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Abstract

We analyse 161 Italian IPOs on the Italian Stock Exchange in the period 1999-2007, focusing on the empirical praxis of share allocations by underwriters. In Italy, one offering (the public one) is reserved for retail investors and is conducted according to Italian regulation, while the second (the institutional one) is reserved for institutional investors and is usually implemented according to Regulation S and Rule 144A of the Securities Act. Effective allocation proportions between the two offerings are determined at a high level of syndicate discretion, setting aside the minimum amount for the public offering. Claw back clauses, a typical device of Italian IPOs, allow the syndicate to shift shares ex post from the retail to the institutional offering and vice versa in order to manage demand in a discretionary fashion. We document significant increases of the retail offering size ex post and show that this mostly happens at times of preceding negative market performance and in weaker IPOs marked by lower institutional demand, a higher proportion of the offering coming from selling shareholders and significantly lower levels of initial underpricing. As a result, retail investors end up buying more shares only in weaker and less profitable IPOs, raising inevitable questions as to the fairness of the use of the claw back clauses in Italian public offerings.

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1. Introduction

Two main theoretical models explain the relationship between underpricing and share allocation between retail investors and institutional investors in IPOs in a context of informational asymmetries regarding the "true value" of the listing company.[1] The first is the winner's curse model proposed by Rock (1986): given a system of fixed price offering, underpricing is the cost that listing companies are ready to incur in order to motivate uninformed retail investors to participate in all the IPOs. On the contrary, the model proposed by Benveniste and Spindt (1989) argues that underpricing becomes the price the listing company has to pay in order to convince institutional investors to reveal the true value of the listing company as an outcome of the bookbuilding system (information revelation theory).

Nowadays a typical IPO is everywhere characterized by the bookbuilding procedure of price setting as opposed to auction and fixed price offerings.[2] According to what seems to be the traditional view, the bookbuilding system reduces underpricing in comparison to the other two procedures.[3] By way of the orderbook collected during road shows, the syndicate determines price and quantity and the shares are then discretionally allocated by underwriters between retail and institutional investors.

On one hand, for the United States and partially also for the European Union, the empirical financial literature has provided an inspiring overview on the allocation strategies of syndicates. In particular, the literature has provided sufficient evidence on strategic links between allocations and initial returns, measures of price discovery and issuance costs. It is fair to say that the empirical literature tends to confirm the Benveniste and Spindt theory of bookbuilding as information revelation theory, of underpricing as a compensation mechanism and of allocation strategies as a discretionary mechanism to properly allocate the gains deriving from underpricing.[4] Among others, Hanley and Wilhelm Jr. (1995) using a sample of 38 US IPOs show that institutional investors are

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[1] See Ljungqvist (2007) for an introduction to the different theories of underpricing and asymmetric information theories in particular.
[2] Draho (2004) provides an excellent introduction to the mechanics of IPOs; see also Jenkinson and Ljungqvist (2001) and Loughran, Ritter and Rydqvist (1994).
[3] On bookbuilding as price revelation mechanism in its practical application see Benveniste and Wilhelm Jr. (1997) and also Loughran, Ritter and Rydqvist (1994).
[4] For a more complete review see Ljungqvist (2007).

favoured in comparison to retail investors in more pronounced underpriced offerings, but have also to participate as a *quid pro quo* in less favourable (overpriced) offerings. The study of Cornelli and Goldereich (2001)[5] analyses the type of information revelation (in terms of bid types) underwriters compensate by a favourable allocation of shares also in relation to the participation in less profitable IPOs. Aggarwal, Prabhala and Puri (2002)[6] show that there is a positive correlation between institutional investors' allocation and level of underpricing.[7] Finally, the empirical study of Ljungqvist and Wilhelm Jr. (2002)[8] shows that discretionary allocation of underpriced shares in favour of institutional investors is a worldwide phenomenon.

On the other hand, the different praxes that may lead to discretionary allocation of (underpriced) shares in IPOs in favour of institutional investors have not only interested academics, but has also attracted increased attention from various regulatory bodies and have recently also reached the Supreme Court of the United States.[9]

We are not aware of any empirical study that systematically analyzes allocation practices of Italian IPOs. On the basis of the increasing international literature on the topic and the necessity to provide policy makers (both at European and national level) with empirical results to design possible solutions to potential regulatory problems, our study tries to fill the gap by providing a first systematic analysis of IPO allocation practices in 161 Italian offerings from January 1999 to December 2007. In particular, we ask several questions. First, do we observe a preferential allocation to institutional investors as documented by previous studies using US evidence and if yes, is this preferential allocation positively correlated with the level of underpricing? Moreover, is this preferential allocation accompanied by an overallocation also in less profitable IPOs (i.e. the "*quid pro quo* theory")? Second, in what kind of IPOs are the claw back clauses predominantly used and is there a direct link between claw back clauses and underpricing? Next, how are claw back clauses interrelated to the exercise of

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[5] This study considers 39 IPOs from 20 different countries from 1995 to 1997.

[6] Their sample consists of 174 US IPOs in the period from May 1997 to June 1999.

[7] To be precise, the authors argue that their results only partially confirm the information revelation theory of bookbuilding.

[8] The study includes 1032 IPOs listed in several countries in the period from January 1990 to May 2000.

[9] See e.g. NYSE/NASD IPO Advisory Committee (2003), CESR (2002), SEC (2005), and US Supreme Court *Credit Suisse Securities … v Billing at al*., decided June 18, 2007.

overallotment option? Lastly, we analyse whether there are any substantial retail investors' losses related to the exercise of claw back clauses.

We reach the following conclusions. The Italian IPOs allocation praxes favour institutional investors by reserving ex ante around three quarters of the global offer to institutional investors. However, this proportion can be modified ex post by the underwriter in case of weak demand by using claw back clauses or by reducing the size of the global offering. Our findings indicate that retail investors receive on average 5% more of the total global offering shares (or 47% more of their initial quota disclosed in the prospectus) than was planned ex ante. We do not find a statistically significant link between initial underpricing and institutional allocation proportion. From one side, this seems to contradict the main results of the abovementioned studies on allocation. But, a closer look reveals that institutional investors' participation is significantly lower in offerings with lower underpricing where some shares were shifted to retail investors. Moreover, confirming the results of Cornelli and Goldereich (2001), we find that institutional investors participate also in very weak offerings where there is retail undersubscription and the underwriter decides not to reduce the offer size. Next, we observe that claw back clauses are predominantly used in case of potentially weak IPOs, which are characterized by significantly lower underpricing levels and where the global offer has a higher percentage of the shares coming from the incumbent selling shareholders. Using regression analysis, we find a significant relationship, albeit a weak one, between exercise of claw back clauses and underpricing, although this link disappears once we control for other underpricing determinants (such as IPO risk and institutional demand). We also find that in many cases the transfer of shares to retail investors is accompanied by the exercise of the overallotment facility reserved ex ante solely for institutional investors. Our findings indicate that due to average positive underpricing levels for IPOs where claw back clauses were used, the average losses for retail investors are negligible. Nevertheless, averaging across all IPOs with shares transferred to retail investors in excess of their ex ante proportion, hides a number of IPOs where a large percentage of shares was given to retail investors who later found the prices of their shares dramatically fall during the first day of trading.

