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Re-examining the IPO Unlock Day Anomaly: Do Market Conditions and Increased Availability of Information Matter?

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ABSTRACT

Re-Examining the IPO Unlock Day Anomaly: Do Market Conditions and Increased Availability of Information Matter?

George J. Gaspar

The lockup agreement prohibits insiders and pre IPO shareholders from selling any of their stake in the company prior to the unlock date. Field and Hanka (2001) find that the unlock day is associated with significant abnormal returns. During the period of the Field and Hanka (2001) study the public was almost never reminded of the unlock date, other than the unlock date being available in the company's prospectus. However, as of October 1999, reminders of the unlock date have been widely available via internet sources. This study investigates if the greater degree of public information/scrutiny pertaining to the unlock day results in the elimination of the unlock day abnormal returns. Abnormal returns are found to be confined to firms having venture capital backing. Observed price adjustments tend to begin much earlier and declines appear more severe than previously reported. The study considers if the nature of the actual response observed at unlock is tied to the overall market sentiment at the time of IPO and unlock finding that firms making IPOs in cold markets are less affected at unlock than those firms making IPOs in hot markets. Further, many of the factors surrounding the IPO of a security act to lessen the informational asymmetries persisting at the time of the offering; the study confirms the relation of these IPO signalling factors as drivers of unlock day selling pressure. Furthermore, in the examination of the unlock day effect, consideration was also given to aftermarket price support and industry effects.

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1. Introduction

When a company undertakes an initial public offering (IPO) most insiders are subject to a lockup agreement. The lockup agreement prohibits insiders and pre IPO shareholders from selling any of their stake in the company prior to the unlock date. The lockup agreement is a legally enforceable contract imposed on the insiders by the underwriter of the issue. However insiders may be released from the agreement by the decree of the underwriter. Typically 3/4 of the companies' shares are locked under the agreement. Once the lockup expires the insiders are no longer prohibited from selling their shares. However they are still restricted by other rules and limitations, which apply to sales by insiders. These rules encompass company imposed restrictions and blackout periods as well as SEC regulations. Specifically, under rule 144, limitations as to sales by insiders are put forward. Still the unlock day signifies a potentially major increase in the public float of the companies' stock.

The typical length of the lockup period is 180 days. For the firms in this study, 96% of the firms have a lockup period of exactly 180 days. The information pertaining to the length of the lockup period is contained in the IPO prospectus. Further, the lockup day and the number of shares locked up is known and printed in the prospectus in advance of both the initial public offering date and well before the unlock day itself. Thus the unlock day represents a completely predictable event. Field and Hanka (2001) find that the unlock day signifies a statistically significant three-day abnormal return of -1.5%. Ofek and Richardson (2000) find that there is a similar 1% - 3% drop in stock price around the unlock day. Similar unlock day returns are reported by Brav and Gompers (1999) as well as Bradley et al (2001). This price reaction is quite surprising since there is no information asymmetry about the unlock date and goes against the

notion of market efficiency as the unlock date is public information. Knowing the unlock day in advance of the IPO, it would seem that in an efficient market investors would incorporate the expected effects of the unlock day prior to the event day. The price of the stock should adjust, at least over the period from IPO until the unlock day itself, to the expected increase in the public float. Investors should, on average, anticipate the extent to which the additional shares will generate an over supply and make appropriate adjustments to take this into account prior to the unlock itself. Thus, in an efficient market, no price reaction to the event should be observed. However, even though Field and Hanka (2001) find abnormal returns about the unlock they also find that "the abnormal returns around the unlock day are not large enough to provide short term profits for traders that must transact at the bid ask spread." These results are further supported by Ofek and Richardson (2000) who also contend that at the unlock date this inefficiency is not exploitable.

Since insiders are no longer prohibited from selling their positions, the unlock date results in a permanent increase in the number of shares that must be held by the public. If the demand curve for securities is downward sloping, Ofek and Richardson[1] take this as their primary explanation, then the increase in the supply of shares needed to be held by the public following unlock will result in a reduction of the stock price. Field and Hanka's study looks at data for the period beginning in 1988 and ending in 1997. They note that during this period the public was almost never reminded of the unlock date, other than the unlock date being available in the company's prospectus. However, as of October 1999, reminders of the unlock date have been widely available.

[1] Field and Hanka (2001) also cite the downward sloping demand curve as a partial explanation of the unlock day effect.

IPOLockup.com was the first website that tracked the timing of lockup expirations of all U.S. IPOs and contains data on all IPOs having unlocks October 1, 1999 and onwards. This information is also widely available from many other Internet sources such as www.unlockdates.com, www.ipopros.com, www.ipo.com and www.ipoexpress.com to name a few.

Thus, it is the intention of this study to ascertain if the greater degree of public information/scrutiny pertaining to the unlock day results in the elimination of the unlock day abnormal returns found by Field and Hanka (2001) or if their reported results have diminished appreciably. That is, if one believes that the unlock day was not really widely available public information and thus not incorporated into a stock's price, does the resulting wide spread public availability of an IPO's unlock date result in the elimination of the unlock day anomaly? If this is not the case, are there alternative influences concurrently affecting the returns at unlock? As far as I am aware, this is the first study to consider the unlock under increased scrutiny. It is expected that the additional shares becoming available at unlock will result in a temporary over supply resulting in downward pressure on the stock price. Since the unlock day event is known in advance, it is expected that this influence will be priced into the stock price in the days prior to the unlock expiration day, with possible liquidity and information based adjustments occuring on the unlock day itself. It is expected that due to the easy and widespread accessibility of unlock date information through Internet sources, that the abnormal returns around the unlock reported by Field and Hanka (2001) will no longer be statistically different from zero. However, it is expected that the volume effect will be

consistent with the findings of Field and Hanka (2001) and others as the increase in tradable shares on the unlock date will continue to persist.

Many of the factors surrounding the IPO of a security are, by design, a means of signalling and alleviating, to some extent, the informational asymmetries which persist at the time of IPO itself. Factors such as: the proportion of shares locked up, the level of venture capitalist backing and the reputation of the lead underwriter may all assist in the alleviation of informational asymmetries at the time of IPO. However it is expected that the amount of selling on the unlock day will also be affiliated with these IPO signalling factors. The proportion of shares locked up, the backing of venture capitalists and underwriter reputation will all in turn contribute to increased selling pressure at the time of unlock since all of these variables proxy to some extent the degree to which selling about the unlock date will take place.[2] Field and Hanka demonstrate that the negative unlock day returns are clearly more severe for VC backed firms.

