Underpricing and Money "Left on the Table" in Italian IPOs

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Abstract. *The pricing of Initial Public Offerings (IPOs) in the short-run has been analyzed by several theoretical and empirical studies referring to the major international stock markets. This paper presents an empirical study conducted on a unique survey of 163 IPOs on the Milan Stock Exchange between 1985 and 1999. In particular we focus on the driving forces that determine short-run performance. We distinguish between fixed-price offers and open-price offers with book-building and find different underpricing levels and different statistically significant determinants. The analysis of fixed-price IPOs (basically between 1985 and 1994) offers results consistent with theoretical frameworks and previous analyses in other countries, such as a negative correlation between the underpricing and the age of the firm, and a positive correlation between the underpricing and the offering size, the market momentum, the price volatility. In open-price IPOs with book building, mostly between 1995 and 1999, the underpricing is lower and negatively correlated with the assets value. A significant positive correlation with the fraction of the equity capital maintained by the controlling shareholders is pointed out whilst the market momentum is not a significant determinant. The difference between the two offering methods seems to confirm the "information gathering" and "partial adjustment" theories, and the importance of choosing adequate placing strategies. We look at the IPOs performance in the first weeks of trading: we find that the initial returns contain almost all the IPO underpricing. We also detect preliminary evidence of price stabilization activity, this suggesting that underwriters support "weak" IPOs in order to avoid negative initial returns.*

J.E.L Classification codes: G30, G32.

Keywords: Underpricing, Price Stabilization, Initial Public Offerings, Italian Stock Exchange.

1. Introduction

Hunger for high-tech stocks and the Euro's arrival helped make 1999 a record year for Europe's IPO market. The number of new companies listing rose 30% to 309 from 237 across Germany, Italy, France, Spain and UK. Italy boosted its contribution significantly. Aside from the privatization of energy and telecommunication giant ENEL (the world's largest IPO, collecting more than 8 billion •) Italy attracted more than 10 billion • on the money-raising front[2].

With Internet and high-tech offerings making huge gains on their market debuts (Italy's Finmatica rising 687% !) and swings in sentiment unnerving the markets, investors and analysts have focused even more their attention on IPO market performance.

The pricing of IPOs both in the short-run and in the long-run is somewhat of a mystery and poses several problems to the theories of market efficiency (Ibbotson et al., 1994). While the evidence on IPOs long-run underperformance is mixed[3], the most striking and widely diffused empirical regularity is the initial underpricing.

Most of the theoretical models explaining IPO important initial returns share three features: (i) imperfect information and agency costs among firms, intermediates and investors, (ii) choice and institutional setting of introduction procedure and (iii) investors over-optimism in hot-issue markets. More recently the IPO literature has documented another interesting, though less explored puzzle, i.e. the intermediates' activism in trading shares in the aftermarket in order to support or stabilize IPOs. This seems to be quite a common practice in IPOs, but little has been discovered about its determinants and implications for investors.

In this work we attempt to provide new evidence on the short-run performance puzzles using a unique set of data from the Italian Stock Exchange. We analyze the first days market performance of 163 IPOs newly listed on the Milan Stock Market between 1985 and 1999.

We find that the first day underpricing persists on the Italian Stock Exchange, as previously highlighted[4] by Cherubini and Ratti (1991) and Basile and De Sury (1997) and substantial money is

“left on the table” by issuers. Therefore, the aim of our research is to widen the sample size, to update the previous results and point out the most relevant determinants of short-run performance. By carefully considering the market variables we obtain a remarkably high level of statistical significance in the empirical analysis. We point out a correlation between the underpricing level and variables identified by the literature as proxies for information asymmetry such as the firm’s age, the price volatility, the fraction of equity capital maintained by the controlling shareholders after the IPO (Beatty and Ritter, 1986). As Loughran and Ritter (1999) claim, we find that the first-day return on IPOs are correlated also to the market momentum in the weeks before the issue.

By separately analyzing IPOs with book building (which are significantly less underpriced) we confirm the “information gathering theory” by Benveniste and Spindt (1989). We also validate the “partial adjustment theory” by Ritter (1988) i.e. the more optimistic the revision in the offer price from the file price range, the higher the underpricing in order to compensate investors for truthfully revealing their expectations. Moreover the determinants of the underpricing appear to be diversified: when the offer price is fixed the underpricing is particularly affected by the age of the firm and the market momentum and volatility. In IPOs with book building the offer size, the fraction of equity capital held by the controlling shareholder and the accounting value of the assets seem to have a more relevant role.

Then, by looking at the market data on subsequent days, we find that the initial IPO returns contain almost all the underpricing. We also detect preliminary evidence of price stabilization activity, this suggesting that underwriters are keen on supporting "weak" IPOs in order to avoid negative initial returns. In detail, we hypothesize that worst performing IPOs in some cases exhibit first-day positive returns, but in the following weeks, when underwriters' activism on the market is over, the performance gradually drifts to negative values.

This paper is divided in six sections. Section 2 highlights the recent literature about IPOs performance in the short-run, in particular on the underpricing phenomenon and on the role of

underwriters in the aftermarket. In Section 3 we give a short description of the going public institutional framework in Italy. Section 4 shows the results of the empirical analysis. In particular, Section 4.1 describes some basic characteristics of the survey, Section 4.2 specifically deals with the underpricing phenomenon. In Section 4.3 an econometric analysis is presented with the objective to determine the causes of the underpricing in Italian IPOs, and finally in Section 4.4 we observe the IPOs performance in the first month of trading in order to detect underwriters managing price support in the aftermarket. In Section 5 the findings of the analysis are summarized and some concluding remarks are derived.

2. Why IPOs are (often but not always) underpriced ?

The existence of the underpricing phenomenon in Initial Public Offerings (IPOs) is well known by economic literature, and seems to be a common characteristic of most international markets, as highlighted by Loughran et al. (1994). Table I reports the most recent evidence we found about the underpricing magnitude in the world.

Table I

The interpretations of this widely diffused "anomaly" of the financial markets are quite numerous and in most cases they interpret the underpricing as the outcome of an equilibrium consistently with modern financial theories. Nevertheless other works relate the underpricing to market "fads" (see for example Aggarwal and Rivoli, 1990), to noisy trading activities (Chen et al., 1999), to investors' overoptimism about growth prospects (Rajan and Servaes, 1997, Bossaerts and Hillion, 1998) or to irrational behaviours due to speculation bubbles (Tinic, 1988). Yet, the persistence of the phenomenon has induced the research towards theoretical models in which the underpricing is a

rational solution to information asymmetry, agency problems and institutional settings when firms go public.

