Lockup Clauses in Italian IPOs

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Abstract

Virtually all IPO prospectuses feature lockup provisions that limit pre-IPO shareholders' share sales for some period of time after negotiations start. The aim of the paper is to analyze in-depth voluntary lockups in the Italian setting and to draw conclusions about their effect both on different shareholder classes and on share prices. We show that the lockups are considerably longer and heterogeneous than US or European evidence shows, and their duration and size serves primarily as a commitment device to alleviate the moral hazard problem faced by the incumbent shareholders. We show that abnormal returns around the lockup expiration dates are associated solely with venture-capital-backed IPOs.

Keywords: law and finance, IPOs, lockup clauses, regulation of financial markets.

JEL Classifications: G24, G32, G38, K12, K22

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1. Introduction

Lockup clauses in initial public equity offerings (IPOs) are contractual arrangements between the underwriters' syndicate and pre-IPO shareholders (directors, venture capital firms, family owners, particular employees and other equity holders) according to which these insiders voluntarily agree not to sell their shares on the aftermarket for a period of time following the start of negotiations on the exchange. Presence of lockups in both IPOs and seasoned offerings is an international phenomenon which has been extensively documented for many countries[1]. Existence of lockups has been a puzzle of empirical financial economics because they are generally not provided for by law (securities regulation and/or corporate law), but are frequently requested by underwriters in their contractual agreements with IPO shareholders.

Earlier research papers focused on the theoretical underpinnings of lockup existence. Following the model of signaling in Leland and Pyle (1977), Gale and Stiglitz (1989) argued that selling shareholders will not retain the overvalued shares unless they have some commitment to do so. One obvious solution to such a problem is to assume an obligation not to sell for a specified period of time, i.e. to lock up one's shares. Given the informational asymmetries between external investors and corporate insiders, the models of Courteau (1995) and Brau et al. (2005) show that better-quality firms enter into lockup agreements of such length and/or size that rules out mimicking by bad firms, thereby leading to a separating equilibrium. In order to differentiate themselves from low-quality firms, it is suggested that high-quality firms going public introduce lockups, so signaling to IPO investors their goodness. By voluntarily restraining from selling shares in the

[1] See, for example Barlett (1995) for earlier US evidence, Espenlaub et al. (2001) for UK data and Goergen et al. (2006) for lockups in French and German IPOs.

aftermarket, insiders help the public to identify their firm as of good quality, which subsequently might allow for a higher IPO price or subsequent seasoned offering price.

Apart from the signaling hypothesis, a second explanation for lockup existence is that these arrangements represent a commitment device in a typical asymmetric information context for alleviating post-IPO problems of moral hazard, as shown in Brav and Gompers (2003). In this case, pre-IPO firm quality is known and does not represent a problem. The problem here is the opportunistic behavior of pre-IPO shareholders in the aftermarket. By committing themselves not to sell for a given period of time, during which more information about the firm becomes public, insiders convince investors to buy IPO shares.

Another strand of the literature has tried to explain the lockup existence by looking closer at the behavior of underwriters, who represent the driving force behind lockup creation and who are likely to have most interest in imposing the lockups on an IPO firm. Many authors have shown that underwriters often engage in price stabilization following share distribution (see, for example, Aggarwal, 1998, or Ellis et al., 2000 for US data and Boreiko and Lombardo, 2011, for some international evidence). To prevent the sales of large blocks of securities that might lead to losses on the part of underwriters committed to support the issue at the offering price, underwriters may have incentives to limit the pre-IPO shareholders' discretion in disposing of shares following the listing. However, given that the stabilization period is by law limited to 30 days after the IPO date, and that the average lockup period is 6 times longer, it is difficult to accept such an argument as the main explanation of lockup existence.

Instead of focusing solely on the potential losses during the stabilization period, several authors (see, e.g. Carter et al., 1998) argued that investment bankers might care not only about initial IPO performance during stabilization, but also

about its long-run performance as this might affect underwriters' reputation and as a result future IPOs income. Lockup provisions, when in place, might alleviate the problems of insider selling shortly after the IPO, thereby protecting investment bankers' reputation.

Apart from reputational issues, Brav and Gompers (2003) argued that lockup clauses may serve as a mechanism for underwriters to extract additional compensation from the issuing firm. In this case, the underwriter gains from trading commissions from the selling shareholders whose lockup has been released by the underwriter or from the spread charged on a seasoned equity offering conducted during the lockup period.

The empirical evidence regarding the motives behind lockup existence in underwriting contracts is rather mixed and exists only for US data. Brav and Gompers (2003) studied 2,871 IPOs over the period 1988-1996 and found empirical support in favor of the commitment hypothesis. They argue that "larger firms with higher-quality underwriters and firms backed by venture capitalists all have shorter lockups on average"; these variables are typically associated with less informational asymmetry and lesser need to show commitment with longer lockup periods. Moreover, they find that the offerings with a larger primary component and brought to the market by less reputable underwriters are associated with longer lockups. The study cites the empirical evidence that contradicts the signaling hypothesis with respect both to the IPO price adjustment and to subsequent seasoned offerings. Also, the underwriters compensation hypothesis is not confirmed by the authors' findings.

In a contradicting study, Mohan and Chen (2001) argued that lockup periods signal issuer's risk and their length conveys some valuable information to the market, thus providing some empirical evidence in favor of the signaling hypothesis. Furthermore, Brau et al. (2005) challenged the moral hazard hypothesis

both theoretically and empirically, finding support for lockups as signals by good firms of their superior quality.