This study also considers if the actual response observed at the unlock date is tied to the overall market sentiment at the time of IPO and unlock, the latter, which is not measurable at the time of IPO but should have a substantial influence as to the market reaction on the unlock day. As far as I am aware, this is the first study to look at this aspect with respect to the unlock day anomaly. In a deteriorating market it is the expectation that market participants react more severely to the underlying proposed unlock day's selling variables.[3] Additionally, the study investigates the unlock anomaly

[2] Brav and Gompers (1999) find that these variables are associated with increased selling pressures.
[3] Either due time varying RRA or time varying risk premia (Koutoulas and Kryzanowski (1996)). Essentially in order to provide the same level of liquidity at unlock it is expected that insiders would be required to provide greater price concessions in return.

in terms of industry influences to gauge if the VC effect reported by Field and Hanka (2001) is in part due to the industries that VCs tend to invest in.

VC backed firms are associated with higher quality underwriters, who in turn are known to provide stabilization of issues in terms of aftermarket price support as noted in studies by Hanley, Kumar and Seguin (1993) and Prabhula and Puri (1998). For the duration of the lockup, VCs have every incentive to control the volatility of the issue or for that matter movements below the offer price. Thus it is expected that during the lockup period, VC backed firms will experience a lesser degree of variability below their offer price than those firms lacking VC support. However post unlock it is expected that the proportion of IPOs with prices below the offer price experienced by VC backed firms will increase since any stabilization activity provided due to the presence of VC backing is expected to stop with expiration of the lockup agreement. Furthermore, the expiration of the lockup may be viewed as an expiration of put options[4] (Prabhula and Puri, 1998) and thus may contribute to price deterioration in firms having VC backing.

The remainder of the paper is organized as follows: Section 2 provides brief background information as to: the role of venture capitalists, stabilization, market conditions in the IPO process as well as an overview of market conditions during the time of the study. Section 3 outlines the process used in compiling data and also discusses the methodology employed in the study. In Section 4 the hypotheses are set forth and discussed. In Section 5 the results and findings of the study are presented. Finally, Section 6 concludes the paper.

[4] Prabhulab and Puri (1998) note that the underwriter's commitment to provide price support is, in essence, a put option.

2. Literature Review

2.1 VC Backing

Venture capitalists provide capital financing to companies. VCs generally provide financing for firms: in expansion (usually prior to IPO), turn arounds and for LBOs and they most commonly specialize by industry or stage of development (W.Schilit, 1996). As a result of the degree of VC's specialization, a VC's return is a function of the VC's: experience, the industry that the fund invests in as well as geographical concentration. Barry (1990) finds that venture capitalists primarily concentrate their investments in young high-risk private firms where the VCs goal is to take these firms public, as they derive most of their profit from such activities. Thus VC investments are typically highly illiquid until such a time the firm is taken public and VCs are able to exit their investments.

Most of the time VC investments are organized as limited partnerships. Through the partnership, the venture capitalist has the role of general partner and manages the fund. The investors are limited partners. A large portion of investors in such VC funds are institutional. Generally, these partnerships have predetermined lives, typically of 10 years in length. In most cases when a firm is taken public the VC will distribute shares to the general partners. After such a distribution, the general partners are free to sell their shares within the SEC set guidelines. Following an IPO distribution, the investors in the fund generally liquidate their position immediately.

Gompers (1995) examines VC investments and the control mechanisms associated with VC financing. The study documents that VCs tend to invest in early stage companies, as well as high tech companies where the level of informational asymmetry is

likely to be the most pronounced. The paper focuses on staging of capital financing as a control mechanism, which allows for monitoring by the VC of their investments. Staging of financing also provides the VC with an abandonment option with respect to their investments and acts as a mechanism to ensure that investor and entrepreneur interests coincide. Venture capitalists are able to provide monitoring through the duration of funding they provide as well as by the frequency with which they provide such funds (Gompers (1995)). The monitoring provided by VCs is especially of value considering that these VC partnerships typically concentrate their investments in young high tech companies where informational asymmetries are most severe. Furthermore, Barry et al (1990) report that VCs typically hold one third of the shares and Board seats in the companies they invest in. Thus venture capitalists are active participants in the firms that they invest in, providing both financing and monitoring.

Megginson & Weiss (1991) consider the impact of VCs providing certification in the IPO process. Certification is of value in any instance where there is an opportunity to alleviate asymmetry of information. This is especially true of IPOs where the prospects of a fledgling firm are not fully known by the market and insiders have the motive to conceal adverse information. Rational investors understand the insider motive to conceal and thus will price this into the issue. The authors find that VCs are able to certify the value of the firm to investors by reducing informational asymmetries and thereby reducing the level of underpricing, hence reducing costs to the firm. The VCs are able to provide increased credibility by remaining shareholders post IPO and in fact in most cases VCs do not cash out any of their holdings at the time of IPO. Further, Field and Hanka (2001) document that venture capitalists continue to hold a significant proportion

of their original holding in the year following the initial public offering. Megginson & Weiss (1991) also find that VC backed issuers are able to attract more prestigious auditors and underwriters. VCs are known to establish continual relationships with specific underwriters and are able to attract higher quality underwriters by lowering the level of due diligence performed by the underwriter. Additionally, VC backed firms generate more interest from institutional investors and are thus able to bring their offerings to market earlier.

2.2 Stabilization

When considering underperformance of new issues, Loughran and Ritter (1995) find that IPOs exhibit no tendency to under perform in the first six months following the offering. However these firms under perform matching firms by 4.5% over the next six months. Thus it seems that the first six months of an IPO trading are quite different from the following six. Coincidentally, it is further interesting to note that most lockup agreements have a duration of 6 months. Field and Hanka (2001) find that the length of the lockup period has over time become standardized. Indeed in this study nearly 96% of firms had lockup agreements which were in effect for exactly 180 days. Thus it seems possible that the difference in performance in the first half of the year and the second half of the year following the offering is related to the lockup agreement itself.

The difference in the performance of new issues as documented by Loughran and Ritter (1995), if related to the lockup agreement, may be attributable to both artificial price support taking place as well as insiders guarding negative sentiments as to firm prospects during the lockup period. If private sentiment is being revealed on the unlock

day it would be expected that the greatest portion of private information will be revealed on this day also. Market participants will be able to infer the trading activity of insiders from the volume of selling and price changes at unlock.