2.1 Review of the underpricing theories and empirical evidence

Several theories have been presented regarding IPOs underpricing. We attempt to build a taxonomy by introducing four broad categories: (i) theories invoking some investors possessing private superior information than other outsiders, (ii) theories invoking information asymmetry between the investors and the underwriter, (iii) theories invoking information asymmetry between the issuing firm and the underwriter, and (iv) theories invoking agency costs (in this case moral hazard phenomena and conflict of interests are the topic, apart from information asymmetry). Obviously some of the theories presented by the literature share several features among these categories: therefore we just propose a referring classification.

Within the first category the best-known model is provided by Rock (1986), who categorize investors into two types: informed and uninformed. Informed investors will only attempt to buy underpriced shares. Uninformed investors cannot discriminate between issues, and they will be allocated only a small fraction of the most desirable issues, while they get full allotment of the least attractive ones. Therefore they face a winner's curse due to the adverse selection externalities. Shares must be offered at a discounted price to compensate them for at least a risk-free rate[5].

Let us now imagine that information asymmetry exists between the underwriter and the investors about the price and the level of the stock demand. Benveniste and Spindt (1989) and Benveniste and Wilhelm (1990) state that the underpricing is a mean to induce informed investors to reveal private information about the demand for shares in the pre-selling phase, thus allowing the intermediates to better evaluate the offering. Hanley (1993) tests the "information gathering theory" by Benveniste and Spindt (1989) and the "partial adjustment theory" by Ritter (1988); she demonstrates that the relationship between the IPO offer price and the preliminary price range predicts the direction of the

initial stock returns. Stocks that are priced above the initial range perform very well in the short-run; therefore, the offer price is "partially adjusted" to the information about investor demand received during the underwriter's institutional activity. In this case the underpricing may be exploited to reward investors for having provided good information about the firm. Consequently, the more qualified the information gathered during the pre-selling activity, the higher will be the expected underpricing[6]. Krigman et al. (1999) and Aggarwal and Conroy (1999) find that nearly all of the total initial return for an IPO is realized on its first trade on the issue date; this could confirm that pre-market information updating by wholesalers, even in the five-minutes preopening time, is a strong determinant of the price discovery process, rather than investors' behavior. Loughran and Ritter (1999) hypothesize other explanations for partial adjustment, such as underwriters anchoring to the file price range or "leaning against the wind" (investors overreaction).

Consider now the third type of information asymmetry. Mandelker and Raviv (1977) and Baron (1979) highlight the relationship between the firm's managers and the intermediates, therefore relating the underpricing to the underwriters' risk-aversion. Mauer and Senbet (1992) propose an explanation based on stock pricing in segmented markets; in particular, they assert that in these markets problems of incomplete access and incomplete spanning do exist, causing a remarkably high risk for investors. Baron and Holmstrom (1980) and Baron (1982) also state that the underpricing is caused by information asymmetry, since the intermediate has private information about the demand level and the seller is not able to verify the intermediate's effort in sponsoring the offer[7]. Grinblatt and Hwang (1989), Allen and Faulhaber (1989), Welch (1989) and Chemmanur (1993) instead identify the firm's managers as the informed party, and interpret the underpricing as a "signal" of a firm's quality[8] and as a mean to counterbalance the costs borne by the investors in collecting information.

Let us now introduce agency and moral hazard considerations. Ibbotson (1975) states that the underwriter may be induced to underprice an IPO to leave "a good taste in investors' mouth" in

order to capture buyers for the following offerings driven by the same intermediate. Allen and Faulhaber (1989) hypothesize that underwriters also want to gain the goodwill of strategic clients, assigning them underpriced shares. More easily, Baron and Holmstrom (1980) highlight that marketing expenses have a decreasing marginal return and it is less costly to convince investors to subscribe underpriced IPOs. Leland and Pyle (1977) and Holmen and Högfeldt (1999) argue that new shareholders ask for underpriced shares in order to be compensated for the extraction of private benefits by the entrepreneur who would like to continue to stay in control[9]. Thus, underpricing will be closely related to the motives for going public, and to the resulting ownership structure. On one hand, underpricing may be desired also by the issuing firm if the managers want to stimulate the small investors' demand and avoid monitoring shareholders to purchase large blocks (Brennan and Franks, 1997). On the other hand, it can be argued that the controlling shareholders welcome monitoring large shareholders in order to commit themselves to the investors and obtain research coverage (Stoughton and Zechner, 1998).

Baron's (1982) model combines agency costs, asymmetric information and costly monitoring and predicts that underwriters tend to underprice IPOs both to minimize their selling efforts and to maximize the probabilities of a successful offering.

Among the above interpretations, the most influential have been the theories based on information asymmetry between firms and investors. In order to find empirical evidence about them, Beatty and Ritter (1986) introduce the key testable concept of "ex-ante uncertainty" based on the positive correlation between the expected underpricing and the lack of information, which may be expressed by some proxy variables, the most common[10] being (ex-ante) the firm's age, size and assets typology, as well as (ex-post) the bid-ask spread, the price volatility and the fraction of equity capital held by the controlling shareholder. Friedlan (1993) effectively finds that the lower the underpricing the more detailed the information in the prospectus, the older the issuing firm and the larger its assets value and revenues[11]. Besides, the ex-ante uncertainty may be reduced through

suitable placing strategies[12], by adequately selecting the intermediates and the auditors[13], by the presence of a venture capitalist[14] (certification hypothesis), or by providing adequate commitment (for example through lock-up provisions[15]).

Actually, a debate is going on about optimal selling procedures in IPOs (fixed price offer vs. book building vs. auction-like[16]). Jenkinson (1990) compares the underpricing of IPOs in the U.K, in Japan and in the U.S. and posits that the regulations governing the placement of new shares help to explain the pattern of prices in different countries. Benveniste and Spindt (1989) suggest that the book-building procedure is efficient since it induces revelation of the investors' beliefs and (contrary to the auction method) allows the underwriter to discriminate in the allocation of shares. Sherman and Titman (1999) build a model suggesting that for firms with the most to gain from accurate pricing (i. e. collecting information is very costly), the number of investors participating in the offering is larger, and underpricing will be greater. When information is costly, more investors will be invited to participate in the book building phase but increased participation increases rationing and underpricing.

Benveniste and Busaba (1997) conclude that the book-building procedure generates higher expected proceeds than a fixed-price offer. Leite (1999) presents a model showing that the use of bookbuilding allows more accurate pricing, this ameliorating the adverse selection problem facing less informed investors and hence reducing the need for underpricing.

Leleux and Paliard (1995) and Derrien and Womack (1999) state that the auction mechanism is associated with less underpricing and thus more efficient, since this procedure is able to incorporate more information from recent market momentum into the pricing of the IPO. Also Biais et al. (1998) suggest the optimality of the auction-like procedure. Kandel et al. (1999) examine the IPO auctions in Israeli; they state that in auctioned IPOs investors gain information about the elasticity of the demand for stock, revising the prices of securities according to the new information. In this case

the underpricing is entailed by the uncertainty about the demand elasticity, which is assumed to be important to determine the stock value.