Our analysis of lockups in Italian IPOs confirms Brav and Gompers (2003) findings, so reinforcing the correctness of the moral hazard hypothesis and strongly rejecting the signaling theory. Interestingly, in a recent study by Yung and Zender (2011), these two conflicting hypotheses are claimed to be dominant for two different sets of firms. According to their findings, one group of firms, certified by a reputable underwriter, will use lockups to overcome moral hazard frictions, whereas the second group primarily adopts lockup provisions to address asymmetric information-related problems.

Apart from lockup existence, another strand of literature has tried to explain the perplexing diversity regarding their length, size, and targeted investor group. Not being regulated by law and being voluntary arrangements, lockups vary considerably across issuers. Although it was shown by Bradley et al. (2001) that towards the end of their sample period under study, lockup length showed a clear trend toward a standardized 180-day restriction on share sales, this evidence relates only to US data. Our findings using more recent data show that this trend is not observable in Italy, and Espenlaub et al. (2001) find no confirmation of lockup standardization for UK data either.

Apart from the length of the restriction period, lockups vary considerably across various shareholder classes, with venture capitalists being locked up for the shortest period, and companies' directors and founding members accepting much longer periods. Our study of Italian IPOs sheds additional light on this issue on the diversity of European lockups[2].

[2] The only available studies till now are Espenlaub et al. (2001) for the UK, and Goergen et al. (2006) for France and Germany.

Given the existence of lockups, another important research question to ask is what happens to share prices once the lockup period is over and insiders are free to sell their shares in quantities potentially much higher than the free-float before the lockup expiration. Additionally, considering the fact that the lockup expiration date is known at the time of publication of the IPO prospectus, should the researcher observe any effect of lockup expiration on share prices? The economic rationale would predict the absence of significant price reactions because of the public knowledge of the lockup expiration and its subsequent rational anticipation by the market. More in particular, the market should correctly anticipate on average the number of sold shares at the time of lockup expiration so that abnormal returns should be insignificantly different from zero.

Nevertheless, several studies have looked in depth into this issue and have found some evidence against market efficiency, at least using the US dataset. Among them, Bradley et al. (2001), Field and Hanka (2001), Keasler (2001b) and Ofek and Richardson (2000) found that lockup expirations resulted in a permanent increase in trading volume, and statistically significant stock price declines of about 1.5%. Field and Hanka (2001) proposed two hypotheses to explain this abnormal return. They posit that both the increased float effect (downward sloping demand curve) and information effect (insider trades revealing valuable information about the quality of the company) explain the negative returns around the lockup expiration dates. A later study by Cao et al. (2004) took the view that the float effect is the dominant one. This hypothesis was also confirmed by Krishnamurti and Thong (2008), who found that the increase in float actually improved stocks liquidity by considerably reducing trading spreads.

Our results for Italian IPOs indicate that the negative returns around the lockup dates are mostly confined to venture-capital-backed IPOs, with the rest showing zero abnormal returns. The importance of venture capital and its effect on

share prices following lockup expirations was stressed also by Bradley et al. (2001) and Krishnamurti and Thong (2008). Interestingly, the studies for other European countries have failed to find any significant abnormal returns and they did not look at venture-capital-backed IPOs separately.

One last interesting question regarding lockups is that being voluntary agreements between shareholders and underwriters, the latter sometimes grant a lockup release to some shareholders, permitting them to sell the shares before lockup expiration date. Keasler (2001a) looked at early lockup releases in the US and found significant negative abnormal returns immediately prior to the scheduled lock-up release. In our sample, we found that such releases are very rare. In fact, in Italy over the period of 1999 to 2008 only one IPO featured such a lock-up release.

In this paper we analyze the pattern of lockup clauses in Italian IPO for the period 1999-2008, looking at their diversity across years and shareholder classes. We found clear evidence in favor of the moral hazard hypothesis and no evidence for the signaling hypothesis. We show that the lockup clauses are extremely versatile and complicated, so making it virtually impossible for a common investor to deduce the exact number of shares to be released at the expiry date, and sometimes even impossible to identify the lockup expiration date. We found significant abnormal returns at lockup expiry only for venture-capital-backed firms, where lockup clauses for venture capital investors are considerably shorter than for other investor classes. Lockup expiration led to a 30% increase in share turnover, and again the effect was mostly confined to VC-backed IPOs. Our results suggest the possible need for the improvement of regulation regarding public disclosure of lockup provisions in order to make public investors aware of lockup sizes and lengths.

The rest of the paper is organized as follows. Section 2 provides a brief description of the Italian institutional setting regarding lockups and analyses

lockups provisions as disclosed in Italian IPOs' prospectuses. Section 3 provides the data description and the empirical analysis of lockup lengths and share price reaction around expiry. Conclusions follow in Section 4.

2. The regulatory regime and diversity of lockups

As of now, lockup clauses are neither imposed by European law nor by Italian law. Prior to January 2000, lockups were mandatory in the UK for firms in certain industries with a trading history of less than 3 years. After that date, only firms to be listed on the stock exchange segments – partners of EuroNM alliance (New Euro Markets, e.g. Nuovo mercato in Italy, New Marche in France and Neuer Market in Germany, see Georgen, Renneboog and Kurhshed 2006) - had to face minimum lockup requirements. As was disclosed in Article 2.2.3 of the Regolamento Nuovo Mercato (1999-2005) the lockup clause was applicable to:

"…1. Shareholders who became such in the twelve months preceding the date on which the application for admission to trading was submitted, the founder members of the company and its directors and managers shall undertake, for the duration of one year from the date of the start of trading, not to sell, offer, pledge, or in general, effect transactions involving a quantity equal to at least 80% of the ordinary shares of the issuer held by such persons at the date of the start of trading.

