring a stake, the involved parties in the transaction and many more. This willingness can arise from different needs: raising fresh capital to fund investment projects or planning an exit strategy for the pre-existing shareholders, with all possible combinations in between.

This already sheds some light on the fact that the optimal process through which to go into the stock market is the result of a complex interaction of different economic agents with diverse interests. For this reason, a vast amount of literature has been dedicated to the initial public offering topic which tries to always get further insights on the phenomena associated to it.

While extensive academic research has been devoted to IPO waves, short-run underpricing, long-run underperformance and many other similar aspects, there has been less attention paid to the owners' perspective. In reality, there are many valuable potential fields of study that should be further investigated, control matter and wealth losses just to name a couple.

The boost in listing activity that has been recorded in Italy in recent years has also revitalised the interest in the topic of initial public offerings. Therefore, the objective of this paper is to analyse the Italian IPOs from the owners' perspective.

The thesis is accordingly structured in the following chapters:

1- The going public decision which highlights the pros and cons from the perspective of the company, but also the insiders;
2- The owners' perspective of listing companies in terms of economic utility and from a strategic point of view, re-examining the existing theories in the eyes of pre-existing shareholders;
3- A complete presentation of the Italian public equity market and its future prospects;
4- The empirical application on a sample of Italian IPOs of the entrepreneurial wealth losses model.

1. GOING PUBLIC DECISION

The vast majority of companies finance their activities using both debt and equity: the first method consists in borrowing money with the contractual agreement to repay back the amount plus some interest, while the second one is characterised by the firm selling a piece of ownership, i.e. shares, in exchange for a payment by the new shareholders. It must be noted that, in the latter case, only the issuance of stock, namely the creation and selling of new shares, benefits the corporate treasury whereas the transfer of existing shares benefits the initial owners.

Typically, during the first years from a business incorporation, the equity financing takes place in a private form: business angels, venture capitalists and other types of early stage investors acquire sizable percentages of firm's shares by paying the issuer, thus increasing the money available to run the business. As the company grows, the limited availability of cash from this type of investors forces the search for new sources of financing. Besides self-financing or borrowing new money to fund the business operations, a common next step is tapping the public equity markets. In order to do so, the corporation has to file for an IPO.

1.1. IPO DEFINITION

The IPO acronym stands for "Initial Public Offering" (or *offerta pubblica iniziale* in Italian). It consists in the process through which a private company sells its shares to the public for the first time. To accomplish this, the firm has to list on a regulated market, a stock exchange such as the Italian bourse. This event leads to the creation of floating securities: the company's shares can be freely traded in the secondary market[1]. Furthermore, it determines the moment in which the passage from a private to a public ownership takes place: because of this, the IPO procedure is commonly referred to as "going public".

As mentioned above, in order to bring fresh money to the corporate treasury, there must be an issuance of stock during the company's listing: this is called a primary offering (or *offerta pubblica di sottoscrizione - OPS* in Italian). In this case, a capital increase takes place and the pre-existing shareholders agree to dilute their stake. Alternatively, an IPO can be a secondary

[1] A stock exchange is considered a secondary market because the investors trade securities they already own among themselves, whereas the IPO is the primary market as the securities are sold from the company. (https://corporatefinanceinstitute.com/resources/knowledge/finance/secondary-market/)

offering[2] (or *offerta pubblica di vendita - OPV* in Italian), i.e. the sale of shares owned by pre-existing shareholders. This method is used to bring a monetary inflow typically to the initial owners of the company, as a privatization process for previously state-owned firms or for corporations with a particularly strong financial structure. An IPO can also be a combination of these two types of offerings (*offerta pubblica di sottoscrizione e di vendita - OPSV* in Italian): the typical case is a company that is looking for equity financing while some shareholders need to sell their stake, such as the exit of a private equity fund.

The IPOs with primary offerings are predominantly the most successful ones because they are commonly presented to the public with investment plans for growth as the destination of the listing proceeds and the investors favour this kind of projects. The opposite scenario, where the pure secondary offering serves only to the majority shareholder to sell part of his take, unless the listing firm detains well-know brands and already has excellent growth prospects without external financing[3], is the least favoured by investors. Their interest is significant in determining the IPO success as they influence both the quantity of shares demanded and price valuation.

1.1.1. Alternatives to IPOs

An enterprise can actually access financial markets also by other means, for example SPACs[4] and reverse mergers[5]. If, on the other hand, the initial owners of the company are more interested in an exit strategy, they may also consider the option of selling their stock to other counterparties such as strategic buyers[6] instead of filing for an IPO.

Taking into consideration the breadth of these topics and their related peculiarities, the analysis presented in this thesis focuses on initial public offerings for a goal of clarity.

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[2] It should be noticed that the Anglo-Saxon terminology of secondary offering can be misleading, as it sometimes refers to what is actually a follow-on offering: a selling or issuance of shares by a company already public. In this thesis, the phrasing follow-on offerings is preferred to avoid confusion.
[3] Some examples in Italy are Enel in 1999, FinecoBank in 2014 and Technogym in 2016.
[4] SPAC stands for "Special Purpose Acquisition Company", also called as "blank cheque company". It's a clean shell company in the sense that it hasn't and never had any operational activity. The origination of a SPAC has the only goal to raise capital through an IPO with the final objective of acquiring an actual company in order to take it public more easily and faster.
[5] Reverse merger, referred also as reverse acquisition or reverse take-over, is a technique that consists in acquiring a controlling stake in a public company that no longer operates and that doesn't have any asset or liability. Reverse mergers are used by private companies to access capital markets in an easier and faster way by skipping the typical long-lasting listing process.
[6] Strategic buyer refers to a company acquiring another one in the same industry or in an adjacent one with the goal of exploiting positive synergies. Being this the main goal of a strategic buyer, the transaction can bring a higher consideration price than with financial investors.

1.2. REASONS FOR GOING PUBLIC

Before a company starts discussing on how to float its shares, which equity market to access, how to present itself to the investors and so on, it must first carefully evaluate whether to go public. Contrary to the conventional wisdom, going public is not merely a stage in the life of a firm, but a choice. Otherwise, we would not observe in the listing activity certain patterns with relevant cross-sectional and cross-country differences (Röell 1996; Pagano et al., 1998; Paleari et al., 2008, Finaldi et al., 2020). Moreover, quotation is one of the most impactful and complex strategic decisions in corporate finance due to the fact that it's influenced by the interests of the corporation itself and the firm's insiders who have to weigh various benefits and costs. Although each business is unique, there are some common factors that may induce a company to pursue a listing process or forgo from doing so: these are described hereafter.

The benefits of an IPO, as suggested by Kesten (2019), can be grouped into three categories: those related to the proceeds of the offering, those related to the expected value of future benefits for the firm and those related to the private benefits for the insiders. Not all the incentives necessarily fall within one category, but the subdivision is helpful in better screening which are the major benefits for the enterprise and which for the pre-existing shareholders.

1.2.1. Proceeds of the offering

The most quoted reason for going public is to raise a substantial amount of fresh cash to finance company's investment policy (Franzosi and Pellizzoni, 2005). This can be related to organic growth (such as purchasing new machines, building an additional factory, creating a new R&D centre, hiring new qualified staff and so on) or an external growth (an M&A strategy for geographical expansion, broaden the product offering, access new technologies quicker and many more). To analyse the firm's financing needs, the most common practice is to check the investment and growth rates both in the latest years and in the forecasted values. In Pagano et al. (1998), these variables showed a positive contribution to the probability of listing among Italian IPOs between 1982-1992 (even though only growth of sales resulted statistically significant). On the other hand, the post-IPO effects show a decline in investments, meaning that companies went public mainly to rebalance their accounts. Nevertheless, when focusing on more recent studies (Franzosi and Pellizzoni, 2005; Caselli et al., 2018), collecting cash to invest prevails among the main rationales for pursuing an IPO.

The proceeds raised during the initial public offering are not always designated to investment projects: they can be used also as a tool to unlever the balance sheet. An IPO may help

overcoming financial constraints that corporations can suffer, such as having a limited availability of internal finance, having already exploited the maximum debt capacity or it can simply be a mean to rebalance the financial structure. In a survey by Caselli et al. (2018) conducted on few Italian managers, rebalancing or optimizing the balance sheet was a reason for going public to which 60% of interviewees agreed on. However, as pointed out by Pagano et al. (1998), sometimes the drop in leverage is just temporary: this in case the actual goal of the company is being able to access to new debt in the near future.

A peculiar situation that incentives companies to collect fresh money from public investors is exploiting mispricing. Historically, there have always been market cycles in which there are more favourable conditions in terms of valuations (Ibboston and Ritter, 1995). As a consequence, listing during one of these “windows of opportunities" would allow the firm to gather a larger amount of proceeds from the offering. The exogenous market timing theory suggest that companies look both for valuations in their industry and investor sentiment in the capital market. The survey conducted by Bancel and Mittoo (2013) on CFOs of European corporations that went public in 1994-2001 mentions that about half of the interviewees declared that they benefited from favourable market conditions. The empirical analysis in Pagano et al. (1998) confirms that the industry market-to-book ratio was a major pre-IPO determinant for listing in Italy.

Another similar, but at the same time different, situation is endogenous market timing. It’s similar to the previous one as it still concerns voluntarily timing the listing decision but the origin of the incentive to go public is internal. More specifically, endogenous market timing is a strategy that consists in filing for an IPO when the enterprise is performing particularly well, thus inducing the investors to give more optimistic valuations. The display of a good company performance can be real or it can derive from a windows dressing practice from the managers. In the latter case, that falls within the larger area of earnings management, the accounting numbers are manipulated during the pre-IPO period thanks to the freedom allowed by accrual-based measures. Nevertheless, the managers can’t manipulate the cash flow ratios, so a professional analyst would be able to spot if this practice has been applied. Both Pagano et al. (1998) and Paleari et al. (2008) have found empirical evidence in Italian IPOs, so being able to window-dress the firm is surely another reason for going public with the final goal, again, of raising the largest possible amount of proceeds.

1.2.2. Future benefits to the firm

One of the most cited benefits of going public is lowering the cost of capital. As empirical researches (Pagano et al., 1998; Paleari et al., 2008) and surveys (Bancel and Mittoo, 2013) confirm, this phenomenon is verified also in Italy and Europe. There are several rationales for this: the first one is that having an improved balance sheet means the enterprise is safer in the eyes of all the lenders and investors. A lower level of risk implies a reduced level of reward demanded by the funders, i.e. a diminished cost of capital. Pagano et al. (1998) in particular find out a statistically significant and permanent drop in bank interest rates among corporations listing in Milan. This drop doesn't necessarily derives only from an improved creditworthiness, but there can be other grounds that are explained hereinafter.

The second rational behind a lowered cost of capital comes from the fact that investors have a higher willingness to pay for a company's listed shares than if these had been privately issued. The investors positively value the ability to freely trade the securities in the secondary market so they're happy to pay a premium for this power to act.

The third rationale is the higher frequency and more detailed information disclosure that a company provides as required by the regulators. The lenders have less uncertainty towards firm's activity and financial situation. This should translate into a lowered perceived risk, thus an improved cost of capital.

The fourth rationale of a lower cost of capital derives from companies having a wider range of financing resources to reach out and a larger pool of investors. An IPO can also build up interest from new lenders, typically banks in Italy. The long-term result found out in Pagano et al. (1998) is a reduced concentration in credit, so an increased number of lending banks. This whole situation not only improves the bargaining power of the enterprise, but also the financial flexibility because the managers can decide more freely how to finance the business activities.

Moving forward, as previously mentioned, a rebalanced financial structure may serve also to access to new debt. Indeed, Pagano et al. (1998) and more recently Franzosi & Pellizzoni (2005) and Paleari et al. (2008) found out that companies listing in Milan frequently display a temporary drop in leverage due to an IPO, meaning that they mostly use the proceeds to access to further debt. Together with the goal of reducing the cost of credit, these seem to be the primary reasons to go public in Italy. An unsurprising result as the country is well bank-centralized compared to more market-oriented countries such a USA and UK.

The complementary aspect of accessing new debt is the possibility of raising new equity in the future (i.e. follow-on equity offerings). Being already present in the capital markets allows the firm to collect new cash faster and easier compared to private placing of securities, granting a more responsive reaction to the business needs. Albeit in theory this is an important reason that should incentivise a corporation to go public, in the past in Italy the first equity offerings seemed to be more a one-time event: in fact Pagano et al. (1998) didn't find any increased probability of issuing subsequent equity offerings. When inspecting more recent years (from 2000 till 2018), a different picture is found instead: Italian companies raised four times as much cash through follow-on offerings as they did through IPOs[7] (Isaksson et al., 2020).

Moving on to more operational rationales that benefit the firm in the long term from going public, one of them remarkable is being able to use the shares as an acquisition currency. The advantage of this practice is preserving the corporate treasury while still pursuing the external growth strategic plan. The European survey evidence from Bancel and Mittoo (2013) and the Italian-specific one from Caselli et al. (2018) show a clear interest from about half interviewees to pursue M&A strategies thanks to having listed shares. It must be pointed out that the payment method with stock shares could be used also with private securities, but no counterparty would accept such proposal since it's harder to come up with a fair value and it's more time consuming to find who to sell the shares to.

In connection with the previous matter, the company's publicly traded equity securities can be included in managers' and employees' remuneration. In this case, though, the shares are not transferred immediately but are "sold" through a stock option plan[8]. This serves as an incentive instrument because it aligns the shareholders' interest with those running the business.

Listing a corporation in a stock exchange doesn't bring only financial or operational benefits, but also some intangible ones. Marchisio and Ravasi (2003), in an investigation of Italian IPOs that took place in the 1995-2000 period, identified that improving the image and the prestige of the company is actually a crucial incentive for the going public decision; the same result has been found by Bancel and Mittoo (2013) when interviewing European managers. More precisely, the quotation allows an expansion of the entrepreneurial network, an enhanced capability to attract and retain qualified human resources, an increased number of strategic

[7] It should be mentioned, however, that this is largely due to the financial sector as in Italy much effort has been directed to re-capitalise the banking sector after the 2008 crisis.

[8] Stock option is a call option with the company's share as underlying. The incentive comes from setting the vesting period for a medium/long-term and the strike price higher than the current market value of shares but not too high so that the goal of transforming the stock option "in the money" is feasible.

opportunities such as partnerships and alliances. Kesten (2019) recalls that also the visibility in the product market can be a benefit and the survey of Caselli et al. (2018) confirms this motive among Italian CFOs. Unfortunately, these latest variables do not have a precise impact on listed firms as they're very hard to quantify and compare.

1.2.3. Private benefits to the insiders

Listing a company brings private benefits to the pre-existing shareholders too. First of all, the IPO can serve for the creation of an exit strategy where institutional investors, such as private equity funds or venture capitalists, can complete their investment cycle, namely divest, by liquidating the shares they own. Most of the times, these type of investors are choosing the option of filing an IPO because they are close to the contractual deadline of their funds so they need to sell their shares. The surveys on European and Italian companies (Bancel and Mittoo, 2013; Caselli et al., 2018) mention the creation of a way out for the financial sponsors as a relevant motivation for IPOs. Anyhow, depending on firm's attractiveness and market timing, quotation can actually generate the highest return and not being just a forced action.

Even though is generally de-emphasized in the prospectuses, an IPO may serve as an exit strategy also for the initial owners. In order to maximise their personal function, Zingales (1995) theorise a long-term plan where at the IPO the initial owners start selling cash flow rights (non-voting shares) while retaining control. At a later time, they negotiate with potential buyers also the transfer of control over the company, thus extracting the highest return. In a nutshell, Zingales (1995) suggests to depict the IPO as a step in the corporation sale. Another reason why the selling of ordinary shares happen at a later stage is the diffused usage of lock-up provisions[9] for the business founders or the managers. As mentioned, the initial owners' wish of cashing in their holdings in the company is generally de-emphasized because it creates a bad signal to market. The signal is that the pre-existing shareholders are trying to "escape" from the enterprise or the current valuations in the market are excessively optimistic. The negative interpretation of this by potential investors would depress the interest towards firm's IPO, leading to a lower amount of proceeds collected or even to the withdrawal of the listing process. The empirical analysis of Pagano et al. (1998) points out that the phenomenon of strategic selling has been only partially displayed on the Italian stock exchange since on average, at the moment of initial public offering, very few secondary shares have been offered. Per contra, in

[9] Lock-up provision is a special clause that limits the shareholders in terms of which actions they can undertake on company's shares after filing for an IPO. It usually consists in a period of time when the shareholders cannot sell their stake.

the three years after the listing, there's a higher than expected[10] turnover in control, meaning that in some cases the initial owners actually use the IPO as an instrument for their optimal exit strategy and, when doing so, they plan with a long-term view. The need for such strategy can arise from different bases: from the founder's desire to change business to succession issues.

Closely related to the exit strategies, another advantage to the insiders from the listing event is the enhanced liquidity for the shares. By being able to reach out various and diverse investors, the shareholders have the capability to sell their stake to more potential buyers. The liquidity brings also the benefit of a higher valuation: compared to the situation of privately owned securities, the investors are willing to pay a premium for having a stock market within reach and this translates in a larger company valuation. In addition, a dispersed ownership carries a better informative stock price as it pools the analyses of many different investors, so that the pre-existing shareholders have a more reliable anchorage price point when negotiating with potential buyers.

Moving forward, as presented by the model of Leland and Pyle (1977), the diversification of the initial owners portfolio may be a motive for listing companies. In particular, the theory prospects that those holding stakes in riskier firms benefit most from an IPO compared to other companies. The empirical studies on the Italian market (Pagano et al., 1998; Paleari et al., 2008) do not support this theory as there hasn't been found a significant decrease in ownership by insiders at the moment of listing (the equity ownership tends to remain within the main pre-existing shareholders), whereas in the UK, as a reference, many shareholders can possibly lose company's control. As a consequence, the pre-existing shareholders of corporations that quoted on the Milan Stock Exchange historically don't seem to give much weight on the trade-off between diversification and firm's control, giving more importance to the latter[11].

As for the firm's perspective, there are operational benefits for the initial owners too. The most meaningful is that the listing process can help regaining control on the firm. As cited by Kesten (2019), venture capital backed companies frequently grant their early stage investors various control rights in order to obtain some financing aid. Similarly, a private equity fund establishes restrictions and covenants[12] on the business activities with the purpose of safeguarding their

[10] Compared to unquoted firms that satisfied the listing requirements during the same period of time.
[11] It must be pointed out, that the data used in the aforementioned papers is quite outdated (the latest reference year is 2004), meaning that these conclusions may very when analysing more recent IPOs.
[12] A covenant is a binding agreement between two parties. In most of these cases, they are financial covenants that have the goal to control the activity of the firm without the need to actively oversee each decision taken by the managers. Some examples are: maintaining the leverage below a pre-determined level or keeping the interest coverage ratio above a certain threshold.

interest. The initial owners of the corporation can recover their full control on business decision making thanks to an IPO because of the exit of VC, PE funds or other similar financial sponsors. By retaining the majority voting stake or exerting a minority but significant stake, the insiders can obtain the private benefits of controlling a listed corporation.

1.2.4. Other side benefits

As recalled by Röell (1996), there are other side benefits that can derive from an IPO but are usually unexpected. Some of these in particular are worth mentioning: helping in better defining a clear business strategy, improving the governance system, revising the management control and many more closely related. Even though these changes are not necessarily caused by the implementation of the listing requirements, the IPO event can serve as a boost for these enhancements (Franzosi and Pellizzoni, 2005).

1.3. REASONS FOR STAYING PRIVATE

Despite the abundance of IPO advantages, any company considering whether to go public must also weigh the costs it has to bear. As previously done with the benefits of going public, the major reasons for staying private will be split in three categories: obstacles at listing, enduring disadvantages for the firm and private drawbacks for the insiders.

1.3.1. Obstacles at listing

First of all, the initial public offering is a very costly process. Simply estimating attorney fees, charges for the auditors, travel expenses for management's presentations, printing costs for all the paperwork, external consultants' remunerations, underwriter's fees and many more is already daunting. In fact, the total costs incurred by the firm in order to sell its shares into a stock exchange as a percentage of the issuing value is normally in the order of double digits.

In the specific case of Milan Stock Exchange, based on an analysis of IPOs that took place between 1999 and 2013, the average total cost in the main market[13] is 19.4% and in AIM Italia[14] is 23.3% (Lanzavecchia and Mazzonetto, 2014). It's worth mentioning that there isn't a significant statistical difference in total costs between these two markets. Moreover, the

[13] The main market, MTA - *mercato telematico azionario*, is the primary market of the Milan Stock Exchange and is conceived for medium and large capitalisation companies.
[14] AIM Italia is a specific secondary market of the Italian Bourse that is tailored to small and medium-sized enterprises with high growth potential.

underwriting fees, resulting from the gross spread[15], are set as a percentage of the shares' issuing value and, together with underpricing, they don't present a significant statistical difference either. However, there is a divergence when splitting the analysis between direct[16] and indirect[17] costs, both still measured as a percentage of the issuing value. More precisely, the average total direct cost is 7.24% for the regulated markets and 14.43% for AIM Italia, with the difference being statistically significant. This divergence derives from the fact that direct costs include the fees due to the various consultants that are typically set at a fixed level, leading to a higher incidence in smaller IPOs that occur in AIM Italia. This also shows that, when filing an IPO, relevant economies of scale in terms of direct costs exist.

Anyhow, there are other less considered one-time costs that a corporation has to sustain when going public. The most important one is the burden of setting up an enhanced financial reporting system. This has the purpose of complying with all the compulsory regulatory disclosures and accommodate the implicitly demanded improvements by auditors in terms of internal controls.

Moving forward, referring to the investigation of Ritter (1987), differentiating between firm commitment and best efforts offers is crucial too. In brief, the first type of contract brings greater risks for the underwriters because they take the commitment of selling all the issuing shares at the benefit of the listing company, but the risk of a larger underpricing increases. Whereas in the second type of contract the underwriters just give their best efforts to sell as many shares as possible. Best efforts offers are used in circumstances when the uncertainty about the firm's value is particularly high, this resulting in another possible obstacle at listing.

A connected phenomenon to informational asymmetries is underpricing. This event occurs when the placement price of the company's shares is set lower than the market value, leading to a price surge on the first day of trading and possibly the following days. Apart the many theories that try to explain this anomaly (Ibboston and Ritter, 1995), there are also market timing issues. Anyway, expect for cases where underpricing is strategically implemented, a

[15] Gross spread is the remuneration to the underwriters. It is determined by the difference between the value of proceeds at which the underwriters sell the stock shares to the investors and the actual amount of proceeds the listing company receives.
[16] Direct costs are those incurred by the firm that are directly related to the pursuing of the listing process. These are typically out-of-pocket expenses, meaning they lead to a monetary cost. Some examples are: regulatory compliance costs, initial listing fees, legal fees, consultant fees, printing costs, gross spread to underwriters and many more.
[17] Indirect costs are those not directly related to the listing process, such as underpricing, loss of proprietary information and so on. These are non-monetary since they do not trigger a cash transaction.

firm can conceive this as a relevant risk hampering its listing because it represents "money left on the table", i.e. additional proceeds that may have flowed in corporation's treasury.