Other features of the contractual devices governing IPOs have been analyzed. The option to withdraw the offering is modeled as part of the placement method by Benveniste et al. (1999), who find that the underpricing is lower when investors' perception of an IPO's likelihood of withdrawal is high. Fernando et al. (1999) document a U-shaped relationship between the offer price choice and underpricing. Lower offer prices discourage institutional interest, and IPOs with lower offer prices appear to be targeted more to a retail clientele and suffer greater adverse-selection induced underpricing. Higher offer prices encourage institutional attention, and induce higher underpricing as compensation to institutions for gathering information.

Nevertheless, Habib and Ljungqvist (1999) underline that underpricing is not the entrepreneur's primary concern. Entrepreneurs are expected to minimize the reduction in underpricing-induced wealth losses ("money left on the table", as defined by Ritter, 1984), which increase in the underpricing but also in the number of shares sold in the IPO. When testing any hypothesis which makes predictions about underpricing, such as the certification hypothesis, incentives to reduce total wealth losses should be considered rather than the underpricing *per se*. Loughran and Ritter (1999) observe an unprecedent amount of money left on the table in the '90s and nonetheless notice that issuers rarely get upset about it. Introducing a "prospect theory" of issuers behavior, they argue that the IPOs where wealth losses are large are almost invariably those where the offer price and market price are higher than had originally been anticipated. Thus, controlling issuers are generally simultaneously discovering they are wealthier than they expected to be, and underpricing may be considered an indirect form of underwriter compensation.

Actually, other explanations of IPOs underpricing have been pointed out, which cannot be strictly referred to our taxonomy. In Welch's (1992) framework investors are not get in touch simultaneously; therefore, an offering may fail due to a "cascade" effect, since investors may be

irrationally conditioned by other investors' behaviour. Rydqvist (1993), referring to the Swedish market, points out tax-driven benefits in underpricing shares. Loughran et al. (1994) explain the huge level of IPOs underpricing in emerging markets invoking institutional binding rules. Hughes and Thakor (1992) and Drake and Vetsuypens (1993) suggest that underwriters deliberately underprice new issues to avoid litigation risks. Su and Fleisher (1999) admit that also bribery and corruption can explain high underpricing in IPOs[17].

Some papers have focused specifically on IPOs by privatized firms: governements may have great discretion in pricing the shares, to pursue political and economic ends (Megginson and Netter, 1998). On one hand privatization IPOs may be perceived as having lower cash flow risks (Huang and Levich, 1998) and thus less underpriced. On the other hand, several studies have presented evidence for a political explanation for the short-run underpricing effect; dispersing share ownership and favoring underpricing could be a way to curry favor with small investors, or an attempt to establish a culture of private investing and deepen capital markets (Ibbotson et al., 1994). Nevertheless Dewenter and Malatesta (1997) conclude that on average the initial returns of privatization IPOs and private company offerings are similar. Huang and Levich (1998) find evidence consistent with proceeds or value maximization in privatization IPOs and argue that traditional theories that are used to model the behavior of conventional IPOs can also be applied to privatization offerings.

In this paper we will test the above hypotheses explaining underpricing and money left on the table for the Italian Stock Market. We believe that this is particularly interesting, because it also allows us to point out the relationship among the underpricing level and alternative placement strategies (book-building vs. fixed price offers) which alternated in Italian IPOs in the '90s.

Unfortunately, up to now less has focused on why some IPOs are underpriced while others are not, thus in several studies they represent 20-30 percent of all observations[18]. We leave it as a challenge for future research.

2.2 The role of the underwriter in the aftermarket

The lead underwriter plays an important role in pricing and placing shares. She decides at what time during the day trading will start in an IPO and revises her own quotes after observing what other market makers (especially the wholesalers) are quoting (Aggarwal and Conroy, 1999). She always enters the first quote during the preopening, but her activity continues beyond the IPO date, when she often becomes a market maker for the newly traded stock[19].

Recently most efforts have been spent to analyze if the underwriters engage in price support and stabilization. Yet, the data about price support are not always available and transparently disclosed to investors so that the interventions by underwriters in the aftermarket are not well understood.

Hanley et al. (1995) and Schultz and Zaman (1994) find evidence that the lead underwriter actively supports the price of less successful IPOs trading shares and taking relevant inventory positions, in order to control the final size of the issue and protect her reputation. She enters a bid equal to the offer price for weak IPOs ever since the first day of trading (Aggarwal and Conroy, 1999).

Benveniste et al. (1996) and Ritter (1988) advance a favored customer hypothesis for explaining price support: simply the underwriter wants to bail her most favored customers out of losers IPOs.

Chowdry and Nanda (1996) state that price stabilization helps to alleviate risk and provides the investors with a put option. The latter are more likely to purchase shares, if they know that the market price will not drop off in the short-run. Therefore we expect that price support is a cost center for the intermediates, subsidized by the gross spread.

Prabhala and Puri (1999) argue that IPOs supported by the underwriters are larger, have lower gross spreads and high offer prices, but not necessarily are unsuccessful. Rather, the “better quality” IPOs appear to experience price support. They claim that stabilization commits intermediates to produce more accurate information about the issuing firm and suggest a liquidity-based explanation price

support. Therefore they find no evidence that stabilization is simply an extra cost of underwriting an IPO, designed to fool investors and recovered by higher spreads[20].

Thomas and Cotter (1998) document that the risk of price support is decreased by the use of the overallotment option ("green shoe"). Underwriters are allowed to sell additional shares to be covered with stock repurchases in the open market if the stock price does not increase, or by exercising the option if it does[21]. Thus no matter which direction the stock prices moves after the IPO, the underwriter eliminates much of the financial and inventory risk, and potentially makes money in the aftermarket.

The strategic role of the overallotment option is confirmed by Ellis et al. (2000). They find that the lead underwriter is always the dominant market maker; during the first days of trading she takes a substantial inventory position in trading shares for less successful IPOs[22] but aftermarket activism generates positive profits, by using the overallotment option. Large inventory positions are concentrated exactly in those IPOs where the overallotment was not (or only partially) exercised. As a consequence on average the aftermarket trading activism cannot be viewed as a cost to the intermediate. Interestingly enough, the authors find also a significant link between underwriters' trading profits and IPO underpricing. This suggests that the underwriter may have an incentive to underprice the shares to obtain greater trading profits.

Aggarwal (2000) confirms that in the first two weeks after the listing the underwriters manage price support by aftermarket short covering (in order to stimulate demand) and the selective use of the overallotment option, but excludes that stabilizing bids are posted[23], since short-covering achieves the same purpose but is less risky. Moreover she finds that the underwriters restrict supply by penalizing the flipping of shares, taking away selling concessions. Stock flippers are investors who purchase shares in IPOs and sell them when the issue begins trading[24]. When canvassing customers the underwriter knows that flippers create an artificial demand; therefore she has to determine the true demand for the issue in order to avoid the decrease of the aftermarket price as flippers bring

their supply to the market. Whether flippers actually cause or react to aftermarket price decreases is debatable. Krigman et al. (1999a) claim that flipping is a reaction to poor pricing and flipped IPOs are more likely to underperform in the long-run, implying some investors (the large-block flippers vs. *naïve* investors) endowed with a superior information. Houge et al. (1999) confirm the long-term predictive power of the flipping ratio: however they do not attribute superior information to block traders but simply hypothesize divergent expectations among investors contributing to the short-term overreaction.