2. rule of paragraph 1 applies to equity interests of at least 2% of the ordinary shares. "

For some firms, in exceptional cases the regulation provided for lockups of two years referring to 100% of shares for the first year and at least 80% of shares for the second year.

After the crisis of the new economy market and the closing of such markets, lockups are not governed by any regulation but continue to be voluntarily used by underwriters for US as well as European IPOs.

At the moment, the only regulation of lockup disclosure that exists is at the EU level. Commission Regulation 809/2004 (Prospectus Regulation) in Annex III, point 7.3, provides disclosure of lockups in the following terms: lockup agreements, the parties involved, content and exceptions of the agreement, and indication of the period of the lock up.

After careful examination of all available Italian IPO prospectuses, it emerged that the voluntary lockup clauses in Italian IPOs are characterized by a high degree of variability. Whereas the wording of the clauses is virtually the same, there are two main sources of inconsistencies across IPOs – the starting date of the lockup period and its duration. For example, whereas all IPOs usually specify the date from which the lockup period starts and its duration, one IPO prospectus gave only the calendar date of the end of the lockup period (Lavorwash, year 2000).

Up to the year 2003, prospectuses gave different dates for lockup period initiation. Out of 167 IPOs in our sample, only 131 mentioned the listing date as the first day of the lockup period, with the rest identifying some other event in the IPO schedule. For example, 17 IPOs mentioned the date of the signing of the share distribution agreement as the lockup period starting date, 10 IPOs – date of the payment for shares, 4 IPOs – date of the global offer completion, 3 – date of the global offer start and 2 IPOs – date of the settlement of the global offering (*regolamento dell'offerta globale*). These dates do not coincide with the listing date and show significant differences that may mislead an unaware researcher or investor about the exact date of the end of lockup period. Moreover, relevant

information is located in different parts of the prospectuses except for the date of signing the distribution agreement, which has to be obtained from other sources.

Having established the exact date of the lockup period start, some ambiguity still remains regarding the exact length of the lockup period. The IPO prospectuses mention their duration not only in days, but also in months or years without referring to whether they follow any convention such as 30-day month or 360-day year. As a result, the mentioned lockup durations were 90 days or 3 calendar months (with actual days in this period ranging from 89 days to 92), 180 days or 6 months and 270 days and 9 months. Even for lockup length of one year, some prospectuses mentioned 360 days, some 12 months, and some 1 year.

Virtually all prospectuses disclosed only the names of the shareholders subject to the lockup provisions without directly identifying the total number of shares locked, as is the common practice in US IPOs[3]. Therefore, the reconstruction of the percentages of shares locked up requires some additional effort from investors willing to identify the correct date and amount of shares locked. We also tried to locate the lockup expiry press-releases in the Market Connect database of the Italian Stock Exchange, supposedly to be placed there by each listing firm when they are due. We were able to find only a few of these. In addition, 19 IPOs in our sample featured staggered lockups where some shares are released on one date and the rest at some later dates.

This variability might be a legacy of the past and so we decided to look at the structure of the lockup clauses across years, hoping to find some standardization towards recent years as is observed in the US. Table 1 shows some basic statistics about the distribution of lockup clauses.

[3] Section “Shares eligible for future sale”.

[Insert Table 1 about here]

We observe that all IPOs started using the listing date as the start of the lockup period. There is no clear trend in insiders shares locked up or in the percentage of the total post-IPO shares locked. To identify a possible trend towards standardization we decided to make some assumptions regarding the theoretical lengths of lockups (ignoring lockup expiration date falling on week-ends and assuming the 30-day per month convention) and estimated the theoretical average lockup duration across years. We found no evidence that the length converges to any stable value across years. Moreover, the overall average is 300 days, which is much longer than the US data shows. One of the possible explanations of the lengthy lockups is that Italian underwriters are willing to impose longer lockups on the listing companies; consequently, we looked at the subsample of the IPOs where the lead underwriter was an international investment bank. The average lockup length is slightly shorter, but still above 180 days.

Looking at the detailed statistics of the actual lockup length we observe large variability across years. There are lockups that last for 3 years with the shortest lockup being 90 days. The median lockup length is actually 270 days, which is 50% longer than the US data shows. The standard deviation of the lockup length does not show any tendency to go down towards the later years, so we might claim that in Italy there is no tendency towards standardization in lockup clauses.

3. Empirical analysis

3.1. Data sources and description

The paper analyses 174 IPOs listed on all segments of the Italian Stock Exchange (Borsa Italiana Spa) from January 1999 to December 2008. We excluded offerings by foreign firms and transfers from other markets. We also eliminated 7 IPOs with missing IPO prospectuses, thus giving us a final sample of 167 listings. The details of the offerings, lockup lengths and total numbers of shares locked were sourced from IPO prospectuses. All market data comes from DataStream. To identify venture-capital backed IPOs, we used the records of the Italian Private Equity and Venture Capital Association (www.aifi.it). We also used the listing firms' and underwriters' records stored in the Market Connect database of the Italian Stock Exchange. Unlike previous studies, in our analysis we used the actual share allocations that included the overalloted shares.

For the purposes of the study we examined only the voluntary lockup clauses adopted by the firms at the request of the underwriters and omitted lockups that were either a part of the shareholders' agreements (*patto parosociale*) or involuntary (lockups adopted according to the regulatory requirements for companies listed on the New Market segment, *Mercato Nuovo*)[4]. Table 2 reports IPO distribution across years. We observe two waves of IPO activity, peaking in years 2000 and 2007. The majority of the listings had voluntary share lockups with one third of all IPOs being venture-capital financed and 19 IPOs having complicated lockup schedules where the shares were locked up for sale for different periods of times for various shareholder classes.