Field and Hanka (2001) demonstrate that the abnormal returns about the unlock date are more severe for firms having VC backing. The difference between the performance around the unlock day between VC and Non VC backed firms suggests that perhaps VCs who have been documented to be associated with higher quality underwriters (Megginson and Weiss, 1991), are possibly benefiting from artificial underwriter price support.

Chowdhry & Nanda (1996) argue that underpricing, as a means of compensating the uninformed investors as proposed by Rock (1986), is sub optimal. Underpricing rewards both informed and uninformed investors but price support rewards mainly uninformed investors since informed investors will invest on average in those issues which they expect to appreciate. Thus price support is put forward as a superior means of rewarding uninformed investors. Further, only reputable underwriters would be able to convince investors that such support would be provided since they possess the capability of putting their credibility at stake. Typically larger investment bankers are in a position to generate such a signal. Such investment banks may be able to control their losses from an aftermarket price support arrangement since they are more able to disperse their losses amongst other syndicate members, especially under the threat of exclusion from further offerings for non compliance. Chowdhry and Nanda's model predicts that larger issues should be associated with more underpricing due to the limited loss capacity of any syndicate. Further, during hot markets if there is larger demand for underwriting services

then there should be a greater deal of underpricing and less aftermarket price support. Additionally, during periods of increased volatility, stabilization costs increase and it becomes less likely that underwriters participate in the stabilization process. Prabhala & Puri (1998) put forward the argument that price support offered by the underwriter is in fact a put option. Underpricing of issues effectively minimizes the value of this put option offered by the underwriter.

2.3 Hot and Cold Markets

There is much evidence pointing to the fact that investors are overly optimistic. Barber & Odean (1999) demonstrate that investors exhibit overconfidence in both the precision of information that they possess as well as in their ability to interpret it. Barber and Odean looked at the trading behaviour of investors in order to ascertain if they trade excessively. Excessive trading was defined as the level at which the costs associated with trading activity was in excess of the profits generated by investors actively adjusting their portfolio positions. Rational informed traders are expected to trade in order to increase their returns on average. Traders should at least expect to cover the cost of their trading activity. However Barber & Odean (1999) find that the market adjusted returns of stocks sold outperformed the market-adjusted returns of those purchased. The results of the study may be confounded by psychological factors relating to investors being more likely to sell winning investments and holding on to their losing ones.[5] Further, not only are average investors overly optimistic, professionals making recommendations as to

[5] N.Barberis points out that individuals are not only loss averse but that the degree of loss aversion is conditional . For example: people that won substantial money on earlier bets were less averse of future losses. Thus, when the market advances, investors associate less risk with future prospects, consequently driving the market higher.

market outlook also display systematic biases in overestimating prospects. Rajan & Servaes (1997) investigate analysts' following of initial public offerings and specifically how this relates to a hot issues markets. The authors find that analysts are over optimistic of the prospects of hot issue IPO firms as evident through their excessive earnings estimates. Further, as the tenure of the forecast increases, so does the extent of the forecast error, indicating that analysts are even more optimistic as to long term prospects for these firms. The authors report that there exists a positive relationship between the magnitude of forecast error and the number of new issues being brought to market. Thus, as the optimism of analysts increases, so does the number of IPOs coming to market as to capture the opportunity to raise funds in the face of optimistic sentiments. Chung and Kryzanowski (2000) report similar findings when looking at recommendations of both analysts and strategists. They find that the degree to which overly optimistic recommendations are biased is positively related to the number of bull market months for the period under investigation.

The decision to issue equity may be directly related to market sentiment. If markets are overly optimistic to future prospects, firms may seize this opportunity to raise funds by conducting a public offering. This reasoning is in line with Myers and Majluf (1984) who argue that managers, having better information of the firm's prospects than the market, will want to issue equity when it is overvalued. Evidence to this effect is provided by Loughran and Ritter (1995) who demonstrate that the extent to which IPO firms under perform is directly related to the issues market at hand. They find that underperformance is most severe when firms go public during hot issue markets, under performing by 60 basis points per month. As for the sub sample of firms that underwent

issues during cold issue periods, they displayed relatively minimal underperformance in the magnitude of 17 basis points per month. Further Ritter (1984) finds that hot markets are characterized by smaller, earlier stage speculative firms coming to market. Loughran and Ritter's (1995) results indicate that smaller firms experience worse performance than larger issuing firms. Thus in conjunction with Ritter (1984) it seems that these more speculative firms are coming to market as to take advantage of market sentiment and issuing equity when it is overvalued. Lerner (1994), studying venture capitalist backed firms in the biotechnology sector, provides further support for the opportunistic timing of equity issues in that the volume of IPOs coming to market is a consequence of the ability to cash in on investor sentiment.[6] Biotechnology firms are studied since these firms mature slowly and do not require large up front costs, mostly remaining in the R&D phase well after going public. Thus venture capitalists in these types of industries have opportunity as to the timing of equity issues, as compared to other industries where the nature of funding needed at certain stages may not lend itself to market timing. As Lerner (1994) finds, venture capitalists time IPOs and increase the likelihood to take companies public at peak valuations.

2.4 A Brief Overview of the Market Conditions during the Study Period

The general market sentiment as to the overall market, as well as the IPO market, was highly optimistic for 1999 and the beginning of 2000. Referring to IPO market conditions in 1999 and at the beginning of the first quarter 2000, Omar Sacriby of The IPO Reporter notes that, venture capitalists "with their pipelines bulging and investors biting at virtually anything" were "floating some questionable deals knowing that they

[6] Barry et al (1990) report that VCs take their companies public when market valuations are high.