Fishe (1999) proposes a model in which the underwriters' activism aims at contrasting flippers, given that the intermediate sets the IPO keeping into account flipping activity and over-selling the issue rather than lowering the offer price. Consistently with the empirical evidence, in his model this strategy is profitable because the underwriter may cover its short position at the lower aftermarket price. He also demonstrates that price support combined with the green shoe option provides a put option to the underwriter, not to the investors.

Up to now to our knowledge no empirical research has been provided about the underwriters' post-issuance activity in European IPOs. Therefore, it is quite interesting to find out if in Italian IPOs the underwriter does really engage in aftermarket trading, which are the objective of her intervention and if price support is either a cost or a profit for the intermediate. We will also attempt to identify flippers activity and to determine its consequences.

3. The going public process in Italy

In most countries a diversity of options is available to introduce new shares on the Stock Exchange. As we highlighted, several underpricing theories invoke aspects of regulatory environment; therefore in this Section we provide a short description of the Italian setting.

The going public process in Italy starts with a firm and an advisor selecting a Stock Market, choosing the flotation mechanism and estimating an offer price range[25]. A "book-running" manager

and the co-managers (if any) are given the responsibility to assembly a syndicate (leaded by the underwriter) to assist in the public offering of the shares. A letter of intent is draught protecting the underwriter in the event the offer is withdrawn, determining the gross spread and a commitment by the company to grant an overallotment option to the underwriter, typically 15% of the total issue. The most diffused kinds of agreements in Italian IPOs are the Firm Commitment and the Stand-by Agreement. With a Firm Commitment the investment bank guarantees to purchase the whole issue from the corporation and then re-offer the shares to the public. With a Stand-by Agreement the intermediate agrees to purchase the newly issued shares not subscribed by the investors, to a limited amount. The Best Effort Agreement, which does not guarantee that enough buyers will be found to sell the entire offering, is almost never used in Italy[26].

After the authorities' approval[27], a legal notice and a prospectus are published specifying the number of shares sold, the price at which these shares will be sold and the date of the listing.

In the prospectus the intended use of the new funds must be largely commented on, and detailed information about the firm, its controlling shareholders and its subsidiaries have to be provided.

The shares marketed through a public offer may be existing shares (OPV, *Offerta Pubblica di Vendita*) or newly issued shares (OPS, *Offerta Pubblica di Sottoscrizione*) or both (OPVS, *Offerta Pubblica di Vendita e di Sottoscrizione*). Voting, non voting or restricted voting shares may be offered to the public.

From 1985 to 1994 almost all IPOs adopted the fixed-price issue procedure, i.e. the (fixed) price of the shares was published in the prospectus. A few IPOs adopted an auction-like procedure, in which competitive price-quantity bids were collected from investors. Actually this procedure has been no longer adopted for an IPO in Italy[28] after 1986.

From 1992 for large IPOs (to coincide with the first large privatization IPOs leaded by the Italian governments), and from 1994 for almost all IPOs, the investment banks are used to start gathering indications of interest from the regular investors, which are non-binding orders at different price

levels. This collection helps the underwriter to determine the final offer price and a list of potential buyers (*book building with fixed price*). Therefore, just a referring price range is published in the official prospectus. The final issue price is not set according to any explicit rule, but rather at a level at which demand exceeds supply, determined after observing all the indications of interest. Up to now in all Italian IPOs the final offer price has been never set below or above the file price range.

Once the offer price is set, bids are solicited from investors and shares are assigned. In case of oversubscription, the effective allocation of shares to the public is generally driven by casual drawing or allotment of smaller tranches. In 1999 a new procedure (*book building with open price*) has been developed and adopted for 13 IPOs, according to which the final price is set after the collection of bids. In this case the investors do not know exactly the offer price when they purchase shares.

From 1994 tax incentives for Italian firms going public are at work[29]. Up to 1997 income realized by newly listed small and medium size firms (issuing new shares) has been levied at a reduced rate equal to 21%. In 1997 a tax reform allowed all Italian companies to apply a reduced tax rate equal to 19% (*dual income tax*) at the income deriving from new equity capital raised or ploughed-back profits. In order to induce firms, particularly SMEs, to go public, a particular disposal has been introduced for companies newly listed on Stock Markets: for three years the relief of 19% can be reduced to 7%.

The Italian Stock Exchange is divided into three markets: the official Stock Exchange (*Mercato Ufficiale*), a market for small caps (*Mercato Ristretto*) and a market for small firms having a high growth potential (*Nuovo Mercato*). To be admitted to the official Stock Exchange, the issuing firm must publish the last three annual reports, exhibit an “active capability” to generate revenues and undertake to adopt a disclosure policy. The offered shares must represent at least 25% of the equity capital, and the total capitalization must exceed 5.16 millions • . These rules have been introduced

as soon a the Stock Exchange has been privatized in 1998; before the rules were somewhat more severe.

The Official Stock Exchange lists a relatively low number of companies (247), with a gross market capitalization equal to 714.147 billion • representing 65.2% of Italian GNP as at December 30th, 1999. Therefore, the mean size of the listed companies is quite large in comparison with other industrialized countries[30].

The firms listed on the Mercato Ristretto (17) are essentially small cooperative banks and local utilities and capitalize 5.438 billion • .

In 1999 a new Second Market (*Nuovo Mercato*), joining the Euro-NM network, opened to Italian small fast-growing firms, especially belonging to high-tech sectors. Six firms (mainly from the IT and telecom sectors) are listed on this market, as at December 30th, 1999; they capitalize 6.981 billion • . Compared with the Official Market standards, the rules of the *Nuovo Mercato* are less strict. For example, offered shares (at least half of them must consist of newly issued shares) must represent more than 20% of the equity capital, and the offering size has to exceed 2.58 millions • . Only one set of audited published financial statements is required before the offering. A sponsor collaborating in the procedure for the admission and a specialist displaying continuous bids and offers on the book have to be pointed out. Special rules apply to the trading method in order to provide liquidity.

On the Italian Exchange the underwriters may engage in price stabilization during the first months of listing of an IPO firm. Yet, only after 1995 the IPOs prospectuses started to provide *ex-ante* information about the underwriter's behavior in the 30-45 days after the listing. *Ex-post* disclosure of price support activity is requested by the market authorities to intermediates but these data are not publicly available.