[Insert Table 2 about here]

[4] Out of 37 IPOs listed on the New Market segment during the time under study, only 5 did not have any additional voluntary lockup agreement as requested by the underwriter. Only one IPO from the main segment (Mid Industry, year 2007) had no voluntary lock-up arrangement but had shares locked up according to the shareholders' agreement disclosed in the IPO prospectus.

In Table 3 we report general statistics for the sample. In line with various studies that have stressed the importance of venture-capital (VC) financing on lockups (Bradley et al, 2001, Brau et al, 2005, Field and Hanka, 2001) we also split the sample into VC-backed IPOs and non-VC-backed IPOs.

The average listing company in our sample has assets of almost 900 million Euro, offers to the market 220 million Euro worth of shares, 37% of which come from selling shareholders and is 30 years old. Underwriters charge a 4% spread for their services and the observed demand for shares is 6.5 times larger the shares offered. On average, the final IPO price is 20 percentage points below the mid-price level of the price range and the average underpricing after the first day of trading is 13%.

[Insert Table 3 about here]

Looking separately at the VC-backed IPOs, we observe some differences but most of them are not statistically significant. Such IPOs seem to be of younger firms, offering fewer shares to the market with a higher percentage coming from selling shareholders. These IPOs are underwritten by more prestigious underwriters[5] and have lower levels of initial underpricing. The most striking and significant difference is that for VC-backed IPOs the underwriters charge a higher spread for their services (0.3 percentage points higher on average).

It is interesting to look at any difference as regards lockup details. On average, the lockup length is 318 days (with a median of 272 days), which is much longer than the standard lockup length of 180 days observed in all US studies (Field and Hanka, 2001, Bradley et al, 2001 and others). Incumbent shareholders have around 95% of their shares locked up, which is much higher than the findings of Brav and Gompers (2003) for US data, but in line with European evidence

[5] We calculate the underwriters' rank as the percentage of total Italian IPO value underwritten by each investment bank in 1999-2008.

(Goergen et al., 2006). On average, only 38% of IPOs shares are available for trading during the lockup period. The VC-backed IPOs seem to have slightly shorter lockups, with a lower percentage of shares unavailable for sale. However, when we look at the total post-IPO share capital subject to lockup provisions, we obtain strong and significant differences for VC-backed IPOs. They have fewer shares locked up as a percentage of the post-IPO share capital (6 percentage points less both for means and medians).

3.2. Lockup provisions in Italian IPOs

3.3. Ownership and lockup clauses

Similar to Goergen et al. (2006), we obtained the detailed records on Italian IPOs ownership and lockup diversity among different shareholder types. We classified shareholders into five different, non-mutually exclusive categories: executives, non-executives, founders, venture capitalists and others. Executives are defined as the members of the management board (*Consiglio di Amministrazione*), whereas non-executives are defined as the members of the supervisory board (*Collegio Sindacale*). Surprisingly, we found that virtually no IPOs had non-executives directors among their shareholders. This stands in stark contrast with findings in Goergen et al. (2006) for Germany (26.5% of pre-IPO capital ownership on average) and France (30.3%). Therefore, for our further analysis we excluded the non-executive shareholders category. The categories are not mutually exclusive as we found many cases where the executives of the IPO firms were either owners or venture capitalists. We report various statistics for different shareholder groups in Table 4.

[Insert Table 4 about here]

The proportion of firms with ownership by different shareholder categories is shown in Panel A. We observe that executives were present in the share capital of almost 79% of all IPOs and they remained after listing in all but one IPO. Similar dynamics can be observed for founders, but the proportion of IPOs with their ownership before IPO is 62%. Venture capitalists were present in around 29% of all IPOs but the proportion fell to 25% following listing as some investors used an IPO as an opportunity to sell their shares and liquidate their investment in the firm. The 'other investors' category is present was the share capital of 61% of all IPOs.

The results for Italian IPOs are markedly different from findings for France and Germany in Goergen et al. (2006). First, the proportion of Italian IPOs with ownership by executives and founders was on average 16 to 20% lower. Second, we observe a much higher ownership of IPOs by the other investors group that includes direct investments by outside investors different from venture capitalists such as, for example, banks. Third, the proportion of IPOs with venture capital was much smaller than in Germany (47%) or in France (61%).

Panel B of Table 4 reports the ownership by the different groups of shareholders before and after the IPO. All shareholder groups substantially reduced their ownership following the IPO (mean-differences are statistically significant at 1% and 5% levels). However, executives, founders and other shareholders reduced their participation by around one third, whereas the percentage of venture capitalist ownership went down more than one half (from 11% before to 5% after the IPO). Another point to mention is that the table omits the non-executive group of shareholders as we have found only one IPO with shares owned by this category.

Panel C and D show the statistics across the groups for the percentage of share capital locked for sale after listing and the length of time of sale restrictions. Looking across the whole shareholder base, 61% of all post-IPO share capital was

restricted for sale for a period of slightly less than 10 months on average. Alternatively, 93% of all shares owned by incumbent shareholders were restricted for sale. This is slightly larger than the data for France (89%), but lower than the numbers for Germany, where all shares owned by insiders are subject to lockup restrictions. Venture capitalists and other investors locked up substantially lower number of shares than founders and executives (around one quarter of all owned shares less, significant at 1% level). Looking at the length of lockup period, venture capitalists and other investors seem not only be subject to lower lockup requirements but also for a much shorter period of time (median lockup length of 180 days against 270 day lockups for founders and executives).