would be carried by sheer momentum." The end of the First Quarter of 2000 was followed by a general fallout in both the overall market and the IPO markets as investors began to reassess record equity valuations.[7] Readjustment of investor sentiment began to take hold as of March 10, 2000 following the NASDAQ reaching an all time peak level of 5048. CNNmoney[8] reports that the bear market began in the first Quarter of 2000 when the performance of Blue Chips began to deteriorate. However many computer related industries continued unabated long after the general market's decline was well under way. The inevitable adjustment that did occur when technology stocks gave way nearly 6 months later was attributed to investors revising their overly optimistic sentiment of the market. CNNmoney explains that the tech hold out was a consequence of investors "cult-like belief in technology". Referring to the hot market of 1999 which continued through the first quarter of 2000 and its subsequent fallout, Richard Frisbie founder of Battery Ventures said in The IPO Reporter, "We have been in a playground for VCs and investors. We knew it wasn't real life and it wouldn't last, but as long as it did we were happy to participate. It created easy windfall of gains for us." The Venture Capital Journal (Feb 2001) noted that 2000 was a year marred with continuous deterioration in the venture capital industry. This point was further exemplified by the fact that five of the venture capital companies that went public in 2000 were also delisted in that year. However the IPO market in 2000 still remained receptive to technology, communications as well as biotechnology equity issues, at least up until the third quarter. The IPO market of 2000 saw companies issued that year finish the year trading down -20.28% with only 32% finishing the year up, in stark contrast when compared to the returns of those firms

[7] The IPO Reporter August 7, 2000; Omar Sacirby
[8] CNNFN (Sept 2001) "Bear of a Different Color When Did the Bear Market Begin?"

that IPOed in 1999 who finished their IPO year up 188% with 72% finishing in positive territory.[9] However 2001 was an especially weak year for the IPO market marked by few public offerings. In total only 110 IPOs came to market. The Venture Capital Journal (Jan 7, 2002) attributes the poor performance of the IPO market in 2001 to the downturn experienced by internet stocks as well as the record number of private companies that were being taken public in both 1999 and the first Quarter of 2000. Kathleen Smith, manager of the Renaissance IPO Plus Aftermarket Fund said of the IPO market adjustment "This is a healthy thing we've been in a very, very strong IPO market that's been willing to accept all kinds of companies and put high valuations on those companies—even the risky ones"[10]

The common belief of practitioners and observers was that the market adjustment which had occurred in 2000 with respect to the market for equities, as well as that for new issues, was a result of investors' overconfidence resulting in unsustainable market valuations which adjusted as investors began more critically assessing market valuations and prospects. Furthermore it is evident from the comments and actions of VCs and the commentary of those that follow the activity of venture capitalists that VCs do in fact try to time IPOs in order to take advantage of excessive market valuations for issues. IPO analysts frequently reported to the media as to the cyclical nature of the IPO market "shutting down... after a glut of companies file and go public and investor demand wanes" Scott Sipperelle of Midtown Research.[11]

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[9] Figures obtained from The IPO Reporter January 7,2001; Omar Sacirby "2001: A Tale of Two Markets"
[10] The Associated Press; Dustin Prial "IPO Market Expected to Suffer at Hands of Technology Crash"
[11] The Associated Press; Dustin Prial "IPO Market Expected to Suffer at Hands of Technology Crash"

3. Data and Methodology

3.1 Data

The sample of firms making IPOs was obtained from www.ipolockup.com. The web site www.ipolockup.com initially started posting data with respect to firms undergoing unlock expiration as of October 1999 and onward. This study takes into consideration all those firms that had unlock dates from the time this information became publicly available via the web and encompasses the two year time frame following. That is the sample includes the set of firms undergoing lockup expiration for the time period inclusive of October 1999 to the end of September 2001 on either the New York Stock Exchange or the NASDAQ Exchange. The entire sample of lockup expirations during the study periods was 812. Of the entire sample 44 firms had multiple unlock dates, with the respective number of distinct unlocks ranging from 2 to 6. Thus, the initial sample of firms was reduced by only taking into consideration the first unlock date for these firms that had multiple unlock dates, reducing the sample size to 753 observations. Further, there were another 38 firms for which no trading information was available and had to be eliminated from any analysis. Thus, the final sample consists of 715 IPOs that had unlocks during the period October 1999 to September 2001.

Data for the study was gathered from multiple sources. Data pertaining to the companies under going IPO lockup expirations, as mentioned before, was gathered from www.ipolockup.com. Additionally from this source, data pertaining to the length of the lockup period, number of shares offered for the IPO issue, unlock date, trading volume around the unlock day, and stock returns around the unlock day was obtained. Daily price, adjusted price, and volume data for every stock in the data set was obtained from

www.siliconinvestor.com. The data for each company in the sample, regarding price, adjusted price, and volume was collected from the time of IPO to 60 trading days following the unlock date. Market performance data, that is index level data for the Nasdaq and S&P 500 was gathered from www.nasdaq.com. However only results employing the Nasdaq Composite index are reported in the study since this was deemed to be the more appropriate benchmark considering 94% of the sample was listed on the Nasdaq exchange.[12] Further, www.alert-ipo.com was used to gather the following stock information: offer price, exchange listing, lead underwriter, offering amount, shares offered by company, post-offering shares, over-allotment, and SIC code. To find missing data pertaining to company SIC codes the web site www.edgarpro.com was employed. Similarly, the website www.freeEdgar.com was used to complete the other missing information in the data set.

Prospectuses were looked at in order to ascertain whether a company was VC backed or not. The total sample of firms is greater than the sum of firms in the VC and Non VC categories since it was not possible to locate 22 firm prospectuses. In order to be classified as VC backed one of the top 10 investors listed in the prospectus needed to have either of the words Venture, Capitalist, or Limited Partnership affiliated with the investing groups name. Under this method 76% of all firms were classified as having VC backing. Further, the VC classifications used in the study were crosschecked with the data set compiled by Yan Xie at Concordia University. In his data set 543 of the firms overlap with firms in my study sample. Yan Xie also collected data as to the proportion

[12] When the S&P was used as the benchmark the results were consistent with those obtained when the Nasdaq was the point of reference. However, the S&P benchmark yielded more severe abnormal returns.

of VC backing. Of the 543 corresponding firms in our two data sets Yan Xie's reports 446 firms as having some level of VC backing at the time of IPO.

Furthermore, two sets of underwriting rankings were compiled for the study. The first set was obtained from www.livedgar.com, from the '33 Act Deals Database Rankings which is based on quarterly rankings of underwriters with respect to the dollar value as to total net proceeds of offerings brought to market by the underwriter during the particular quarter. Rankings were obtained for the second quarter 1999 to the first quarter 2001. The set of offerings consists of all deals registered with the SEC and have prospectus dates that fall within the specified time period. In order to come up with a set of underwriter rankings the individual quarterly rankings were each given equal 1/8th weighting. The second set of underwriter rankings for this study employed were the updated Carter-Manaster rankings that were obtained from http://bear.cba.ufl.edu/ritter/Rank.HTM. The rankings were as of 2001. The two sets of rankings are highly correlated (0.78)[13] as would be expected and yielded statistically indistinguishable results when employed in the regressions.