4. The empirical analysis

4.1 The sample

In this study 237 firms listed for the first time on the Milan Stock Exchange between 1985 and 1999 have been considered. Nevertheless, not all of them may be considered Initial Public Offerings. In particular, 44 of them simply transferred from other national Stock Markets (in 25 cases from the "*Mercato Ristretto*" and in 19 from other markets), 8 were already listed on other foreign Stock Markets, 9 simply made no public offerings, 2 have been re-admitted after a period of suspension and finally 11 are spin-offs. Therefore, the sample is made up of 163 offerings, summarized in Table II, where the number of cases excluded is also reported.

Table II

As Table II shows, in the years considered two different periods may be distinguished, in which the number of IPOs is relevantly high ("hot issues") . The first is between 1985 and 1988 (when in most industrialized countries stock markets registered brilliant performance), the second refers to the last five years (in this case we have to keep into account that Italian IPOs are boosted also by tax relief).

From several public sources we collected the relevant data about the sample firms relatively to the periods before and immediately after the offering, and about the placement's strategies and techniques. The data are reported in the first part of the Section ahead, in which the underpricing magnitude and the amount of "money left on the table" have been computed for every operation. In the second part, we point out the determinants of the underpricing phenomenon and the causes of its variability across the period, which is remarkably long with respect to the few existing studies on the Italian Stock Market.

Among the IPOs of the survey 30 offerings are privatization operations and in 38 cases the issuing firm belongs to business groups whose holding company is already listed (equity carve-outs). The latter IPOs are essentially related to the period between 1985 and 1988 and involve almost all the

largest business groups listed on the Stock Market in those years[31]. Moreover, they represent about 50% of the IPOs in the same period.

With reference to the privatization operations, in the first period banks and assurance companies are especially at stake, whereas in the second public utilities are involved above all[32].

We first include also privatizations, equity carve-outs and financial companies in our sample, since no strong empirical evidence exists rejecting proceeds or value maximization in these kind of offerings. Nevertheless, we will use dummy variables to control for other hypotheses.

Considering the sector subdivision of the sample, we referred to a classification adopted by the Italian Stock Exchange (*Borsa Italiana SpA*), which distinguishes among three "macrosectors", i.e. "industrial" securities, "financial" securities and "utilities". Table III shows that the majority of the IPOs refers to "industrial" firms, even if "financial" companies have a relevant importance, especially in the first period.

Table III

It is interesting to observe that the offerings examined are not homogeneously distributed across the year. Table IV reports their monthly distribution, with respect both to the month in which the shares start to be traded on the Stock Market, and to the month in which the offering is launched. Notice that about 50% of the offerings and listings are concentrated in the months of May, June and July. To our belief this happens because of the technical time needed in order to approve the year-end balance sheet (generally the shareholders' meeting is organized between March and May), to draw up the prospectus and to accomplish the tasks imposed by the Market authorities (requiring that the annual report does not contain obsolete data).

Table IV

Besides, it may be suitable the hypothesis that a correlation between the market momentum and the offering period scheduled by the management does exist. In order to attempt a first analysis, we plotted the 90-days mobile average of the monthly returns of the market index (the historical MIB index), and we shifted it on three months. Figures 1 and 2 report the results for the period between 1985 and 1987 (in which a remarkably number of firms went public in Italy) and between 1988 and 1998 (the other years considered) respectively.

Figures 1 and 2

Notice that the months of June and July, characterized by a remarkable concentration of listings and offerings, are strongly correlated with the "peaks" of the mobile-average series. We may hypothesize that the managers of a company newly listed between June and July definitively adopted the decision to go public between March and April, being conditioned by the market performance in the first months of the year. Is this an evidence of hot issue markets ?

Ibbotson and Jaffe (1975) define a "hot issue market" as a month in which the average underpricing is significantly above its median level. Ibbotson et al. (1994) instead adopt a measure of IPOs volume for the same definition. Loughran and Ritter (1999) find a significant autocorrelation of first-day returns in IPOs, this implying that underpricing (and hot issue markets) are predictable based upon lagged market returns. We argue that market momentum both triggers higher underpricing in IPOs that are in the selling period (we will test this hypothesis in the next Section) and induce firms to go public in the next months. Therefore we expect that bullish momentum determines hot issue markets both initially (in terms of underpricing) and in the short-run (in terms of IPOs volume).

4.2 Underpricing and money left on the table

For each IPO considered, we computed two measures of underpricing: (i) the "simple" underpricing, defined as the difference in percentage between the official price of the share after the first day of listing and the offer price; (ii) the "adjusted" underpricing, defined as the difference between the "simple" underpricing above and the market index return measured between the day of the admission to the trading and the beginning of the public offering; in our analysis the market index was assumed to be the historical MIB index.

Table V summarizes the results obtained in computing the "simple" and "adjusted" underpricing, along the years. The mean value and the number of firms outstanding a positive underpricing is also reported; t-tests have been conducted in order to determine the statistical significance of the underpricing. In 1999 we also distinguished Internet IPOs and offerings on the "Nuovo Mercato" since they exhibit huge levels of underpricing, related to the high-tech euphoria documented also by Ritter (2000) in the U.S. market.

Table V

Table V clearly confirms the results obtained by Cherubini and Ratti (1991) and by Basile and De Sury (1997) who considered only the first period of our survey. Namely, the underpricing phenomenon is indeed common in IPOs also in the Italian case. The mean "simple" underpricing, relatively to the whole sample of 163 firms, is equal to 25.6%, while it is equal to 22.6% if we consider the "adjusted" one. The values are statistically different from zero with a remarkably high significance (99%)[33], nevertheless they do not appear to be homogeneously distributed across time. In particular, the analysis of the most recent IPOs seems to reveal a strong reduction of the underpricing, with mean values of about 10%. Notice that in 1999 IPOs not related to Internet or to

the "Nuovo Mercato" (hereafter NM IPOs) are not significantly underpriced. Therefore it is worth investigating which are the determinants of this progressive decline.

Table VI

In Table VI we computed the amount of money “left on the table” (Ritter, 2000), defined as the offer price to closing market price on the first-day of trading, multiplied by the number of shares offered (excluding overallotment options). The mean amount is equal to 18.067 million • (15.932 excluding Internet and NM IPOs). The largest amounts of "wealth loss" (359 million • and 289 million •) have been experienced in an Internet IPO (Finmatica in 1999) and in a bank privatization (IMI in 1994) respectively. From 1995 to 1998 only four IPOs (two of them refer to privatizing companies, the others two are large companies of the Fininvest group – Mediaset and Mediolanum) left on the table more than 50 million • . On the contrary, notice that in 1986 a very large amount of wealth was lost in IPOs (six IPOs over 50 million •).