It is apparent that claw back clauses in a context where only institutional investors may withdraw their buying orders after price and quantity have been determined, raise some questions on the possible behaviour and incentives of the underwriting syndicate, the listing company and the selling shareholders in terms of efficiency and fairness of the IPO procedure.

The rest of the paper is organized as follows. Section 2 provides a brief description of the Italian IPO regulatory regime. Section 3 focuses on the regulatory regime of the allocation procedures, characterized by specific rules and praxes (primarily by claw back clauses). Section 4 provides the empirical analysis. Conclusions follow in Section 5.

2. The Italian IPOs Regulatory Regime

The Italian IPO regulatory framework was established by Legislative Decree No.58 of 24 February 1998, which also implements European regulation on the issue, further integrated by the rules and regulations issued by the Italian securities market regulator (CONSOB). The following shortly describes the praxis of a typical Italian IPO as conducted in the period of the sample (1999-2007).[10]

The typical IPO is structured as public offer of subscription (*offerta pubblica di sottoscrizione* or OPS) or as public offer of selling (*offerta pubblica di vendita* or OPV) or as a combination of the two (OPVS). In the first case new shares come from an increase in the company's legal capital, while in the second, selling shareholders provide the shares for sale.

The IPO offering is called the global offering and is structured on the basis of two or three components. First, there is a public offering carried out in accordance with Italian rules.[11] This offering includes one or more *tranches*, i.e. one reserved for public retail investors, but can also reserve shares for company's employees, customers, selling agents etc. Second, there is an institutional offering reserved for both Italian and international institutional investors. This offering is not generally conducted according to Italian rules

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[10] A more detailed description of the IPO Italian system particularly from an economic and statistic perspective is provided by Dalle Vedove, Giudici and Randone (2005) and also Palerai, Pellizzoni and Vismara (2005).

[11] On the basis of a prospectus written in Italian.

but implemented on the basis of Regulation S and, in case of participation of US institutional investors, also on the basis of Rule 144A. This means that the institutional offering is made outside of the regulatory scope of Italian regulation in the area of retail investors protection. Article 14.3 of the Regulation for listing companies simply requires coherence between the information provided in the prospectus for the public offering and that disclosed in the offering circular for institutional investors.[12] At times, there is also a third component, the private placement, usually called a "friends and family" placement, with participants individually identified in the prospectus.

Underwriters, led by a global coordinator (possibly accompanied by one ore two coordinators) who acts as the lead manager, typically create two separate and autonomous underwriter syndicates to bring the company to the exchange. The first one is for the Italian public offering and is organized before the offering period starts. The second syndicate is for the institutional offering and is created *after* the offering period is closed and when the decision on the final price-quantity combination has been already taken. Following international standards, starting from 1995 the open-price system (the bookbuilding procedure) as an IPO price-setting mechanism has replaced fixed-price offerings and has become the predominant one in Italy. In line with literature on the bookbuilding procedure that regards it as an information-revelation mechanism, usually around three quarters of the shares to be sold are ex ante reserved for institutional investors, with the rest set aside for retail investors and private placement. The bookbuilding system is structured as follows. Before the offering period starts, a price range is determined by the lead manager on the basis of the pre-marketing activity with some selected institutional investors. Indeed, contrary to the United States praxis[13], such types of informal contacts between the lead manager and some institutional investors are not forbidden under European or Italian regulation. On the contrary, such informal contacts are explicitly allowed to better promote the offering.[14] The determined price

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[12] The Italian prospectus just mentions that there is an institutional offering by an offering circular written in English.

[13] In the US the gun jumping rules (Section 5 of the Securities Act) divide the offering period in a pre-filing period, a waiting period and a post-effective period. In the pre-filing period any marketing activity is strictly forbidden. On the topic see e.g. Choi and Pritchard (2005) p. 425.

[14] The result of this regulatory difference is demonstrated by Jenkinson, Morrison and Wilhelm Jr. (2006) who show that the probability that the final price of the offering will fall inside this initial price range is larger in Europe than in the US because it deemed to be more accurate already from the start.

range is disclosed in the prospectus and can be accompanied by the further specification of a maximum price that can be equal to higher price range bound or even higher. This maximum price is made public with a published addition to the prospectus before the offering period starts (at least one day before). The result is that when the offering period starts (with duration on average of 5-7 days) investors do know the price range and the maximum price. Finally, it must be stressed that in Italy the final offering price is commonly set when the orderbook is closed, i.e. after the end of the offering period.

Apart from the global offering the prospectus typically provides for an overallotment option (or overallotment facility). This overallotment option is either covered by a short covering activity in the aftermarket (in case of overpricing) or by the exercise of a greenshoe option (in case of underpricing)[15] granted either by the company or by the selling shareholders. Note that prospectuses report the standardized statements that i) the overallotment facility may be used in order to over allocate the shares only to institutional investors and ii) this overallocation option may be covered by a greenshoe option. They mention indirectly that the short position can be covered by short covering in the aftermarket in terms of stabilizing activity.[16]

An important characteristic of the Italian IPO regulatory framework in relation to the binding/non-binding nature of investors' orders is the following. Once the offering period is closed, the lead manager sets the final offering price (and possibly the final quantity)[17] on the basis of the orderbook. It then distributes (allocates) the shares to investors. Retail investors who can only participate in the public offering express direct and immediately binding and unconditional orders. This means that they cannot refuse to buy the ordered shares once they are allocated to them ex-post.

On the contrary, institutional investors express non-binding orders, i.e. simple indications of interest that they can confirm, modify or withdraw when the final offering price has been set and the lead manager asks for order confirmation. This legal institutional difference is essential in order to understand the mechanics of the overallotment facility/greenshoe option which is used in Italy only in the institutional

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[15] On underpricing in Italian IPOs see Cassia, Giudici, Paleari, Redondi (2004).

[16] For the use of the overallotment facility and the greenshoe option as stabilizing devices see Lombardo (2007).

[17] Prospectuses commonly provide the possibility for ex post reduction or increase of the quantity of shares offered.

offering for the purpose of covering the risk that institutional investors do not confirm their orders, once final prices (and final quantity) have been set, like in the US system.[18]

3. Allocation Rules and Claw Back Clauses

As was already mentioned, Italian IPOs are characterized by two offerings. The first one is public (structured in various *tranches* for retail investors, company employees, customers etc.) and the second is reserved for institutional investors. Sometimes there is also a third offering (private placement) for friends and family members. Since prospectuses are extremely standardized legal documents it is simple to describe the typical structure of an IPO in relation to the provisions on allocation of shares. The analysis is done ex ante (what the prospectus tells) and ex post (actual results of allocation).[19]

The public offering is defined as a minimum quantity of the global offering. Given a global offering of e.g. 12,000,000 shares it is ex ante stipulated that a minimum of 3,000,000 shares are reserved for the public offering (possibly divided among the several *tranches*). This indirectly implies that a maximum of 9,000,000 shares are reserved for the institutional offering. Inside the public offering very strict and extremely specific rules govern the division of the shares in case of oversubscription by retail investors. These rules are designated to implement the principles of equal treatment and non-discrimination among investors of the public offering (particularly retail investors, but possibly also company's customers, employees etc.) that are the core provisions of Italian regulation.