Finally, all data other than the daily returns for individual stocks and the markets was cross-referenced at least with one alternate Internet source. For example both www.ipolockup.com and www.alert-ipo.com have information pertaining to offering amount, offering price, total shares offered, post-offering shares, listing exchange, lead underwriter and the length of lockup period. When data discrepancies were discovered, for the most part in less than 10% of cases, an alternate source for the information was located and the more frequently reported figure was employed. If the information could

[13] Having p-value 0.0001.

not be verified, it was omitted. In addition to the information sources already mentioned the following sites were also employed as cross references for the data compiled: www.edgarscan.pwcglobal.com, www.secinfo.com, www.edgarpro.com, www.depts.washington.edu and www.equityweb.com. The variable categories with most frequent discrepancies and their corresponding frequency of mismatch were as follows: SIC code classification (5%), Offering Amount (2.6%), Offer Price (6.5%) and market capitalization (12.3%). Although there existed a mismatch in market capitalization in 12.3% of the cases, 61% of these discrepancies were of order less than 5%, these were classified as being identical and thus the initial observation was employed.

The classification as to "Hot" or "Cold" markets was chosen to coincide with the peak of the NASDAQ Composite Index. The NASDAQ reached its all time high of 5048 on March 10, 2000. Following the peak the market was in steady decline. Many financial writers in the months following this peak reported March 2000 as the beginning of a bear market. Thus for classification, as to market conditions and sentiment, the period prior to March 2000 was classified as a hot market and event dates in March 2000 and onwards were classified as occurring in a cold market. Of course if the number of IPOs coming to market is influenced by market sentiment as reported by Lerner (1994) and further if there generally exists a 3-6 month lag time between the initiation of the IPO process and taking the firm public[14], then the slowdown in IPO offerings will be preceded by that of the market slowdown itself. The sample of firms undergoing lockup expirations was partitioned into groups, based on the market conditions at the time of both the IPO and unlock. Due to the market conditions during the period under investigation, three groups arise. The first group deals with those firms making IPOs and unlocking in a hot market.

The second group consists of those which made IPOs in a hot market but unlocked in a cold market and the third group is composed of those both making IPOs and unlocking in a cold market. We refer to these classifications as Hot/Hot, Hot/Cold and Cold/Cold respectively. The paper classifies market conditions with respect to the overall market, however classifications as to market conditions may be more accurate if they would account for specific industry conditions as one sector may be in decline while another may at the same time be experiencing growth.

3.2 Methodology

3.2.1 Abnormal Returns Computation

Abnormal returns were calculated using three alternative methods. These are (i) the Market Adjusted Return method, (ii) the Field and Hanka (2001) Market Adjusted Return method, and (iii) the Market Model method. The distinction between the two Market Adjusted Return Models is that Field and Hanka use the multiplicative formulation as opposed to the additive nature of the original Market Adjusted Return Model. All three methods produced similar results although the magnitude of the results varied somewhat. When classifications based on market conditions at the time of IPO and unlock were undertaken, the three calculations again yielded similar results for the classification Hot/Cold and Cold/Cold. However this was not the case for the Hot Hot market. In the case of the Hot/Hot market, the results are more severe with continued deterioration when the Market Model was used as compared to when the other models were employed. Part of the problem may be attributable to the short event window used

[11] Ivo Welch, IPO-The Initial Public offerings (IPO) Resource Page, www.iporesources.org ipopage.html

to estimate the regressions. These may all be reasons as to why studies by Field and Hanka (2001), Ofek and Richardson (2000) as well as others employ the Market Adjusted Return Model when looking at the IPO unlock day effect. For this reason I will report all results using both the Market Adjusted Return Model as carried out in the Field and Hanka study, as well as the Market Model method. Throughout the remainder of the paper first the Market Model method results will be reported followed by results from the Market Adjusted method in parentheses and their corresponding tables will be indexed with an a) and b) suffix respectively. The Market Model method is out lined below, the Market Adjusted method follows in the same manner with alpha set to zero and beta set to one for all firms.

Abnormal returns were calculated using the Market Model method twice, once using the NASDAQ returns as the proxy for market return and next using the S&P 500 as the proxy. The abnormal return was calculated for company i by adjusting the days return on company i, $R_{i,t}$, by the corresponding return on the particular market $R_{m,t}$.

$$r_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t} \qquad (1)$$

Next, for each day the residuals were averaged across the firms to produce the average residual for that day.

$$AR_t = \frac{1}{N}\sum_i r_{i,t} \qquad (2)$$

The cumulative average return (CAR), was calculated, for example for the (-1, 1) window as follows

$$CAR_i = \sum_{t=-1}^{1} AR_t \ . \qquad (3)$$

The corresponding test statistic for the cumulative abnormal return for the 715 firms over 3 days [-1, 1] is calculated as

$$t = \frac{CAR}{\hat{S}(CAR)} = \frac{\sum_{t=-1}^{1} AR_t}{\sum_{t=-1}^{1} \hat{S}(AR)} = \frac{\sum_{t=-1}^{1} AR_t}{\sqrt{3}\hat{S}(AR)} \qquad (4)$$

where AR_t is the one day residual return averaged over all IPO unlocks with standard deviation

$$\hat{S}(AR) = \left[\frac{1}{100} \sum_{t=-110}^{-10} (AR_t - \overline{AR})^2 \right]^{\frac{1}{2}} \qquad (5)$$

3.2.2 Abnormal Volume Computation

$$\text{Abnormal volume, } ABV_{i,t} = \frac{V_{i,t}}{\frac{1}{100} \sum_{t=-110}^{-10} V_{i,t}} - 1 \qquad (6)$$

where $V_{i,t}$ is the trading volume for firm i, on day t.

The three-day abnormal volume for firm i is calculated as the arithmetic average of equation (6) over day –1 to 1. The methodology employed to calculate abnormal volume was carried out in the same manner as presented in Field and Hanka (2001).