Since in Italy inflation has been not negligible during the 80s and the early 90s, we also adjusted the value of "money left on the table" collecting the revaluation indexes from the ISTAT database and reported all the values to the present value (as to December 1999). Like in the U.S. (Ritter, 2000) in Italy more money was "left on the table" in 1999 than during the first nine years of the decade combined. Moreover, from 1995 to 1999, we observe an increase of the mean amount of wealth loss; therefore, we observe that in these years firms selling a large number of shares tend to be more underpriced than small companies, since the mean underpricing level decreases. This hypothesis will be confirmed in the next Section, as we show that a positive correlation between the offer size and the underpricing exists. Finally, note that in 1999 on the average Internet and NM IPOs leave on the table almost three times the money left by other IPOs.

4.3 The determinants of the underpricing phenomenon: an econometric analysis

In order to test the correlation between the underpricing and some explicative variables pointed out by the literature, we considered the data summarized in Tables VIIa and VIIb. In Table VIIa we split financial and insurance companies from the others, because they have different accounting procedures. In Table VIIb we report (if available) some data about the offerings, the firms' ownership structure and the aftermarket price volatility.

Tables VIIa and VIIb

First, it is evident a strong scattering of the firms' size, revealed by the high standard deviation; this is due to sectorial peculiarities, as shown by the comparison between the mean and median data of banks and insurance companies and the data of industrial firms, and to the presence of very large companies (Enimont, ENI, Mediaset, ENEL). The mean age of the firms is 47 years, which is remarkably high if compared to US IPOs but similar to other European samples[34]. The fraction of equity capital held by the controlling shareholder after the IPO is on average equal to 61.18%, not sensibly different from other markets[35].

The "adjusted" underpricing values[36] have been regressed in a linear multivariate model against some variables, in order to single out the determinants of the phenomenon. In particular, from the analysis of the existing theoretical literature and of the empirical results, based either on the Italian market or on foreign markets, we considered the dependent variables reported in the Appendix[37].

We introduced dummy variables to control for several factors (such as privatization IPOs, presence of foreign intermediates, shares assigned to employees) obtaining no significant difference in underpricing behavior.

For the sake of brevity we report only the most interesting results of the regression analysis, obtained considering a final sample of 139 IPOs, once having rejected 7 IPOs in which only

restricted-voting shares or non-voting shares have been offered, 3 auction-based IPOs, 5 privatization operations in which a bonus share provision was offered, 2 outlier cases (Banca Toscana and Sondel) characterized by a remarkably long period of time (more than 200 days) elapsed between the offering and the admission on the Stock Exchange, 7 Internet and NM IPOs (these last referring to 1999). In all these cases the determinants of the underpricing are pointed out by the literature to be different[38].

Table VIII summarizes the regression results. The firm's age, the accounting value of assets and the price volatility in the first 10 days after the listing are significantly correlated with the underpricing and the expected signs (positive or negative) are confirmed. Therefore the higher the risk and uncertainty perceived by investors, the higher the underpricing. The fraction of equity capital held by the controlling owner after the offering is also positively correlated: we may hypothesize that investors require shares to be underpriced if control is firmly held by the offering party. The market volatility before the listing, and in particular the market momentum, (which may be associated to investors' sentiment) seem to explain the underpricing, too. Yet, the offer size is not a significant determinant of the initial return. The adjusted R^2 statistics is equal to 26.46%.

Table VIII

In order to test the effects of different placing strategies on the underpricing level, we identified two sub-samples. In particular, the first includes 70 IPOs in which the offer price was fixed in the prospectus, and the second 76 IPOs (69 excluding Internet and NM IPOs) in which the final offer price is determined after book building (in the prospectus a price range is filed). This distinction coincides also with a time-discrimination criterion, since the first IPO preceded by book building activity refers to 1992, while the last fixed-price offer has been issued in 1996.

From the analysis of the literature, we expect the underpricing to be lower in IPOs with book building, coherently with the information gathering theory by Benveniste and Spindt (1989).

Table IX shows the underpricing levels, by offering strategy; we included also the three auction-like IPOs to show that, consistently with Leleux and Palard (1995) and Derrien and Womack (1999), the auction mechanism is associated with a lower underpricing and money left on the table, although the sample size does not provide statistical significance.

Table IX

Notice that the underpricing is much lower in IPOs preceded by “book-building” activity than in fixed-price IPOs, and the difference between the two levels is statistically significant if we exclude Internet and NM IPOs. On the contrary, note that the amount of "money left on the table" is not significantly different: this means that on the average in IPOs with book building more shares are offered to investors than in fixed-price IPOs. These results add new empirical evidence to the hypothesis that book building induces revelation of the investors’ beliefs and contributes to reduce the underpricing. Thus, we expect also the final offer price to partially adjust to the new information collected by the underwriter, consistently with Ritter (1998) and Hanley (1993).

Table X (which categorizes the 76 IPOs with book building by the final offer price relative to the file price range) confirms the informative role of book-building: the choice of the maximum price in the ex-ante fixed band (or, at least, of a price higher than the average one) is interpreted by the market as good news resulted from the information gathering activity. On the contrary the choice of a low price reveals a less optimistic judgement of the investors reached during the book-building procedure: in this case notice that the underpricing is not statistically different from zero.

Table X

Given that IPOs with book building behave differently from fixed-price offers, we now aim at pointing out peculiarities and differences with respect to the relevance of the factors adopted in the regression above.

Consequently the variables described in the Appendix have been split, so that the F_ variables refer only to the first sub-sample (fixed price IPOs), the B_ variables to the second sub-sample (IPOs with book building). The coefficient estimates are reported in Table XI.

Table XI

Notice that, in comparison with the significance of the first analysis reported in Table VIII, the adjusted coefficient R^2 grows up to 40.29%. Second, it is remarkable that some differences appear in the variables' explanatory power. In particular, in IPOs with book-building the underpricing level seems to be: (i) correlated with the accounting value of assets and the fraction of equity capital held by the controlling party after the offering, while the correlation is not significant for fixed-price IPOs; (ii) not significantly correlated with the market momentum, while in the first sub-period an extremely significant correlation is found (a similar argument apply to the market volatility); (iii) less correlated with the firm's age, coherently with the information gathering hypothesis.

4.4 Short-run performance

In this Section we investigate the IPOs performance in the first weeks of trading. Table XII report the first-day underpricing and the cumulated underpricing for the whole survey after 1 week up to 5 weeks.

Table XII

On the average the first-day return explains almost all the initial underpricing, since the mean initial return is not much different from the cumulated return in the following weeks. On the contrary the median value decreases after the listing. Thus we may hypothesize that IPOs may be clustered according to their short-run performance. The literature (see Section 2.2) highlights that after the listing the weakest IPOs are temporarily supported by underwriters. Since the data about underwriters' trading are not publicly available in Italy, we had to detect any price-stabilization activity by looking at the market prices distribution after the IPO. We considered the IPOs' return from the listing to 5 weeks after and we assumed that the worst performing IPOs are more likely to have experienced price support in the first days of trading. Therefore we split the sample of 163 IPOs in "hot IPOs" and "cold IPOs". The latter are defined as one third of the sample IPOs performing worst after 5 weeks of trading (i.e. 55 IPOs showing the lowest - in most cases negative - underpricing). Following Ruud (1993), in Table XIII we have analyzed the distribution of the "simple" underpricing for "cold IPOs" with reference to the day of listing, up to 5 weeks.