On the contrary, the discretion of the syndicate to allocate shares among institutional investors in the institutional offering is absolute. The syndicate allocates the shares according to the quantity but particularly to the quality of the institutional (both Italian and international) investors' orders. We use here the concept of quality meaning agnostically something characterized by a high degree of mystery. However, there are

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[18] See Lombardo (2007).
[19] In Italy the results of the global offering in terms of allocation (number of shared asked for by investors in the different offerings and numbers of allocated shares per investor type and their numbers) have to be made public and communicated to the Stock Exchange and to the Consob.

some theoretical models that have analysed the factors used by underwriters to determine the final price in the context of the bookbuilding procedure.[20]

What characterize Italian IPOs are claw back clauses between the public and the institutional offerings. The claw back clause provides that, given the mandatory minimum amount of shares for the public offering, the syndicate can ex post transfer shares from the public to the institutional offering and vice versa in order to satisfy demand in excess of the ex ante offered quantity.

As a result, claw back clauses do potentially create a problem as already noted by Consob (1998). Indeed, as already explained, once the offering period is closed, final price and offering quantity are fixed. In this context, given the traditional information asymmetry in favour of institutional investors (with respect both to the syndicate and to retail investors) regarding the "true" value of the listing company and given the fact that only institutional investors have the possibility to withdraw their order (remember that retail investors do express immediately binding orders), the danger of claw back clauses in an "Italian-style" bookbuilding system, is that in IPOs which are relatively undersubscribed by institutional investors and relatively oversubscribed by retail investors, the syndicate (or the listing company and/or the selling shareholders) may be tempted to shift missing institutional demand to the (oversubscribed) public offering. The problem is that where overpricing effectively results, retail investors pick up the bill of a badly managed IPO, because their losses are simply somebody else's gains (selling shareholders and/or listing company).[21]

It is apparent that claw back clauses in a context where only institutional investors may withdraw their buying orders after price and quantity have been determined, raise some questions concerning the possible behaviour and incentives of the underwriting

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[20] We stress again that in Italy retail investors do express directly unconditional binding orders while institutional investors do express non-binding orders (i.e. simple indication of interests to be confirmed, reneged or modified once final price and final quantity have been determined *after* the offering period is closed). For the theoretical models describing the optimal level of compensation/underpricing in relation to several possible variables see e.g. Benveniste and Wilhelm Jr. (1990), Sherman (2000), Sherman and Titman (2002), Maksimovic and Pichler (2004).

[21] To be sure, in case of undersubscription by institutional investors average overpricing is generally higher. In our sample there are 11 cases of undersubscription by institutional investors (accompanied by retail investors oversubscription in 7 cases and undersubscription in 4 cases) which ended in 10 cases with overpricing.

syndicate, the listing company and the selling shareholders in terms of efficiency and fairness of the IPO procedure.

Indeed, from a legal perspective, i.e. in terms of a possible liability, the problem is that the syndicate (or the selling shareholders or the listing company) may push for a transfer to the public offering of what they have intentionally or not intentionally priced too highly and institutional investors have correctly declined to buy. Issues such as the efficient level of diligence in pricing and fraudulent or negligent behaviour by these actors may be analyzed from a law and economics as well as a legal perspective in order to provide answers to the regulatory bodies on the complexity of the issue and its applications to specific cases. However, in this paper we focus exclusively on an empirical analysis of IPO allocations in Italy in order to provide some statistical results on the use of claw back clauses.

4. Empirical Analysis

4.1. Sample

The paper analyses 171 IPOs listed on the Milan Stock Exchange from January 1999 to December 2007. The details of the offerings, subscription and final results were sourced from IPO prospectuses and databanks of Ipo.it and of Borsa Italiana Spa. For the purpose of this study we excluded 10 IPOs where the global offer was only to retail or institutional investors,[22] thus leaving us with 161 IPOs. Given the disclosure requirements for Italian IPOs, we were able to collect detailed information about the allocation of shares both ex ante and ex post for all the 161 IPOs, thus allowing for a detailed reconstruction of underwriters' allocation practices with regard to the proportion of the global offering ex ante reserved and actually ex post allocated to retail and institutional investors.

Table 1 reports summary statistics. The total market value of all IPOs at the end of the month of listing is greater than €150 billion, with an average market value slightly below €1 billion and a median of only €255 million, showing that the sample is dominated by several, very large IPOs. An average IPO has 33% of share capital offered to the market and 38% (median of 27%) of shares sold by incumbent shareholders (OPV)

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[22] There was only 1 IPO with retail investors offering and 9 offered to institutional investors only.

with the rest coming from the newly issued shares (OPS). The average offering period is 5.3 days and it takes 17.6 days on average to list an IPO from the date of filing the prospectus. The average number of global coordinators of the global offering is 1.6 (median of 2). As regards allocation of shares, the institutional investors receive an average of 70% (median of 74%) of the global offer including overalloted shares. Retail investors receive on average 29% (with median of 25%) while private investors receive on average 1% only.[23]

In line with international evidence, we observe a significant average underpricing of 13.2%. Comparing our sample results with those of the other studies on Italian IPOs from 1985 to 2001,[24] we observe a substantial reduction in the average level of underpricing, most probably explained by the introduction of the bookbuilding procedure of price-finding since 1995.[25] Also with respect to the adjusted underpricing levels[26], a similar picture is observed.

[Insert Table 1 about here]

Table 2 shows the statistics of shares allocation across different types of investors, both as specified in the prospectus and what is effectively allocated to each group. Consistent with international evidence,[27] institutions receive almost two thirds of the total issues, highlighting the preferential treatment they receive from underwriters. However, if one compares the number of shares reserved for institutional investors and what was actually allocated later, it becomes apparent that their ex post allocation proportion of global offer is lower on average by around 4.5% (both in mean and median), significant at 1% (5% for medians). The retail allocation seems to absorb the reduction in the institutional one if we include in the calculation the overallotment facility always reserved in the prospectuses only for institutional investors. This finding holds if we look separately at the overpriced IPOs (where the first day market-adjusted return was

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[23] Or 7.5% if we compute an average for only those 24 IPOs where the private placement was effectively included in the offering. Whereas the average proportion of shares given to named individuals is around 1%, in some IPOs it reached 45% of the total global offer.
[24] See Cassia, Giudici, Paleari and Redondi (2004).
[25] Note that we have only 3 cases with a fixed price offering..
[26] In order to calculate the adjusted underpricing level we have subtracted the MIB30 index return over the corresponding period.
[27] See the references in the introductory section.

negative) or underpriced ones (where it was positive). Surprisingly, we do not observe a significantly higher institutional investors' allocation in the case of underpriced IPOs in comparison to overpriced ones. A modest difference of 2.5% both in means and medians is not statistically significant.

[Insert Table 2 about here]

Given the consistent and significant level of IPO underpricing in our sample and for IPOs in general worldwide, the ex post increase in the proportion of shares allocated to retail investors, raises a fundamental question about the usefulness and explanatory power of the Benveniste-Spindt (1989) paradigm of bookbuilding as an information revelation instrument. Indeed, this result may be a direct contradiction to the well-established fact that underwriters favour institutional investors firstly for their participation in the bookbuilding phase, during which they reveal valuable information on the true value of the listing company, or secondly, for favours reciprocated in post-lisitng trading or business activities. From this perspective, if an average IPO were significantly underpriced, then allocating more shares to retail investors would mean discriminating against institutional investors and reducing their profits.