3.2.3 Stabilization

In order to detect if any price stabilization was taking place with respect to VC-backed firms prior to the unlock the following method was employed. First all firms having unlocks of 180 days were considered. For these firms each day's stock price, from IPO to 20 days following the unlock expiration was divided by the firm's offer price. Next, the firms were divided into two groups categorized by VC-backing. For each

day the proportion of firms whose price had fallen below their offering price was calculated and plotted for each category (VC and Non VC). The graphs were then examined as indicators of whether stabilization activity existed. Further the charts were also examined in terms of market conditions at the time of the IPO since any arrangement to provide stabilization of the stock price after the offering would be agreed to at the time of IPO.

4. Hypotheses

4.1 Information Hypothesis

Since the study by Field and Hanka (2001) was published, information on the IPO unlock date has become widely available, appearing on many websites such as: ipopros.com and ipoexpress.com and most notably on ipolockup.com. If the results found by Field and Hanka (2001) were a consequence of informational asymmetry among investors as to the unlock day itself, this is clearly no longer the case. Hence it is proposed that the unlock day effect should not persist in the manner reported by the Field and Hanka (2001) study for firms having unlocks between October 1999 and September 2001. The abnormal returns about the unlock date, if any, should not be perceived as being driven by informational asymmetry. Rather it is the contention of this study that any abnormal returns about the unlock are a result of temporary price pressure. Price pressure here refers to the increase in selling pressures due to insiders liquidating and diversifying their positions to various extents at unlock and thus temporarily reducing the price of the issue in order for the market to provide liquidity. If the price pressure argument is to hold, then there should be a reversal in the unlock day effect shortly

following the event itself. If a reversal occurs, but is only partial, then it may be that price pressure is only one component as to the unlock day anomaly. Observation of a temporary price pressure effect may be confounded by artificial price manipulation prior to unlock or as a result of private information becoming public once insiders are allowed to trade.

If the volatility of stock returns pre and post unlock day are different this may indicate that the unlock day effect is not merely driven by a downward sloping demand curve and temporary price pressures but that there is in fact valuable information that is coming to market from the observation of the trading behaviour of insiders. If private information, as to the value and future prospects of the firm, is coming out at lockup expiration, one would expect the information, on average, to adversely affect the stock price. Prior to the unlock day insiders have an incentive to conceal negative information. At the same time, post quiet period[15], they have an incentive to reveal positive expectations. Both actions coincide with insider's maximization of expected returns at unlock. Thus at the time of unlock there may be both price pressure at play as well as the effect of private information becoming public following the unlock, suggesting that only a partial price adjustment will occur post unlock. Additionally, post-unlock, it is expected that the incorporation of insider information and increased trading will lead to an increase in the actual return volatilities. If, as Rubinstein (2001) points out, that price and volume activities reveal information as to the beliefs and preferences of other

[15] The quiet period for new issues lasts 25 days following the offering date. During this time the company and its insiders are restricted from making any comments with respect to the offering. Following the expiration of the quiet period generally analysts begin making recommendation regarding the issue. Most of the coverage being positive buy recommendations. Scott Sipprelle of Midtown Research notes "Most of the smart money knows that 25 days out you typically get a glowing recommendation." TheStreet.com, M. Falbo A Lockup Update, Dec 10,2001.

investors, then market volatility may increase as a consequence of investors inferring from market activity changes in the demand curves of other investors.[16]

4.2 Signalling Hypotheses

The probability that the price of an IPO will fall below the offer price is reduced as the amount of underpricing increases. Since insiders are prohibited from selling their shares prior to the unlock date, insiders may be interested in underpricing as a means to ensure that there is a greater likelihood that they will receive compensation above the offer price for their shares upon the unlock day, especially if greater underpricing is positively associated with the returns investors experience from IPO until unlock.

The sale of securities at IPO is motivated by different factors compared to the selling that takes place at unlock. At IPO, very often much of the sales of securities are carried out to raise funds to aid in the growth of the firm. In addition, insiders also sell for various reasons: liquidity, diversification etc. However the unlock selling is entirely driven by the sales of insiders. Thus the two events are characterized by different motivations. The first is concerned with firm value maximization as well as personal wealth maximization.[17] The latter case is concerned exclusively with individual wealth maximization in that the proceeds do not contribute to the firm value in any way. Underpricing must be closely related with the proportion of insiders locked in. If insiders do not lock in at all, that is insiders liquidate there entire position at IPO, then it is

[16] French and Roll (1986) suggest that trading introduces noise into stock returns, especially if investors are inferring information from the trading activity of others.
We should also expect an increase in volatilities if artificial price manipulation gives way at the unlock day as well.

[17] In the sense that the wealth of the insider is linked to the value of the firm as well as the proceeds gathered at IPO by any sale of insider's holdings.

optimal for them to ensure that there is no underpricing associated with the issue. For individuals of this sort, the IPO is the only opportunity to sell and thus they will be highly concerned with wealth maximization and thereby minimization of underpricing of the securities issue.

However, if the level of underpricing as well as the proportion of shares locked in by insiders generates a momentum effect, then it may be logical to underprice to a greater extent when offering up only a small proportion of shares to the market. A higher level of underpricing will be associated with a greater amount of positive coverage and market following, as suggested by Meggison and Weiss (1991) and reported by Rajan and Servaes (1997), which in turn, it is expected, will result in the increase in market demand and a greater likelihood of value appreciation by the time of unlock. Thus price appreciation occurs in part, as a consequence of these two factors. Thus as the proportion of shares locked up increases so does the incentive for insiders to underprice to a greater extent.

The proportion of shares locked in signals the fact that the insider's wealth will continue to be tied to the fortunes of the company and the interests of the new shareholders for at least the time of the lockup period. Thus, for the duration of the lockup period, the lockup agreement assures that the interests of the old shareholders and management is aligned with that of the new shareholders and as the proportion of insiders locked in increases so does the credibility of the signal sent with respect to the value and prospects of the firm.

Further, it is expected that those firms associated with a greater extent of underpricing will perform better in the IPO to unlock window, in terms of returns to

investor. Further it is expected they will also experience a greater decline upon unlock day, due to the expectation that those firms with a greater price appreciation are more likely to have increased profit taking,[18] thus contributing to an increase in selling and price pressure about the unlock day.

Many of the factors around the IPO of a security are, by design, a means of signalling and alleviating to some extent the informational asymmetries which persist at the time of IPO itself. The greater the uncertainty for new investors as to firm value and prospect, the stronger the signal that is required to overcome the asymmetry of information. That is such factors as, the proportion of shares locked up, the level of underpricing, the level of venture capitalist backing and the reputation of the lead underwriter may all assist in the alleviation of informational asymmetries.