Table XIII

Note that cold IPOs on the average have a negative initial return, which - contrary to the whole sample - is decreasing over the following weeks. The buy-and-hold underpricing median value is negative and tends to decrease as well. The maximum value decreases, too, and after 5 weeks all 55 IPOs exhibit a negative cumulated return.

These results are consistent with price support activity, whose effects tend to disappear over time, consistently with Aggarwal (2000). The "coldest" IPOs are initially supported by underwriters, who in the short-run push the underpricing distribution towards positive values; yet this activity is

limited in time and the following returns are negative. Figure 3 shows the "cold" IPOs underpricing distribution up to five weeks after the listing.

Figure 3

Notice that at the listing day 35 firms exhibit a negative initial return: in particular in 9 cases the overpricing is higher than 10%. Among "cold" IPOs, 20 exhibit a first-day positive return. In the following weeks we observe two phenomena: the "coldest" IPOs persist to be overpriced; the initially underpriced IPOs worsen and move to negative returns. Consider that among the 38 IPOs with negative first-day return (see again Table V) 35 are comprised in our sample of "cold" IPOs. This means that IPOs initially overpriced almost never become underpriced in the following weeks. Therefore we may hypothesize that a small group of IPOs are immediately pointed out by investors as "bad" IPOs and do not benefit from price support. Other offerings are initially supported in the aftermarket, but in the following weeks (when the support is over) they are recognized as overpriced IPOs.

5. Concluding remarks

In this paper we analyzed a comprehensive and unique data set about IPOs short-run market performance in Italy. We computed the first-day return of 163 IPOs from 1985 to 1999 obtaining a mean (adjusted) underpricing equal to 25.6% (22.6%). We verified that IPOs volume tends to be higher when the market momentum is positive, and listings are concentrated in particular months. We computed the amount of money "left on the table" by issuers, when they sell underpriced shares; we obtained that in 1999 more money was "left on the table" than during the previous years combined, due to Internet-related stocks and IPOs on the "Nuovo Mercato".

We regressed the underpricing against some variables pointed out by the literature as proxies of information asymmetry, uncertainty, risk, investors' sentiment. By deeply analyzing the underpricing in the last years of the survey, we reported a lower underpricing level. Therefore we argued that placing strategies influences the IPOs initial return: if the offering is preceded by book building, the underpricing is significantly lower (9.08% vs. 31.18% in fixed-price offerings) coherently with the "information gathering theory" by Benveniste and Spindt (1989) and Hanley (1993). Indeed, during book building the underwriter is able to reduce information asymmetry through information spreading.

We also validated the "partial adjustment theory" by Ritter (1988) i.e. the more optimistic the revision in the offer price from the file price range, the higher the underpricing in order to compensate investors for truthfully revealing their expectations. On the contrary the choice of a low price reveals a less optimistic judgement of the investors reached during the book-building procedure: in this case notice that the underpricing is not statistically different from zero.

The determinants of the underpricing are found to be diversified as well: introducing dummy variables in order to distinguish fixed-price offerings and IPOs with book-building the regression explanatory power dramatically improves. When the offer price is fixed the underpricing is particularly affected by the age of the firm and the market momentum and volatility. In IPOs with book building the offer size, the fraction of equity capital held by the controlling shareholder and the accounting value of the assets seem to have a more relevant role. On the contrary, proxies of uncertainty (i.e. the price volatility after the IPO and the firm's age) do play a minor role.

Finally we explored the short-run return of IPO stocks. We showed that generally the first-day return contains almost all the underpricing. We found a group of IPOs (which we named "cold" IPOs) exhibiting initial negative return. We also pointed out that in some cases IPOs are initially underpriced but in the following weeks they turn to negative cumulated return. We related this fact to underwriters' temporary activism in "cold" IPOs supporting in the first days of trading.

Three issues certainly represent a main issue in the authors' research agenda. First, the investigation of price support by underwriters is quite at the beginning. Execution of the overallotment option, trading volume and short-selling by intermediates should be looked at. Second, we showed that IPOs related to the "new economy" paradigm (Internet and high-tech stocks) behave differently: therefore a deeper analysis is needed in order to single out the determinants of their huge underpricing. Last, it will be worth investigating also on long-run performance of Italian IPOs.

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Appendix

Variables considered in the regression analysis

Parameter	Adopted measures	Expected correlation
Firm size	Accounting value of consolidated assets	-
	Accounting value of consolidated equity	-
	Gross sales	-
	Income from investments (banks)	-
	Total premia (insurance)	-
Company's age	Difference between the listing year and the foundation	-
Offering size	Offerings proceeds	?
Price volatility	Standard deviation of adjusted daily returns	+
Ownership structure	Equity fraction maintained by the controlling agent	?
	Equity fraction held before the IPO	?
	Equity fraction offered to new shareholders, as a percentage of capital before the IPO	?
	Equity fraction offered to new shareholders, as a percentage of capital before the IPO	?
Offering type	Dummy variable (0=OPS, 1=OPVS, 2=OPV)	+
Intermediate quality	Intermediate market share, as a percentage of total offerings proceeds	-
	Intermediate market share, as a percentage of total offerings number	-
Presence of foreign intermediates	Dummy variable (1=yes, 0=no)	-
Offering strategy	Dummy variable (1=book building, 0=fixed price)	-
Offering allocation	Dummy variable (1=offer reserved to employees, 0=otherwise)	?
	Dummy variable (1=offer reserved to controlling shareholders, 0=otherwise)	+
	Fraction of the offer reserved to institutional investors	?
Oversubscription level	Ratio between total demand and supply	+
	Ratio between institutional investors' demand and supply	+
	Ration between public demand and supply	+
Market trend	MIB index performance before the listing (100 days)	+
	Standard deviation of MIB index performance (10/60 days)	-
	Market volatility (1=high, 0=low)	-
Internet and NM IPOs	Dummy variable (1=yes, 0=no)	+
Privatization	Dummy variable (1=yes, 0=no)	+
Equity carve-out	Dummy variable (1=yes, 0=no)	?

Endnotes

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[2] The data are taken from the Wall Street Journal Europe, Friday-Saturday 10th-11th 1999.

[3] Ritter (1991) contents that US IPOs significantly underperform the market in the first three years after listing, and similar results are reported in the UK (Levis, 1993), Germany (Ljungqvist, 1997), Australia (Lee et al., 1996) and Italy (Giudici and Paleari, 1999). Contrasting results are found in Sweden (Rydqvist, 1993) and Korea (Kim et al., 1995). A significantly high overperformance is highlighted in Turkey (Kiylmaz, 1997). A comprehensive survey is constantly updated in Loughran et al. (1994).