Alternatively, from the perspective of Rock's (1986) underpricing paradigm, institutional investors, being more informed about the true value of the firm introduced to the market, can choose to invest only in good-quality IPOs refusing to participate in weak offerings.[28] Since institutional investors in Italy can submit non-binding offers to purchase IPO shares while retail investors' orders are binding (keeping in mind that the part reserved for retail investors cannot go below the minimum specified by the offering prospectus[29]), the resulting different allocation patterns would end up in increased ex post allocations to retail investors mostly in weak offerings.

In order to reconcile the observed empirical differences between ex ante and ex post allocations, we have decided to look more closely at the allocation practices of the Italian IPOs' underwriters.

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[28] Remember that Rock's model is a fixed-price offering one.
[29] Unless there is an undersubscription for shares from the retail investors.

4.2. Shares Allocation

Given the allocation rules and practices used in Italian IPOs and in order to analyze the use of claw back clauses we have decided to split the sample into three groups. The first group consists of all IPOs where retail subscriptions are smaller than the ex ante number of shares reserved for them and where by definition there is no possibility for the underwriter to allocate more shares to retail subscribers. In total, there are 26 such IPOs with an average retail oversubscription rate of 0.7 (i.e. there is a considerable undersubscription). Not surprisingly, the institutional oversubscription rate is also rather small with an average of 2.1 compared to overall sample mean of 6.1. These IPOs can be termed as "unwanted IPOs" with both retail and institutional investors unwilling to participate in such offerings. As a result, in 10 cases the global offer was reduced ex post and in other 16 cases institutions received the shares unsubscribed by retail investors.

The second group consists of 75 IPOs where some shares were transferred from the institutional offering to the retail one using claw back clauses. We identify such IPOs by comparing the number of shares reserved for retail investors in the prospectus against actual allocation results. For these IPOs the retail and institutional average oversubscription rates are 6.8 and 4.2 times, respectively. These IPOs can be termed as "lemon IPOs" reasonably assuming that institutional investors correctly identify their weak potential while retail investors assume them as being of good quality. As a result, in 68 cases retail investors received all shares not taken by institutional investors and in other 7 IPOs the global offer was partially reduced but some shares were still transferred to retail investors.

The last group of 60 IPOs consists of all offerings where retail investors received the amount specified in offering prospectus and nothing more. The public and institutional oversubscription rates were 16.6 and 9.9 times and there were no cases of ex post global offer reduction. These are very hot and demanded IPOs and we termed them "demanded IPOs". In these offerings retail investors receive just the minimum amount of shares specified in the prospectus while institutional investors get the remaining shares plus all overalloted ones.

Table 3 reports various characteristics of the overall sample and of the three separate subgroups of IPOs as well as the results of the means- and medians-difference tests for the "lemon IPOs" and "demanded IPOs" subsamples.[30] There is a striking difference observed in many of the parameters under study of the "lemon IPOs" and "demanded IPOs" subsamples. In particular we try to analyse the differences with regards to several groups of IPOs characteristics such as initial underpricing, offering details, subscription and allocation results, and results of the final offering.

[Insert Table 3 about here]

Starting from average underpricing levels, we see that "lemon IPOs" with exercised claw back clauses have a much lower level of underpricing, both in terms of means (and medians) than "demanded IPOs". The values are respectively 6.4% (median 1.1%) against 26.5% (medians 7.5%) using closing prices at the first day of trading. This result holds at longer time horizons as well as for initial returns calculated using weighted average price of all trades during the first day of listing. This implies that when there is a transfer of shares from the institutional to the retail offering, the average underpricing level is much lower. "Unwanted IPOs", on the contrary, show no significant underpricing at any horizon under analysis, with first day returns being around zero and turning negative at longer time horizons. Relative to the average underpricing levels of the other subgroups of our sample and of the worldwide IPOs this is rather small but still unclear why in absolute amounts the overpricing of the "unwanted IPOs" is not so dramatic.[31]

The average offering values show that "lemon IPOs" are largest, followed by "demanded IPOs" and "unwanted IPOs" (respectively €319 million, €188 million, €145 million). The ranking holds if we look at the market values of the IPOs at the end of the month of listing date.

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[30] We are not reporting the means- and medians-differences for the "unwanted IPOs" against the other two groups because we are primarily interested in allocation practices to retail investors that include the use of claw back clauses. In such IPOs, given the retail investors' undersubscription, there is no legal possibility to increase ex post their allocations.

[31] Among possible explanations might be the reduction of the global offer ex post or of the final offering price. Still, this fact merits special attention in future research.

Analyzing offering details of the IPOs subgroups we observe significant differences. First, "lemon IPOs" on average place on the market around 49% of the pre-IPO share capital (or around 36% of the post-IPO share capital) whereas "demanded IPOs" have smaller values (respectively 39% and 30%) and the differences in means and medians are statistically significant.[32] Next, with regard to the percentage of OPV and OPS to the global offering, we observe that in the case of "lemon IPOs" the percentage of shares offered with OPV is higher than the other two groups (43% against 33% for both).[33] This result is interesting because it shows that selling shareholders (controlling families, private equity funds, venture capital investors), in order to capitalize their investment, may have an incentive to push the leading underwriter to simply shift shares to retail investors when there is low institutional investor demand. In cases of resulting overpricing the old shareholders' gains are of course retail investors' losses. In these cases the possibility of the leading underwriter's resisting pressures from the selling shareholders depends primarily on its level of reputation.

Finally, the percentage of the overallotment facility and greenshoe option to the global offering ex ante is basically the same across all three groups. On the contrary the ex post percentage of the exercised overallotment facility to the global offering is slightly higher for "demanded IPOs" than for the other two groups (respectively 10% against 9% and 8%).[34]

Looking at the allocation and subscription data, the differences between subgroups become even more pronounced. With respect to the institutional participation ex ante and ex post, we observe that although ex ante there is no significant difference in the percentage rate of participation of institutional investors (including the overallotment option, with a mean of around 75% and a median of 78%), this is not true for actual allocations. In "lemon IPOs" institutional investors get 11% less shares than in "demanded IPOs" (down from 74% to 63%). Furthermore, ex post we observe the

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[32] This difference between the two groups may be due to the higher level of shares sold by existing shareholders by way of OPV in "lemon IPOs" than in "demanded IPOs".

[33] Not that these differences are statistically significant at 5%.

[34] Since we know that the exercised overallotment facility can be covered either by short covering in the case of overpricing or with the use of the greenshoe option in the case of underpricing we observe that on average for "unwanted IPOs", 3% of the exercised overallotment facility was covered by short covering while in the case of "lemon IPOs" the level is 1.7% and in the case of "demanded IPOs" the level is 1.4% of the global offering.

confirmation of the Cornelli and Goldereich (2001) findings that institutional investors do participate also in weaker offerings as *quid pro quo* for their participation in strong IPOs.[35] Indeed, in the case of retail undersubscription ("unwanted IPOs" group) the underwriters (and the company) have the possibility to reduce the offering size ex post or to allocate the excess shares' supply to institutional investors. Institutional allocation in "unwanted IPOs" grows to 81% because the leading underwriter cannot shift shares to retail investors.

Moving to institutional and retail oversubscription rates as well as to their ratio we observe clear differences in the level of oversubscriptions by both groups of investors. As expected, the level of undersubscription for "unwanted IPOs" is very low with retails asking only 70% of shares reserved ex ante for them while institutional demand is 2.1 times higher than the ex ante reserved shares.[36] These values are very low compared to the sample averages (9.5 and 6.0 times, respectively). "Demanded IPOs" attract two to three times more interest from both kinds of investors than "lemon IPOs.[37] Interestingly, it seems that retail investors are able to "smell" the quality of "demanded IPOs" whose underpricing level is much higher than that of either the overall sample average or the "lemon IPOs".