Specifically, as a means of alleviating some of the asymmetry, the insiders (pre IPO shareholders) have incentive to lock in their shares, thereby aligning the interests of the existing shareholders and new investors for at least the duration of the lockup period. Thus the greater proportion of insiders locked in, the more credible the signal that is sent as to the firm's outlook. However, it is also expected that the proportion of shares locked in will be positively related to the degree of underpricing as argued previously. That is those issues with greater proportion of shares locked up will be underpriced to a greater extent.

Further, venture capitalists are able to certify information as to the value of a firm by putting their reputational capital at stake and locking in their holdings for the length of

[18] It can also be argued that those firms which under perform the market during the holding period may also be exposed to more dramatically negative CAR, since for these it is likely to be more difficult to get investors to hold additional share, thus resulting in magnified negative abnormal returns about the unlock.

the IPO lockup period.[19] Since venture capitalists, through their endorsement of an issue and by themselves locking in, already provide some certification as to the value of an offering and as a consequence lessening the asymmetry of information, a lesser degree of underpricing should be associated with those firms having VC backing. It has been documented by Meggison & Weiss (1991) and Brav, Gompers (1997) that new issues having VC backing are underpriced to lesser extent than those not having VC backing.

Further the VCs are able to attract higher quality underwriters since they are able to alleviate some of the asymmetry in the valuation of the firm for the underwriting parties, and thus decreasing the level of research needed to be undertaken by the underwriters. The lead underwriter associated with the offering in turn provides information to the market participants. The underwriter similarly puts at stake their reputational capital when the price is set and the issue is brought to market, and as documented by Chowdry and Nanda (1996) and Meggison and Weiss (1991), are also providers of price support.

More severe price pressure is expected in relation to IPOs with VC-backing as opposed to those lacking VC participation. Many VCs distribute shares in IPO firms to institutional investors who then typically sell at first possible opportunity, the unlock day as reported by Gompers and Lerner (1998). It is commonly noted that VCs distribute their holdings to partners who then liquidate more aggressively[20], or that VCs will desire to liquidate their positions quicker post unlock as to realize their return on investment in

[19] VC put their reputational capital at stake with respect to the underwriters they employ to bring issues to market and with the institutional investors they partner with furthermore they must be able to bring issues to market repeatedly and thus also must protect their credibility with investors. (Meggison and Weiss, 1994)

[20] Institutional investors may liquidate their positions immediately as a consequence of restrictions portfolio managers may have in regards to holding illiquid stocks.

order to employ these funds and repeat their investment cycle. In order to ascertain if VCs do in fact sell more aggressively at unlock, abnormal volume about unlock is examined. It is thus expected that the more aggressive selling should be associated with IPOs having VC backing and thus in conjunction with a downward sloping demand curve, would result in a more severe decline for unlock day abnormal returns as documented in Field and Hanka (2001).

Considering the unlock day, it is expected that the findings will be consistent with a downward sloping demand curve for securities. Thus, greater price declines at unlock should be associated with those variables proxying the likelihood of greater volume of selling by insiders since a price pressure effect is expected even with widespread information availability. The expectation as to the amount of selling upon the unlock day should be affiliated with the signalling factors at IPO, i.e. the proportion of shares locked up, the backing of venture capitalists, and underwriter reputation as they are all proxies for the volume of trading upon unlock. Further, holding period returns are expected to be associated with increased profit taking and price pressure on the unlock date.

It seems reasonable to take into account firm size since for smaller issues one would expect that there would be more difficulty getting insiders to continue to hold on to shares in illiquid firms. Thus, it is expected that these smaller issues will be associated with greater price pressure around the unlock date.

4.3 Market Conditions Hypothesis

As noted previously, much of the circumstances surrounding the IPO day have to do with asymmetry of information and signalling with regard to the value of the firm.

The proportion of shares locked in, presence of VC backing, underwriter ranking and level of underpricing are all to some extent signalling the value of the firm to the market. It is this paper's contention that the unlock day anomaly is a result of liquidity effects which are further confounded by market conditions both at the time of IPO and unlock. The abnormal returns reported in the study by Field and Hanka (2001) about the unlock day are expected to be priced in prior to the unlock day when we consider the aggregate sample of firms. The signalling variables as well as the other firm characteristics, contribute to expectations as to the increase in supply of the asset following unlock. Thus in the context of a downward sloping demand curve all are drivers of price pressure around unlock. However, the reaction to the increase in float around unlock is inevitably related to the psyche of the market.

Further confounding the nature of the actual response observed at unlock is tied to the overall market sentiment at the time of unlock, which is of course not gaugeable at the time of IPO itself but which should have a substantial influence on the market reaction on the unlock day. In a deteriorating market, it is expected that participants will react more negatively to the underlying proposed variables proxying for unlock day selling: VC backing, underwriter ranking, level of underpricing and firm size.[21] At the same time during worsening markets, the demand curve may in fact shift or become steeper. Further investors may infer information from the trading behaviour of other investors (French and Roll, 1986). Thus any unexpected sales by insiders about the unlock may result in a positive feedback response driving the returns even lower as

[21] Due to either change in market sentiment , risk aversion or the market required rates of return.

negative information is derived by other participants.[22] Since the unlock day effect is primarily proposed to be a liquidity effect, in a stable market (that is either Hot/Hot or Cold/Cold) with wide spread informational availability as to the unlock day and the aforementioned variables, we would expect rational behaviour to prevail and that investors will on the whole properly ascertain the amount of selling at unlock and thus no permanent abnormal return is expected to result from this completely predictable event. However, if market conditions change for the worse from the time of IPO to unlock, a greater response is expected since it is likely that the investor sentiment in terms of expectation has changed or alternatively that the market's required risk premium has changed.