To conclude the major obstacles at quotation, it must be noted that there can be difficulties also in creating a liquid market. Apart from what concerns the costs of listing, a limited offer in terms of issuing value could inhibit the interest of institutional investors. As mentioned before, creating liquidity to company's shares is an influential reason for going public (Bancel and Mittoo, 2013; Caselli et al.; 2018), therefore not being able to meet this goal may lead to an IPO withdrawal or forgoing from even starting the listing process.

1.3.2. Enduring disadvantages for the firm

In addition to the one-time burden, there are also recurring costs that originate from being public. As an illustration, the formation of a dedicated investor relations office requires hiring new accountants, communication experts and other employees who will remain working in the corporation in the long-term. Further examples of the origin of the increase in recurring costs is the performance of additional audit, publication of quarterly disclosures instead of annually, expenses for legal and regulatory compliance specific for listed companies, stationery costs due to the escalation in documents preparation, continuously updating the enterprise management software and many more.

Moving on, the loss of confidentiality that comes from an excessive information disclosure is another enduring disadvantage for the firm. Even though the objective of regulators is to protect the investors from the missing of material information, the other side of this aspect is the loss of privacy. For example, the detailed strategic plan that has to be distributed by a listed corporation can unintentionally provide valuable insights to competitors to counter-act in advance, whereas a privately held firm retains all the sensitive information. This issue is particularly felt by high-technology companies which face a more significant trade-off between external financing and public disclosures.

When evaluating whether to go public, the managers must also take into account the constraints on the freedom of business decision making. The external analysists perform larger and deeper scrutiny, in addition to being focused on short-term results. This emphasis leads to an increased pressure on senior management to take decisions that may be in contrast with the long-term benefit of the corporation. The survey of Caselli et al. (2018) states that having more freedom of action is the most influential factor among the pros and cons of being public.

Referring only to IPOs that took place in Italy, a peculiar effect that may discourage firms to go public has been found out: an increase in taxation burden (Pagano et al., 1998). The higher tax pressure[18] is permanent and is estimated around an additional 2% (this value hasn't been precisely quantified). As mentioned before, being public causes an increase of informational disclosures. This implies a greater accounting transparency, thus severely limiting the possibility of tax evasion. The analysis performed by Pagano et al. (1998) favours the concept of Italian companies evading taxes when privately held, thereby suffering more when listed.

1.3.3. Private drawbacks for the insiders

The major private drawback of an IPO regards the risk of losing control. This situation occurs both when selling primary and secondary shares. In the first case, the phenomenon is a dilution of ownership, i.e. the issuance of new shares leads to a decreased level of ownership by pre-existing shareholders. In the second case, the selling has a direct impact on insiders' stake. Accordingly, the danger of losing control becomes more important as the number of shares sold increases or as the stake held by the controlling shareholders decreases. In light of this, the risk can be limited by issuing as few shares as possible, by selling non-voting shares or the insiders can even subscribe some of the newly issued securities. Initial public offerings in Italy don't seem to bring a loss of control because generally the initial owners retain the majority of their stake to a level larger than what is required to ensure the control (Pagano et al., 1998; Paleari et al., 2008). Though few in number, there are some cases in which the controlling shareholders substantially decrease their stake.

A close topic to the previous one is the control-liquidity trade-off that the initial owners have to face when deciding whether to go public. When the entrepreneurial pre-existing shareholders give more weight to maintaining the control of the firm, the diversification of their portfolio appears hard to achieve. However, by lowering the corporation-related level of risk, for example through a decreased leverage, the controlling shareholders can still reduce the risk of their holdings. The historical analysis on IPOs in Italy exclude the diversification motive (Pagano et al., 1998; Paleari et al., 2008), thus giving more weigh to other motives for going public.

Moving on, another remarkable private disadvantage is wealth loss to initial owners. Unlike the broader view of underpricing, the wealth loss refers to the measure in which the "money left on the table" affects specifically the pre-existing shareholders. This opportunity cost of issuance

[18] The tax pressure was estimated as an average at the corporate level. More precisely, it was computed as paid taxes on operating income of the same year.

essentially doesn't consider the underpricing related to the selling of primary shares and it pertains to the group of indirect and non-monetary costs. Unfavourably, the initial owners are only partially capable of controlling their wealth loss and they are not able to quantify it accurately in advance, as for underpricing, but it's on their interest to monitor it, especially when many secondary shares are sold. Moreover, due to contractual arrangements, the timing decision of listing may be forced by the presence of venture capitalists of private equity funds within the shareholders, thereby potentially resulting in a non-optimal exit strategy for the business' founders. To conclude, the expectation of a large wealth loss due to underpricing is another element that can deter the initial owners' desire to list the company but, unfortunately, on this topic there is little theoretical literature and there are no empirical researches on the Italian Stock Exchange.

1.3.4. Other issues from going public

As mentioned for the reasons of going public, there are also some side issues that descend from an IPO. The one most worth mentioning is that public companies face a bigger risk of going through lawsuits or class-actions. These are filed when the firm's share price drops significantly and the shareholders allegedly claim material misstatements in corporation's disclosures with the hope of recovering the trading losses. Meanwhile, privately held companies do not face this kind of risk.

Another matter that pertains listed companies is the long-run underperformance of share price. This consists in having lower returns in the aftermarket for IPOs when compared to non-issuing firms. Although this is a vast phenomenon with many theoretical and empirical studies concerning it (Ibboston and Ritter, 1995), the long-run underperformance is an aspect that is more relevant from the new investor's perspective rather than the issuing firm or company's pre-existing shareholders.

To summarise this chapter on the going public decision, all things considered, quotation is not for every company. The listing event has both many positive and many negative implications that are unique to each corporation so it's not necessarily the best choice. For this reason, a pre-IPO analysis is well advised in order to properly weigh all the pros and cons while examining which is the best procedure from the corporation's and insiders' point of view.

2. THE OWNERS' PERSPECTIVE IN LISTING COMPANIES

In every initial public offering, there are three major parties involved: the issuer, the investors and the underwriter. They play undoubtedly the most important roles in determining the success of an IPO as they each aim to maximise their utility function by seeking to protect their interests during the listing process of the company. While the ultimate goal of investors and underwriters is fairly clear, respectively to invest in shares of high value firms at the lowest price possible and to collect as much revenue as possible from the services provided while protecting their long-term reputation, unearthing the objectives of the issuer is more tricky. This is due to the fact that, as mentioned in the first chapter, the issuer actually groups the interests of two parties: the issuing firm itself and the pre-existing shareholders which may have various concerns besides pricing. In other words, the private benefits that initial owners gain from pursuing a certain type of going public procedure may not necessarily be also at the benefit of the company (or the other involved parties) and vice versa.

Nonetheless, the IPO literature finds that one almost persistent phenomenon, among the many, is widely encountered at the international level and has a significant asymmetrical effect to the key players involved in the listing process: that is, underpricing.

2.1. UNDERPRICING AND WEALTH LOSSES

The term "underpricing" refers to the initial performance of the stock price of newly listed companies as there is usually an upward jump from the issuance price. The background information for this anomaly in the IPO pricing is that the market recognises a higher value of the company than that based on the issuance share price, therefore investors acquire firm's shares as they find it convenient.

Moreover, underpricing is universally accepted as the main indirect cost of issuance that a corporation has to bear from an IPO. From the issuer perspective, it is known as the "money left on the table" because it implies that the shares could have been sold at the higher aftermarket price instead of the lower issuance price or that the same amount of proceeds could have been raised by selling fewer shares, i.e. aftermarket demand is price-inelastic (Ljungqvist, 2007). This amount of money that issuers could have theoretically raised instead of leaving it to the market constitutes a gain for the investors. For this reason underpricing represents also a wealth transfer from the issuer to the investors, thus a wealth loss for pre-existing shareholders.

It must be noted that the opposite scenario is also possible, namely overpricing: this happens when the market price of the newly listed stock drops from its issuance price. In this manner, there is a wealth gain for pre-existing shareholders, in fact the wealth transfer is from investors towards the issuer. Even though this might sound like a good deal to the issuer's ears, this scenario is actually a bad sign from the market as it reflects investors' perception that the real value of the company is lower than that assumed from the issuance price, leading to negative future effects for the quoted firm. These include: lower valuations from the capital markets in follow-on offerings, increased probability to suffer from an hostile takeover[19], possibly reduced liquidity of the shares[20] and so on.

This last mention about overpricing already brings some intuitive insights into why companies going public tend to leave money on the table, therefore underprice its shares: in an ideal world, a perfectly priced issuance would be desired but, for any real-world situation in which this is not achievable for any reason (that will be explained later on), it's better to underprice than to overprice.

2.1.1. Measuring money left on the table and underpricing

Before moving forward, a clarification about the different measurements used in the literature is necessary because, depending on which factors one uses and which time horizon refers to, it can substantially change the results.

Pricing, and in its broader meaning valuation, is more of an art than a science, but money left on the table ($MLOTT$) can be determined with certainty as it's based on directly observable market data.

$$MLOTT = (P_1 - P_0) * N_s$$

Where P_0 indicates the issuance price at which shares have been sold to the market at the opening of the first day of trading, P_1 indicates the market price per share at which the newly listed stock trades in a time moment subsequent its issuance and N_s refers to the number of shares (both primary and secondary) that have been sold to the public at the time of IPO. As a consequence, MLOTT represents the total amount of money left on the table measured in euros

[19] Again due to lower valuations of the company's shares, a single external player can more easily acquire a large stake in the company and obtain its control.
[20] An overpriced IPO is expected to arouse little interest in the stock market among investors, leading to fewer trading activity, therefore smaller liquidity for the shares.

(or any other reference currency). By avoiding the multiplication by the number of shares sold, $MLOTT$ per share sold is found (also referred as underpricing per share sold). Lastly, assuming the scenario of underpricing, $MLOTT$ is a positive amount.

The commonly-accepted measurement of underpricing (UP) is computed, instead, as follows:

$$UP = \frac{P_1 - P_0}{P_0} = \frac{P_1}{P_0} - 1$$

Where the indicated factors have exactly the same meaning as before, but the resulting number UP is a proportion (often indicated as a percentage) between the difference of prices P_1 and P_0 in relation to P_0. As a consequence, assuming $P_1 > P_0$, UP literally refers to the price increase of the shares in relation to the issuance price and it's a positive amount.

In both measurements, the most used time reference for P_1 is the closing of the first day of public trading: for this reason, underpricing is also called as first day returns or initial returns (IR). However, taking into account the price changes of only the first day might not be sufficient to display the full extension of underpricing since the share price may need few days to stabilise, whether this is due to stabilisation efforts by underwriters, high trading activity, legal framework that limits volatility on the first days of trading or other reasons (Arosio et al., 2000). Because of this, in some scientific researches the underpricing is computed using P_1 that refers to stock price after two, three or five days from the IPO. In any case, the first day returns on average appear to contain most of the total effect of underpricing (Arosio et al., 2000).

Moving forward, another distinction has to be made between raw underpricing (or raw initial returns – RIR) and market-adjusted underpricing: the data used for the former measurement is directly obtained from the market, whereas the former measurement of underpricing is modified to take into account the market momentum (bearish or bullish) at the time of the IPO. Therefore, the market-adjusted initial returns (MAIR) is computed as follows:

$$MAIR = \frac{P_1 - P_0}{P_0} - \frac{MI_1 - MI_0}{MI_0}$$

Where the first fraction is computed in the same way as above in the "normal" underpricing and the second fraction is computed using the value of a reference market index at time t1 (MI_1) and the value of the same market index at the time of going public (MI_0). With this perspective, the second fraction of the formula is essentially the market return in the same considered time horizon of the first fraction (raw underpricing). By subtracting the market return, underpricing

becomes market-adjusted in the sense that it is now "purified" from the overall fluctuations in the market that can significantly influence the aftermarket price development of newly issued shares. It's worth noting that the computation of $MAIR$ requires the decision of which market index to use as reference: although the stock market where the firm goes public is generally taken into account as the most representative benchmark, the choice itself brings subjectivity in the computation. Furthermore, market-adjusted initial returns imply that the systematic risk of the going public firm is the same as the market index and this doesn't necessarily hold true.

There are also other alternatives for measuring underpricing, such as computing the average daily initial returns for the first days of trading activity and many more combinations, but these have been hardly ever used in the literature. The most renowned metrics are certainly underpricing, intended as raw initial returns, and money left on the table, as a total currency amount and referring to the first day of trading.

To conclude, it's worth mentioning that all the formulas aforementioned are applicable in a overpricing scenario as well, i.e. when $P_1 < P_0$, but the outputs will have a negative sign in front of them.

2.1.2. Issuer-oriented underpricing alternatives and their measurement

The widely used definition of underpricing brings a meaningful problem: it is investor-oriented, in other words it reflects price changes in the eyes of investors. However, in an IPO the pre-existing shareholders are reasonably expected to be concerned also about their own interests: these are economically revealed by the wealth changes related to price variations of their holdings in the going public firm[21]. Clearly, underpricing is costly to a firm's owners: secondary shares are sold at a lower price from its market value and the retained shares still suffer because of dilution (Ljungqvist, 2007). In other words, the rational economic objective of the issuing company is to maximise the value of shares for the existing shareholders, so the focus during a going public process is rather on minimising the wealth loss to pre-existing shareholders than minimising the level of underpricing (Dolvin and Jordan, 2008). The consequence of this different point of view between investors and issuers is that the traditional underpricing may

[21] The initial owners of a listing company have a complex mix of interest to take care of as a result from IPO underpricing, such as retaining control after ownership dilution, decreased earnings per share due to the increased number of shares outstanding and so forth, but the most comprehensive factor is wealth loss as it gathers the effects of various IPO-related decisions.

mislead issuers as it's not representative for the actual wealth losses suffered by pre-existing shareholders[22] (Dolvin, 2012).

The first scientific paper to highlight this issue is that of Dawson from 1987 in which the concept of issuer-oriented underpricing is built. Dawson modifies the traditional formula of underpricing by changing the aftermarket price per share (P_1) with the price per share before the IPO (P_B), i.e. $(P_B - P_0) / P_0$. By doing so, this issuer-oriented underpricing estimates the wealth loss suffered by initial owners as a percentage with respect to the value of shares before the company goes public. The weak point of this computation is that the information about pre-IPO share price is not available, as no market data exists, therefore it is inferred using post-IPO market data. Moreover, Dawson's simple formula wrongly overestimates the indirect cost of issuance for initial owners as if all the pre-existing shares had been sold at P_0.

A couple of years later, in 1989, Barry corrects the issuer-oriented underpricing computation of Dawson by taking into account the actual amount of shares sold at the time of IPO, thus the combination of primary and secondary shares. In particular, Barry takes into account the "pure" wealth loss suffered by pre-existing shareholders selling part of their stake (secondary shares selling): this wealth loss amounts to $P_B - P_0$ per share, where P_B indicates the share price pre-IPO. Meanwhile, the issuance of primary shares still brings a wealth loss but to a lesser extent: this is the effect of dilution, it's worth $P_1 - P_0$ per share and it depends on the proportion between the number of newly issued shares (N_n) and the number of existing shares before the IPO (N_0)[23]. The sum of these two effects is nothing but money left on the table as explained above, with the distinction that the number of shares sold (N_s) can be split between primary shares (N_n) and secondary shares ($N_{0,s}$).

Overall, the issuer-oriented underpricing (IUP) of Barry, referred as opportunity cost of issuance for pre-existing shareholders (OCI) by subsequent authors, computes the wealth loss to pre-existing shareholders as a percentage with respect to the pre-IPO value of the existing shares (thus, pre-IPO value of the firm). The revised formula of Barry is computed as follows:

[22] There are only two situations in which initial returns correctly measure also the fraction of wealth change for pre-issue shareholders: the first case is when the IPO regards only the issuance of primary shares and the number of new shares sold is exactly the same as that of pre-existing shares (Barry, 1989). The second case is when the IPO seems to be perfectly priced, i.e. there isn't any underpricing nor overpricing.

[23] It's worth noting that also a pure secondary shares offering brings a dilution effect in case of underpricing as part of the shares are sold below at their market value. However, the major loss regarding secondary shares pertains the selling event itself and not the dilution effect for retained shares.

$$IUP\ or\ OCI = \frac{MLOTT}{V_0}$$

Where V_0 indicates the pre-IPO value of the firms and all the other factors as already mentioned before. V_0 is calculates as the number of existing shares N_0 multiplied by the share price before the firm goes public (P_B). The latter, pre-IPO value of existing shares, is inferred using the post-IPO market data[24] and by applying the formula shown below.

$$P_B = \frac{(N_0 + N_n) * P_1 - (N_n * P_0)}{N_0} = P_1 + \left(\frac{N_n}{N_0}\right) * (P_1 - P_0)$$

Where all the factors have the same meaning as previously indicated. Due to the assumptions needed to infer the market price per share pre-IPO, the calculation essentially consists by starting with the after-IPO market capitalisation, subtracting the paid-in capital derived from primary shares issuance and dividing the result by the number of existing shares. Putting it differently, the pre-issue share price is the result of adding back the dilution effect (weighted by the proportion of newly listed shares to existing shares) to the post-IPO share price.

As a result, the inferred pre-IPO value of the firm can be computed as $P_B * N_0$, meaning that $V_0 = (P_1 * N_0) + (P_1 - P_0) * N_n$

Now, having all this information, the formula of issuer-oriented underpricing, or opportunity cost of issuance, can be more extensively developed as shown below:

$$IUP\ or\ OCI = \frac{(P_1 - P_0) * N_s}{(P_1 * N_0) + (P_1 - P_0) * N_n} = \frac{(P_1 - P_0) * N_s}{(P_1 * N_1) - (P_0 * N_n)}$$

Where N_1 indicates the total number of shares outstanding after the IPO and all the other factors as previously explained. It's worth noting that, with this extensive development of the formula, all the inputs can be gathered from directly observable market data at the time of going public[25].

[24] This implies the assumption that there is no information asymmetry: in this way the market price per share post IPO currently reflects the value of the firm pre-IPO plus the new paid-in capital. This is a significant assumption, but it's unavoidable as there is no certain price for privately-held companies, therefore any different valuation (DCF, multiple valuation, comparable transactions and so forth) would still bring issues such as valuation subjectivity. Although non specified by Barry, his formula of pre-IPO share market price also implies that there are no transaction costs for selling the shares to the public equity market and that there is no liquidity effect value for publicly traded shares.

[25] Nonetheless, this is permitted because of the assumptions related to the inference of the market value of shares, or the firm as a total, pre-IPO.

Dolvin and Jordan (2008) further elaborate on this topic by breaking down, i.e. proposing a decomposition, of the aforementioned opportunity cost of issuance by simply multiplying the numerator and the denominator by the amount of gross proceeds raised at the IPO, that is equal to the issuance price multiplied by the number of shares sold ($P_0 * N_s$).

$$OCI = \frac{(P_1 - P_0) * N_s}{(P_1 * N_1) - (P_0 * N_n)} = \frac{(P_1 - P_0) * N_s}{(P_0 * N_s)} * \frac{(P_0 * N_s)}{(P_1 * N_1) - (P_0 * N_n)}$$

By making this seemingly small adjustment, now the computation OCI is split in two terms: the first one is exactly the traditional investor-oriented underpricing, while the second term indicates the offering size as a percentage of the pre-IPO shareholders' wealth. The latter term is called by Dolvin and Jordan as "economic overhang" since the concept is extremely close to the most renowned overhang[26].

Other authors of scientific research, such as Ferretti and Meles (2011), suggest that the opportunity cost of issuance to pre-existing shareholders should be computed net of the effect of gross spread due to underwriters in order to take into account the net inflow of money derived from the going public decision. OCI-adjusted is calculated as follows:

$$OCI = \frac{[P_1 - (P_0 * \delta)] * N_s}{(P_0 * N_s * \delta)} * \frac{(P_0 * N_s * \delta)}{(P_1 * N_1) - (P_0 * N_n * \delta)}$$

Where δ is a "netting factor" and is equal to one minus the gross spread percentage; all the other variables are as previously defined.

Still with a desire to better define the cost of issuance for initial owners, Habib and Ljungqvist (2001) construe an issuer-oriented cost of issuance, called directly wealth loss, that is essentially based on the traditional formula of money left on the table but with the addition of promotion costs[27] borne by initial owners. Habib and Ljungqvist (2001) divide this amount by the number of pre-existing shares, resulting in a wealth loss per existing share. The key rationale behind this computation is that the cost of issuance in the eyes of initial owners should include all the

[26] Overhang is defined as the ratio between the number of shares retained by the initial owners of the issuing company and the number of shares (primary and secondary) sold through the IPO. Overhang is therefore computed as $N_{0,R} \ / \ N_n$. The higher the value of overhang, the higher the retention of cash flow rights by pre-existing shareholders. Overhang should not be confused with share retention that is computed as the ratio between the number of retained shares on the number of existing shares, thus $N_{0,R} \ / \ N_0$.

[27] The promotion costs include the fees paid to underwriters (only the fixed fees, not the gross spread), auditors and lawyers; the cost of road shows; listing fees; and so on, but exclude other costs which cannot easily be measures, such as management time devoted at following the going public process.

costs potentially influenceable by the decision of the initial owners themselves. The formula of wealth loss per share proposed by the authors is show below.

$$wl = \frac{\left[N_{0,r} * (\overline{P_B} - \overline{P_1})\right] + \left[N_{0,s} * (\overline{P_B} - P_0)\right] + (1 - \alpha) * EXP}{N_0}$$

Where wl stands for wealth loss per pre-existing shares, $N_{0,r}$ is the number of existing shares retained by initial owners, $\overline{P_B}$ is expected pre-IPO share price, $\overline{P_1}$ is the expected aftermarket share price[28], $N_{0,s}$ is the number of existing shares sold (secondary selling) at the time of IPO, P_0 is the issuance price, α is the proportion of promotion costs borne by the pre-existing shareholders[29], EXP is the total amount of promotion costs and N_0 is the number of existing shares.

As seen in this section, unlike the common investor-oriented underpricing that is calculated as first day RIR most of the times, there is quite a significant divergence on how to compute an issuer-oriented underpricing value or generally wealth loss to pre-existing shareholders. There isn't necessarily one formula that outshines all others in terms logical soundness and accuracy because, unfortunately, the empirical literature devoted to this topic is scarce, so that comparisons are difficult to make.

2.2. THEORETICAL EXPLANATIONS OF MONEY LEFT ON THE TABLE

The widespread presence and often large size of IPO underpricing[30], although varying across countries, time and different firms, is one of the most puzzling phenomenon in corporate finance. This is because issuers don't seem to be upset about "leaving money on the table". This is not just an assumption based on the high number of underpriced initial public offerings, the willingness of initial owners to sell shares at a significant lower price that its market price is tested in various ways, such as interviews to managers and by assessing that issuers maintain the same underwriter for follow-on offerings even if they suffer from high underpricing at the time of IPO (Loughran and Ritter, 2002).

[28] Assuming that initial owners try to estimate wealth losses before the IPO, this post-IPO share price is unknown.

[29] As demonstrated by the authors, by further developing the formula, the promotion costs of going public are fully borne by the pre-existing shareholders in part through their own accounts (secondary shares selling) and in part through the lower level of retained shares due to the firm incurring in these promotion costs

[30] Wealth losses are tightly related to underpricing but the literature of the latter is much larger. For this reason, this section will deal with theories focused on underpricing explanations.