Having noticed some major differences across the groups as regards the pre-listing data, we decided to control for actual ex post characteristics of the offerings. As for price revision variables, i.e. the determination of the final price with respect to the initial price range,[38] we also observe large differences across the three types of IPOs. Indeed, "unwanted IPOs" have a negative value (-0.37), meaning that the final price was set well below the lower price range bound. "Lemon IPOs" show a price revision of 0.34, meaning that these IPOs were priced towards the lower bound. Finally, "demanded IPOs"

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[35] See for the same empirical evidence Hanley and Wilhelm Jr. (1995), in which the authors consider a sample of 38 US IPOs in the period from 1983 to 1988.

[36] Remember that while retail demand is directly binding, institutional demand is non binding, i.e. a simple manifestation of interest.

[37] The mean and median differences between these two groups of IPOs are statistically significant at 1%.

[38] Note that if the final price was set at the minimum price range level then the revision is equal to 0, to 1 if the final price was set at the maximum price range level, and 0.5 if it was right in the middle. In cases where the final price was below the minimum, revision becomes negative. In cases where the final price was above the maximum, revision becomes more than 1.In mathematical terms, Revision = 1 – (max range – final price)/(max range – min range).

are characterized by a positive price revision coefficient of 0.54, i.e. above the middle of the price range.[39]

With respect to the average reduction in global offering size we observe a 10% reduction for "unwanted IPOs" (9 cases out of 26 IPOs). This is of course not surprising given the weak demand for such offerings. For "lemon IPOs" we observe a much smaller average reduction (1.4% for 5 cases out of 75 offerings). Finally, for "demanded IPOs" there was no reduction given the high level of oversubscription.

The IPO daily return volatility in the 10 days following the listing is the highest for "demanded IPOs" (65%) which is higher than the volatility for "lemon IPOs" (45%) and this difference is statistically significant at 5%. Volatility is the lowest for "unwanted IPOs" (31%). This observation is probably due to the fact that the last two groups of IPOs are supported by way of price stabilization which reduces price volatility.

The market performance over 100 days before the listing shows in particular that "unwanted IPOs" come to the market too late, missing the general market momentum and so confirming the theory that IPOs come in waves (on average the market index loses 5.7% before the listing).[40]

Last, with respect to the money left on the table, we observe that "unwanted IPOs" leave on average around € 2 million on the table, which is much lower than the sample average of around € 15 million and € 16 million and € 20 million for "lemon-" and "demanded IPOs".

4.3. Claw Back Clauses

Having observed some major differences between IPOs where claw back clauses are used and not, we decided to run multivariate regressions in order to analyze the interaction of various factors that might have an effect on the underwriter's decision to shift some shares to retail investors.

First, we decided to run a set of logit regressions, where the dependent variable is the claw back dummy, i.e. a dummy which has the value of one if there was a reallocation of shares to retail investors in excess of their initial proportion, and zero otherwise. By running the logit regression, we try to answer the question about what

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[39] The differences between the last two groups are statistically significant at 5%.
[40] See Jenkinson and Ljungqvist (2001) p. 43.

parameters of the demand or of the offer might have influenced the decision of the underwriter to shift the shares to retail investors. Moreover, we also run OLS regressions, taking as a dependant variable the percentage of shares shifted to retail investors with regards to the ex ante number reserved to them. The results are reported in Table 4.

[Insert Table 4 about here]

Our logit estimates show that there are several factors that have a significant effect on the claw back decision. First, it seems that the probability of observing claw back clauses in action is positively related to the percentage of the global offering coming from selling shareholders (OPV). Moreover, this probability is negatively related to the size of institutional investors' oversubscription ratio. One interpretation might be that the higher the institutional demand, the smaller the incentive becomes to shift the shares to retail investors. Additionally, in case of low demand by institutional investors, there is strong pressure to place the undesired shares in retail hands when a larger part of the share offer comes from existing shareholders.[41] Next, if we include not only offer characteristics, but other possible explanatory variables, we see that the more shares a firm puts on sale as a percentage of its share capital, the higher the probability that the underwriter will use the claw back clause. Moreover, to account for both retail and institutional demand we introduced a variable OVERSUBSCRIPTION RATIO which is constructed as the ratio of institutional oversubscription over retail oversubscription; assuming that institutional investors are better informed about the quality of the IPO, this variable may serve as a proxy for informational asymmetries. The higher it is, the higher is the quality of the IPO in question and the smaller is the incentive of the underwriter to allocate more shares to retail investors. Indeed, this variable is negative and highly significant in our regressions. Moreover, the higher the final share price is fixed in relation to the initial price range, the lower is the incentive to shift shares to retail

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[41] It is apparent that selling shareholders may have the incentive to push the underwriter to overprice the shares and to shift the shares to retail investors to avoid a reduction in the offering. The underwriter has a set of opposing incentives: on one side he is tempted to increase the price and to shift the shares so increasing its gross spread (that depends on the size of the offering), whilst on the other, reputational concerns may discourage him from doing so and instead lead him to reduce the offering size ex post.

investors (manifested in significant negative coefficient for explanatory variable PRICE REVISION).

It must be pointed out that the inclusion of the PRICE REVISION variable might lead to an endogenuity problem. The decision to fix the final price is probably connected to the decision of the underwriter to shift the shares unsubscribed by institutional investors at the final offer price and these decisions might be taken simultaneously. We therefore rerun the last regression omitting the price-revision variable; however, the results are not changed.

Taking as a dependent variable the percentage of shares shifted to retail investors in excess of their ex ante offering proportion and running OLS regressions, we observe similar results with some new explanatory variables being significant. The average return on the market index for the period of one hundred days before listing seems to negatively influence the transfer of shares to retail investors. This means that with lower market returns before the IPO, the underwriter tries to insure itself against a low institutional investor demand by allocating a higher proportion of shares to retail investors. PRICE REVISION and OVERSUBSCRIPTION RATIO variables are negative and highly significant. Without the price-revision variable, we observe that the offer value variable is positive and significant as well as the percentage of the global offering coming from selling shareholders.

To summarize, we show evidence that claw back clauses are predominately used in weak offerings with low institutional demand probably in order to satisfy pressure from incumbent selling shareholders to allocate the overpriced shares provided there is an oversubscription by retail investors. Furthermore, we have also observed that this tendency is more pronounced in offerings where a larger proportion of share capital is sold to the market and for larger offerings that follow periods of lower market returns.

We now turn our attention to the analysis of the relation between the proportion of shares transferred to retail investors and IPO underpricing. In Table 3, "lemon IPOs" show significantly lower underpricing level than "demanded IPOs" and the question is whether a clear statistical link is established between the use of claw back clauses and subsequent underpricing. In order to answer this question we use several univariate and multivariate regressions using various levels of underpricing (at different time horizons)

as dependent variables and including claw back variables in the set of independent ones. The results are reported in Table 5.