3.4. Determinants of lockup length

Having observed large variability in the terms of the lockup provisions, we ran an OLS regression to identify the likely determinants of the lockup length. Here we broadly followed the tests of lockups as commitment devices used by Brav and Gompers (2003). The dependant variable is the logarithm of the total number of days of the actual lockup period.[6] The results of the regression are reported in Table 5.

[Insert Table 5 about here]

We find a clear confirmation of the commitment hypothesis. More mature companies with larger offerings are associated with less informational asymmetry and have shorter lockups on average. The presence of venture capital in the listing firm might serve as a certification about the quality of the firm and therefore there might be less need for a longer lockup period. The same applies to the larger

[6] In case of multiple-dates lockups we focused on the earliest date of lockup expiration.

percentage of offers coming from selling shareholders – as shown by Brav and Gompers (2003); this finding is consistent with the commitment theory. All variables have the expected signs and are significant at least at 10% level, except for underwriter's rank, which does not appear particularly important in explaining lockup length.

In our sample, we find a much stronger result for the free float and total shares locked percentages – these have significant and positive effects on the length of lockup. Therefore, both volume and length of lockup period serve as complimentary devices in showing firms' commitment and the more shares are placed in the market, the longer the lockup period is assumed to be in order to persuade investors that the incumbent shareholders will not exit the firm at the first opportunity. The underwriter's rank seems to be insignificant and we re-estimated the equation using another proxy for the underwriter's prestige – a dummy that takes a value of one if the lead underwriter is an international investment bank. We find that renowned investments banks agree with shorter lockups although the coefficient is still not significant.

In order to test the signaling hypothesis, we also repeated the test used by Brav and Gompers (2003) to understand the relationship between length of lockup period and final IPO price revision. We confirm their finding that firms with positive price revision are associated with shorter lockup lengths (60 days on average and 90 days difference in medians, both significant at 10%); our results therefore appear to reject the signaling hypothesis also for the Italian IPO market.

3.5. Lock-up expiration's abnormal returns and trading volume

In this section we estimate the abnormal returns around the lockup expiration dates. We used buy-and-hold returns of the listing firm, adjusted by

buy-and-hold returns of the Italian stock market, using DataStream country index as a proxy. Figure 1 plots the cumulative buy-and-hold abnormal returns (BHARs) for the time period from -10 to +10 days around the lockup expirations. Given the large amount of literature highlighting the difference between normal and venture-capital backed IPOs, we also split the sample into VC-backed IPOs and the others. What we see is that the total sample average BHAR is around zero for all the time frame, but looking at the two subsamples separately we observe striking differences. Only for VC-backed IPOs is there a substantial fall in price, whereas the IPOs without venture capital show slight insignificant growth in price.

[Insert Figure 1 about here]

We tabulated the cumulative abnormal returns for two, five and ten day periods starting from the lockup expiration day and the results are shown in Table 6. We observe noticeable differences in adjusted returns for all time horizons with differences between two subgroups significant at 10% level both for means and medians.

[Insert Table 6 about here]

We also plotted the average abnormal trading volume in the period of 20 days around the lockup expiration (see Figure 2). This was calculated as the daily trading volume divided by the average daily trading volume in period from -60 to -11 days before the lock-up expiration. There is a general trend of increased daily trading volume by 20-30% following the lock-up expiration, although this is observed both for VC-backed and non-VC-backed IPOs.

[Insert Figure 2 about here]

4. Conclusions

This paper focuses on empirical analysis of voluntary lockup clauses in Italian IPOs during the years 1999 to 2008. Similar to UK and US evidence, Italian firms going public on main segments of the stock exchange are not subject to compulsory lockups and yet all the IPOs featured some sort of restrictions on share sale following listing. Significant negative abnormal returns around the lockup expiration dates were observed only for venture-capital-backed IPOs, whereas both types of IPOs exhibited increased share turnover shortly after lockup expiration.

We document considerable variability in lockups duration and percentages of shares restricted for sale. Whereas the fraction of post-IPO insiders shares locked in Italy is similar to other countries (around 95%), the duration of lockup restrictions is much longer: 300 days on average (with median duration being 270 days). There also large differences among main shareholder classes, with venture capitalists and outside investors having considerably lower percentages of owned shares restricted for sale and with significantly shorter lockup durations.

Multivariate regressions of lockup durations show a clear confirmation of the hypothesis of lockups as a commitment device to alleviate the moral hazard problem of incumbent shareholders to cash in on their shareholding following an IPO. More mature companies with larger offerings and the presence of venture capital investors and with more shares coming from selling shareholders are associated with lower informational asymmetry and a lesser need for longer lockup periods. We do not find any evidence that high-quality underwriters impose longer lockup periods on incumbent shareholders.

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TABLE 1

Lock-ups statistics

The full sample consists of 174 IPOs listed in Italy from 1999 to 2008. We excluded 7 IPOs with missing IPO prospectuses and 6 IPOs without voluntary lock-ups provisions so giving us a final sample of 161 IPOs. *Voluntary lock-up IPOs* are IPOs where the prospectuses acknowledged an agreement not to sell a specific proportion of shares for some period of time without the prior consent of the underwriter. *Listing date as start* are the IPOs where the starting date of the lock-up provision was the actual listing date. *Insiders' shares locked up* specify the total number of shares locked as a percentage of post-IPO shares remaining at the disposal of incumbent shareholders. *Post-offer shares locked up* specify the total number of shares locked as a percentage of all post-IPO shares. *Theoretical lock-up length* is the length of the lock-up period as given in the prospectus and assuming 30-days-in-a-month convention. *International underwriter lock-up length* is the length of the lock-up in IPOs where the lead underwriter was an international investment bank. *Actual lock-up length* refers to the actual number of days shares were locked from sale in the period from the lock-up start date to the first trading day following lock-up period expiry. The differences in means and medians are assessed using the *t-tests* and non-parametric median tests, respectively.