[4] Cherubini and Ratti (1991) analyze 69 firms, while Basile and De Sury (1977) 77 firms. They both consider a short time-window characterized by a high heterogeneity (in terms of firms' sector, size and ownership structure).

[5] This hypothesis is empirically supported by Koh and Walter (1989), Levis (1990), Keloharju (1993) and Michaely and Shaw (1994).

[6] See also Weiss (1989) and Maug (1999). Cornelli and Goldreich (1999) also find that IPO bidders who provide valuable information to the underwriter are allocated more shares than others. Reese (1999) proofs that the IPOs with greater investor interest, showed off during the pre-issue marketing and inferred by newspaper citation, tend to be more severely underpriced.

[7] On the contrary, this hypothesis is rejected by Muscarella and Vetsuypens (1989) who analyze IPOs in which the intermediate sells its own shares (thus without information asymmetry) and nonetheless find significant underpricing.

[8] Empirical tests on this hypothesis are provided by Jegadeesh et al. (1991), Garfinkel (1993), Michaely and Shaw (1994) and Spiess and Pettway (1997).

[9] Nevertheless empirical evidence is mixed: Friedlan (1993) shows a negative correlation between the underpricing and the fraction of equity capital held by the controlling agent after the offering, while Keasey and Short (1992) find exactly the opposite.

[10] See Miller and Reilly (1987) and Garfinkel (1993).

[11] Consistently with this analysis, Ejara et al. (1999) find a lower underpricing for ADRs IPOs (foreign firms going public on the US market). ADRs are in general large and well-known firms operating in low-risk sectors.

[12] See Loughran et al. (1994).

[13] See Booth and Smith (1986), Carter and Manaster (1990) and Carter et al. (1998). Nevertheless this hypothesis is refused by Michaely and Shaw (1994), Beatty and Welch (1996), Cooney et al. (1999), who argue that in high-demand IPOs high-reputation underwriters are able to exploit their superior bargaining position to underprice the IPO more severely, consistently with the monopsony power hypothesis introduced by Ritter (1984).

[14] See Megginson and Weiss (1991), Barry et al. (1990), Hamao et al. (1998). More recent evidence of an apparent reversal in this relationship is provided by Francis et al. (1999) and Ljungqvist (1999), explained by conflict of interests between the venture capitalist, the underwriter and the entrepreneur.

[15] In this case the investment bank requires that insiders agree to refrain from selling their stock in the aftermarket for aperiod of time after the IPO. See Brav and Gompers (2000).

[16] The three procedures are shortly described in the next Section.

[17] See the Japanese scandal of Cosmos IPO. Intentionally, shares had been severely underpriced and allotted to politicians.

[18] See among others Aggarwal (2000), Ejara et al. (1999), Giudici and Paleari (1999), Krigman et al. (1999a), Reese (1999), Roosenboom et al. (1999).

[19] Despite this strong commitment, Krigman et al. (1999b) show that most of the times firms completing an IPO choose a new lead underwriter in a follow-on stock offering, graduating to higher reputation underwriters in order to buy additional research coverage.

[20] In fact, Chen and Ritter (2000) find a substantial fixed spread (7%) for all IPOs in the US market.

[21] Actually the authors find that the extent to which the green shoe option is exercised is positively related to both the initial return and the first four weeks performance of the newly issued shares.

[22] On the contrary the co-managers in the underwriting play virtually no role in the aftermarket inventory accumulation.

[23] This evidence contrasts the hypotheses by Benveniste et al. (1996). In the U.S. stock market stabilizing bids must have a flag identifying them: probably the underwriters avoid this kind of intervention because it would be a clear signal to the market that the offering is weak (Aggarwal, 2000).

[24] IPO flippers are particularly spurned by intermediates: "Flipping screws up the market … flippers are parasites who prey off a system that basically works" (see Krigman et al., 1999a).

[25] For the purpose of this paper, we focus only on public offerings and neglect private placements.

[26] Fishe (1999) states that in the US Best Efforts contracts tend to be used for smaller IPOs where demand is more uncertain.

[27] The new issue process is regulated by a public authority, CONSOB, which performs a role that is comparable to the SEC in USA, and by a private company, Borsa Italiana SpA, who manage the Stock Markets in Italy. CONSOB (http://www.consob.it) has to be informed in advance of the offering conditions and has to certify that the issuer provides adequate information to the public (collected in an officially approved prospectus). Borsa Italiana (http://www.borsaitalia.it) deliberates the admission to the listing, after having verified all the necessary requirements.

[28] On the contrary single-bid and multiple-bid auctions are common in other countries, such as France. For a detailed description of these procedures see Vandemaele (1999).

[29] See Giudici and Paleari (2000).

[30] Details about general characteristics and ownership structure of the Italian listed companies may be found in the CONSOB and Borsa Italiana SpA Internet pages (see footnote 27). Although in the last years the number of listed companies has not significantly increased, a relevant turnover has considerably reset the Stock Market outline.

[31] In fact, the phenomenon is imputable to the process of "financial dismantling" and separation between ownership and control experienced in Italy during the '80s by large business groups and documented by Brioschi et al. (1990).

[32] Actually also in the second period the privatization process in the banking sector has been relevant; nevertheless, it has been realized through public offerings of shares held by the State but already listed on the Stock Market.

[33] The same result about the null hypothesis testing is obtained through the Tchebyceff inequality. The t-test implies a normal distribution of the stochastic variable and this may not be justified in our case.

[34] For example, in Ljungqvist's (1999) survey of US IPOs the mean age is 10 years; Habib and Ljunqvist (1999) also refer to the US market and report a mean age equal to 14 years. In Europe a comparable mean age is reported by Vandemaele (1999) for the French market (44 years), Roosenboom et al. (1999) for the Netherlands (35 years), Holmen and Hogfeldt (1999) for Sweden (31 years).

[35] Cooney et al. (1999) find 67.4% in their US sample, Lee et al. (1999) 53% for the Australian market, Goergen (1998) 76.4% and 62.6% for the German and UK market respectively, Roosenboom et al. (1999) compute 64.6% for the Netherlands.

[36] We adopted the "adjusted" underpricing, since on average 68 days (a remarkably long period) elapsed between the offering and the listing. Yet the length of this period has decreased in the last years, due to the book building procedure.

[37] First, we built a monovariate model on a wide set of variables and consequently we derived a multivariate model. The variables reported in the Appendix and not considered in Tables VIII and XI are not statistically significant.

[38] For example, Arosio et al. (2000) explore the determinants of the huge underpricing in Internet-related IPOs on secondary pan-european markets (EASDAQ and Euro-NM, comprising the Italian "Nuovo Mercato") and find specificness in the short-run performance.