[Insert Table 5 here]

Univariate regressions show that underpricing is lower when claw back clauses are used and when a larger quantity of shares is transferred to retail investors. However, the explanatory power of the regression models is rather low. This can be explained by the fact that underwriters cannot predict perfectly the performance and demand for particular IPOs and sometimes they transfer the shares to retail investors even in those IPOs whose price goes up considerably after the listing. Adding to the regressions additional explanatory variables makes the claw back variables insignificant, although their signs are always negative.

Several findings from the multivariate regressions are worth mentioning. First, we do not find any confirmation of the fact that a higher proportion of institutional offerings leads systematically to higher underpricing, nor do we see any relation between final price revision and underpricing at any time horizon. The former can be explained by the fact that institutions have to take up the shares in 26 "unwanted IPOs" that were unsubscribed fully by retail investors; however, we run the regressions excluding those IPOs and obtained the same results. Second, the transfer of shares to retail investors under claw back clauses does not show any significant statistical effect on subsequent underpricing, especially after accounting for other factors. Next, for the first day of underpricing we find that from all the factors considered only two have a clear systematic and profound effect (i.e. the relative demand for shares - proxied by oversubscription ratio, and the volatility of an IPO share price during the first 10 days of listing, which is frequently assumed to serve as a proxy for IPO risk).[42] Interestingly, for the first day of underpricing, only the level of retail investors' oversubscription is important and not the institutional one. If we look at the underpricing levels at the 20th day of trading, the institutional oversubscription and the ratio of institutional to retail oversubscription are

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[42] We follow the Beatty and Ritter (1986) and Cassia, Giudici and Paleari and Redondi (2004) approach, proxying IPOs risk with price volatility after listing.

significant instead of retail demand. Additional factors that explain underpricing over longer time horizons are the proportion of share capital put up for sale and the return on the market index over a hundred days before the listing, the latter having clear negative effect on underpricing. The last finding implies that IPOs listed after periods of higher market growth have lower underpricing.[43] Finally, it is worth mentioning that other allocation factors such as the level of overallotment facility, the greenshoe option exercise, the proportion of OPV in the global offer were not significant in the regressions and were excluded from the regression models.

4.3.1. Claw Back Clauses and Overallotment Option

As already mentioned, the overallotment facility and the greenshoe option are literally used only for the purposes of the institutional offering in order to potentially overallocate (or over-allot) shares only to institutional investors and not to retail ones. Given this legal framework it is interesting to note that the number of shares related to the overallotment facility end up very often in retail investors' hands as a part of the claw back quota. Indeed, in our sample of 75 cases "lemon IPOs" we observe an exercise of the overallotment option in 44 cases. Out of those 44 cases, the shift of shares was completely covered by the use of overallotment options in 29 IPOs (i.e. the overalloted amount was higher or equal to the number of shares shifted to retail investors) and in the remaining 15 cases apart from the full amount of effectively overalloted shares, some shares were transferred from the original institutional quota.

These 44 IPOs raise a question as to the need to overallocate some shares if their primary use was to increase retail participation ex post. Indeed, in the case of weak institutional demand it would seem reasonable not to exercise the overallotment facility (then covered either by the exercise of the greenshoe option or by short covering). The only explanation we have at hand is that for such IPOs, the company and/or the selling shareholders' incentive is aligned with the underwriter's in terms of maximization of the offering size even at the expense of the retail investors (in case of overpricing, the gains of the former are the losses of the latter). If we look at the average level of underpricing at the end of the first day for these 44 IPOs, it is on average 8.0% or median of 0.9%,

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[43] One explanation might be that in times of bull markets, the underwriters fix the final price at a higher level, being more positive about the market demand for shares.

which is slightly lower than all subgroups' values, but in line with 31 other "lemon IPOs" underpricing where overallotment was not used for transferring shares to retail investors. Additional factors that might play a role in these 44 IPOs are i) the proportion of shares sold by shareholders is on average 47% which is well above 37% average for other "lemon IPOs"; ii) the average value of public oversubscription is 8.1 against 4.95 for other "lemon IPOs".

4.3.2. Losses due to Claw Backs Clauses

As a last part of our analysis, we decided to look at the losses incurred by retail investors due to the transfer of shares in weak IPOs. If there was a substantial shift of shares to retail investors and later on the listing resulted in overpricing, then we can argue that these losses incurred by retail investors is the direct result of claw back uses in allocation policies of Italian IPOs. However, given the average positive underpricing even for the group of "lemon IPOs", it is likely that the resulting costs to retail investors would in fact become profits. Indeed, our findings indicate that an average claw back gain per "lemon IPO", calculated as a multiple of number of shares shifted to retail investors times the difference in closing and final IPO price, is €681 thousand (median of €70 thousand), or around € 52 million gain in total.[44]

5. Conclusions

This paper provides an overview of the Italian IPO allocation rules and practices by analyzing 161 IPOs from January 1999 to December 2007. We obtained the following results. The Italian IPO allocation practices set aside ex ante around three quarters of the global offer to institutional investors. However, this proportion can be modified ex post by the underwriter in case of weak demand by using claw back clauses or by reducing the size of the global offering. Our findings indicate that retail investors receive ex post on average 5% more of the global offer size than was planned ex ante that are transferred from institutional investors. Our analysis shows that larger institutional participation does not systematically result in increased initial underpricing. This result seems to contradict

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[44] However these average numbers hide some extreme IPOs where retail investors' losses were quite high.

the main results of the previous studies on IPOs allocation. However, a closer look reveals that institutional investors' participation is lower in case of offerings with weak potential because of the shares' transfer to retail investors. Nevertheless, they also participate in very weak offerings where there is retail undersubscription and the underwriter decides not to reduce the offering size. Next, we observe that claw back clauses are predominantly used in the case of potentially weak IPOs, which are characterized by significantly lower underpricing levels and where the global offering has a higher percentage of the shares coming from the selling shareholders. Using regression analysis, we find a significant but weak link between use of claw back clauses and underpricing, although this link disappears once we control for other underpricing determinants (like IPO risk and institutional demand). We also find that in many cases the shift of shares to retail investors is accompanied by the exercise of the overallotment option reserved solely for institutional investors. Our findings indicate that due to average positive underpricing levels for IPOs where claw back clauses were used, the average losses for retail investors are negligible. Nevertheless, averaging across all IPOs with shares' transferred to retail investors, hides a number of IPOs where a large percentage of shares was given to retail investors who later found the prices of their shares dramatically fall during the first day of trading.

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TABLE 1
SAMPLE DESCRIPTIVE STATISTICS

The table reports the mean and median values of several characteristics of 161 IPOs listed on the Milan Stock Exchange between January 1999 and December 2007. 171 IPOs were first identified from Borsa Italiana archives and ipo.it database; 10 IPOs were removed from the sample due to being offered only to institutions or retail investors. *Market value* is measured at the end of the month of the listing and was obtained from DataStream. *Global offering value* is calculated as number of shares offered times final IPO price. *Percentage of share capital offered* is the amount of shares in free float over total share capital following listing. *Days between publishing and listing* refers to the time between depositing a prospectus with regulating authority (CONSOB) and final listing date. *Percentage of OPV in global offer* is the percentage of IPO shares coming from selling shareholders. *Institutional allocation* refers to the final proportion of global offer taken by institutional investors. *Underpricing* is calculated as the % difference between the final IPO price and the market price. *Official price* refers to the official price of Borsa Italiana, which is a weighted average of the prices of all trades taken place during that day. *Closing price* is the last recorded trade price during that date. In order to adjust underpricing for market movements, the corresponding MIB30 index return was subtracted from raw underpricing level. **, *** denote significance levels of 5% and 1% respectively.