As a result, a large body of literature has started being developed since the 1970s to try to decipher this phenomenon, i.e. to understand why IPO underpricing exits and which factors influence it. The analysis models that have been created up to the present time are numerous, but they can be divided in four macro groups as follows: information asymmetry theories, institutional conjectures, ownership and control considerations and finally behavioural theories.

In the next section, all the predominant theories related to the IPO underpricing field will be recalled, focusing in addition on the areas where the owners' perspective emerges. The academic papers of reference for a comprehensive review are those of Ibboston and Ritter (1995), Ljungqvist (2007), Alidarous and Jamaani (2019).

2.2.1. Informational asymmetry theories

The first macro group of theories deal with the presence of an asymmetrical distribution of information between the main IPO parties (namely issuers, underwriters and investors): this circumstance conditions the shares' pricing but also the IPO process as a whole, depending on which player has an advantage (disadvantage) because it possess more and higher (less and lower) quality information about a specific feature of the going public operation. These theories are outlined in the following paragraphs.

The principal-agent model focuses on the information asymmetry existing between the issuers (principal) and the underwriters (agent): the theoretical framework argues that underwriters exploit their information advantage, arising from superior market knowledge, by increasing underpricing, this in order to reduce the IPO marketing costs and increase the trading for its clients (investment banker's monopsony power hypothesis), all this at the expense of the issuer. This model has been criticised because it doesn't take into account that underwriters have also a long-term reputation to be preserved (Beatty and Ritter, 1986), so that they can't decide the level of underpricing as they please, and the empirical researches is conflicting since also direct IPOs (i.e. with no underwriters) face underpricing.

Recalling (Beatty and Ritter, 1986), another theory pertains the level pre-issuance uncertainty regarding the quality of the firm: the greater is ex-ante uncertainty, the higher is expected underpricing. This is due to the fact that investors require a higher level of underpricing in order to be willing to bear the risk, i.e. the ex-ante uncertainty about the true value of the listing company. Delving deeper, this type of model can be developed by splitting investors in two groups, informed and uniformed (Rock, 1986): this assumption is seemingly realistic as the institutional investors are usually much more informed than the retail ones due to their

experience in analysing the firms' value. Rock (1986) actually build a close but separate theory; the winners' curse. This prescribe that informed investors participate only in high-quality firms IPOs, leaving the bad deals to the uninformed investors: consequently, to keep on attracting a wide range of investors, the issuer must provide underpricing so that uniformed investors do not end up bidding only on the bad IPOs.

Moving forward, another model within the group of information asymmetry theories is related to book-building IPO contract type between the issuer and the underwriters. Given that institutional investors typically possess more information and more qualitative about the issuing firm, they require to be compensated with higher underpricing to reveal fair and trustworthy valuations of the company going public. The effect of this assumption is that positive feedback from investors during the book-building process leads to smaller upward adjustment in the issuance price, thus bringing higher underpricing as a remuneration for the honest valuation by issuers. From the owners' perspective, this means that positive information about the value of the company increases their monetary inflow of the divested stake or increases the wealth level from the expected value pre-book-building revelations, but it increases theoretical wealth losses as the shares appear to have the possibility to be sold at an even higher price.

The signalling model deals with information asymmetry existing between initial owners, assumed to be more knowledgeable about the true value of the going public firm, and investors (who do not have access to this private information). According to this model, underpricing represents a signal by the pre-existing shareholders towards the investors with the aim to disclose the firm as a high quality one. The rationale behind signalling through underpricing is that underpricing is used as a tool to "leave a good taste in investors' mouth" and that only high quality firms can bear the cost of higher underpricing. The practicality of this model is questioned because underpricing is not necessarily the only way to signal the high quality of the company and that initial owners rather take care about their wealth level than underpricing per se. Furthermore, slightly different signalling models focus on other variables, such as the presence of a lock-up provision for pre-existing shareholders, as an instrument to disclose the high-quality of the firm: with this perspective, underpricing is actually expected to decrease (Chen and Mohan, 2000). Similarly, another signal that is expected to lower the amount of

underpricing in an IPO is the share retention ratio of initial owners as it sends a positive message to the market about the quality of the going public firm[31].

The next analysed theory, referred as certification model, attributes to the (high) reputation of certain players in the IPO process the power to lower the level of underpricing by exploiting their reputation as a "certification" of the high quality of the firm in the eyes of the investors. The key assumption here is that all IPO key players are concerned about their long-term reputation, therefore this is interpreted by the investors as a proxy of issuing firm's value. The role of certifiers, or more accurately IPO players with high level of reputation, is typically assigned to underwriters, venture capital or private equity funds being part of the pre-existing shareholders and auditors assigned to revise the IPO accounting data. The empirical evidence confirms the certification effect for listing companies (Beatty, 1989), but the size of the effect, or even its positive – negative sign, may change whether the analysis if focused on underpricing or wealth loss (Ljungqvist, 1999; Habib and Ljungqvist, 2001; Ferretti and Meles, 2011)

To conclude the overview of informational asymmetry theories, the last model worth mentioning is definitely the Entrepreneurial Wealth Losses (EWL) built by Habib and Ljungqvist (2001). The authors developed a model which essentially combines all the aforementioned theories regarding informational asymmetry and revolutionised IPO literature by considering in their model the existence of endogeneity between the key IPO players. The overall rationale behind the EWL is that some initial public offerings are more underpriced than others because their owners have fewer motives to be concerned about underpricing. For example, if the share retention ratio is high and the amount of newly issued shares is relatively low, than the wealth level of pre-existing shareholders is little affected by underpricing, therefore initial owners do not care too much about controlling underpricing. In the opposite scenario (ideally a full exit strategy by initial owners), the pre-existing shareholders have a strong incentive to control underpricing, thus they are assumed to take corrective actions in order to lower the level of underpricing that ultimately affects their wealth losses. Initial owners are assumed to be able to change the level of underpricing by incurring in more monetary costs through, for instance, the designation of a higher reputation underwriter (which demands a

[31] A peculiar effect of concealing and confounding adverse signals is found by Ang and Brau (2003). Since a higher retention ratio by initial owners provided a positive message to the market, meaning a higher valuation or in other word a lower level of underpricing, a wealth-maximising strategy is found in US IPOs in the 80s and 90s. More precisely, initial owners appear to underreport the number of personally held shares in the first prospectus and correcting this figure only on a subsequent updated prospectus that is generally less available or analysed by the market, thus allowing pre-existing shareholders to sell a higher amount of shares at a higher price.

higher compensation) or by incurring in other costs (such as more extensive road shows). By incurring in these IPO promotion costs, the issuers can increase the number of informed investors that better price the listing firm's shares. All this has the final objective to limit the wealth losses, not underpricing per se. For this reason, in the EWL model, underpricing is a reflective consequence of the incentive-decision making of pre-existing shareholders taking care about their wealth. In addition, among all the informational asymmetry analysis models, the entrepreneurial wealth losses seems to be the most explanatory of underpricing variation in US IPOs (Kennedy et al., 2006).

2.2.2. Institutional conjectures

The second group of theories trying to explain why issuers leave money on the table pertain institutional conjectures, namely motives related to the fields of legal liability, institutional practices of IPOs, taxation and legal environment as a whole.

The first argument concerns the lawsuit avoidance hypothesis: in case the aftermarket price tumbles on the very first days from the initial public offering, the new investors can potentially sue the newly listed firm by claiming that the prospectus was materially misstated. This risk appears to be higher for the USA since the class actions are a more common practice, so its lower in a global setting. Consequently, in order to avoid or limit this risk, the issuers may purposely decide to underprice the shares offered to the public market. Nevertheless, the relationship of legal liability considerations and level of underpricing is scarcely verified even in the American stock market (Ibboston and Ritter, 1995), which leads to the view that issuers, on average, should rather take care of other variables.

A more significant difference among countries influencing the level of underpricing seems to be the institutional and legal environment as a whole, i.e. the strictness of law enforcement and the availability of accounting information. When these are high, they lower the private benefits of maintaining the control of the firm for pre-existing shareholders (Dreher and Hopp, 2013). Accordingly, the initial owners are disposed to tolerate a lower level of underpricing, and more significantly a lower amount of wealth losses, in order to cede part of their private benefits related to the control of the company. However, still withing the framework of institutional and legal environment, a higher (new) investor protection may lead to higher underpricing since the loss of control might become more pronounced for incumbents (Dreher and Hopp, 2013).

Moving on, another theory the can justify the variability of underpricing is related to the tax argument: when the country-specific taxation-system enforces a higher tax rate for employment

income than for capital gains, it creates an incentive for corporations to remunerate their employees with stock plans rathe than normal wages. This is doable only when the shares are expected to increase in value and are part of a quoted firm[32], thus they need to be underpriced when sold. Intuitively, in case the taxation-system changes, the trade-off between underpricing and tax benefits may vanish (Rydqvist, 1997). Moreover, the current tax-systems in most of developed countries do not favour capital gains over employments income[33].

To conclude this section, the price stabilisation must be recalled too, that is the price support implemented by the underwriters as a post-IPO activity. In case there is large volatility in the first market trading days, the underwriters have a contractual agreement to help stabilising the share price by redirecting it towards the issuance price through acquisitions and selling with their own accounts. However, it needs to be specified that there is more concern when the price is trending downwards than when it is trending upwards, meaning that the underwriters take more corrective measures in the first case while, in the second case, they tend more to accommodate the market by cautiously selling more shares[34] and allow the share price to rise. This means that the greater the capacity of underwriters to stabilise the IPO prices, the more likely the firm will be underpriced. Having said that, the major drawback on this argument is the difficulty of precisely measuring the depth of price support by underwriters[35] which leads to comparisons being hard to make.

2.2.3. Ownership and control considerations

The third group of theories dealing with rationales for underpricing spotlights ownership and control considerations: since the event of listing on a stock exchange can significantly reshape the ownership structure or the distribution of controlling rights, investigating the IPOs in this perspective serves to identify how the initial owners' personal interests versus the new investors' perspective can influence the level of underpricing.

The first hypothesis regards underpricing as a tool for ownership dispersion. This theory states that, in case the issuers are particularly worried about retaining the control of the firm even after

[32] Stock plans for privately held companies are not as successful because there isn't a market reference for the share value, so these options typically obtain less interest from the employees.
[33] At least when taking into account the average income of people, such as the case of Italy. (https://taxsummaries.pwc.com/italy/individual/income-determination)
[34] Thanks to the greenshoe option, if any.
[35] The generally shared information about how many additional shares are sold post-IPO thanks to the greenshoe option is not suitable for analysing the price support for downward trends of the stock price and is not sufficient for analysing the upward shifts.

it goes public, they look after obtaining a wide ownership dispersion between the new investors. This can be done when the excess demand for the shares of the going public company is adequately high, thus bringing more possibilities to ration the share allocation among a large number of new investors. For this reason, the issuers may intentionally underprice in order to maintain the control of the corporation: in this case, the initial owners are essentially paying the private benefit of control with losses from their own pre-IPO wealth[36]. Even though the entrenchment managerial control hypothesis has been empirically verified by some authors (such as Pagano et al., 1998), this analysis model is flawed by the fact that it does not consider the possibility of issuing non-voting shares for retaining control instead of "paying" through underpricing[37].

Going ahead, another theory refers to underpricing as a tool to reduce agency costs: these arise as the separation between ownership and control increase, more precisely when there is a malignment between the interests of managers and of non-managerial shareholders (or, broadly speaking, holders of non-voting shares). According to the agency cost theory, initial owners may be interested in underpricing the IPO to attract a large outside investor who is capable of monitoring and reducing the discretion of managerial actions. The resulting implication goes in the opposite direction compared to the theory cited in the previous paragraph because, in case agency costs subsist, the existing shareholders would look at underpricing as a tool to decrease ownership dispersion rather than enlarging it. Anyhow, this different prediction is not compatible with the current institutional environment in which initial public offerings are mainly conducted via bookbuilding processes, thus the shares can be discriminately allocated to large investors without the need of underpricing.

2.2.4. Behavioural theories

The last group of theories trying to decipher the phenomenon of money left on the table in IPOs focuses on behavioural explanations, that is analysing underpricing based on psychological underpinnings of the economic operators.

[36] Recalling what was marked at the beginning of this chapter, underpricing ultimately influences the wealth of pre-existing shareholders because they either sell their shares at a lower price that the market one or they suffer from dilution.
[37] Only if the level of underpricing in IPOs in which voting-shares are sold is significantly larger than IPOs in which non-voting shares are sold, the ownerships dispersion hypothesis emerges as a good possible explanation for underpricing.

The most renowned theory is the "hot issue market", namely the observed cyclicality of initial public offerings both in terms of volume (number of listings or total gross proceeds) and underpricing (intended as raw initial returns). In other words, there are certain hot issue periods[38] in which more firms decide to go public or the concentration of underpriced IPOs is higher than usual. The theory dealing with this anomaly of IPOs cyclicality affirms that new issues are underpriced beyond rational explanations (Ibboston and Ritter, 1995). The behavioural explanation is the positive feedback strategy that may be deployed by some investors: these tend to invest more in shares of companies going public when recent IPOs showed an increase in the market price, i.e. they expect the same price increase in the new issue so they invest more in order to benefit from the upward swing. This behaviour by some investors causes positive autocorrelation in terms of underpricing (initial returns). The same applies in the opposite scenario which creates instead a "cold market": periods when the public equity market registers a lower level of underpricing or a smaller number of listings. The implication of this theory of initial public offerings cyclicality is that the economic agents can, in a certain sense, rationally expect that an IPO will be underpriced the higher the number of underpriced new issues took places in the previous weeks or months. The presence of hot issue markets has been detected in most developed stock markets, so it represents one of the best motives for explaining the underpricing variations among time and among countries.

Another theory, that is quite close to the concept of the previous one, consists in the "windows of opportunity" hypothesis. This asserts that firms tend to go public when the valuations in their industry or the valuations of the public equity market as a whole are perceived to be particularly high, meaning that issuers try to time the market to raise as much money as possible from the IPO. In itself, this behaviour does not affect the level of underpricing. Nonetheless, issuers cannot predict the exact time when the market valuations will peak, therefore they look for periods when valuations increase or, more generally, when certain market indexes rise: quoting during one of these periods, increases the likelihood of a higher underpricing[39]. Empirically, it has been globally verified that companies try to benefit from a positive market momentum:

[38] The hot issue refers, instead, to a single company that experiences a particularly high demand from the investors and the initial returns result to be significantly higher than usual. A hot issue can take place also outside a hot issue market but, based on historical experience, this is less likely to happen.

[39] Alternatively stated, by exploiting the irrational or sentiment investors that pump the overall valuations in certain periods, issuers try to capture this excess valuation by timing their IPO. However, it must be noted that "windows of opportunities" may appear also for rational motives, such as an exogenous increase in demand in a certain industry that rises market valuations. In any case, in order to benefits from these peculiar market periods, the issuers can use the market index trend of reference to gather insights on when it's the best time to go public: if it shows an upward trend, it might be a good option to list soon.

some examples are provided by Arosio et al. (2000), Dreher and Hopp (2013), Lanzavecchia and Mazzonetto (2014), Dell'Acqua et al. (2015) and many more.

Moving on, the cascade hypothesis states that, if investors in IPOs make their investment decision sequentially, i.e. subsequent investors choose to bid in new issues by checking whether the previous bids of other investors have an upward trend and assume that this is a sign that the going public firm is still in the underpricing range, than an irrational phenomenon develops. More specifically, this phenomenon consists in the presence of hot or cold issues that are not based on rational motives, but rather on irrational considerations by investors who collect information in subsequent stages (cascades) and decide to invest based only on this information, thus ignoring possible own analyses about the real value of the company. In case the issuers correctly price the IPO, the first investors to bid may notice that no one else is interested in the IPO (as there is no room of gaining from underpricing), then the investors might withdraw their intention of investing even if they have positive information about the value of the listing firm. In order to avoid such risk, the theory foresee that issuers may voluntarily underprice their shares so that a positive informational cascade develops and ultimately the going public process succeeds. However, it's worth noting that the empirical validity of this underpricing explanation can only be checked in advanced stock markets, where detailed information about the investors' bids can be gathered, hence limiting its usage for worldwide cross-sectional analyses.

The last theory regarding the behavioural field of finance is prospect theory and mental accounting. This hypothesis that issuers are happy for leaving a large amount of money on the table is based on their irrational attitude to sum the wealth loss due to underpricing with the wealth gain based on the amount of shares retained and the price jump in the aftermarket (Loughran and Ritter, 2002). Although the irrational happiness of initial owners about underpricing has been empirically tested with various proxies (such as the retention of the same underwriter in follow-on offerings analysed by Ljungqvist and Wilhelm, 2003), this theory doesn't directly explain IPO underpricing variations. Nonetheless, the mental accounting irrationality is an important consideration for pre-existing shareholders: in case the first price range proposed by underwriters is particularly low than the real value of the shares, a subsequent aftermarket price surge will make them falsely think that they didn't suffer from any loss. However, the existence for underwriters of a trade-off between reputation and underpricing, suggests that the misconception of erroneously summing IPO-related wealth gains and losses is originated mainly from the issuers' expectancy on share price.

2.2.5. Review of factors determining underpricing

All the aforementioned theories dealing with explanatory reasons of IPO underpricing variations led to the creations of a vast literature of academic papers in which analysis models have been built to empirically research which factors are the most significant in determining the underpricing level[40]. These are worth being recalled because they're used also for building analyses models with regards to the wealth loss to pre-existing shareholders: since the latter is strictly related to the pricing of the newly listed company as underpricing, the same influencing variables are foreseen to be applicable. Nonetheless, in view of the more limited literature on wealth loss, when considering the initial owner's perspective, it is possible that the results of empirical studies reveal differences at least in terms of the variables' explanatory power.

The selected factors are only those that can be determined with data up to the last moment before the actual listing takes place: this is for the purpose of having them as tools for being able to estimate underpricing before firms go public. Information gathered post-IPO might be useful in understanding the phenomenon, but it is not helpful for all the economic agents participating in the listing process as they can base their decision only on information accessible before going public.

Jumping into the matter, the variables for examining the level of initial public offerings' underpricing can be split in three major groups: firm specific, IPO-specific and market-specific. The following tables show the most explanatory variables for each group, describing how they are computed and mentioning which is the expected effect on underpricing based on past researches.

The first group of variables covers the characteristics closely-linked to the quoting firm, hence they are mostly non-controllable by the issuers (unless significant corrective actions are taken long-before going public). Generally, all the firms-specific factors can be used as risk proxies for the uncertainty about the real enterprise value, but the following ones appear to have the most explanatory power.

[40] The review is based on the international academic research of Habib and Ljungqvist (2001), Butler et al. (2014) and on various academic papers that focus on the specific Italian case: Arosio et al. (2000), Cassia et al. (2006), Lanzavecchia and Mazzonetto (2014) and Dell'Acqua et al. (2015).
It's worth mentioning that, depending on each IPO case, there are certainly other factors that can influence the resulting level of underpricing. Taking this into consideration, the variables mentioned in this section serve the purpose of analysing a group of initial public offerings. If one is interested in deeply examining a specific IPO, he/she should consider collecting data about additional variables that are expected to be significant.

Name of the variable	Calculation	Effect on underpricing
Ln Age	Ln [41] of (IPO date – firm incorporation date)	Negative
Ln Total Assets	Ln of accounting value of total assets	Negative
Ln Sales	Ln of yearly sales (closest value pre-IPO)	Negative
Leverage pre-IPO	Total liabilities divided by equity (both in accounting values)	Positive
PE or VC backed	Presence of a PE or VC fund among the pre-existing shareholders	Negative

Table 1 - Firm-specific variables influencing the IPO underpricing. Various sources mentioned in footnote n°40.

The variables related to age, total assets and sales have an expected negative effect on the level of underpricing because these factors are commonly viewed by investors as beneficial risk proxies of the firm, thus they should lower the mismatch between issuance and market price. The leverage at the time of IPO goes, instead, on the opposite direction because a higher indebted company is riskier, so the underpricing is predicted to be larger. The presence of a private equity or venture capital investor among the pre-existing shareholders is ordinarily hypothesized to decrease the level of underpricing since they are believed to send a positive signal to the market about the true value of the firm.

The second group of variables focuses on IPO-specific features, namely peculiarities which are the expression of issuers' choice about the listing process, therefore controllable by the initial owners. It's worth highlighting that the decision on how much to address these factors depends on the issuer's personal incentives (Habib and Ljungqvist, 2001).

[41] When the calculations of the mentioned variables is corrected with the natural logarithm, it refers to the fact that the expected marginal effect on underpricing is descending.

Name of the variable	Calculation	Effect on underpricing
Ln Offer size (gross proceeds)	Expected number of shares sold multiplied by the midpoint price from bookbuilding range	Negative
Retention ratio	Number of retained shares divided by the expected total number of shares post-IPO	Negative
Secondary shares ratio	Number of secondary shares sold divided by the total number of shares sold at IPO	Positive
Underwriter reputation	Underwriter market share of IPOs (units or value-weighted)	Negative
Promotion costs	All IPO-related quantifiable costs (except gross spread due to underwriters) divided by total number of pre-existing shares	Negative

Table 2 - IPO-specific variables influencing the IPO underpricing. Various sources mentioned in footnote n°40.

All the previous variables, specific to the characteristics of the initial public offering, are foreseen to have a negative impact on underpricing but each of them for different reasons. The offer size, in terms of gross proceeds, can be mainly related to the expected share's liquidity in the market (a larger offer size should lead to lower shareholding concentration and more trading volume). The retention ratio falls within the signalling theories which predicts that a higher retention by initial owners sends a positive signal to the new investors. In contrast, the secondary shares ratio is supposed to bring a deeper mismatch between issuance and market price for the reason that (as an extreme example) a purely secondary shares offering brings more uncertainties to the eyes of the investors since the listing event appears to be just a divesting opportunity for pre-existing shareholders rather than providing funds for the

company's growth. Moving on, the underwriter reputation variables is based on the assumption that all the IPO underwriters face a trade-off between the level of underpricing and their reputation (mostly measured in terms of market share of IPO activity within a stock exchange), so a higher reputation underwriter should certify that the newly issued stock is fairly priced (however, there is a lot of conflicting empirical literature on this). The last mentioned variable within the IPO-specific group is the amount of promotion costs: assuming that it can positively influence the investor's perception about the true value of the going public company, it should have a negative impact on underpricing.

Finally, the third group of variables pertains to the market-specific features, i.e. external characteristics of the market at the time of IPO: these cannot be directly controlled by the issuers, yet they can be partially controlled mainly through the decision about the timing of the initial public offering.

Name of the variable	Calculation	Effect on underpricing
Hot issue market	Average UP in previous IPOs in a certain period of time before the listing date	Positive
Hot issue market (v.2)	Number of IPOs taking place in a certain period of time before the listing date	Positive
Bull market	Average daily change in market index in the previous month	Positive
Volatility of market	Standard deviation of daily changes of the market index reference in a specified period pre-IPO	Positive
Demand multiple	Sum of shares that all the interested investors desire to acquire divided by the total number of shares offered	Positive

Offer price revision (%)	Issuance price divided by the midpoint price from the bookbuilding range	Positive

Table 3 - Market-specific variables influencing the IPO underpricing. Various sources mentioned in footnote n°40.