Year	Voluntary lock-ups IPOs, N	Listing date as start, N	Insider shares locked, %	Post-offer shares locked, %	Theoretical lock-up length, days	International underwriter lock-up length, days	Actual Lock-up length, Days				
							Average	Median	Min	Max	St.dev.
1999	19	7	97.8	60.2	273	193	274	184	120	1,096	210
2000	39	21	94.8	68.2	293	308	327	185	180	1,096	227
2001	17	13	99.1	64.5	342	296	386	365	180	731	190
2002	5	5	99.7	64.9	327	333	329	365	272	365	50
2003	4	3	92.1	53.8	387	547	388	366	270	550	117
2004	8	8	99.9	62.2	334	343	335	365	120	730	190
2005	15	15	88.2	54.8	247	219	248	181	180	547	112
2006	21	21	99.1	61.9	320	247	330	365	90	733	160
2007	28	28	91.0	56.4	311	223	312	184	180	1,096	215
2008	5	5	91.1	66.5	272	180	237	186	180	365	82
Total	161	126	95.1	61.9	303	267	316	271	90	1,096	191

TABLE 2

IPOs distribution by years

The full sample consists of 174 IPOs listed in Italy from 1999 to 2008. We excluded 7 IPOs with missing IPO prospectuses so giving us a final sample of 167 IPOs. *Voluntary lock-ups IPOs* are IPOs where the prospectuses acknowledged an agreement not to sell a specific proportion of shares for some period of time without the prior consent of the underwriter. *NM IPOs* are IPOs listed on the New Market segment. *Venture-Capital backed IPOs* were identified using the records of Italian Private Equity and Venture Capital Association (www.aifi.it). *Multiple lock-ups IPOs* refer to the IPOs where shares were released from lock-up obligations at several points of time.

Year	All IPOs	Voluntary lock-ups	NM IPOs	NM IPOs with voluntary lock-ups	Venture-Capital backed IPOs	Multiple lock-ups IPOs
1999	21	19	5	3	8	-
2000	42	39	29	26	12	7
2001	17	17	3	3	4	4
2002	5	5	-	-	1	-
2003	4	4	-	-	2	-
2004	8	8	-	-	3	2
2005	15	15	-	-	6	3
2006	21	21	-	-	8	2
2007	29	28	-	-	11	1
2008	5	5	-	-	2	-
Total	167	161	37	32	57	19

TABLE 2

Descriptive Statistics

The full sample consists of 174 IPOs listed in Italy from 1999 to 2008. We excluded 7 IPOs with missing IPO prospectuses so giving us a final sample of 167 IPOs. *Total assets* are as the end of the last quarter before the listing and are taken from IPO prospectuses. *Issue size* is the number of shares offered times the offering price. *Underwriter rank* is measured as total proceeds of all IPOs underwritten by the underwriter as a percentage of total proceeds of all IPOs listed in 1999-2008. *Price range size* is measured in per cent to the lower price range. *Secondary shares offered* refers to the proportion of global offer coming for selling shareholders. *Total oversubscription* is the ratio of the shares requested over the offered amount. *Price update* variable measures the relative position of the IPO final price within the price range, equal to 0 when the final IPO price is at the lower price range and equal to 1, when it is at the higher price range. *Underpricing* is measured relative to the closing and opening price of the first trading date. *Lock-up length, days* specify the number of days for which the shares are locked. *Insiders' shares locked up* specify the total number of shares locked as a percentage of post-IPO shares remaining at disposal of incumbent shareholders. Post-offer shares locked up specify the total number of shares locked as a percentage of all post-IPO shares. The differences in means and medians are assessed using the *t-tests* and non-parametric median tests, respectively.

	All Sample (N=167)		VC-backed (N=57)		Non VC-backed IPOs (N=110)		p-values for difference in	
	Mean	Median	Mean	Median	Mean	Median	Means	Medians
Total assets, €m	893.2	112.1	269.7	114.0	1,216.2	107.6	0.15	0.50
Issue size, €m	221.5	78.0	126.8	67.3	270.6	82.9	0.30	0.90
IPO firm age, years	32	19	28	17	34	21	0.23	0.34
Underwriter gross spread, %	4.0	4.0	4.2	4.3	3.9	4.0	**0.05**	**0.02**
Underwriter rank	5.4	4.0	6.0	5.3	5.1	3.1	0.20	0.15
Price range size, %	33.3	25.0	25.7	25.0	37.2	25.1	0.23	0.51
Secondary shares offered, %	36.8	23.7	39.7	33.3	35.4	20.0	0.33	0.20
Total oversubscription, times	6.5	2.9	6.0	3.0	6.8	2.9	0.67	0.81
Price update	0.29	0.36	0.28	0.34	0.29	0.37	0.88	0.94
First-day underpricing, %	12.9	1.3	9.3	0.8	14.7	2.9	0.57	0.46
Lock-up length, days	318	272	308	272	323	272	0.62	0.42
Insiders' shares locked up, %	95.1	100.0	93.4	100.0	95.4	100.0	0.54	0.99
Post-offer shares locked-up, %	61.9	63.7	57.7	59.1	63.8	65.0	**0.00**	**0.00**