Characteristic	Mean	Median
Market value, mln Euro	963.2	255.1
Global offer value, mln. Euro	242.2	85.2
% of share capital offered (post-IPO)	33.7	32.0
Period of global offer, days	5.3	5.0
Days between publishing and listing	17.6	18.0
% of OPV in Global offer	37.8	26.9
Number of global coordinators	1.6	2.0
Institutional allocation ex post, % (incl. overallotment)	70.1	73.9
Underpricing, in %, unadjusted		
1st day (official price)	12.2***	2.1***
1st day (closing price)	12.8***	1.2***
5th day (closing price)	13.5***	0.4***
20th day (closing price)	19.2**	0.2***
Underpricing, in %, adjusted by MIB30		
1st day (official price)	12.3***	2.3***
1st day (closing price)	12.9***	1.7***
5th day (closing price)	13.6***	1.2***
20th day (closing price)	19.3***	1.1***

TABLE 2
ALLOCATIONS IN ITALIAN IPOS

This table presents percentage proportions of global offer allocated to different types of investors subscribing to 161 IPOs that took place on the Milan Stock Exchange between January 1999 and December 2007. Results are shown both for ex ante offers as disclosed in the prospectuses and effectively allocated as disclosed by companies' announcements following the end of the offer period. The allocation proportions are reported both excluding and including the overallotment options as specified in offering details and offering results. The allocation proportion of institutional investors is shown separately for subgroups of overpriced IPOs (first day adjusted returns are negative) and underpriced IPOs (first day adjusted returns are positive). The ex ante allocations with overallotment option assume its full potential exercise. The significance of the difference in means and medians is assessed using the *t-test* adjusted for difference in sample variances and a nonparametric median test respectively. **, *** denote significance level of 5% and 1% respectively.

Investor groups	Share allocations ex ante		Share allocations ex post		Difference in	
	Mean	Median	Mean	Median	means	medians
Excluding overallotment option						
Retail	26.6	25.0	31.2	27.1	4.6***	2.1**
Private	1.1	0.0	1.0	0.0	-0.1	0.0
Institutional	72.3	75.0	67.8	70.5	-4.5***	-4.5**
Including overallotment option						
All IPOs (N=161)						
Retail	23.8	22.0	28.8	24.5	5.0***	2.5**
Private	1.0	0.0	0.9	0.0	-0.1	0.0
Institutional	75.1	77.5	70.3	73.9	-4.8***	-3.6**
Overpriced IPOs (N=59)						
Institutional	74.6	77.3	68.6	72.4	-6.0**	-4.9*
Underpriced IPOs (N=102)						
Institutional	75.4	78.0	71.2	74.9	-4.2**	-3.1*

TABLE 3
SHARE ALLOCATIONS FOR IPO SUBGROUPS

This table presents various characteristics of several subgroups of 161 IPOs taken place on the Milan Stock Exchange between January 1999 and December 2007. We define "unwanted IPOs" as those IPOs where retail investors oversubscription ratio was less than one, "lemon IPOs" where there was a shift of shares to retail investors in excess of the ex ante proportion reserved for them, and "demanded IPOs" include all remaining IPOs. **Panel A** reports underpricing at various time horizons adjusted by MIB30 as well as IPOs valuation. *Official price* refers to the official price of Borsa Italiana, which is a weighted average of the prices of all trades taken place during that day. *Closing price* is the last trade price during that date. *Offering value* is taken as number of shares offered times final IPO price. *Market value* is measured at the end of the month of listing and was obtained from DataStream. **Panel B** shows selected characteristics of the IPO offerings as disclosed in the prospectuses. *Percentage of offer to share capital pre-IPO and post-IPO* are taken as the ratios of number of shares in offering to the share capital of the firm before and following listing. *OPV* is the proportion of shares in global offering coming from selling shareholders, *OPS* is the proportion of the offer coming from newly issued shares. *Overallotment ex ante* measures the proportion of shares available for additional distribution by the underwriter in case of high institutional demand. **Panel C** looks at the subscription and allocation details of the offerings. *Institutional allocation* is the percentage of global offer reserved for institutional investors, with or without overallotment facility. *Oversubscription data* measures the volume of demand over reserved supply of shares for various investor groups. **Panel D** disclosed offering results. *Institutional allocation data* show the percentage of shares effectively allotted to institutional investors, with or without effectively being overalloted. *Price revision variable* shows the relative position of the final offer price within the prospectus price range and equal to 0 if final price equals to lower price range bound and 100 – to higher price range bound. *Overallotment and greenshoe statistics* show the percentage of shares overalloted and percentage of the overalloted shares covered by exercised greenshoe option. *IPO price volatility* is measured over 10 first days of trading. *Market return* is taken as the return on MIB30 index 100 days before the listing date. The last column measures the differences in means and medians between "lemon IPOs" and "demanded IPOs" and their significance is assessed using the *t-tests* adjusted for difference in sample variances and a nonparametric median tests respectively. *,**, *** denote significance level of 10%, 5%, and 1% respectively.

Characteristics	All sample, N=161		'Unwanted IPOs', N=26		'Lemon IPOs', N=75		'Demanded IPOs', N=60		Difference in	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Means	Medians
Panel A. Underpricing and valuation.										
Underpricing, 1st day (official price)	12.3***	2.3***	0.6	0.6	6.4**	1.9***	24.7***	9.8***	**	***
Underpricing, 1st day (closing price)	12.9***	1.7***	0.4	-0.3	6.4***	1.1***	26.5**	7.7***	*	**
Underpricing, 5th day (closing price)	13.6***	1.2***	-0.4	-2.4	7.3***	0.8	27.6***	7.3***	**	*
Underpricing, 20th day (closing price)	19.3***	1.1***	0.7	-1.0	12.1***	0.1*	36.4***	3.9***	**	-
Offer value, Euro mln	242.2	85.2	144.7	85.8	319.4	83.3	188.1	82.8		
Firm Market Value, Euro mln	963.2	255.1	432.3	228.7	1370.4	252.0	684.2	323.6		

Table 3 (continued).