All the previous variables related to market-specific characteristics have an expected positive influence on the level of underpricing. More precisely, going public during periods of hot issue markets is awaited to attract more interest by investors and as consequence, this will likely drive up the aftermarket price. A similar concept applies when the IPO takes place in a bull market: the positive market momentum is supposed to be reflected also in the price increase compared to the issuance[42]. Moving forward, the pre-IPO market volatility widens the uncertainty about stock's valuations, therefore investors are willing to invest only if the issuance price is lower compares to that resulting in more stable markets times (*ceteris paribus*): ultimately, this is assumed to translate in a grater price increase in the aftermarket trading. Going on, the demand multiple is a variables that depicts investors' sentiment about the initial public offering: more investing requests, namely a higher level of demand, should push the shares' pricing upwards. However, the investors' demand is typically not fully translated in an upwards issuance price revision[43], as recalled in the sub-section number 2 of this chapter, so that the aftermarket trading is predicted to lead higher underpricing.

To summarise this section, based on past academic research the aforementioned variables appear to be the most effective in deciphering the phenomenon of underpricing: they can be employed both when studying the explanatory power of each of them regarding the level of underpricing (and presumably wealth losses) or they can be used as statistic controls when focusing the analysis on a specific topic of interest within the field of IPO pricing.

2.3. FOCUS: IPO AS AN EXIT STRATEGY FOR INITIAL OWNERS

As cited in the first chapter, the going public procedure may serve as an exit strategy to the initial owners who intend to divest entirely or part of their stake in the privately-held

[42] The same considerations can be applied also in the opposite scenarios, namely cold issue markets or bearish markets, with the foreseen results being exactly the opposite, i.e. a lower level of underpricing.
[43] Assuming the IPO procedure is completed through the book-building process.

corporation[44]. If this is the case, it is expected that the decisions taken by the pre-existing selling shareholders will shape the IPO process to their personal advantage, hence they will focus on maximising their wealth or limiting the wealth losses. With this perspective, the level of underpricing per se becomes just an intermediate reflection of what the initial owners are trying to achieve. In the opposite scenario, where none of the existing shareholders have the objective to liquidate their stake, hence only primary shares are issued, underpricing is more of a concern for the firm's value.

Going back to the owners' perspective, in order deploy an exit strategy, the currently available literature has identified two main routes:

- One-stage strategic selling in which the IPO represent the only selling event for the initial owners;
- Two-stage[45] strategic selling, which consists of a more complex long-term plan for the divesting strategy.

In the former scenario, the selling shareholders have the objective to liquidate their holdings in a one-time event that is the initial public offering. As a consequence, the incentives in controlling the IPO process as a whole, in particular the pricing, are high: either the initial owners fully or partially divest their stake, each "penny" left on the table is directly reflected in terms of wealth losses. Clearly, in a full divestment strategy, the incentives for controlling the initial public offering reach the highest level.

Few academic researches tried to depict which reasons influence the likelihood of exploiting the IPO as an exit strategy and analyse their relation with underpricing. A selection of the most noteworthy papers is presented below.

The investigation of Chua and Nasser (2016) focuses on the liquidity needs of firms' insiders[46] as a rationale behind the setting up of a one-stage selling strategy through an initial public offering that affects also the level of underpricing. Because managers of private entrepreneurial firms, who commonly are also major shareholders, have both their human capital and a

[44] Anyhow, as pointed out by Zingales (1995), an initial public offering may not be necessarily always the best exit strategy since initial owners may be better off when selling directly to a large private investor in case depending on the assigned value to the control rights over ownership.
[45] Only the two-stage strategic selling is mentioned here because, even in the cases in which the divestment by the pre-existing shareholders is done in more steps, the same concepts are applicable. .
[46] They also mention concerns about the post-IPO lock-up period and inside knowledge of an impending market crash as major reasons for the increase of secondary shares offered in an IPO, but they investigate only the liquidity needs of firms' insiders.

significant portion of their wealth tied to the company, the illiquidity of their holdings can be a concern when quick cash is needed for their personal needs. Chua and Nasser (2016), based on a sample of US IPOs, suggest that when the level of equity-compensation in privately-held firms (used as a proxy for the insiders' liquidity needs) is higher due to cash constraints of the firm itself, it ultimately increases the probability of pre-existing shareholders selling part of their stake during an IPO as they see it as a tool to finally obtain some liquidity for their own exigencies. This specific analysis covers the situation in which managers' liquidity needs are more valuable than the possible extra inflow of money deriving from waiting and selling at a later stage. Interestingly, when the divestment reflects an exigence of liquidity by the firms' insiders, the authors find a negative influence of initial owners sales on underpricing[47], but it's not statistically significant. To conclude, the main contribution of this academic paper is that it empirically spotlights the possibility that the owners' perspective can be of primary importance during in an IPO.

Moving on, another noteworthy research within the framework of IPO used as an exit strategy by pre-existing shareholder is that of Ang and Brau (2003). The authors analyse the wealth-maximising behaviour of initial owners based on how these latter approach an initial public offering process. The setting of the analysis is again referred to a one-time selling strategy. Ang and Brau (2003) focus on discovering whether and how concealing and confounding adverse signals[48] are deployed during an IPO so that initial owners extract the most benefits in terms of pricing at which they sell their (secondary) shares. More precisely, the authors find out that pre-existing shareholders firstly announce a certain amount of shares to be sold, then, if the demand for shares is higher than expected meaning that a higher stock valuation is expected, they subsequently amend the firstly filed prospectus to increase the number or the proportion of secondary shares offered. This information of this amendment is either hidden for most investors or it is only partially incorporated in the final issuance price, thus allowing the selling shareholders to divest their stake at a higher price that it would be resulted if they immediately declared the actual amount of shares they intend to sell. This academic paper contributes to the IPO literature by highlighting that the owners' private benefits may significantly determining the final listing characteristics.

[47] This is in contrast with other literature the assigns a positive causal relation of the amount of secondary shares on underpricing because investors see it as a signal of bad investment opportunity.
[48] Ang and Brau (2003) analyse the presence of a mix of positive signals, such as a lock-up provision, and negative signals, i.e. the amount of secondary shares sold at IPO.

Turning now to the two-stage strategic selling, Aggarwal et al. (2002) develop a model in which IPO underpricing is strategically used to maximise the wealth of pre-existing shareholder in a long-term view. More specifically, the authors analyse the case in which initial owners who have the intention to divest their holding do not have the need to immediately raise cash but are rather concerned at the maximisation of their wealth even if this requires the waiting for a future selling date. Aggarwal et al. (2002) argue that new issues are purposely underpriced by the pre-existing shareholders in order to create information momentum: this results from an increased number of investment analyses published by research analysts who essentially advertise in this way the IPO because it is seen as a hot issue. The increased information momentum is expected, in turn, to attract more interest by investors who will buy the stock and to raise the long-term share price growth more than it would have happened without underpricing. The ultimate goal of the initial owners is to sell their holdings at a future date at better pricing conditions than they would have obtained otherwise. The pre-existing shareholders can benefit from this two-stage strategic selling only if the information momentum significantly pushes upwards the investors' demand of the stock , so that the wealth gain from a higher future share price is larger than the immediate opportunity costs (measured as the wealth loss due to the forgone proceeds for the firm).

These academic researches clearly point out that, in some cases, the owners' perspective can actually matter so much that the motives behind pre-existing shareholders' decisions are of primary importance in shaping the IPO process and its results. Because of this, future studies should investigate more frequently and more in detail the initial public offerings with the viewpoint of the listing firms' insiders and connect the effects of underpricing, with the ultimate goal of bringing new insights on this phenomenon.

3. ITALIAN PUBLIC EQUITY MARKET

First of all, it's essential to delineate how a company can actually issue or sell equity securities to the public market in Italy. The marketplace where investors and corporations figuratively meet to trade financial instruments is the stock exchange. It's defined as a public market for the reason that it's regulated, in other words there are norms and standards regarding the admission of securities, procedures for listing, obligations for operators and issuers, trading rules, suspension or exclusion of the securities when appropriate and many more.

3.1. ITALIAN STOCK EXCHANGE

In Italy, the institution that organizes the operativity of transactions, while constantly monitoring the circumstances to ensure the well-functioning of the Italian stock exchange, is called Borsa Italiana (also known as the Milan Stock Exchange or *Piazza Affari* due to its location). Borsa Italiana is a private company that was founded through the privatisation and incorporation of all the smaller trading venues that previously existed at the regional level. It's officially operational from 1998, but its historical origins date back as far as 1808 with the formation of the "Milan Merchandise Exchange". More recently, Borsa Italiana has been part of the London Stock Exchange Group from 2007 until 2020[49] when it was sold to Euronext Group. The latest transaction effectively took place on 29th of April 2021, with the ambition of creating a leading European capital market player with global reach and local presence[50] (Euronext, 2020 October 9th).

3.1.1. Structure of Borsa Italiana

Besides the markets of fixed income, exchange traded products and derivatives, Borsa Italiana manages the public equity market of Italy: the directly interested one for initial public offerings. The equity market in the Italian bourse is split as following:

[49] The signing of the binding agreement occurred on the 9th October of 2020. The selling event by the London Stock Exchange Group has been largely influenced by the political reasons behind Brexit (Filippetti, 2020 August 3rd).

[50] Euronext infrastructure now includes the stock exchanges of Belgium, France, Ireland, Netherlands, Norway, Portugal and Italy. At June 2021, it comprised about 1,900 listed companies with a cumulated market capitalisation of €6 trillion.

- Regulated markets that include Electronic Equity Market (*Mercato Telematico Azionario – MTA*[51]), Market for Investment Vehicles (MIV) and EuroTLX Equity;
- Non regulated markets that comprise AIM Italia[52] (Alternative Investment Market).

The Market for Investment Vehicles, dedicated to the quotation of financial vehicles such as closed-end funds, and the EuroTLX Equity, that allows investors to trade equities and similar securities from other OECD countries, are not taken into consideration in the further examination for the reason that the analysis presented in this thesis will focus on corporations that went public on the Italian bourse.

The two remaining and more relevant markets, MTA and AIM Italia, as shown above, differ foremost in terms of regulations. This key difference comes from the fact that the Alternative Investment Market is a MTF (Multilateral Trading Facility), i.e. a market regulated by Borsa Italiana and therefore not subject to the oversight of the supervisory authority. For this reason AIM Italia is commonly referred as the "unregulated market" and MTA as the "regulated market",

Starting now with the main market, the MTA is intended for medium-large companies with sizable capitalization and the capability to run their business operations in a profitable manner. The corporations that are willing to go public within this market have to comply with various regulations that are aligned to international best practices, but in return they obtain a wide exposition to global investors. Within the Electronic Equity Market it's possible to distinguish three segments with specific characteristics in terms of size and other additional requirements met by the enterprise admitted to the Milan Stock Exchange: Blue chip, STAR and Standard. The first one is simply dedicated to firms whose capitalisation exceeds €1 billion. The STAR[53] (*segmento con titoli ad alti requisiti*, high requisite securities segment) is dedicated to medium-sized companies with a capitalisation between €40 million and €1 billion. In addition, the STAR businesses voluntarily commit to particular standards in terms of liquidity, transparency and corporate governance. Finally, Standard is the residual segment dedicated to companies that do not meet the requirements of first two segments. By the end of July 2021, without considering

[51] The MTA has been recently rebranded as Euronext Milan (EXM). Due to the integration within the Euronext Group, the names of Borsa Italiana equity markets have been changed with the modification coming into effect as of 25th October 2021. This paper will keep using the old denominations to avoid possible misunderstandings as the provided analysis is backward-looking.
[52] Now called Euronext Growth Milan (EGM).
[53] Now called Euronext STAR Milan (STAR).

the suspended securities, there were 229 companies in the MTA, of which 79 within the STAR segment (Primary Markets Italy, Borsa Italiana).

On the other hand, the Alternative Investment Market Italia is dedicated for small and medium enterprises that are particularly dynamic and looking for capital to finance ambitious growth plans. The IPO process in AIM Italia is tailored to companies' needs with the intent to allow SMEs to raise financial resources through a procedure with reduced requirements, faster market access and minimum bureaucracy, while still respecting investor protection needs. By supporting the burden of going public, besides the cash inflow from the listing proceeds, the firms quoted on AIM Italia can gain visibility, reduce the dependence on the credit system, obtain support for internationalisation projects or for the adoption of best practices and many other benefits that would be harder to obtain if remaining private. The downside of this market is generally a lower liquidity of traded shares and a limited interest from international investors. Moving on, as for the MTA, the Alternative Investment Market has a subdivision: the professional segment, called AIM PRO Italia, that is accessible only to professional investors and that has an even simpler regulatory approach. This fairly new segment (it started to be operational on 20th July 2020) has been conceived to meet the listing needs of an increasingly diverse range of issuers such as companies that wish to access the market more gradually, start-ups that have still to implement core functions or processes, corporations that structure their offer with complex products not suitable for retail investors, firms that do not need to raise capital immediately and the like. Many have utilized the opportunity to access the Italian public equity market in an easier manner through AIM Italia: by the end of July 2021, excluding the suspended ones, there were 150 listed companies (Primary Markets Italy, Borsa Italiana).

3.1.2. Main actors involved in IPOs

Paraphrasing a report by IR Top Consulting (IPO guide on AIM Italia, May 2021), "listing is an extraordinary operation that requires a technical language and expertise in order to relate with the various stakeholders, therefore there is a need for IPO advisors to support and assist the enterprises in all the phases of the quotation process". Moreover, as required by law, some external consultants or operators are mandatory to access the public equity market for the reason that they operate as an assurance for the investors, for instance auditors. In light of this, companies aspiring to go public must possess a clear overview of all the involved parties: the most significant characteristics and tasks of each of them is presented hereafter.

Firstly, the corporation itself, more frequently denominated as the issuer in the official documentation. For the purpose of floating its shares, or better have a successful IPO, and ensure the compliance with all the norms at the time of listing, the issuer has to prepare well in advance: some of these activities are the establishment of the Investor Relations office within company's organizational structure, the implementation of the internal control system required for quoted firms, the drafting of the of a sustainable yet attractive business plan and so forth.

Secondly, the most important external party in an IPO is Borsa Italiana S.p.A.: it manages the securities market, gives or denies admission to listing and executes trading stops when needed. In a nutshell, it's the connection point between the issuer's floating shares and the investors.

Moving on, Monte Titoli S.p.A. operates as the compulsory centralised depositary and administrator of registered financial instruments in Italy.

CONSOB (*Commissione nazionale per le società e la Borsa*) is the Italian stock exchange supervisory authority responsible for investor protection and the efficiency, transparency and development of the Italian securities market. A key responsibility is granting clearance for the publication of the prospectus[54] for the listing company.

The Sponsor (for the Electronic Equity Market) is a compulsory intermediary for IPOs nominated by the issuer whose task is to accompany the issuing corporation in fulfilling the listing process obligations. It also facilitates the contacts with analysts and investors, and acts as a guarantee of the issuer's quality profile, for instance the business plan's reliability or the accuracy and completeness of the information provided by the company. Furthermore, the Sponsor has to perform some post-listing functions such as the publishing of at least two financial analyses every year and the organization of meetings between company's management and the financial community. An essential aspect of the Sponsor is that it can be selected only among those who have entered a special list prescribed by law[55].

Similarly to the Sponsor, the Nomad (nominated adviser) is compulsory for entering the Alternative Investment Market, it's nominated by the issuer and it's maintained even after the IPO event. To qualify for this role, an investment bank or financial intermediary has to be included in a special register of Borsa Italiana. The issuing company has a valuable business

[54] Mandatory document to be drawn up and published by the issuer that contains various information about the company's overview, financials, activities and organizational structure, the connected risk factors, the offering type, the intended usage of the proceeds raised etc.
[55] Art. 107 of *Testo Unico Bancario*.

relationship with the appointed Nomad as the latter provides a wide support with the compliance of Italian bourse regulations with the ultimate goal of maximising the benefits for the issuer. Citing a presentation by Borsa Italiana on capital markets for SMEs (Lunghi, 2014 July), the Nomad is the "need of the scale" for its influent assistance. Above all, the Nomad performs the due diligence to evaluate the applicability of the company for admission on AIM Italia, plans and manages the IPO, and assists the quoted firm for the entire period of its stay on the market.

Moving forward, the Specialist is the financial intermediary with market making functions that has to sustain the liquidity of the newly listed equity securities. It has to be appointed by the issuer only if entering the STAR segment of MTA or the Alternative Investment Market.

The Global Coordinator (also called lead manager) is the investment bank that coordinates all the aspects of the IPO process, leads and appoints the members of the consortium of placement (the underwriters). As a consequence, the core duty of the Global Coordinator is the management of the distributive function of shares to potential investors. The remuneration of the activity performed by the investment banks included in the placement syndicate is typically the largest direct cost in an IPO as it take the form of underwriting fees[56].

The financial analysts, even if employees of the aforementioned investment banks inside the placement syndicate, deserve a separate comment. The reason for this comes from the fact that their task is to study the Equity Story of the issuer and present it in the best possible way to the investors trough a document called "equity research". As pointed out in a report by Borsa Italiana on the key elements of a successful IPO (April 2021), the Equity Story is pivotal in displaying a clear picture of the firm going public, highlighting the growth potential and to ensure confidence towards the management team. As a result, the reputation of financial analysts involved in the marketing activities has a fundamental role for the IPO success (Bellavita and Colombo, 2017), therefore the choice of prestigious investment banks is crucial.

The Financial Advisor, although not compulsory, is another key actor involved in the initial public offerings as it directly interfaces with the issuer, the Global Coordinator and the Sponsor throughout the whole listing process. Principally, this actor intervenes during the preliminary phase of the IPO by supporting feasibility assessment of the going public project, providing a first evaluation of the company, helping in selecting the other advisors, supporting the offering

[56] The compensation that underwriters in an IPO receive is also called gross spread because it consists of the difference between the price per share offered to the investors and the price per share the underwriters pay to the issuing company. This difference is indicated in percentage in the contractual agreement and it usually amounts to 3-4% in Europe whereas for the USA it's around 7%.

definition, then assisting the drafting of the prospectus and testing the investor sentiment through pilot fishing[57]. Being a close assistant to the pre-existing shareholders or the entrepreneur of the listing company, the Financial Advisor has to be an independent expert in the fields of both equity capital markets and corporate finance (IR Top Consulting, May 2021).

Moving on, the fiscal advisors take care of all the fiscal due diligence, especially in terms of analysing the company's accounting situation, defining the optimal offering structure for tax matters, assisting throughout the whole listing procedure and providing fiscal opinions. Among these tasks, it's worth noting the handling of going public incentives in the form of tax credits[58] and, in case of a secondary offerings, the direct counselling to pre-existing shareholders as the IPO triggers capital gains taxes[59].

In order to conclude the overview on the main actors involved in initial public offerings, the following players have to be mentioned too: the auditing company, the legal consultants and the media company. The first one has the duty to verify the accuracy and truthfulness of issuer's financial statements and any other accounting document presented to the public market. The legal consultants support the company, the shareholders and the intermediaries in relation to all the legal, contractual and regulatory aspects of the listing process, including the oversee of securities and corporate laws compliance, negotiating the underwriting agreement, providing legal opinion on the various types of disclosures and so forth. Finally, the media company, in collaboration with the listing firm's investor relations office, contribute to the market visibility to raise investors' demand before the actual placement of securities.

3.1.3. Eligibility requirements for quotation

In relation to initial public offerings, there are several governing rules with which firms have to comply: Consolidated Law on Finance[60] (*Testo Unico della Finanza – TUF*), CONSOB Issuers

[57] Financial jargon that indicates a type of pre-marketing of an IPO. It consists in obtaining a first feedback from few reliable investors about the attractiveness of the company that intends to go public.
[58] The Budget Law of 2021, by extending the concession that was firstly introduced in 2018, provides fiscal incentives for SMEs applying for listing. The incentive consists of a tax credit for 50% of the IPO advisory costs, for a maximum amount of €500,000 (Finaldi et al., 2020)
[59] Part of shareholders' profit flows to the tax authorities in the form of capital gains tax: in Italy it currently has a flat rate of 26%. (https://taxsummaries.pwc.com/italy/individual/income-determination)
[60] Legislative Decree No. 58 of 24 February 1998 with subsequent amendments and supplements (the latest dating back to 2nd February of 2021. Referred also as the Italian Financial Act, it contains norms about the prospectus, CONSOB's powers, advertising activities related to the offering and others.

Regulation[61], Italian Stock Exchange Regulation with its implementing instructions[62], Prospectus EU Regulation[63] and Self-Regulation Corporate Governance Code[64]. On top of these, in order to have a profitable IPO, the companies should meet also the substantial requirements that attract investors interest, namely having a successful track record, a strong competitive position, an orientation towards internationalisation, a feasible business plan and the like.

Anyhow, as mentioned in various documents, such as the article by Amoroso and Giordano (2020, March 25th) or the report by Lovells LLP (2010), but also by the Italian bourse itself in its IPO guides, the most important formal regulations to bear in mind when deciding to go public are the eligibility requirements. The most recent and major ones are presented in the following tables. With the intention of highlighting the leading differences, the eligibility requirements will be split between MTA, AIM Italia and their most important subsegments.

Market / Requirements	MTA Electronic Equity Market	STAR MTA segment
Market capitalization[65]	Minimum of €40m	€40m - €1bn (maximum)
Free float[66]	Minimum of 25%	Minimum of 35%
Type of offering allowed	Both institutional and retail	Both institutional and retail
Preparation of financial statements	International accounting standards	International accounting standards
Audited financial statements	3	3

[61] CONSOB Regulation No. 11971 of 14 May 1999 and subsequent amendments (the latest dating back to 15th December 2020. It essentially prescribe how to implement the provisions set in the Consolidate Law on Finance.
[62] The latest version of "rules of the markets organised and managed by Borsa Italiana" and the "accompanying instructions" date back to 3rd August 2021, with subsequent amendments to these too. They most notably set out the admission requirements, listing procedure, mandatory financial intermediaries and their tasks, trading halt special cases and the participation of market operators.
[63] EU Regulation n. 2017/1129 that became effective on 21st July 2019. Above all, it harmonised and simplified the norms about prospectus publications.
[64] With its last update from January 2020, it lays down the principles that listed firms should follow in terms of governance structure. A part from the specific case of STAR segment, it's not mandatory.
[65] Market capitalisation as the expected value at the time when trading starts.
[66] The requirement of a minimum free float, i.e. the number of shares issued by the company (or sold by pre-existing shareholders) and available for trading as a proportion to the total amount of shares, could be partially waived by Borsa Italiana if this doesn't affect the normal functioning of the market.

Other documents	Prospectus / Management Control System / Business Plan	Prospectus / Management Control System / Business Plan
Investor relations	Recommended	Mandatory
Independent members in the BoD	General provisions from the Consolidate Law on Finance	Mandatory
Main advisor/s	Sponsor/Global Coordinator	Sponsor/Global Coordinator

Table 4 - Formal requirements at IPO for the regulated markets. Source: Borsa Italiana.

The key differences between the whole MTA and its main subsegment regard the market capitalization (exceeding the €1bn cap will shift a company into the blue chips category), the minimum amount of free float (more exigent in the STAR) and the Board of Directors composition (for the STAR segment, depending on the size of the BoD, there is a specific minimum number of independent members that varies from 2 to 4).