TABLE 4

Ownership and Lock-ups

The full sample consists of 174 IPOs listed in Italy from 1999 to 2008. We excluded 7 IPOs with missing IPO prospectuses and 6 IPOs without voluntary lock-ups provisions so giving us a final sample of 161 IPOs. Voluntary lock-ups IPOs are IPOs where the prospectuses acknowledged an agreement not to sell a specific proportion of shares for some period of time without the prior consent of the underwriter. Panel A reports the proportion of IPOs in which different categories of shareholders own the shares before and after listing. Panel B reports the percentage ownership of share capital for each shareholder category before and after listing. Panel C reports the percentage of shares locked up for each shareholder category in relation to the total share capital and to the total shares owned by each category following listing. Panel D reports the average lock-up length for each shareholder category. Superscripts *a,b* denote significance levels of 1% and 5% respectively.

	All shareholders		Executives		Founders		Venture capitalists		Other investors	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Panel A. Proportion of IPOs with shareholder participation										
Before IPO. %	100.0		78.9		62.1		28.6		60.9	
After IPO, %	100.0		78.3		61.5		24.8		60.2	
Difference in	-		0.6		0.6		3.8		0.7	
Panel B. Percentage of ownership of total share capital										
Before IPO, %	100.0	100.0	58.2	73.7	44.5	41.8	11.3	0.0	20.2	2.0
After IPO, %	100.0	100.0	40.1	51.7	30.6	31.0	5.2	0.0	12.8	0.9
Difference in	-	-	**18.1**[a]	**22.0**[a]	**13.9**[a]	**10.8**[a]	**6.1**[a]	0.0	**7.4**[b]	1.1
Panel C. Percentage of shares locked up										
To total share capital, %	60.6	63.6	69.8	57.9	81.3	56.1	20.3	17.5	38.3	14.0
To shares owned, %	93.0	100.0	93.6	100.0	95.0	100.0	66.4	100.0	70.8	100.0
Difference with all categories	-	-	0.6	0.0	2.0	0.0	**-26.6**[a]	0.0	**-22.2**[a]	0.0
Panel D. Length of lock-up period										
Total length, days	297	270	316	270	280	270	260	180	302	180
Difference with all categories	-	-	19	0	-17	0	-37	-90	5	-90

TABLE 5

Regression of lock-up length

The full sample consists of 174 IPOs listed in Italy from 1999 to 2008. We excluded 7 IPOs with missing IPO prospectuses and 6 IPOs without voluntary lock-ups provisions so giving us a final sample of 161 IPOs. The dependant variable is the logarithm of the total number of days of the actual lock-up period. *Age* is the logarithm of the company's age in years. *IPO value* is the logarithm of the number of shares offered to the market times the offering price. *Shares locked up* refers to the total number of shares locked up as a percentage of all post-IPO shares. *Primary shares percentage* is the proportion of newly issued shares in the offering. *Free float percentage* is the proportion of the shares sold in IPO to the total post-IPO share capital. *Venture-capital backed* is the dummy taking value of 1 if the IPO is venture-capital backed and 0 otherwise. *Underwriter's rank* is measured as total proceeds of all IPOs underwritten by the underwriter as a percentage of total proceeds of all IPOs listed in 1999-2008. *International underwriter* is a dummy taking a value of 1 is the leading underwriter is the international investment bank. Regression is run with White's heteroskedasticity consistent standard errors (White, 1980).

	Regression 1			**Regression 2**		
	Coefficient	**St. error**	**p-value**	**Coefficient**	**St. error**	**p-value**
Age	-0.101	0.039	0.01	-0.103	0.039	0.01
IPO value	-0.109	0.029	0.00	-0.100	0.032	0.00
Shares locked up	0.583	0.298	0.05	0.576	0.300	0.06
Primary shares percentage	0.203	0.102	0.05	0.195	0.101	0.05
Free float percentage	1.608	0.417	0.00	1.609	0.421	0.00
Venture-capital backed	-0.119	0.071	0.09	-0.117	0.070	0.09
Underwriter's rank	0.086	0.806	0.92			
International underwriter				-0.037	0.080	0.64
Adjusted R^2 (%)	19.0			19.1		
F-test *p*-value	<0.001			<0.001		
Number of observations	161			161		