Characteristics	All sample, N=161		'Unwanted IPOs', N=26		'Lemon IPOs', N=75		'Demanded IPOs', N=60		Difference in	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Means	Medians
Panel B. Offering details										
% of offer to share capital, pre-IPO	44.6	38.9	45.3	41.0	48.8	36.3	38.9	36.2	**	-
% of offer to share capital, post-IPO	33.7	32.0	34.4	32.7	36.3	32.4	30.2	31.5	***	**
OPV, in % to global offer	37.8	26.9	32.9	18.2	43.2	31.7	33.2	23.9	*	-
OPS, in % to global offer	62.2	73.1	67.1	81.8	56.8	68.3	66.8	76.1	*	-
Overallotment ex ante, %	12.3	14.3	14.0	14.8	12.0	14.3	11.8	12.5	-	-
Panel C. Subscription and allocation										
Institutions allocation, ex ante, no OA	72.3	75.0	73.4	75.0	72.2	75.0	71.9	75.0	-	-
Institutions allocation, ex ante, OA	75.1	77.5	76.7	78.0	75.0	77.3	74.6	77.4	-	-
Institutional oversubscription, times	6.0	3.0	2.1	1.4	4.2	1.9	9.9	6.4	***	***
Retail oversubscription, times	9.5	3.6	0.7	0.8	6.8	3.5	16.6	5.9	*	***
Inst./Retail oversubscription, times	1.5	0.9	3.3	2.5	0.9	0.7	1.3	0.9	**	**
Panel D. Offer results										
Institutions allocation, ex post, no OA	67.8	70.5	79.6	80.0	60.5	65.3	71.9	75.0	***	***
Institutions allocation, ex post, OA	70.3	73.9	81.0	81.7	63.5	68.0	74.1	77.4	***	***
Price revision to offer range, x100	29.7	35.8	-37.0	-6.3	33.9	35.7	53.5	60.0	**	**
Overallotment, ex post %	9.2	10.4	7.8	9.2	9.0	10.0	10.0	11.1	-	-
Greenshoe, ex post, %	7.4	7.9	4.8	0.0	7.3	7.9	8.6	10.0	-	-
Reduction of global offer, %	2.2	0.0	9.3	0.0	1.4	0.0	0.0	0.0	*	-
IPO price volatility, annualized, %	50.0	34.7	31.3	25.6	45.0	33.0	64.5	41.4	**	**
Market return, 100 days before, %	0.3	0.7	-5.7	-5.2	0.5	0.7	2.7	1.8	-	-
Money left on table, mln Euro	15.4	0.7	2.0	-0.0	16.4	0.7	19.9	3.2	-	*

TABLE 4
MULTIVARIATE TESTS OF THE CLAW BACK DECISION

This table presents a set of Logit and OLS regressions for shift of shares to retail investors under claw back clauses. Logit regressions use claw back shift dummy as a dependant variable whereas OLS regression uses the percentage of shares shifted to retail investors in excess of their ex ante proportion fixed in the offering prospectus. CLAW BACK DUMMY is a dummy variable that takes a value of 1 if for this IPO the retail investors received shares in excess of their ex ante proportion specified in the offering prospectus. OFFER TO CAPITAL measures the % of offer to share capital post-IPO and taken as the ratio of the number of shares in offering to the share capital of the firm after the listing. LN OF OFFER VALUE is the logarithm of the number of shares in global offering times final IPO price. OPV SHARES IN OFFER is the percentage of shares coming from selling shareholders. OVERSUBSCRIPTION RATIO is the ratio of institutional oversubscription over retail oversubscription. MARKET RETURN is taken as the return on MIB30 index 100 days before the listing date. Price revision variable shows the relative position of the final offer price within the prospectus price range and equal to 0 if final price equals to lower price range bound and 1 – to higher price range bound. INSTITUTIONAL SHARE and INST. OVERSUBSCRIPTION measures the proportion of shares reserved for institutional investors and the level of oversubscription by them. OA FROM SHAREHOLDER is a dummy variable that takes a value of 1 if shares available under overallotment facility come from a shareholder, and 0 if they come from IPO firm itself. *T-statistics* for the OLS regression coefficients are reported in brackets and use White's heteroskedasticity consistent standard errors (White, 1980). *, **, *** denote significance level, respectively, of 10%, 5%, and 1%.

	LOGIT dependent variable CLAW BACK DUMMY			OLS dependent variable CLAW BACK SHIFT		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
INTERCEPT	1.10 [0.75]	-0.53 [-0.79]	-0.68 [-1.08]	0.41*** [3.45]	0.11 [0.69]	0.23 [1.35]
OFFER TO CAPITAL		3.66* [1.92]	3.77** [2.13]	-0.38 [-1.38]		-0.43 [-1.59]
LN OF OFFER VALUE					0.08** [2.07]	0.08** [2.05]
OPV SHARES IN OFFER	0.93* [1.78]	0.85 [1.53]	0.61 [1.14]	0.16 [1.37]	0.13 [1.28]	0.15 [1.30]
OVERSUBSCRIPTION RATIO		-0.35* [-1.66]	-0.46** [-2.26]		-0.15*** [-4.26]	-0.18*** [-4.52]
MARKET RETURN		-3.08 [-1.23]	-4.40* [-1.90]		-0.51 [-1.38]	-0.74** [-2.16]
PRICE REVISION		-0.90** [-1.96]			-0.19** [-2.15]	
INSTITUTIONAL SHARE	-0.03 [-0.02]					
INST. OVERSUBSCRIPTION	-0.11*** [-3.04]			-0.01*** [-2.89]		
OA FROM SHAREHOLDER	-0.66 [-1.07]					
McFadden/Adjusted R^2 (%)	10.7	11.3	9.4	5.4	14.5	13.1
LR stat/F-test *p*-value	<0.001	<0.001	0.001	0.016	<0.001	<0.001
Number of observations	128	132	135	135	132	135

TABLE 5
MULTIVARIATE TESTS OF THE IPO UNDERPRICING

This table presents ordinary least square regressions to explain the underpricing levels of the 161 IPOs listed on the Milan Stock Exchange between January 1999 and December 2007. As dependent variable we take market-adjusted underpricing calculated using the 1st and 20th day's closing prices. CLAW BACK DUMMY is a dummy variable that takes a value of 1 if for this IPO the retail investors received shares in excess of their ex ante proportion specified in the offering prospectus. CLAW BACK SHIFT measures the percentage of shares shifted to retail investors in excess of their ex ante proportion fixed in the offering prospectus. INST. OVERSUBSCRIPTION and RETAIL OVERSUBSCRIPTION measure the level of oversubscription by investor groups over the ex ante proportions reserved for them. 10 DAYS PRICE VOLATILITY is the annualized share price volatility over 10 first days of trading. MARKET RETURN is taken as the return on MIB30 index 100 days before the listing date. OFFER SIZE TO CAPITAL measures the % of offer to share capital post-IPO and taken as the ratio of the number of shares in offering to the share capital of the firm after the listing. The t-statistics for the regression coefficients are calculated using White's heteroskedasticity consistent standard errors (White, 1980). *, **, *** denote significance level, respectively, at the 10%, 5%, and 1%.

	"Lemons-" and "Demanded IPOs", n = 135						Full sample, n = 161					
	1st day underpricing			20th day underpricing			1st day underpricing			20th day underpricing		
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
INTERCEPT	0.26**	0.19***	-0.15	0.36***	0.29***	-0.45***	0.19**	0.15***	-0.14*	0.26***	0.23***	-0.46***
CLAW BACK DUMMY	-0.20*		-0.03	-0.24**		-0.01	-0.13		-0.04	-0.14		-0.04
CLAW BACK SHIFT		-0.13**			-0.22***			-0.10*			-0.18***	
INST. OVERSUBSCRIPTION						0.03***						0.03***
RETAIL OVERSUBSCRIPTION			0.01*			0.00**			0.01*			0.00
RATIO INST. / RETAIL OVERSUBSCR.						-0.08**						-0.05***
10 DAYS PRICE VOLATILITY			0.39**			0.70***			0.39**			0.71***
OFFER SIZE TO CAPITAL						0.53**						0.58***
MARKET RETURN, 100 DAYS						-1.32***						-0.99**
Adjusted R^2 (%)	1.8	0.2	39.5	2.7	1.8	72.1	0.4	-0.1	40.2	0.6	1.0	69.6
F-test p-value	0.07	0.27	<0.001	0.03	0.06	<0.001	0.19	0.37	<0.001	0.17	0.12	<0.001

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