Moving on to the obligations that corporations must abide after the IPO on a recurrent basis:

Market / Requirements	**MTA** **Electronic Equity Market**	**STAR** **MTA segment**
Reporting	Semi-annual and annual	Quarterly, semi-annual and annual (with tighter deadlines)
Corporate Governance Code[67]	Should comply, otherwise has to explain	Code partially mandatory, for the remaining part, same conditions as whole MTA
Specialist advisor	Discretionary	Mandatory
Disclosures	Price sensitive information and extraordinary operations	Price sensitive information and extraordinary operations

Table 5 – Formal ongoing requirements for the regulated markets. Source: Borsa Italiana.

Again, there are some key differences among the regulated market, namely the more demanding requirements for the STAR segment: the publications of reports is more frequent and with tighter deadlines for a goal of transparency, part of the Corporate Governance Code has actually to be compulsorily adhered to and the need for a Specialist advisor is not discretionary.

[67] The "should comply, otherwise has to explain" clause means that, in case of non-compliance with the Corporate Governance Code, the companies have to explain the reason why they do not comply.

Turning now to the Alternative Investment Market and its segment AIM Pro Italia, it must be recalled that they have far fewer qualifications as a result of being a multilateral trading facility, with the main final goal of incentivising SMEs listings. Anyhow, there are some distinctive requirements that only companies quoting in this market segments have to comply with.

Market / Requirements	AIM Italia	AIM PRO Italia Professional segment
Market capitalisation	No minimum	No minimum
Free float[68]	Minimum of 10%	Minimum of 10%
Type of offering allowed	Must prefer institutional, retail allowed	Offering not necessary
Preparation of financial statements	Either Italian, international or American	Either Italian, international or American
Audited financial statements	1 (if any)	1 (if any)
Other documents	Admission Document[69]	Admission Document
Investor relations	Mandatory	Not required
Independent members in the BoD	At least 1	Simple BoD
Main advisor/s	Nomad	Nomad

Table 6 – Formal requirements at IPO for the non-regulated markets. Source: Borsa Italiana

The diversity between these two consist substantially in the freer professional segment due to its even wider flexibility (especially in terms of flotation), the possibility to postpone the offering, the dedicated investor relations office is not required and the basic organizational rules.

As done before, the following table illustrates the recurring duties, but for firms quoting on the Alternative Investment Market:

[68] The minimum free float in AIM Italia has to be divided among at least 5 institutional investors or 10 investors (but still at least 2 institutional ones). In the specific case of the professional segment, Borsa Italiana can admit a lower free float but the trading would be immediately suspended at the IPO, with the expectation of meeting the requirement within 2 years.

[69] The admission document for the Alternative Investment Market is essentially a lighter version of a prospectus, it's drafted in accordance to AIM Italia issuers regulation and it doesn't need the review or approval by CONSOB.

Market / Requirements	AIM Italia	AIM PRO Italia Professional segment
Reporting	Semi-annual and annual (with loose deadlines)	Semi-annual and annual (with loose deadlines)
Corporate Governance Code	Discretionary compliance	Discretionary compliance
Specialist advisor	Mandatory	Not required
Disclosures	Price sensitive information and extraordinary operations	Price sensitive information and extraordinary operations

Table 7 - Formal ongoing requirements for the non-regulated markets. Source: Borsa Italiana

With regard to recurring requirements after the IPO for AIM Italia and AIM Pro Italia, there are no major differences to be pointed out, except the binding designation of a specialist advisor for the first one contrary to the professional segment for which this condition is not foreseen.

Nevertheless, having covered all this, some overall distinctions between the regulated and unregulated market have to be noted: in particular the minimum capitalisation required for the Electronic Equity Market and not for the second market for SMEs, the level of free float substantially higher in the regulated market, the allowed type of offering (if any) that is constrained towards institutional investors for the Alternative Investment Market, the larger bureaucratic load for the MTA, the much more relaxed conditions on corporate and reporting disclosures for AIM Italia.

As expected, the main market (MTA) has more stringent conditions both at the IPO and afterwards, while Borsa Italiana's management of its second market is leaner, thus granting AIM Italia also a shortened IPO process duration. To sum up, if a company is eligible to go public in more than one market, it has to carefully evaluate together with the advisors all the requirements and implications before making the final decision.

3.1.4. Listing process

At first glance the IPO may seem a complicated process, and to a large extent it is, but Borsa Italiana provides consultancy services [70] and guides useful for all the involved parties: understanding the necessary steps is decisive for the success of the listing in the interest of all

[70] In particular, Borsa Italiana offers an online IPO masterclass and pre-listing assessment for those companies interested in entering the public equity market.

the stakeholders, from the company owners' perspective to the investors, including the advisors and the stock exchange itself.

That being sad, the listing process can be fundamentally split in six steps: the preliminary phase, the due diligence, the admission phase, the premarketing, the actual placement and finally going public. The procedure presented hereinafter refers to the bookbuilding[71] IPO pricing method for the reason that it's the most used[72].

The preliminary phase consists first of all in the company's self-assessment of the strategic, economic and financial rationale of the going public decision (Lovells LLP, 2010). Once decided to pursue the initial public offering, the next activity should be an in-depth preparation that comprises the strategic and competitive positioning definition, the drafting of the business plan and the financial information, a first pre-money valuation of the company, the revision of corporate governance structure and the setting up of the internal team that will take care of the listing process. Moreover, in this preliminary phase the firm has to frame the offering structure and to select all the mandatory advisors. The Italian bourse strongly suggests to not neglect the preparation phase for the reason that it represents the ground on which the final outcome depends, starting from the first rough draft of the equity story[73].

Moving forward to the next step, the due diligence comprehends financial, strategic, legal and fiscal analyses to verify the issuer's compliance with the admission requirements. In this phase the company and its advisory team start preparing the prospectus, the memorandum on the internal management control system, the equity story and any other compulsory document. Meanwhile the Board of Directors meeting, after having discussed the offering structure, should officially approve the listing project. In the specific case of AIM Italia, the due diligence step mainly concerns the preparation of the admission document as a formal requirement and the equity story.

[71] Bookbuilding refers to the price setting mechanism in which the underwriters contact institutional investors to demand the submission of bids (price and quantity of shares interested to buy) in relation to the securities offered. The Global Coordinator collects this feedback in a "book" that serves, in the subsequent phase, for the determination of the securities' final price and the allotment decision among investors who made bids.

[72] There are other potential methods which can be employed: the principal ones are (Dutch) auction process and fixed price, but they are scarcely used already at the worldwide level.

[73] This brief marketing document regarding the profile of the issuing company is subsequently distributed to attract investors' demand.

The third step is the admission process, i.e. the IPO prospectus formal filing and the application for listing admission submitted to CONSOB and Borsa Italiana. For companies quoting on AIM Italia, it's only necessary to submit the admission document as a notice to Borsa Italiana.

While waiting for the official admission response, the company presents itself to the financial analysts so that they can elaborate some research reports: the publication of the latter initiates the black-out period where no new reports can be published. The pre-marketing phase now begins as the drafted equity story is employed as a presentation tool towards a selected group of professional investors: order taking and pricing take place as their feedback is crucial in defining the valuation range of the issuer's shares.

Once the clearance to proceed is obtained, the placement phase starts: marketing and bookbuilding. Through a refined equity story and the distribution of the approved prospectus (or admission document), the placement syndicate collects institutional bids through a "roadshow" of issuer's management presentations. In the meantime, when allowed and if desired by the firms, the acceptance period for the retail investors goes ahead. On the basis of all these orders, the final price and the allotment of shares are set. It's worth noting that within AIM Italia the pre-IPO phase is completed much earlier as the previous meetings with investors and orders taking are sufficient to complete the operation of price setting and allotment.

The final step in the IPO process is the delivering of shares, against their payment, on the basis of the requests received by investor and the preferred allotment. The day of the start of trading sets officially the company as public and the stabilization[74] by underwriters take place in order to sustain the aftermarket issuer's share price.

As many activities can be executed while overlapping, the estimated total length of time for an IPO process usually varies between four and six months[75] (Capelli, 2019): more precisely 6-8 moths for MTA and 3-4 months for AIM Italia. A summarised overview of the whole process is shown below.

[74] Stabilization is a form of temporary market manipulation, allowed by CONSOB, that aims at limiting the price fluctuations of securities on the secondary market immediately after the IPO. This activity consists in underwriters making bids in case of low post-IPO demand or selling additional shares at the offering price in case public demand exceeds expectations. The stabilization mechanism is performed by granting the Global Coordinator the so called "greenshoe" option with over-allotment.

[75] This excludes, however, the very first step when going public, namely the whole preparation phase at the internal level of the corporation, that can take even a couple of years according to Borsa Italiana.

		1° month	2° month	3° month	4° month	5°moth	6° month
Pre-IPO	Feasibility study	continuous					
	Advisors selection						
	Preliminary valuation						
Due diligence	DD financial, legal etc.						
	Documents preparation						
	BoD approval						
Admission	Filing in CONSOB and/or Borsa Italiana						
Pre-marketing	Research reports						
	Investors approach						
Placement	Regulatory clearance						
	Roadshow and bookbuilding						
	Final price & allotment						
Going public	Shares delivery						
	Start trading						

Table 8 – The phases of the listing process. Source: own elaboration based on Borsa Italiana website, Lovells LLP (2010), Bellavita and Colombo (2017) and Amoroso and Giordano (2020).

Although the first public announcement by the company intent on pursuing an IPO and the last phase of going public are the ones more likely to make the news, the most significant activities for the listing success are actually the preliminary analyses and the marketing steps. Moreover, it's noticeable from the graph that the task that takes, or more appropriately should take, the most time is the due diligence: the conditional here is mandatory because a company may be inclined to shorten the effort dedicated to DD with the aim to limit the costs and the time to enter the public equity market, but this can ruin the efficacy of the subsequent activities.

3.2. CHARACTERISTICS OF THE ITALIAN PUBLIC EQUITY MARKET

3.2.1. Historical evolution of IPO activity

The current state of listing activity in Italy is the result of the IPO's historical evolution that followed global hot issue periods, local trends and country-specific characteristics. As a summary of the initial public offerings by Italian companies, the following graph provides an overview from 1995 to 2018.

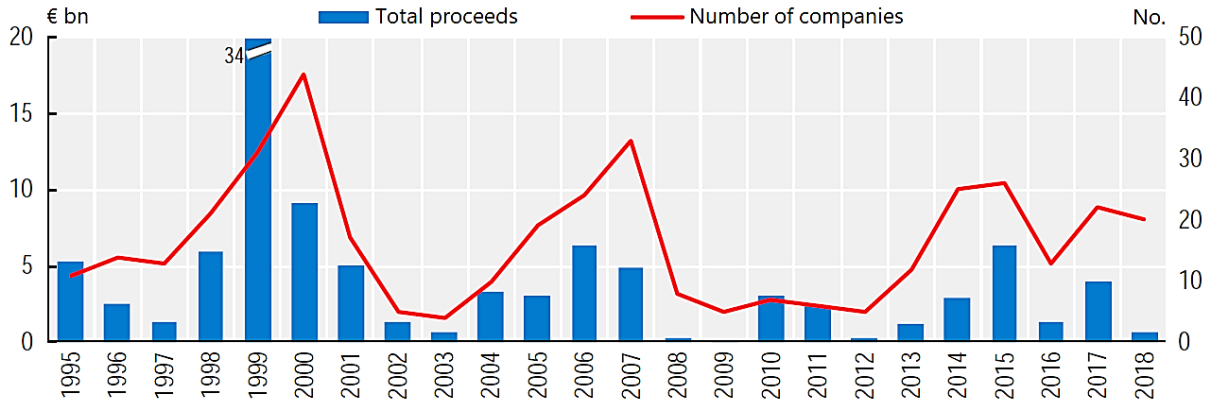

Figure 1 - Initial public offerings by Italian companies (excluding SPACs). Source: OECD Capital Market Review Italy 2020.

It's evident that the distribution of the Italian IPO activity has not been uniform over time. In particular, the highest level of activity has been reached in the late 1990s (with the peak in 1999-2000), both in terms of total proceeds raised and number of companies that went public, mainly because of the privatisation process of previously state-owned companies that took place in those years (just to name a few: Eni in 1996, Telecom Italia in 1997, BNL[76] in 1998 and Enel in 1999). When also the euphoria of the dot-com bubble ended, the number of IPOs declined sharply and experienced a period of almost complete inactivity in 2002-2003.

The second major wave of companies going public occurred in the mid 2000s when various firms took advantage of the favourable business cycle to quote (from fashion-focused corporations such as Safilo Group in 2005 to vehicle producers like Piaggio in 2006). In the immediate following years, the global financial crisis and, later on, the European sovereign crisis abruptly curtailed again the initial public offering activity in Italy.

The amount of listings started to recover properly from 2013 with a fluctuating pattern from there on: more precisely the years 2015 and 2017 have seen a vibrant going public activity thanks to several SMEs entering AIM Italia but also some large companies entering the MTA (such as OVS and Pirelli or Poste Italiane's privatisation). On the other hand, 2016 and 2018 have been quite idle years, especially in terms of proceeds raised due to very few larger IPOs taking place.

Digging into the listing's volatility of the last decade, it's possible to discern that the revival of IPOs from 2013 onwards arose thanks to a combination of various factors: for instance the privatisation policy firstly announced by the Letta government in 2013, the development of

[76] BNL - *Banca Nazionale del Lavoro*, a significant Italian banking group, now part of the French group BNP Paribas.

AIM Italia that attracted new SMEs towards the Milan Stock Exchange, the creation in 2012 of the ELITE[77] programme as a guiding tool for companies and the initial diffusion of SPAC usage. Furthermore, through the Italian Law 116/2014, the regulators strengthened the issuance of dual class shares (Borsa Italiana, 2014 October 24th): by issuing multiple voting shares, companies can increase their liquidity while the main shareholders are able to retain a leading role in the governance structure, thus overcoming the possible unwillingness of owners to list their company because of ownership dilution issues. In addition to all these initiatives, a significant external driver positively influenced the IPO activity in Italy, namely the tightening of credit standards after the European debt crisis that forced companies to look for alternative financing, including tapping the public equity market (Finaldi et al., 2020).

Moving forward to the most recent period of time, the unsteadiness of listings is still evident: 2019 has been a record year for the Italian stock exchange as 34 corporations quoted (excluding SPACs) with a total amount of proceeds raised[78] close to €2.5bn, whereas 2020 resulted in a complex year due to the global pandemic-induced economic crisis that brough to Borsa Italiana only 22 IPOs (with one of the lowest amounts of total proceeds raised, i.e. €0.6bn). The year 2021 has been recovering part of the missing IPOs of 2020 since, up to the end of November, there have been 34 listings (excluding SPACs and investment funds) with the total collected capital amounting to €1.8bn.

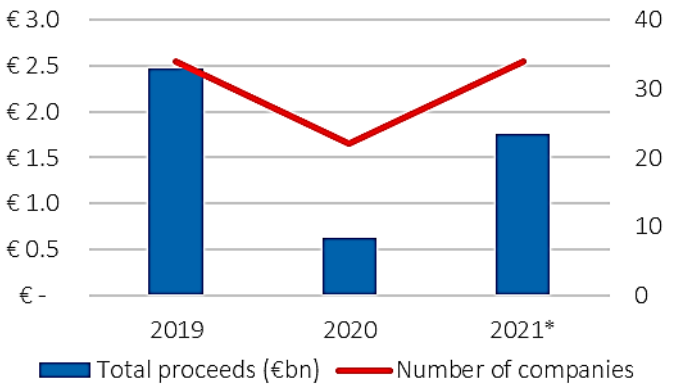

Figure 2 - Initial public offerings by Italian companies (excluding SPACs). Source: Borsa Italiana, own elaboration.
*data of 2021 up to November 30th

The IPO activity in the most recent years have also been influeced by several elements: from the regulatory side, the fiscal incentives (a tax credit for the listing costs) introduced by the 2018 budget law have pushed the going public decision of SMEs (Borsa Italiana, 2018 January

[77] ELITE is Italian Bourse's programme for the training and tutoring of companies that want to undertake a path of organisational and managerial development. It acts as a private maker that connects companies to different sources of capital to accelerate their growth, including an IPO (Lunghi, 2014 July). At the end of November 2021, the ELITE network surpassed the 1000 companies mark (Teleborsa, 2021)

[78] The total amount of proceeds corresponds to the sum of collected capital in the placement phase of the IPO as reported by Borsa Italiana, therefore without considering the subsequent potential application of the greenshoe option. This as a prudential measure of the going public success.

19th) while the tax exemptions for long-term individual savings plan[79] introduced with the budget law 2017 have pushed the demand of Italian stocks from the investors' side (Finaldi et al., 2020). Moreover, the norms provided by the EU Regulation n. 2017/1129 have simplified the requirements for SMEs regarding the prospectus and the overall administrative burden (Plattner, 2020 January 10th). On the other side, the negative factors that suppressed the listings are market volatility and national political uncertainty (Amoroso and Giordano, 2020 March 25th). Furthermore, the Covid-19 economic crisis limited significantly the IPOs in 2020, even though the demand from the investors remained strong for AIM quotations (Meneghello, 2020 November 3rd). The recovered appeal of listings manifested in 2021 is mainly due to IPOs that have been postponed from the previous year, but also for the strong liquidity circulating in the market (Festa, 2021 October 12th). However, it must be noted that these latest positive signs are related to quotations of SMEs on AIM Italia, in fact the large Italian companies have showed a preference to go public in foreign equity markets, as in the case of Stevanato Group, or even to delist, for example Carraro (Galvagni, 2021 July 20th).

3.2.2. Comparison with the main European stock exchanges

At the end of all these ups and downs, one question naturally arises: how is the Italian floating activity actually doing? In order to assess whether the listings on the Milan Stock Exchange are going well or not, a comparison analysis with its main European peers comes in handy: the countries used as reference are Germany, France, Spain and United Kingdom.

The first aspect worth mentioning is that the amount of proceeds raised in IPOs by non-financial corporations[80] has been in decline in the last two decades, not only in Italy but also in the other advanced European economies and in the USA (Isaksson et al., 2020): the filings in Borsa Italiana went from averaging €8bn yearly in the 1995-2000 period to below €2bn per year on average after the 2008. Nevertheless, the Italian quotations in terms of units of companies (NFC) remained more sustained: the annual mean of the 1995-2000 wave is 22 IPOs, for the 2001-2007 period it's 16 and from 2008 onwards the yearly average has been 17 (with an increasing trend in the latest years).

[79] PIR – *Piani individuali di risparmio*. The law provides tax exemptions, such as no capital gain taxes, for investments in financial instruments issued by Italian companies and held for a minimum amount of years, thus encouraging investment funds with a focus on the Italian stock market.
[80] A corporation is defined as non-financial (NFC) if its principal activity is the production of goods and non-financial services, Non-financial corporations are used as reference point because they're the most representative of the real economy.

Thanks to the resurgence of IPOs since 2013, in particular in terms of quotations by non-financial growth companies (Isaksson et al., 2020), and to the proportionally contained amount of delistings, Borsa Italiana has seen a significant upswing in the number of quoted firms, well surpassing the results of Germany, France, UK or Spain. The following graph provides a clearer representation of this evolution in comparison with the major stock markets in Europe.

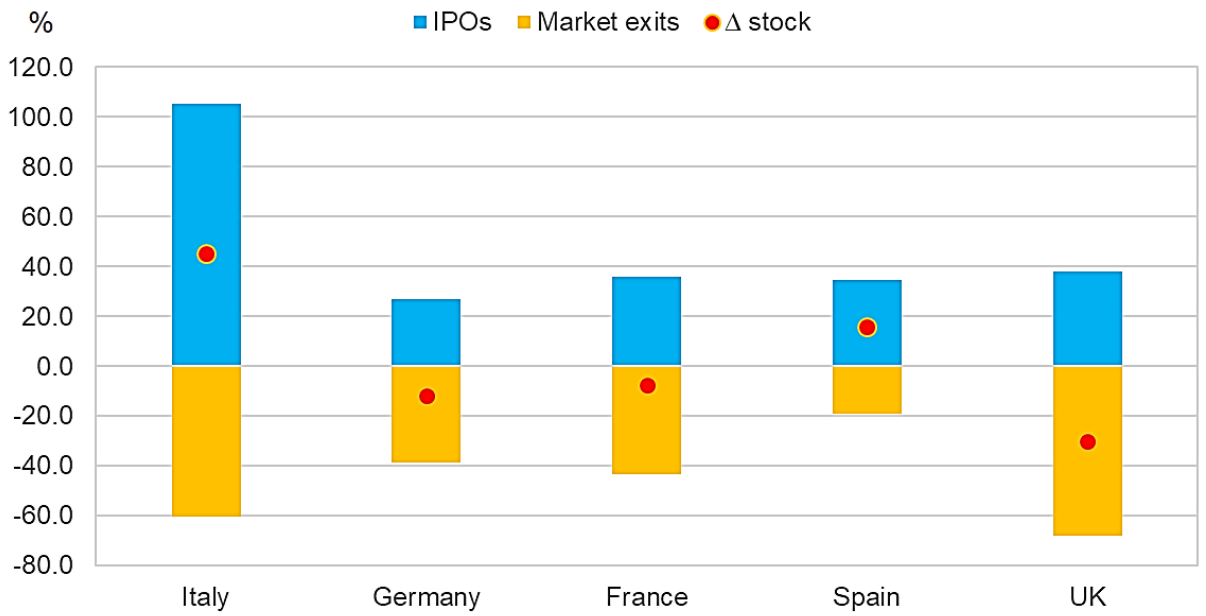

Figure 3 - Listings and delistings in the 2006-2018 period as a percentage of the amount of non-financial corporations listed in 2005. Source: Finaldi et al., 2020.

While Germany, France and the UK experienced a downward trend, the amount of quoted NFC increased significantly in Spain and even more in Italy. The number of non-financial corporations that went public in Italy well exceeded the market exits[81], thus bringing a long-term tendency for Borsa Italiana to see an expansion of total quoted firms: at the end of November 2021, there were 327 non-financial corporations listed on the Milan Stock Exchange (Aida - BvD) while at the end of 2005 they were below the 200 mark (Finaldi et al., 2020).

The increased decisions by Italian companies to float on the stock exchange in the latest years has been particularly stimulated by the fiscal incentives (mainly the PIR – *Piani individuali di risparmio* introduced in 2017 and tax credits for SMEs to cover the IPO costs firstly announced in 2018), whereas the many delistings have been influenced by the peculiar Italian trend of

[81] A market exit, officially called as a delisting, consists in the withdrawal of the company from stock exchange trading. This can happen from voluntary reasons such as merges (a quite recent famous case is the combination of Luxottica and Essilor), acquisitions from private equity firms and own desire, or for unavoidable reasons such as non-compliance with stock exchange rules and default.

acquisitions of listed companies with the goal of taking them out from the market instead of just having a change of control[82] (Morelli, 2021 July 9th).

In the aforementioned proportional comparison with the European counterparts, the listing activity in the Milan Stock Exchange looks exceptionally vibrant. However, when the analysis is deepened, new different insights emerge.