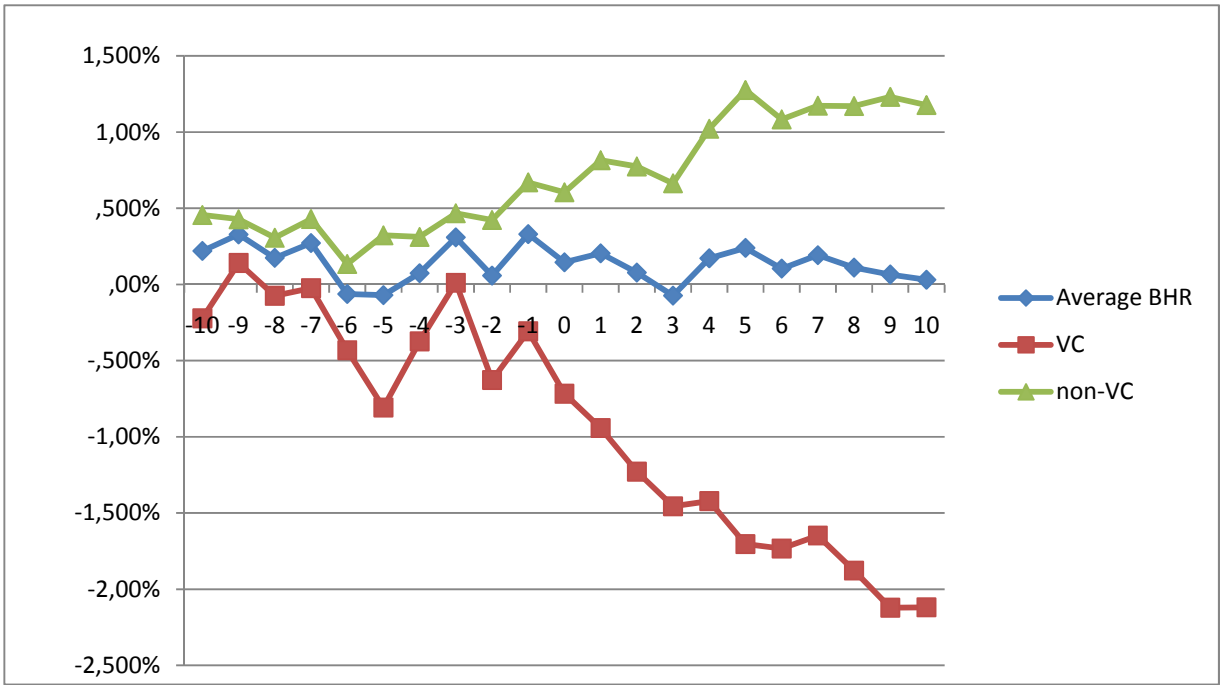

Figure 1. Cumulative BHARs for total sample and VC-backed and not VC-backed IPOs separately.

TABLE 6

BHAR returns

The full sample consists of 174 IPOs listed in Italy from 1999 to 2008. We excluded 7 IPOs with missing IPO prospectuses and 6 IPOs without voluntary lock-ups provisions so giving us a final sample of 161 IPOs. BHARs are calculated for windows of 2, 5 and 10 days starting from the first day following lock-up expiration. Buy-and-hold returns of individual firms are adjusted by DataStream Italy stock market index (datatype – TOTMKIT). *, ** denote significance levels of 10% and 5%, respectively.

	BHAR (0;2)		BHAR (0;5)		BHAR (0;10)	
	Mean	Median	Mean	Median	Mean	Median
Total sample, N=161	-0.4%	-0.6%	-0.2%	-0.4%	-0.4%	-0.7%
VC-backed IPOs , N=56	-0.9%	-1.5%	-1.5%	-0.9%	-1.9%	-2.5%
Non-VC IPOs, N=105	0.0%	-0.3%	0.5%	0.1%	0.4%	-0.2%
Difference	-0.9%	-1.2%*	-2.0%**	-1.0%**	-2.3%*	-2.3%*

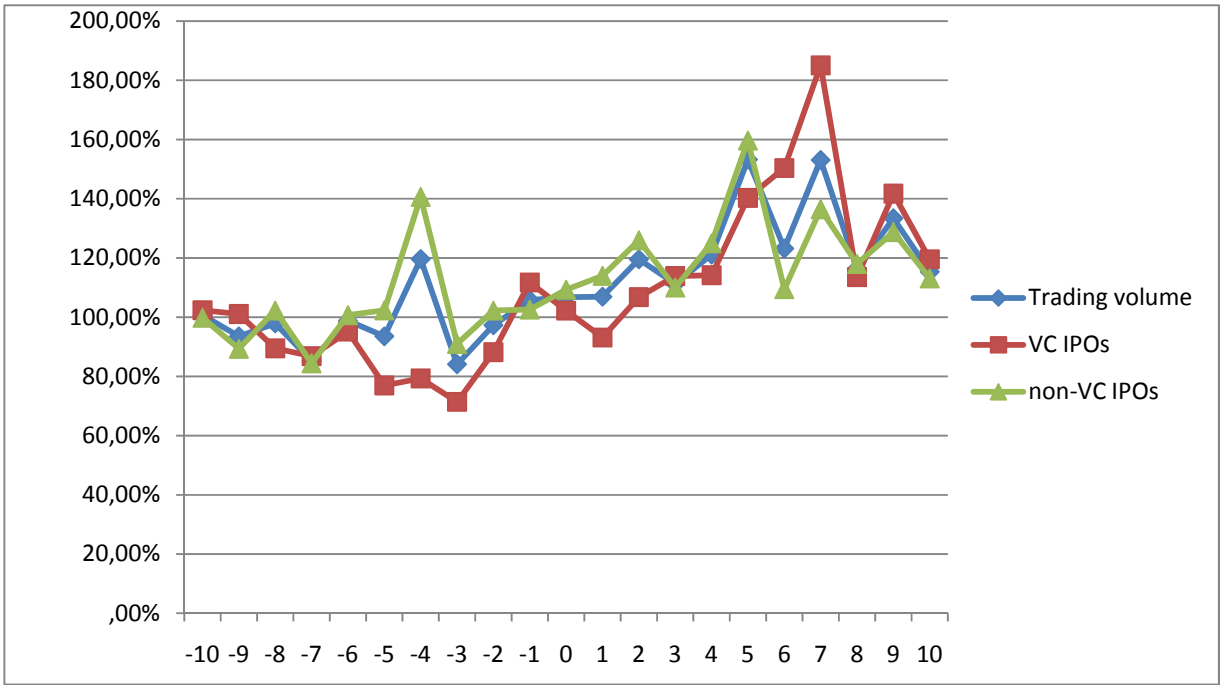

Figure 2. Daily average trading volume for total sample and VC-backed and not VC-backed IPOs separately.

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