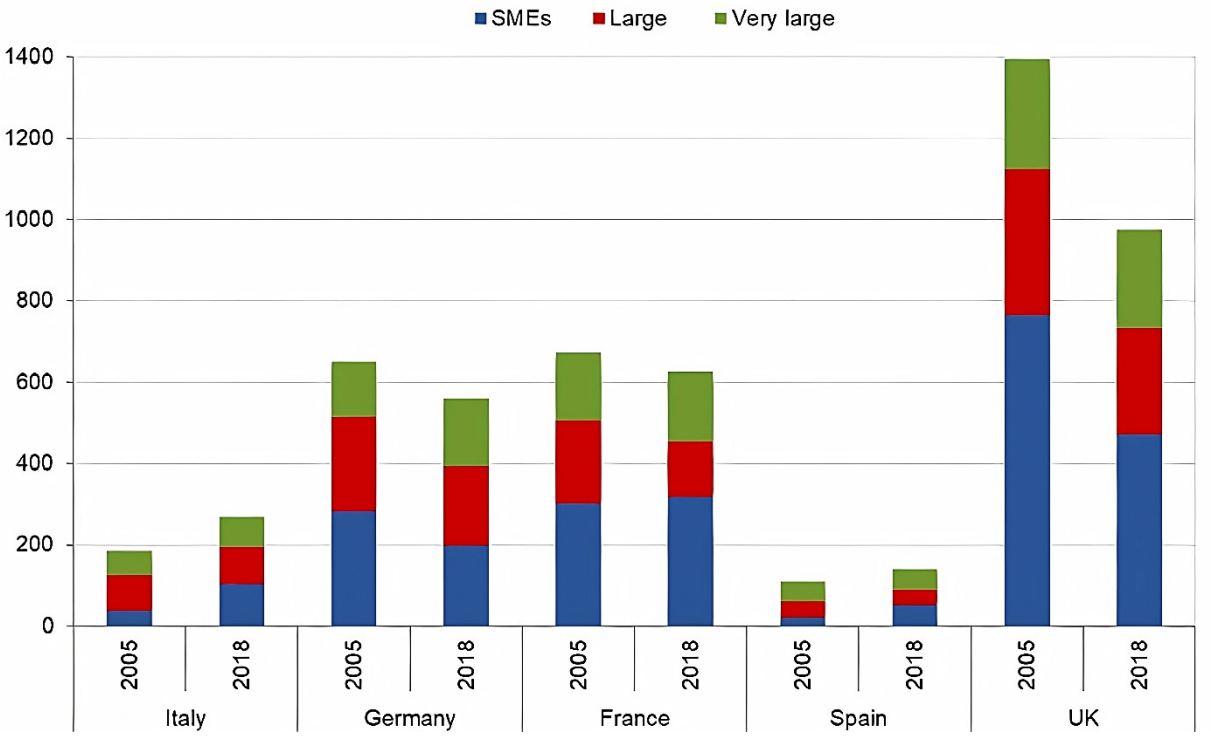

Figure 4 - Units of listed non-financial corporations, split by size, in the main EU countries. Source: Finaldi et al. (2020).

Despite the positive sign of an increase in quoted firms on Borsa Italiana, it must be noted that the IPOs that took place in Italy largely concerned SMEs and almost all those enterprises that tapped the public equity market did it through AIM Italia. At the same time, France and Spain received an inflow of large companies while the proportion of public SMEs declined in the in Germany and UK. The consequence of this Italian peculiarity is that the average size of listed corporations remains low and is even decreasing: 2005 registered a mean of about €2.7bn in total assets, in 2018 it was about €2.6bn and in 2020 it was €1.8bn (Aida – BvD). Meanwhile France, Germany and Spain bumped up close to the €5bn average in 2018 (Finaldi et al., 2020).

[82] This phenomenon has become especially pronounced in recent years due to the abundance of liquidity available to private equity firms that are increasingly looking for new deal opportunities, including considering listed companies. It must also be pointed that the market exit trend since around 2000 occurred in many of the world's advanced economies, most notably in the USA.

Moving forward, another interesting trait is that the remarkable growth of the Milan Stock Exchange, registered from 2013 onwards, significantly derives from the fact that the Italian public equity market is still lagging behind in terms of size in comparison to the European counterparts, thus naturally providing greater prospects for the expansion of listing activity. Indeed, the market capitalisation to GDP ratio[83] stood at 36.7% for Italy at the end of 2020 whereas Germany stood at 55.6%, France at 107.6%, Spain at 84.5% and UK at 100.0% (CEIC data). It's evident that, although Borsa Italiana seems on a positive trend to catch up its European peers, the current size of the Italian stock market remains quite low.

It's important to note that the aforementioned values do not explain the Italian gap properly as the market cap to GDP ratio doesn't provide information whether the differences with the other European countries stem from a limited amount of publicity listed corporations or their smaller average size, or both. Based on the comparison analysis[84] of the report n°555 of Bank of Italy regarding non-financial corporations, the following graph is clarifying.

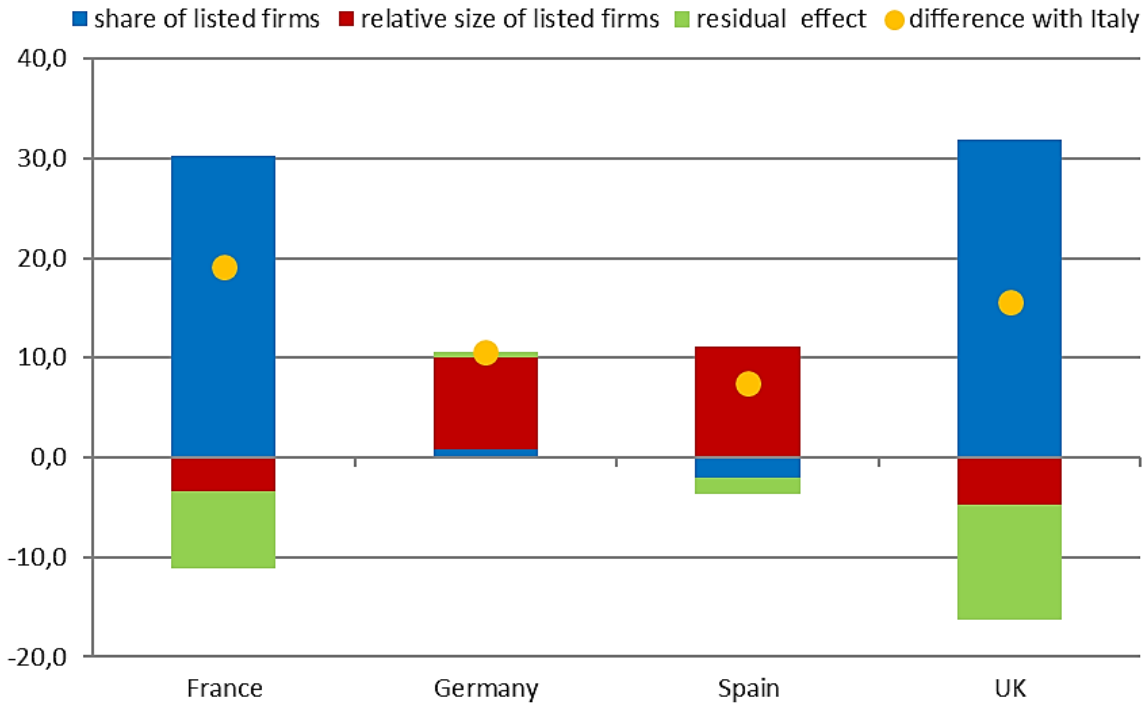

Figure 5 - Determinants of the difference in size of Italy's stock market (values as a percentage difference in relation to Italy, data from 2016). Source: Finaldi et al., 2020.

[83] It's the most utilised indicator to check a stock market size. The ratio is computed by taking the total value of all publicly-traded stocks in a country and dividing it the nominal gross domestic product of the reference year.

[84] The market cap to GDP multiple has been replaced with another ratio: revenues of listed firms on revenues of all firms, further broke down in number of companies and average revenues. This served the purpose of comparing quoted and unquoted firms (for which there is no information about market capitalisation). This ratio has been checked to maintain the significance of cross-country differences.

In relation to France and UK, the difference in size of the Italian stock exchange comes in large part from its lower share of listed firms (computed as units of listed firms on total number of firms). This is linked to the fact that companies have a lower going public propensity on Borsa Italiana (meaning that firms receive or perceive to receive fewer benefits from the listing) or have to confront more difficulties to float (such as listing costs, bureaucratic process, disclosure regulations and other obstacles). Furthermore, the distribution of corporations across industries and size classes explains only partially the smaller share of listed firms in Italy, implying that the difference with France and UK stems more from a propensity effect rather than a structural factor.

When compared to Germany and Spain, the limited size of the stock market in Italy is instead mainly attributable to the lower relative average size of listed firms (computed as average revenues of listed firms on average revenues of all firms). In this case, the Italian gap is explained by the smaller size of companies quoted on Borsa Italiana (and not by a large average size of unlisted companies): the Milan Stock Exchange, as seen also in figure 4, continues to be lacking mainly in very large companies.

Estimating an hypothetical size of the Italian stock market by simulating that Borsa Italiana reaches the same share of listed firms (as in France and UK) and the same average size of quoted enterprises (as in Germany and Spain), it shows that the Italian gap with its European counterparts is hard to fill (Finaldi et al., 2020). This is essentially due to the structural features of the Italian economy: the size distribution of companies that is highly concentrated in the SME group (just above 99% of the total number of enterprises, based on the latest data from 2020, Aida – BvD) doesn't allow to expand easily the stock market size. Moreover, there are still just a handful of very large unlisted firms that could significantly lift the average size listed firms.

To summarise in a nutshell, in the latest years the public equity market in Italy has been expanding and has not yet reached its full potential, but its current gap with the other European countries can't be closed rapidly because of the intrinsic characteristics of the Italian economy.

3.2.3. Selected key features of Italian companies

In the interest of a more thorough understanding of the specific situation of Italy, some additional features of the Italian companies have to be pointed out.

As mentioned previously, the SMEs represent the vast majority of total firms in terms of units: this characteristic is particularly pronounced in the Italian case, but it's in line with the other major European economies (expect Germany which tends to have larger firms).

Country	Micro	Small	Medium	Large
Italy	95.0%	4.4%	0.5%	0.1%
Germany	82.4%	14.7%	2.4%	0.5%
France	95.1%	4.1%	0.7%	0.1%
Spain	94.8%	4.5%	0.6%	0.1%

Table 9 – Distribution of units of non-financial companies based on their size (number of employees) among European countries, data at 2016. Source: Isaksson et al. (2020).

In addition, Italian companies exhibit notably a low productivity growth in terms of value added per hour worked[85], which has stayed essentially flat since 1995 (Istat data). One of the main reasons behind this phenomenon is the low level of R&D investments in relation to the GDP (Pistrin, 2020), which at the end of 2019 stood at 1.47% for Italy while the EU average was 2.12% (OECD data). Although Italy reports a significant proportion (23% in 2016) of high-growth firms[86], trait normally linked to high R&D investments and innovativeness of the firm itself (Audretsch et al., 2014), they are still too few so that they're offset by the large number of small low-productive firms (Isaksson et al., 2020).

Another peculiarity of Italian corporations worth mentioning regards their heavy reliance on bank credit as the main tool for financing their activities: the incidence of bank loans on total financial debt reached 60% in 2019, the highest level in the euro area and almost twice as high as in the US and UK (Visco, 2019 February 19th). This situation makes Italy more vulnerable to financial crises because, when one strikes, bank-based economies tend to suffer more (Gambacorta et al., 2014).

Moving on, in relation to the ownership and management of corporations in Italy, a distinctive characteristic is the high prevalence of family firms which account for 65% of the total[87]

[85] Value added per hour worked is a macroeconomic indicator measured as the difference between the total value of output and the total value of intermediate consumption, divided by the total hours worked. The resulting value expresses one of the most used proxies of labour productivity. It depends only partially on the capabilities of workers as it's influenced considerably also by capital, technical, organisational efficiency and others.

[86] Firms are defined as high-growth when they report three-year annualised sales growth over 10%.

[87] Based on a sample of 17.984 firms with yearly revenues above €20m at the end of 2018. Corporations were considered to be family businesses if they are at least 50% owned by one or two families (if unlisted) and at least 25% owned (if listed), or by a legal entity that is itself related to one of the two situations just described.

(Corbetta and Quarato, 2020). The Italian civil code[88] defines family firms essentially as businesses where one or more of the entrepreneur's family members work continuously within the family business. In return to their contribution to the firm, the family members are entitled to economic and decision-making rights, for instance financial support or intervention in extraordinary management decisions (such as an IPO). Moreover, the entrepreneur (that frequently coincides with the company's founder) has ordinarily a sizable stake in the ownership of the firm. Even when inspecting the totality of companies, the concentration of ownership in Italian corporations is marked: the average quota of the main shareholder is 57% (being an individual or a family in three quarters of cases) and it reaches 81% when considering the combined quota of the two main shareholders (Minetti et al., 2012). The consequence of all these aspects is a direct and tight relationship between company's performance and owners' wellbeing, both in terms of income and wealth. Depending of the specific case of each company, when evaluating whether to go public or not, the owners' perspective might become more relevant that the interest of the firm itself.

Focusing on the listed companies, the picture is somewhat different in comparison to the totality of companies, as one would expect. First of all, the size distribution of quoted firms in Italy leans towards the larger ones, the same as in the other major European stock markets.

Size \ Country	Italy	Germany	France	Spain
SME	38.5%	33.6%	50.2%	35.4%
Large	61.5%	66.4%	49.8%	64.6%

Table 10 - Distribution of units of listed non-financial corporations based on their size among European stock markets, data at 2018. Source: Finaldi et al., 2020.

The underlying rationale of this circumstance is that bigger corporations can afford and benefit more from going public. Furthermore, the smaller firms that decide to quote may experience a period of significant growth that can easily shift them to the upper size class (as growth is one of the main goals to go public). In any case, as previously mentioned, the Milan Stock Exchange has been receiving a particularly strong inflow of SMEs through AIM Italia in the last eight years, especially thanks to tax incentives targeted to them, so the proportions reported above are expected to change considerably.

Moving forward to the ownership of listed firms, it emerges to be quite concentrated, but less than the unlisted ones: the vast majority of companies quoted on Borsa Italiana are controlled

[88] Art. 230-bis

by one[89] or more shareholders[90], these made up 72% of the total market capitalisation at the end of 2019 (Linciano et al,, 2020). On average, the largest shareholders holds on average 47.8% of the ordinary shares or 31.9% if the mean is weighted by market cap, whereas the sum of the smaller shareholders' stakes[91] is 40% (data at 2019). Although the ownership concentration in Italy is very high, it must be noted that this trait is found also in Germany, France and Spain (Isaksson et al., 2020). Another remarkable fact among listed firms is that the ultimate controlling agent[92] is a family in 64% of cases, 26% when weighting by the market capitation (Linciano et al,, 2020), and that the average stake of strategic individuals[93] is 11% (Isaksson et al., 2020). It's also worth mentioning that there's a downward trend in terms of issuance of non-voting shares, but the usage of loyalty shares[94] is increasing (Linciano et al,, 2020), meaning that ownership and control is drifting closer together. The implication of all the aforementioned aspects is that the owners' perspective is prominent in many corporations quoted on the Milan Stock Exchange, this because families or individuals benefit from their stake for generating income and building wealth. However, differently from those who own unlisted firms, their holdings are more liquid as shares are listed.

3.2.4. Development measures for the Italian stock market

A highly developed and open financial market, including the stock market, is a known tool for enabling economic growth because it facilitates the efficient allocation of capital by better connecting savings to investments and by widening the means of diversification (Bekaert and Harvey, 1998). Furthermore, market-oriented economies appear to be more resilient to business cycle downturns associated with financial crises (Gambacorta et al., 2014). Nevertheless, as shown for some European countries, the stock market needs to be liquid and highly active in order to have a positive causality on economic growth (Boubakari and Jin, 2010). Since the development of Borsa Italiana stills falls behind its major European counterparts and Italian companies still strongly rely on bank credit, the current state of the Italian public equity market calls for an intervention by policy makers (Visco, 2019 February 19th).

[89] A major shareholder is considered one that has a stake of at least 50% of the capital (majority control) or one that has a significant stake of at least 30% of the capital (referred as weak control) but still has the control due the vast dispersion of the remaining shares.
[90] No single shareholder has control, but a collation of shareholders through a shareholders' agreement.
[91] Shareholders with less than 2% each.
[92] Net of intermediate corporations holding stakes of the listed firm.
[93] A strategic individual is typically a physical person that owns more than 5% of the capital. Still weighted by market capitalisation in this case.
[94] Loyalty shares provide a "bonus" to the loyal shareholder who continuously holds the share for an extended period of time. After this period, he will automatically be awarded a maximum of two votes.

Besides the general outlook, the current business cycle of the Italian economy requires a series of actions to support the post-crisis recovery path. One of these is to sustain the recapitalisation of corporations so that they have an adequate amount of funding for reaching a critical scale and invest more, thus also achieving the strategic objectives set out in the Recovery Plan[95]. This can be accomplished more easily with a well-developed public equity market, so the current state of the Italian Stock Exchange again calls for intervention by policy makers to support its expansion.

Measures aimed at fostering the growth of the stock market can take several forms: they can be directed at stimulating the IPOs or encouraging existing listed firms to remain public, they can focus on the demand side of the market (firms seeking to publicly issue shares) or on the supply side (investors seeking investment opportunities) and many more. Below are suggested interventions that should be the most significant for the Italian case.

Based on the comparison with the main European stock exchanges, the best choice to reduce the Italian gap in terms of stock market size is by further enhancing the propensity and reducing the obstacles of SMEs to go public. This could be done by enlarging the fiscal incentives, like tax credits for IPO listing costs or temporary corporate income tax reductions, since in the past they showed to stimulate companies quotations while avoiding reducing government revenues (Giudici et al., 2003). Policy makers may also consider whether to provide fiscal incentives directly addressed to pre-existing shareholders, for instance a capital gains tax rate cut for private holders, that could encourage more owners to liquidate their stake. Regarding the bureaucratic procedures, despite some progress has been made such as the European harmonisation of prospectuses, they should be streamlined because there is still some overlapping in the IPO process in terms of document preparation (COMI, 2021 May).

Moving on, some supportive measures could be taken toward the investors' interest too. In particular, it's worth mentioning the continuous significant growth of bank deposits by Italian households[96] that just sit there unproductively. On the other side, there are many SMEs in need of recapitalisation to relaunch their business activities. A possible solution could be encouraging this dormant capital of private savers to be invested in firms through stock

[95] The Recovery Plan (*Piano Nazionale di Ripresa e Resilienza – PNRR*) outlines the measures that Italy will have to adopt in order to implement the Recovery Fund (Next generation EU programme). The latter is a special EU fund aimed at financing the economic recovery of the member states through the issuance of European government bonds.

[96] It must be noted that recently this trend has also been influenced by the uncertainty caused by the pandemic-induced economic crisis that lead to a reduction in consumption and investments.

exchange listings by offering a tax deduction based on the amount invested at the IPO (Graziani, 2021 March 3rd). Something similar is already offered by the PIR (*piani individuali di risparmio*), but they require a very long-term commitment (a minimum holding of 5 years).

Additional corrective actions should address also the decline in the number of quoted firm on the regulated market (MTA) of Borsa Italiana: by leveraging the listings on AIM Italia, one tool can be creating a path for a smoot transition towards the main market for companies that satisfy predefined criteria (Isaksson et al., 2020). Enlarging the size of the MTA could attract more institutional investors, as these are currently lacking in the Italian capital market, and facilitating the inclusion in indexes (e.g. by increasing the free-float) could attract international investors, thus helping to solve the low liquidity of the Italian stock exchange.

Fortunately, the quite recent acquisition (2020, October 9th) of Borsa Italiana by Euronext and its integration within the group should bring an external boost to the development of the Italian stock market. Euronext, in fact, has the objective of creating a large player[97] within the European market in order to allow investors to hold a diversified portfolio through a single intermediary. Having joined this group, the Milan Stock Exchange will benefit in several ways: the better visibility should attract more international investors towards Italian companies, the larger pool of accessed investors should increase the liquidity and the alignment of Euronext procedures should lead to faster and cheaper IPOs. The latter is particularly relevant since the direct and indirect costs remain a major restrain for going public in Italy, especially for SMEs (Olivieri, 2021 May 16th).

The full integration within the Euronext groups leads, however, to some risks too: since investors, both Italian and international, will be able to invest in Italian companies through a single channel (Euronext infrastructure), the Italian firms may consider to go public in another stock exchange of the group. This because the firms will be able to take advantage of the leaner or cheaper listing procedures offered by another country while they will still be able to easily reach their national investors. For this reason, maintaining a strong identity of the Borsa Italiana "brand" (COMI, 2021 May) and catching up with the best-in-class procedures is fundamental to allow the further expansion of the Italian public equity market.

[97] At the end of November 2021, Euronext had the largest market capitalisation in Europe with €6.8 trillion, afterwards there's Nasdaq Nordics & Baltics with €2.2 trillion and Deutsche Börse with €2.1 trillion. (data from FESE – Federation of European Securities Exchanges)

In conclusion, by following the recommendations such as those from OECD, COMI and Bank of Italy, and by making the most of the recent integration in the Euronext group, achieving a well-functioning capital market seems feasible, bringing benefits not only to the stock exchange itself but rather to the revival of the Italian economy as a whole.

4. EMPIRICAL ANALYSIS ON THE ITALIAN STOCK EXCHANGE

The existing empirical literature focusing on topics related to initial public offerings is quite vast: just to get an idea, searching for 'IPO empirical' on Google Scholar brings up about 111,000 results. Despite this, relatively little academic investigation has been devoted to the analysis of the company owners' perspective, i.e. the effects that the personal benefits or disadvantages of pre-existing shareholders can have on the listing process. Among the many facets in this field of studies, one peculiar model stands out for trying to combine various theories[98] and create some sort of broader explanatory template for examining the IPO underpricing phenomenon: that is the Entrepreneurial Wealth Losses model of Habib and Ljungqvist (2001).

The main feature of the EWL model worth spotlighting already here is that the authors take into consideration the likelihood of the existence of endogeneity related to the choice on how much to promote the initial public offering. This, in turn, should affect the level of underpricing and ultimately the wealth losses suffered by the pre-existing shareholders. The authors, by analysing a sample of firms that went public in the US in the 90's, confirm their predictions hold true.

Habib and Ljungqvist point out that, in most literature and empirical studies, the aforementioned endogeneity consideration is not taken into account, even though the real world data suggests that initial owners' incentives may be significant in affecting the results of the listing process. In view of the fact that their Entrepreneurial Wealth Losses model still lacks an extensive empirical application, I find this as a great opportunity to test it and hopefully contribute to the IPO-related literature by providing new insights. Accordingly, the research question of this thesis is verifying if the analysis structured in Habib and Ljungqvist (2001) is also valid in other samples other than the one studied by the authors.

[98] Ideally the combination of all the main informational asymmetry theories mentioned in the sub-section 2.2.1. of this thesis.

4.1. MODEL AND TESTABLE HYPOTHESIS

In their Entrepreneurial Wealth Losses model, Habib and Ljungqvist argue that the variation in terms of underpricing, in addition to the already significant established variables[99], is likely to be determined by another crucial factor: the owners' incentives to control underpricing. Depending on the degree to which the pre-existing shareholders participate in the going public procedure or suffer from it, in terms of wealth losses, they are expected to adapt their choices in order to maximise their personal utility function.

Accordingly, the interest of the owners in ensuring that the company's share price is as accurate as possible, in other words leaving as little money on the table as possible, depends on their participation to the offering and the extent to which they suffer from dilution. In the first case the wealth loss is direct because the secondary shares sold to the public market leads to a cash inflow to the selling owners based on the stock issuance price (P_0) while its market price is typically higher (P_1), meaning that these shares could have been theoretically placed at a higher price[100]. In the second case, dilution, the owners still bear some wealth losses based on the amount of new shares that are issued and sold at the time of IPO at a price lower than what results in the aftermarket trading. The intuitive result from this perspective is that pre-existing shareholders will have higher incentives, measured in terms of limiting their wealth losses, the higher their participation[101] or dilution ratio[102] is.

Habib and Ljungqvist expect that the company's initial owners are capable to control the level of wealth losses deriving from the IPO by influencing the amount of promotion costs: these include roadshows, analysts engagements, listing fees, auditing fees, lawyer fees, underwriter fees[103] and many similar[104]. The assumption here, which falls within the signalling theories, is

[99] The main established variables being significant in determining the level of underpricing, or money left on the table from another perspective, have been listed in chapter two, split between the related theories and grouped on their pertinence.
[100] It must be recalled that the theory behind this assumption is based on the demand inelasticity of new investors towards the shares of the listing firm (Habib and Ljungqvist, 2001).
[101] Participation ratio is intended as number of secondary shares sold divided by total number of shares pre-IPO.
[102] Dilution ratio is intended as number of newly issued shares divided by total number of shares before going public.
[103] Only the fixed part is considered by Habib and Ljungqvist, i.e. only the fees not proportionally related to the size of offering, arguing that the gross spread is typically clustered around a certain level among all firms independently from their level of risk. This means that costs derived from the gross spread are not informative for the specification of the EWL model.
[104] It's worth noticing that the promotion costs considered here are all strictly IPO-related. In other words, other possible one-time capitalizable costs or recurring costs (such as setting up a new IT system needed for trimestral financial reports publications) are not included in the calculation of promotion costs since their origination and effect is not related to underpricing and wealth loss levels.

that promotion costs signals the quality of the firm, thus they can be used as an alternative to underpricing (which ultimately affects wealth losses). The underlying reasoning comes however from the adverse selection issue: the presence of two types of investors within the public equity market, informed and uninformed[105]. The proportion between these can be endogenously determined in the EWL model[106] by increasing the amount of promotion costs.

Furthermore, based on the certification theories, the quality or reputation of the selected advisors (mainly referring to underwriters) is assumed to be significant in determining the level of underpricing: since the most prestigious investment banks, *ceteris paribus*, charge higher fees, these can be used as a proxy to analyse to which extent the IPO is being promoted.

The pre-existing shareholders are expected to raise the indirect expenses of IPO-promotion until the marginal cost equals the marginal benefit (measured in terms of reduced underpricing), therefore maximising[107] their net capital inflow. The latter is the net issue proceeds and is computed as gross proceeds minus wealth losses, i.e. money left on the table and promotion costs.

To sum up what has been said up to here, there are two key points in this model:

I- The initial owners of a going public company care about the level of underpricing depending on how much they lose in terms of wealth losses and these are proportional to the number of primary and secondary shares sold to the public market;

II- The owners can control the level of underpricing by deciding how much to spend in terms of promotion costs.

Based on the theoretical setting of the Entrepreneurial Wealth Losses model by the authors, citing their publication, the empirical implications can be divided in three parts based on the testable hypothesis:

1- Promotion costs increase in the participation ratio, the dilution factor, and uncertainty.

2- Underpricing decreases in promotion costs and in the participation ratio. It is indeterminate in the dilution factor. It increases in uncertainty when controlling for promotion costs, but is indeterminate otherwise.

[105] Informed investors are assumed to give a high valuation to the company because they

[106] Conversely to the Rock (1986) where the proportion of informed and uniformed investors is taken as exogenous.

[107] As a practical example, the issuers will be happy to spend 1€ per existing share for promotional-related activities (*exp*) until this additional spending lowers the expected money left on the table per share (*mlott*) by more than 1€.

3- Wealth losses increase in the participation ratio, the dilution factor, and uncertainty. They are invariant to promotion costs in equilibrium.

Starting from the first empirical implication, the promotion cost (per share) is predicted to increase as the participation ratio increments because this ratio means that there are more selling shareholders, so their wealth loss is directly affected by the price setting at the IPO: this intuitively provides grater incentives to enlarge the amount of promotion costs in order to control underpricing. The same reasoning applies with the dilution factor, but in this case the incentive for the initial owners to spend more in promotional activities is lighter as the wealth losses are only indirectly affected by dilution. The last variable considered here, uncertainty about pricing in the pre-IPO, foresee that the pre-existing shareholders have higher incentives to enlarge the promotion costs in order to make the final issuance price more reliably known.

Moving on to the second empirical implication, underpricing is expected to decrease when promotion costs are higher because of the assumption that the latter can be used as an alternative to underpricing or, in other words, promotion costs make the true value of the firm more known among investors thus reducing possible underpricing[108]. The participation ratio is predicted to have a negative effect on underpricing because the former decreases in promotion costs and promotion costs increase in the participation ratio. Underpricing is unfortunately undetermined in the dilution factor because the latter influences costs per share borne by the issuer both pre and post-IPO. Finally underpricing increases in uncertainty because the issuers have larger incentives to spend in promotion costs, which in turn negatively affect underpricing. This however is only valid when controlling for the level of promotion costs, otherwise uncertainty has an indeterminate effect on underpricing: the direct effect of uncertainty in underpricing is negative, but the indirect effect through promotion costs is positive (recalling what has already been said in the first empirical set of implications).

Lastly, the third empirical implication intuitively derives from the fact that as the number of shares sold increase, both primary and secondary, the pre-existing shareholders increasingly suffer from wealth losses. The latter are expected to increase in uncertainty because, when controlling for promotion costs, it increases underpricing and ultimately wealth losses. The last empirical implication is that wealth losses are invariant in promotion costs in equilibrium because the EWL model predicts that pre-existing shareholders will always want to maximise

[108] Stating this even more directly, the promotion costs should reduce the amount of uninformed investors.

their utility function, in other words limit their wealth losses, by reaching the point where margin (promotion) cost equal margin benefit (reduced wealth loss).

The last step to outline the full model for the analysis is to clearly identify which variables are considered exogenous and which endogeans. As mentioned within the empirical implications, underpricing and wealth losses depend on promotion costs, but all these three variables depend on participation ratio, dilution factor and uncertainty. For this reason, the EWL model treats underpricing, wealth losses and promotion costs as endogenous, while participation ratio, dilution factor and uncertainty are treated as exogenous.

The practical application of the EWL model is the usage of equation-by-equation ordinary least-squares where each regression (on promotion costs, underpricing and wealth losses) is calculated using the same explanatory variables: the key point is to perform the regressions in order as their predicted time order effect. That is, firstly perform the OLS on promotion costs per share (*exp*), then computing the predicted results of these costs. The second regression on underpricing, besides the same other exogenous variables, uses promotion costs per share *predicted* and so on[109]. As mentioned by Habib and Ljungqvist, that the application of equation-by-equation OLS correctly estimates the results only if the errors are uncorrelated across regressions.

4.2. DATASET

As anticipated in the previous chapters of this thesis, the empirical analysis will take into consideration the specific Italian case on which the Entrepreneurial Wealth Losses model will be applied. This choice is made for various purposeful reasons: first of all, the application of this kind of empirical research that specifically deals with the endogeneity consideration of issuers' choices in IPOs has never been made in previous academic researches. Secondly, as recognised in chapter three, the Italian economy has a wide presence of small and medium enterprises, with high ownership concentration and high presence of family businesses: all these factors suggest that the owners' perspective in a going public procedure should be particularly relevant since the economic implication of an initial public offering is expected to be felt more heavily than a large corporation with dispersed ownership. Thirdly, in order to increase the size of the Italian public equity market, based on the report presented in chapter three, the most

[109] A more technical representation can be found at pag.443 in the published paper of Habib and Ljungqvist (2001).

effective strategy is to focus on incentivising SMEs to go public, presumably through fiscal incentives to cover listing costs[110].

Accordingly, the empirical analysis that will be developed in the following section of this chapter is based on a sample of initial public offerings that took place on Borsa Italiana. The selected time frame[111] is from January 1st, 2016 till June 30th, 2021. The reason behind this choice is to use as much recent data as possible in order to gather the most updated insights about the features of the Italian public equity market, while still keeping a proper sample size.

In the considered time frame there have been 148 new listings on Borsa Italiana, however not all of these have been considered for the actual empirical analysis. All the SPACs have been discarded because they fall out of scope for this thesis as stated in chapter one, then all the SICAF, SIM and a permanent capital vehicle have been excluded because their capital needs and functioning is significantly different from the other more common non-financial corporation, the banks have been discarded too for similar reasons[112], the delisted companies[113] have been excluded because of their non-availability of detailed public financial reports and finally a couple of companies have been excluded because of the inability to find all the necessary data for performing the empirical analysis[114]. The resulting "net" sample comprises 109 initial public offerings.

The main data sources from which the necessary information has been collected is Borsa Italiana's official website and Refinitiv Eikon. Nevertheless, due to a lot of alternative missing data and incorrectly reported data, many additional sources were needed:

- Aida (Bureau Van Dijk) for financials and shares information;
- Orbis (Bureau Van Dijk) for financials and shares information;
- First post-IPO financial report;
- Investing.com for market price and market index evolution;

[110] Although not all the promotion costs can fall within the coverage of the fiscal incentives, the latter still maintain their going public stimulus effect (Manella and Sebastianelli, 2018).
[111] What will be called as IPO date, for convention, is considered the first day of trading activity on Borsa Italiana by the newly listed firm.
[112] Based on the TSBC industry categorization of Refinitiv Eikon, the only IPO related to the financial services industry that was kept is Nexi for the reason that it's a transaction services company, so it doesn't have the same traits of a bank.
[113] The list of companies that went back private has been updated up to December 31st, 2021.
[114] Actually, for many companies the financial reports published on their website were PDF documents made of scanned images of the financial report. This significantly limits the readiness of the document, besides making it impossible to perform quick searches. Quite a strange behaviour for listed companies publishing official mandatory reports.

- Il Sole 24 Ore, AIM Italia News and BeBeez to gather additional insights on pre-IPO market sentiment (book-building) and final shares selling;
- Factiva (as a last resort option after all the previous ones)

Matching all the data gathered form these different sources has been the final step for building the complete dataset required for the analysis. Since a good part of the dataset has been collected by hand, the empirical analysis can be considered to have been performed on a unique dataset as, unfortunately, all the necessary data isn't fully retrievable from any of the mentioned sources.

4.2.1. Variables construction

In accordance to the goal of testing and verifying the validity of the Entrepreneurial Wealth Losses model, with its subsequent adaptation to better suit the analysis of Italian data, a broad set of variables has been developed: these are presented in the section below, firstly in the table summary, than in detail on how they have been computed and which sources they have been collected from.

Brief name	Full name of the variable	Detailed	Unit of measure	Main sources
Age_at_IPO	Age at IPO	Age of the firm at the IPO date	Years	Borsa Italiana, Eikon, prospectus
Technology	Technology economic sector	The listing firm operates in the economic sector of technology	dummy	Eikon
Leverage	Leverage ratio	Ratio derived from latest accounting values pre-IPO	none	Eikon, financial reports
Ln_tot_assets	Ln of total assets	Natural logarithm of total assets from the latest accounting values pre-IPO	Ln (€)	Eikon, Orbis, financial report
Ln_sales	Ln of sales	Natural logarithm of yearly sales from the latest accounting values pre-IPO	Ln (€)	Eikon, Orbis, financial report
E_N_0	Equity value per existing share	Accounting equity value per existing share from latest data pre-IPO	€	Eikon, Orbis, prospectus
Sec_market	Second market	AIM Italia market	dummy	Borsa Italiana
STAR_market	STAR segment	MTA - STAR segment	dummy	Borsa Italiana
Part_ratio	Participation ratio	Proportion of secondary shares sold compared to existing shares	%	Eikon, prospectus

Dil_factor	Dilution factor	Proportion of primary shares sold compared to existing shares	%	Eikon, prospectus
Shares_sold	Shares sold	Proportion of shares sold compared to existing shares	%	Eikon, prospectus
Intend_sell	Intended number of shares to be sold	Proportion of shares intended to be sold compared to existing shares	%	Eikon, prospectus
Ln_gross_proc	Ln of gross proceeds	Natural logarithm of gross proceeds	Ln (€)	Borsa Italiana, Eikon, Investing, Own calculation
EXP	Promotion costs (total)	Total amount of promotion costs	€	Prospectus, own calculation
Exp	Promotion cost per existing share	Promotion costs on the amount of outstanding shares pre-IPO	€ per share	Prospectus, own calculation
M_Und_rank	Underwriter rank in the main market	Assumed underwriters reputation based on a proceeds-ranking basis	none	Own calculation
S_Und_rank	Underwriter rank in the secondary market	Assumed underwriters reputation based on a proceeds-ranking basis	none	Own calculation
Und_rank	Underwriter rank as a whole	Assumed underwriters reputation based on a proceeds-ranking basis	none	Own calculation
MI_trend_100g	Market index trend at 100 days	Bullish or bearish market trend in the 100 days pre-IPO	%	Investing.com
MI_trend_30g	Market index trend at 30 days	Bullish or bearish market trend in the 100 days pre-IPO	%	Investing.com
MI_vol_100g	Market index volatility at 100 days	Uncertainty in the market index	Basis points	Investing.com
MI_vol_30g	Market index volatility at 30 days	Uncertainty in the market index	Basis points	Investing.com
N_prev_IPOs	Number of previous IPOs	Number of IPOs that took place within 100 days before	none	Own calculation
BB_midpoint	Book-building midpoint	The average price between the lower and higher price setting pre-IPO	€ per share	Main news agents, own calculation
Part_adj	Partial adjustment	Price change based on issuance price and boob-building midpoint	%	Borsa Italiana, own calculation
UP_1	Underpricing at first day	Underpricing level considering first trading day closing price	%	Borsa Italiana, Investing.com

MLOTT	Money left on the table	Money left on the table	€	Borsa Italiana, Investing.com, prospectuses
Wealth losses	Wealth losses	Total wealth losses	€	Own calculation
Wl	Wealth losses per share	Wealth losses per existing share	€ per share	Own calculation
IPO_post_2018	IPO post 2018	IPOs taking place from 2018 onwards	dummy	Own calculation

Table 11 - Outline of all variables used in the empirical analysis.

Starting from firm-specific variables, the following are characterised for being unique traits of the going public company. This group includes the major variables used as a proxy to control for the firms' riskiness level pre-IPO.

The first variable is Age_at_IPO, unequivocally referring to the age that the firm has at the time of going public: it is computed as IPO date (taken from Borsa Italiana as the first day of trading in the public equity market[115]) minus year of incorporation (gathered from Eikon or listing prospectus). Age at IPO is a proxy of uncertainty because older corporation have more historical information on which analysts can anchor their evaluations. Technology is a dummy variable which, based on the economic sector definition by Eikon, equal to 1 if the IPO relates to a technology company, 0 otherwise. This dummy variable serves to gather the impact of uncertainty around the technology sector that is typically found to have considerable growth potential but also uncertainty. The leverage ratio pre-IPO refers to the value derived from the last annual financial report before going public: it is computed as accounting value of all debt divided by accounting value of equity, thus serving as an indicator of the indebtedness of the firm. Ln_tot_assets refers to the natural logarithm of the accounting value of total assets gathered from the latest financial report before going public, it serves as a measure of company's size because smaller ones are expected to suffer from more uncertainty. Ln_sales relates to the the natural logarithm of the yearly sales as the latest value before going public, with the same considerations as the previous one. Lastly, E_N_0 means nominal equity value per existing shares: it is computed as accounting value of equity from last financial report before going public divided by the number of shares outstanding pre-IPO. This variable has the goal to normalize the volatility of the number of shares since their nominal value is commonly

[115] This is more of a convention than an actual rule

arbitrarily set[116] by the firm's insiders in order to reach the desired issuance price per share at IPO.

The second group of constructed variables are IPO-specific, meaning that they represent the characteristic of the going public procedure.

The first variable within this group is Sec_market which refers to the fact that the company went public on the secondary market or not. Listings on AIM Italia is expected to require more effort by listing companies since the market is less renowned than the larger one. Similarly, STAR_market is a dummy variable that has value of 1 if the company lists on the STAR segment of the MTA market, 0 otherwise. Thanks to its stringent accessibility requirements, floating the shares on this segment may provide a positive signal to the investors. Part_ratio is the participation ratio, namely the amount of secondary shares sold divided by the number of existing shareholders The Dil_factor refers to the dilution factor, the economic effect that pre-existing shareholders suffer is computed as number of newly issued shares divided by outstanding shares pre-IPO. Shares_sold is the constructed variable that combines both the participation ratio and the dilution factor because it's computed as number of shares sold divided by number of outstanding shares before the IPO. This variable depicts the relative size of the offering in terms of number of shares, an alternative variable to the more common gross proceeds. Intend_sell works similarly to the previous variable, but the numerator is gathered from the prospectus as the expected (intended) number of shares to sell rather than the actual number, reflecting the owners' real intention. Ln_gross_proc is the natural logarithm of gross proceeds, i.e. the multiplication of issuance price by number of shares sold. This variable is expectedly associated with small companies, assumed to be more risky, thus positively influencing the uncertainty around price value. The variable EXP denotes the promotion costs in total as reported in the prospectus as a budget amount: however, when the indicated value includes the placement fees to the underwriters, the gross spread is extrapolated by computing number of intended shares to be sold multiplied by 3.5%[117]. Similarly exp is the amount of promotion costs per share, more precisely EXP divided by the number of outstanding shares

[116] Through a stock split or a reverse stock split.

[117] This is an assumption since the amount indicated in the prospectuses sometimes included the variable component of the remuneration to the underwriters, sometimes not, so there is a need for uniformity. The choice of exactly 3.5% is not random, but based on indication on few prospectuses themselves and on previous researches (Torstila, 2003; Lanzavecchia and Mazzonetto, 2014). In an unreported testing analysis, the EWL model has been applied to promotion costs which included the commission due to underwriters, by adding 3.5% of intended gross proceeds to the prospectuses' values which excluded the gross spread. The results, at least for the regression in promotion costs, didn't change substantially, suggesting that the assumption of an average gross spread of 3.5% is likely to hold true.

pre-IPO. Lastly, M_Und_rank refers to the reputational rank of the lead underwriter that managed the placement activities within the main market: the rank of each underwriter is computed as gross proceeds managed divided by total proceeds within that market[118]. S_Und_rank is computed similarly, but for underwriters operating in the secondary market (AIM Italia). Und_rank is essentially the final result of underwriter reputational ranking where, in the few overlapping results (between primary and secondary markets managed), the ranking in the main market is favoured. Hiring a higher reputational underwriter is expected to positively influence investors' opinion about the firm's valuation due to the certification theories.

The third group of variables constructed pertain the market-specific ones, that is the results of fluctuation outside both the field of the issuer and the IPO itself.

MI_trend_100g represents the bullish or bearish trend of the market index used as reference (FTSE Italia All Share[119]), indicating the existence possibility of hot market issue period. This variable is computed as the value of the market index at the date of IPO divided by the value of the same index 100 trading days earlier, minus 1. The variable MI_trend_30g has the same concept, but with a time horizon of 30 trading days, this in order to check whether the market trend is more significant when analysed on a shorter period basis. MI_vol_100g denotes the market index volatility in the 100 days before the IPO date and is computed as the standard deviation of the daily market index value within the period. This variable is helpful for controlling the uncertainty level in the market. MI_vol_30g works similar but it's constructed on a 30 days time horizon. N_prev_IPOs means number of previous IPOs as is computed by summing the number of IPOs that took place in the period time set as 100 days before the considered IPO: this variable should help in getting insights whether hot IPO issue periods exist.

A fourth group of constructed variables falls in between the IPO-specific and the market-specific ones: these are mentioned as follows.

The BB_midpoint refers to the book-building midpoint, i.e. the average between the first lower and higher estimated price per share before actually going public. This is a useful variable

[118] Carter-Manaster tombstone reputation variable used in Habib and Ljungqvist (2001) is not reasonably applicable in the Italian case as pointed out by Migliorati and Vismara (2014). Therefore, the usage of a modified ranking system, as proposed by the latter authors, appears to be more meaningful.
[119] As the sample contains both IPOs that took place on the main and the second market, but the amount of listing on AIM Italia is much larger, the FTSE Italia All Share appears to be the best choice since it contains FTSE MIB, FTSE Italia Mid Cap and FTSE Italia Small Cap. On a separate test, not reported in this thesis, in which the FTSE Italia Small Cap has been used brings similar results in the EWL model testing application.

because issuers' are assumed to anchor their expectations about the IPO results on this value[120]. Part_adj means partial adjustment, in other words that price adjustment that results from calculating issuance price divide by BB_midpoint, minus 1. This variable should provide useful information about investors appetite towards the listing shares. UP_1 denotes the underpricing level, using the same formula as presented in chapter two, with the market price at closing of the first day of trading. MLOTT refers to money left on the table, exactly as recalled in chapter two, therefore it's computed as the difference between the market price at the end of the first day and the issuance price multiplied by the number of shares sold (both primary and secondary). Wealth_losses represent the total amount of wealth losses that pre-existing shareholders have to suffer and it's computed as EXP (total promotion costs) plus MLOTT. Finally, Wl means wealth loss per existing shares and it's computed as total wealth losses divided by the number of outstanding shares pre-IPO.

One last additional variable has been constructed: IPO_post_2018. It's a dummy variable that equal to 1 for any IPO that took place after 2018, 0 otherwise. This is to assess the possibility that, thanks to the fiscal incentives for listing costs that have been made available from 2018 onwards, the spending behaviours in terms of promotion costs has been pushed upwards, possibly resulting in higher promotion costs than in comparable IPOs in the previous years.

4.2.2. Descriptive statistics

Before diving into the empirical analysis, it's worth highlighting the most relevant descriptive statistics of the selected sample of Italian IPOs. Most notably, among the 109 initial public offerings taken into consideration, 92 of them took place on the secondary market (two of which on the professional segment), so only 17 companies went public on the main market (of which seven on the STAR segment). As expected, the average transaction size, in terms of gross proceeds raised at IPO is significantly different: €443,6m for the MTA and €7,8m for AIM Italia. When analysing the sample as a whole, the most common economic sector is industrials with 29 IPOs, then in the second place there is technology with 28 initial public offerings and on the third place consumer cyclicals with 26 IPOs. These three economic sectors together cover almost entirely the sample size.

[120] Unfortunately, only 62 IPOs out of the selected sample contains information about the book-building price range. The missing data for the other initial public offerings is due to both lack of public data and to IPOs taking place with a fixed price setting mechanism. In order to overcome this constraint and still exploit afterwards the partial adjustment, the missing data has been filled with the issuance price. Even when restricting the analysis for IPOs with available data, part_adj results insignificant in all regressions.

Going forward to what it's needed for the understanding of the empirical analysis, the most crucial variables are certainly those on which the Entrepreneurial Wealth Losses model is build: the following tables focus the attention on company characteristics, offering characteristics, promotion costs and wealth losses.

Variable description	Mean	ST. DEV.	First quartile	Median	Third quartile	Min	Max
Age at IPO	24.5	21.9	8.4	17.5	33.5	0.5	113.8
Sales (€m)	138.2	639.7	7.2	16.7	42.6	0.0	6257.1
Tot. assets (€m)	245.7	1,464.8	8.2	16.0	42.8	0.1	14,366.5
Leverage	4.2	4.6	1.4	3.2	4.8	0.3	31.8
E_N0 (€)	1.3	1.7	0.3	0.6	1.3	0.0	11.6

Table 12 - Descriptive statistics of the selected sample: company characteristics

This first table summary pictures an interesting image: the variability in all the considered variables is quite high, especially in terms of total assets. This means that the companies that went public in Italy from 2016 until mid-2021 are extremely different from one another, so that each IPO brings a unique set of variables. For instance, the age of companies that decided to quote is on an average between 24 and 25 years, but the first quartile drops significantly till 8.4 years. Compared to the US sample of Habib and Ljungqvist which has an average age at IPO of 14.2 years, the Italian firms appear to take the decision to quote at an older stage in their "business life"

The variability of yearly sales and total assets pre-IPO is due the fact that within the sample there are few large companies and many smaller ones, leading to the descriptive analytics challenging to interpret. What can be certainly said, considering the specific sample selected for the analysis, Borsa Italiana appears to be capable of attracting all kinds of companies.

In terms of leverage, first of all it has to be recalled that this is computed as debt on equity before the listing process, thus no capital inflow from the public market has been accounted in these numbers. Curiously, in contrast to the US listing, the leverage of Italian corporation is much lower: an average of 4.2 vs. 17.4, meaning that companies floating on Borsa Italiana are much safer, at least in terms of capital funding. Anyway, it should be noticed that the US sample

considers IPOs that took place in the 90s, a completely different economic setting compared to nowadays.

Lastly, the nominal value of equity per existing share pre-IPO has been added for the reason that the number of shares within a firm can essentially be freely determined by the insiders, depending of their personal preferences or external incentives[121]. As an example, the same corporation may have a 1,000,000€ od share capital divided in 100,000 shares or 20,000,000, that is the nominal value per share changes but without any consequence on its total value. As it will be seen later on, this can demolish the nicely structured model of Habib and Ljungqvist because any variable that requires dividing by the number of shares becomes meaningless as it's not possible to compare the results. Since companies that quoted on the Italian Stock Exchange have a wide variety of face value per share[122], it's clear that it's necessary to control for this characteristic in order to bring meaningful analysis. One way to do so is to take into account the nominal value of equity per share, that is the accounting value of share capital divided by the total number of shares, which homogenises the shareholders structure, thus bringing back the possibility to analyse ratios such as promotion costs per share.

Variable description	Mean	ST. DEV.	First quartile	Median	Third quartile	Min	Max
Gross proceeds (€m)	75.8	316.4	4.0	5.7	13.9	0.4	2,397.9
N_0 (m)	30.2	97.4	4.4	6.0	11.4	0.1	650.0
N_0,s (m)	6.2	29.4	0.0	0.0	0.5	0.0	252.6
N_n (m)	6.6	34.2	0.9	1.7	3.1	0.0	350.0
Participation ratio	6.4%	12.7%	0.0%	0.0%	6.5%	0.0%	77.6%

[121] One external incentive, if making sure that the issuance price in an IPO in Italy falls within the range of €1-€10. This is some kind of rule of thumb to which nearly all corporations seem to adhere. In fact, there have been cases of stock splitting purposely made to reach a desired market price level. There are also logical reasons behind this: a price too low, let's say below 1€, would depict the stock as a "penny stock", with all the negative facets that derives. Conversely, a too high share price would likely reduce the interest of investors as not many can afford or are interested in investing big chunks of money on a single company.

[122] In many cases the shares don't even have a face value, but the estimation of nominal value of equity per share can still be computed.

Dilution factor	28.4%	18.8%	16.7%	25.7%	37.0%	0.0%	148.2%
Underpricing	12.9%	21.1%	-0.2%	7.2%	19.5%	-22.3%	125.0%

Table 13 - Descriptive statistics of the selected sample: offering characteristics

This second table provides a deeper understanding of what happened in the Milan Stock Exchange in these last years. At first glance, the amount of proceeds raised seem quite large based on its average but this is actually misleading as the median value is significantly lower than the average, suggesting that few IPOs raised a large amount of money (such as the case of Pirelli with around €2.3bn).

Moving on, the number of shares existing before the listing process is not informative per se, but it help in understanding the evolution in the shareholder base post quotation. The amount of secondary share sold at IPO can be said at having a tendency to go to zero because its variability is quite high and 63 out of the 109 corporations of the selected sample didn't sell a single secondary share. Anyway, there are still some peculiar extreme exceptions, such as the purely secondary offering of Carel Industries who sold more than 40% of the pre-IPO shares. Going back to the overall information, together with the picture that offers the participation ratio, it tells us that the pre-existing shareholders are not, on average, interested in divesting their stake bringing their firm public. A similar analysis can be derived from the results of Habib and Ljungqvist. The reasons behind this choice could be both related to an actual desire to retain ownership, to the willingness to control the underpricing level or eventually as a two-stage strategic selling. Such insights, however, can only be gathered from a long-term analysis.

On the other side of selling shares, there is the dilution factor that is influenced by the amount of newly issued shares. The results confirm that IPOs taking place in Borsa Italiana have more the objective of raising new funds for the firm rather than pre-existing shareholders looking for an exit strategy. Nevertheless, this activity of raising new funds, assuming even a low amount of underpricing, leads to wealth losses to the pre-existing shareholders because of dilution.

Finally, the underpricing level, computed at the closing time of the first day of trading, appears to have increase compared to what has been found in the past: Dell'Acqua (2015) has detected a 6.5% underpricing in the 2000s while in the selected sample for this thesis is at 12.9%. Interestingly, there have been also cases of overpricing, such as Sostravel which registered a -22.3% aftermarket price change on the first day of trading. Taking into account also the

variability of underpricing level, the data shows an inverted trend compared to past analyses which seemed to predict a trend towards a clustered underpricing close to zero.

Variable description	Mean	ST. DEV.	First quartile	Median	Third quartile	Minimum	Maximum
MLOTT (€m)	2.04	20.09	-0.01	0.36	1.86	-130.24	123.92
Wealth losses (€m)	3.41	19.54	0.65	1.27	2.75	-111.24	127.92
Promotion costs (€m)	1.18	2.31	0.56	0.75	0.99	0.25	19.00
WI (€)	0.33	0.67	0.10	0.20	0.44	-1.89	5.95
exp (€)	0.16	0.30	0.06	0.11	0.17	0.00	2.99

Table 14 - Descriptive statistics of the selected sample: promotion costs

Focusing now on the various facets of wealth losses suffered by pre-existing shareholders when going public, it's clear that the largest (opportunity) cost in the money left on the table. This is influenced by the underpricing level and by the total amount of shares sold at IPO: the resulting effect showed by the data is a sizable amount of missed cash inflow. The variability of data here is much more astonishing that the underpricing level because the unit of measure is euros rather than "simply" a percentage. The same analysis applies to the wealth losses (in total terms), whereas the amount of promotion costs appears to be more stable, especially because it cannot go below zero as for the money left on the table. Nevertheless, all these consideration would be more meaningful when computed as per existing share. Although the data is correct, is not practically interpretable because, when flipping through the IPO prospectuses, the amount of shares can be chosen arbitrarily. Because of this, comparisons with the results derived from the US sample of Habib and Ljungqvist are not conceivable. The solution is either normalizing per share value, but this is more difficult to assume since there are no market prices for pre-IPO companies, or normalizing per nominal of equity value per share as explained before, which is less informative but easily feasible as the computation is based on accounting values rather than market values.

4.3. EMPIRICAL RESULTS AND ANALYSIS

In this section, the empirical analysis enters into the merits by testing the Entrepreneurial Wealth Losses model designed by Habib and Ljungqvist in 2001 through its application on the sample selected within the Italian case.

The common practice would require to firstly apply the model exactly as it is structured by the authors. However, its applicability on the Italian dataset needs at least on first adaptation in order to correctly estimates the regressions[123]: taking into account of face value of shares among corporations. Without this consideration, the promotion costs or wealth losses per share are not comparable among IPOs even of the same sample. For this reason, the analysis is started directly by controlling for the variable: nominal value of equity per existing share.

The results of the application of the EWL model on the Italian dataset is showed below as an equation-by-equation OLS. Firstly the regression on exp (promotion costs per share) is calculated: based on the results, a new variable (predict_exp) is computed based on the estimations of this first regression. Then the second regression is computed which focused on the level of underpricing (at day one): among the other variables, it has been used predict_exp as foreseen by the EWL model to account for the endogenous effect of the amount of promotion costs. The third regression still focuses on the underpricing level but drops predict_exp in order to evaluate the residual explanatory power in comparison to the second regression. Lastly, the fourth regression analyses wealth loss per existing share based on the control variables consider in the second regression (the first one for underpricing).

The following table summarises the results of the statistical testing.

[123] The first trials to apply the EWL model, not reported in this thesis to avoid being long-winded, appear to have an explanatory power close to zero. A the same time, the model applied on the US sample, without any modification or additional consideration, already leads to significant results. That is likely that the authors didn't have on their dataset the issue of controlling for shares' face value variability.

	exp		UP(1)		UP(2)		WI	
Constant	0.8922		0.2006		0.0679		0.3807	
	0.2913		0.1665		0.1627		6397806	
Particiaption ratio	0.0647		-0.1721		-0.1656		0.169788	
	0.1964		0.1322		0.1227		0.453128	
Dilution ratio	0.0671		-0.0456		-0.0415		-0.74163	
	0.0801		0.1402		0.1418		0.51187	
Ln (gross proceeds)	0.0035							
	0.0197							
Age at IPO	-0.0023	**	-0.0009		-0.0012		2.15E-06	
	0.0010		0.0007		0.0007		0.002309	
Leverage	0.0152	**	0.0055		0.0044		-0.00362	
	0.0063		0.0037		0.0037		0.009673	
Ln (sales)	-0.0593	**	-0.0059		0.0013		-0.00842	
	0.0283		0.0093		0.0092		0.037867	
E_N_0	0.1384	***						
	0.0508							
Predict_exp			-0.1615	**			1.863259	**
			0.0650				0.755749	
Part_adj			0.0706		0.0855			
			0.1071		0.1083			
MI_vol_100g			0.0001	**	0.0001	**		
			0.0000		0.0000			
Diagnostics								
R^2	63.39%		9.10%		6.32%		46.64%	
Adjusted R^2	60.86%		1.83%		-0.17%		43.50%	
F-statistic	2.57		2.33		1.95		1.74	
Observations	109		109		109		109	

Legenda: confidence level *10% **5% ***1%

The results are in contrast to what has been predicted by the theory of the EWL model. In particular, in the first regression about promotion costs per share, both participation ratio and dilation ratio result insignificant. Conversely, the risk proxies age at IPO, leverage and ln of sales are all significant but will a low coefficient. Lastly, E_N_0 (nominal value of equity per existing share) is highly significant, confirming the previous analyses that without controlling for this variable, all the results are meaningless. Overall the explanatory power of the first regression is quite high (61% of adjusted R^2). Taking into consideration also the counterintuitive results in the variables of participation and dilution ratio, this suggests that the amount of promotion costs is either not controllable by the firms' insiders or the collected data doesn't represents correctly the promotion costs as intended by the EWL model.

The second regression about underpricing level shows a significant explanatory power only in terms of predicted exp and market index volatility (personally added to the original model as it's the only one, among the many, found out to be significant). Overall the regression provides very little explanatory power.

The third regression shows that dropping predicted reduces slightly the overall explanatory power of the regression, suggesting that the residual effect of promotion costs influences underpricing.

The fourth regression, which deals about wealth losses per existing share, has an overall quite good significance as a model (43,50% in terms of adjusted R squared), higher than what Habib and Ljungqvist managed to get in their sample. This means that, although the EWL seems to not be correctly set out to be meaningful in analysing Italian IPOs, it shows a strong explanatory power. Nevertheless, the significance of the variable predicted exp is not actually a good sign since it goes against the theory behind the EWL that states that issuers will be indifferent at the optimal level between promotion costs and wealth losses.

All the many testing, not reported in this thesis, about different possible combinations of variables and transformation of variables didn't result in more explanatory power from the regressions. Based on the current setting, the level of underpricing seems almost to be completely unpredictable while promotion costs and wealth losses appear to be determined by variables not controllable by the firm's owners.

To conclude, the EWL model still has a high probability to be applicable on the Italian data and explain the phenomenon of endogeneity choice of pre-existing shareholders, but it needs a reframe in order to reach this goal..

CONCLUSIONS

The comprehensive review of the existing literature pertaining the initial public offering proved that even the most consolidated theories can offer fresh insights in terms of owners' perspective in the listing process, for instance the certification theories which can be rejected when controlling for the initial owners' incentives.

Although the theoretical and empirical research seem to rather prefer to focus on topics more investor-oriented, better understanding how the pre-existing shareholders play a pivotal role in an IPO can provide unexpected results, such as those foreseen by the entrepreneurial wealth losses model which endogenies some of the insiders' choices.

The Italian scenario seems to be a perfect fit to test this model because of the exceptionally vibrant IPO activity compared to its European counterparts and due to the very limited amount of academic researches that have considered analysing the Milan Stock Exchange.

The testing of the EWL model, however, didn't brought the desired results for the reason that theoretically it appears very well made but it's troublesome to put it practice as it requires very specific information which is not always findable. Various different attempts, not reported in this thesis to not be long-winded, in terms of adding variables or transforming them failed to enhance the EWL model fit with Italian data. However the still high explanatory power of promotion costs and wealth losses analysis suggests that the model needs to be reframed to be of more use.

APPENDIX

A.1. Definition of enterprise size groups

Based on the Eurostat indication and the EU recommendation 2003/361/EC, when referring to groupings of enterprises in terms of their size, unless otherwise specified, the following classification is applied.

Company category	Staff headcount	Turnover or	Balance sheet total
Micro	< 10	≤ €2m	≤ €2m
Small	10 - 49	€2m < x ≤ €10m	€2m < x ≤ €10m
Medium	50 - 249	€10m < x ≤ €50m	€10m < x ≤ €43m
Large	≥ 250	> €50m	> €43m

Note that within the SME macro group, micro, small and medium-sized enterprises are included.

A.2. Comparison of old market names of Borsa Italiana with new names

Old denomination	New denomination
Mercato Telematico Azionario (MTA)	Euronext Milan (EXM)
STAR Milan (STAR)	Euronext STAR Milan (STAR)
AIM Italia (AIM)	Euronext Growth Milan (EGM)

Because of joining the Euronext group, Borsa Italiana's markets have been rebranded from October 25th, 2021. However, as this thesis has a retrospective analysis approach, the old denomination has been kept in use.

A.3. All database sources used for the empirical analysis

- Borsa Italiana official website
- Refinitiv Eikon
- Aida (Bureau Van Dijk)
- Orbis (Bureau Van Dijk)
- Investing.com

- Il Sole 24 Ore
- AIM Italia News
- BeBeez
- Company's website, investor relations section;
- Factiva

A.4. List of firms used in the empirical analysis

The following table presents the final net dataset with all the companies used for the empirical analysis performed in chapter four.

Name company	ISIN code	Date of IPO	Market
Energica Motor Company	IT0005143547	29/01/2016	AIM Italia
Siti - B&T	IT0005171936	31/03/2016	AIM Italia
Abitare In	IT0005445280	08/04/2016	AIM Italia
Technogym	IT0005162406	03/05/2016	MTA
Coima Res	IT0005136681	13/05/2016	MTA
Enav	IT0005176406	26/07/2016	MTA
Dominion Hosting Holding	IT0005203622	27/07/2016	AIM Italia
Vetrya	IT0005202277	29/07/2016	AIM Italia
Fope	IT0005203424	30/11/2016	AIM Italia
Health Italia	IT0005221004	09/02/2017	AIM Italia
Telesia	IT0005240046	20/02/2017	AIM Italia
Tps	IT0005246142	28/03/2017	AIM Italia
Unieuro	IT0005239881	04/04/2017	STAR Milan
Indel B	IT0005245508	19/05/2017	MTA
Wiit	IT0005440893	05/06/2017	AIM Italia
Finlogic	IT0005256323	09/06/2017	AIM Italia
Digital360	IT0005254252	13/06/2017	AIM Italia
Culti Milano	IT0005257347	17/07/2017	AIM Italia
Alfio Bardolla	IT0005244030	28/07/2017	AIM Italia
Neodecortech	IT0005275778	26/09/2017	AIM Italia
Pirelli & C	IT0005278236	04/10/2017	MTA
Portale Sardegna	IT0005305443	16/11/2017	AIM Italia
Alkemy	IT0005314635	05/12/2017	AIM Italia
Dba Group	IT0005285942	14/12/2017	AIM Italia
Gel	IT0005312365	20/12/2017	AIM Italia

Kolinpharma	IT0005322950	09/03/2018	AIM Italia
Fervi	IT0005325912	27/03/2018	AIM Italia
Somec	IT0005329815	14/05/2018	AIM Italia
Grifal	IT0005332595	01/06/2018	AIM Italia
Carel Industries	IT0005331019	11/06/2018	STAR Milan
Longino&Cardenal	IT0005337073	04/07/2018	AIM Italia
Esautomotion	IT0005337107	06/07/2018	AIM Italia
Askoll Eva	IT0005337123	11/07/2018	AIM Italia
Monnalisa	IT0005338139	12/07/2018	AIM Italia
Portobello	IT0005337495	13/07/2018	AIM Italia
Intred	IT0005337818	18/07/2018	AIM Italia
Sg Company	IT0005337172	26/07/2018	AIM Italia
Sostravel.Com	IT0005338675	01/08/2018	AIM Italia
Vimi Fasteners	IT0004717200	02/08/2018	AIM Italia
Sciuker Frames	IT0005340051	03/08/2018	AIM Italia
Renergetica	IT0005340655	09/08/2018	AIM Italia
Piovan	IT0005337958	19/10/2018	STAR Milan
Circle	IT0005344996	26/10/2018	AIM Italia
Garofalo Health Care	IT0005345233	09/11/2018	STAR Milan
Ediliziacrobatica	IT0005351504	19/11/2018	AIM Italia
Powersoft	IT0005353815	17/12/2018	AIM Italia
Ilpra	IT0005359101	15/02/2019	AIM Italia
Neosperience	IT0005351496	20/02/2019	AIM Italia
Maps	IT0005364333	07/03/2019	AIM Italia
Societa' Editoriale Il Fatto	IT0005353484	14/03/2019	AIM Italia
Nexi	IT0005366767	16/04/2019	MTA
Sirio	IT0005372385	10/06/2019	AIM Italia
Italian Exhibition Group	IT0003411417	19/06/2019	MTA
Gibus	IT0005341059	20/06/2019	AIM Italia
Officina Stellare	IT0005374035	26/06/2019	AIM Italia
Relatech	IT0005433740	28/06/2019	AIM Italia
Marzocchi Pompe	IT0004376858	16/07/2019	AIM Italia
Pattern	IT0005378143	17/07/2019	AIM Italia
Shedir Pharma Group	IT0005379620	23/07/2019	AIM Italia
Cleanbnb	IT0005377277	24/07/2019	AIM Italia
Friulchem	IT0005378457	25/07/2019	AIM Italia
Radici	IT0005379737	26/07/2019	AIM Italia

Farmae	IT0005378333	29/07/2019	AIM Italia
Confinvest	IT0005379604	01/08/2019	AIM Italia
Iervolino & Lady Bacardi Entertainment	IT0005380602	05/08/2019	AIM Italia
Websolute	IT0005384901	30/09/2019	AIM Italia
Cyberoo	IT0005383671	07/10/2019	AIM Italia
Arterra Bioscience	IT0005386369	28/10/2019	AIM Italia
Newlat Food	IT0005385213	29/10/2019	STAR Milan
Matica Fintec	IT0005388449	11/11/2019	AIM Italia
Ucapital24	IT0005380461	19/11/2019	AIM Italia
Fos	IT0005388217	26/11/2019	AIM Italia
Nvp	IT0005390783	05/12/2019	AIM Italia
Sanlorenzo	IT0003549422	10/12/2019	STAR Milan
Gismondi 1754	IT0005391138	18/12/2019	AIM Italia
Doxee	IT0005394413	19/12/2019	AIM Italia
Gvs	IT0005411209	19/06/2020	MTA
Sebino	IT0005413510	19/06/2020	AIM Italia
Cy4gate	IT0005412504	24/06/2020	AIM Italia
Fabilia	IT0005417784	11/08/2020	AIM Italia
Sourcesense	IT0005417040	12/08/2020	AIM Italia
Fenix Entertainment	IT0005403495	14/08/2020	AIM Italia
Reti	IT0005418204	10/09/2020	AIM Italia
Labomar	IT0005421646	05/10/2020	AIM Italia
Esi	IT0005421885	26/10/2020	AIM Italia
Trendevice	IT0005422792	27/10/2020	AIM Italia
Osai Automation System	IT0005424830	03/11/2020	AIM Italia
Euro Cosmetic	IT0005425456	06/11/2020	AIM Italia
Tecma Solutions	IT0005425050	09/11/2020	AIM Italia
Promotica	IT0005425365	27/11/2020	AIM Italia
Comal	IT0005428971	16/12/2020	AIM Italia
Tenax International	IT0005428898	18/12/2020	AIM Italia
Igeamed	IT0005429227	22/12/2020	AIM PRO Italia
Convergenze	IT0005426215	30/12/2020	AIM Italia
Eviso	IT0005430936	30/12/2020	AIM Italia
Planetel	IT0005430951	30/12/2020	AIM Italia
Vantea Smart	IT0005433765	27/01/2021	AIM Italia
Philogen	IT0005373789	03/03/2021	MTA
Almawave	IT0005434615	11/03/2021	AIM Italia

Casasold	IT0005437113	18/03/2021	AIM Italia
A.B.P. Nocivelli	IT0005439861	30/03/2021	AIM Italia
Reevo	IT0005438038	06/04/2021	AIM Italia
Jonix	IT0005442741	04/05/2021	AIM Italia
Seco	IT0005438046	05/05/2021	STAR Milan
Acquazzurra	IT0005443061	13/05/2021	AIM PRO Italia
G Rent	IT0005445108	26/05/2021	AIM Italia
The Italian Sea Group	IT0005439085	08/06/2021	MTA
Aton Green Storage	IT0005449464	17/06/2021	AIM Italia
Meglioquesto	IT0005450173	28/06/2021	AIM Italia

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sessione Primo periodo, anno accademico 2021/2022

dovendo sviluppare una tesi/prova finale dal titolo: The owners' perspective in initial public offerings: a theoretical review and empirical analysis of the Italian Stock Exchange

con relatrice la Prof.ssa Elena Sapienza

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2. ad utilizzarli, in accordo con il relatore, ai soli fini dell'elaborazione della tesi/prova finale;
3. a non compiere atti che possano essere di pregiudizio all'utilizzazione economica degli stessi da parte dei legittimi proprietari.

Padova, 07/02/2022