In the Hot/Hot sample it is expected that there would be less unlock price pressure when compared with the Hot/Cold group. However, the selling pressure about unlock may in fact be greater in the Hot/Hot as opposed to the Cold/Cold market, for in Hot IPO markets a greater variability as to the quality of firms approaching the market exists and thus there may be more price pressure due to this marginal element at unlock (hot issues market).[23] Lerner (1994) finds that issuers take advantage of the opportunity to come to the market when optimism persists. Insiders are also inclined to take advantage of market optimism at unlock and cash out at inflated valuations. Thus, in fact selling pressure in hot markets may be most severe due to the level of selling. However, it is expected that the price reaction would be most severe for the Hot/Cold market. During the Cold/Cold scenario it would be anticipated that the CAR about the unlock should not

[22] Field and Hanka (2001) argue that the unlock day effect is, at least, partly a consequence of worse then expected sales by insiders and a downward sloping demand curve.

be worse than observed during the Hot/Hot market due to the fact that no counter adjustment as to market conditions had taken place from the time of IPO to unlock. Further the firms that make IPOs during a cold market are expected to be the higher quality firms, on average, and insiders of such firms would also be less inclined to sell at the unlock.

In the Hot/Cold sample it is expected that abnormal returns about the unlock will be the most pronounced. Further, adverse market sentiment at the time of unlock would result in greater price deterioration since in order to absorb the new shares the market would require more incentive to provide liquidity to insiders. Confounding this matter is that during hot markets firms of all qualities IPO. Many firms make IPOs just to take advantage of the prevailing market optimism. Thus, when a hot market sours these lower quality firms will be most drastically affected and further impair the performance of the overall sample.

4.4 Industry Effects Hypothesis

Lerner (1993) shows that for the biotechnology sector VCs have the ability to time the market as to industry conditions. It may be the case that for particular industries there is, in essence, no unlock day anomaly but in other industries it does persist as a result of firms taking advantage of market optimism. Furthermore if an industry is experiencing adverse market conditions any additional pressure about unlock may result in more severe reaction to the increase in float. This, coupled with the effect of private

[23] Further during hot markets, VCs have greater influx of funds with more firms to invest in, the marginal quality of firms may decrease as well. The monitoring provided by the VC may also be diminished in such instances.

information becoming public, may result in permanent readjustments for overvalued firms. Thus, it may be that overall unlock day results are being driven as a consequence of industry specific factors. Additionally, industry wide deterioration relative to the market benchmark, may result in the deterioration about the unlock day being magnified for the overall sample.

4.5 Stabilization/Price Support Hypothesis

Another factor which may be at play, in regards to VC backed firms, is that VC backed firms are associated with higher quality Underwriters, who in turn are known to provide stabilization of issues in terms of aftermarket price support as noted in studies by Hanley, Kumar, Seguin (1993) and Prabhula and Puri (1998). Thus, it would seem appropriate to compare the variability of returns for VC backed firms to the variability of returns for non-VC backed firms, both pre and post unlock to ascertain if there is in fact, price support taking place or if the issue's volatility is being managed by some alternative route. Since in most cases VCs who do not sell at the IPO are locked in for the duration of the lockup period, it is apparent that for the duration of the lockup VCs have every incentive to control the volatility of the issue or for that matter, at least movements below the offer price. Thus, a better measure of price support may be to consider price movements below the offer price. This measure is of more significance since it would be expected that the underwriter would only offer such support when the issues price falls below that of the offer, since it is of little concern to the underwriter as to stabilize equity value when it is above this level. It is suspected that during the lockup period VC backed firms will experience a lesser degree of price drops below the offer than those firms

lacking VC support. However, post unlock, it is expected that price variability for VC backed firms will inevitably increase to levels of firms lacking VC backing.

5. Results

5.1 Abnormal Returns about the Unlock Date

This study finds that the abnormal returns found by Field and Hanka (2001) and confirmed by Ofek and Richardson (2000) and others[24] remain significant even after the increased wide spread availability of information pertaining to the unlock day. Unlock information has become available through many financial sites which publish upcoming reminders pertaining to unlocks, while some such as www.unlockdates.com also send notifications of up coming unlocks to their subscribers. Thus, it is no longer arguable that the results of the aforementioned studies were merely occurring due to a lack of public scrutiny. The study finds abnormal returns on the unlock day in the magnitude of -1.86% (-1.49%)[25]. Further 60% (58%) experience negative returns on the unlock day itself. However, the study finds that the unlock day abnormal returns are significant only for the subsample of firms having venture capital backing. VC backed firms constitute 76 percent of the sample. These firms experience unlock day abnormal returns of -2.20% (-1.99%) and 3-Day CARs of -2.29% (-1.88%) with 62% (60%) experiencing negative returns on the unlock date itself. Non VC backed firms did not exhibit statistically significant abnormal returns on the event date or in short term windows about the event date. This result is as expected in the framework of an efficient market. Whereas, the

[24] Brav and Gompers (2000), Bradley, Jordan, Roten and Yi (2001).
[25] As previously indicated throughout the remainder of the paper the Market Model method results will be reported first followed by results from the Market Adjusted method in parentheses.

Field and Hanka (2001) study did find significant event day abnormal returns for non-VC backed firms.

Longer event windows were also considered to ascertain how the market adjusts around the unlock day. These findings point to a general deterioration of stock prices around lockup expiration. Single day significant negative abnormal returns are almost exclusively confined to days prior to the event. However typically the largest negative excess returns occur on the event date itself. When all IPOs are considered, cross sectionally it appears as if the deterioration about the unlock represents a permanent loss without any real level of price recovery. However, when the firms were sorted as to market conditions at IPO and unlock, different trends for these classifications arise. This was also the case when sorting was carried out with respect to 2-digit SIC code classifications. These results are discussed next.

Further, the path by which prices adjust about the unlock appear to have changed in a fundamental manner. The study finds that price adjustments tend to begin much earlier. Previous studies point to the adjustment process only commencing in the week prior to the unlock taking place. Further, the price declines appear more severe, most significantly in the two weeks prior to unlock. In the week prior to the unlock a loss of 5.59% (5.25%) is experienced. The results as to overall abnormal returns about the unlock date are presented in Figures 1-3.

5.2 Information Signalling

Many of the factors about IPO which are proposed to be mechanisms which mitigate the asymmetry of information at the time of IPO (proportion of insiders locked,

VC backing, and underwriter reputation) do indeed seem to contribute to abnormal returns about the unlock.[26] Specifically as was previously hypothesized, these factors seem to be drivers of unlock day selling and abnormal returns (Table 1). However the abnormal return implications are confined to those firms having VC backing, as would be expected. Only this subset exhibits overall negative abnormal returns about the unlock. The results as indicated in Table 5 point to the notion that these IPO informational devices: VC backing, underwriter ranking and proportion of shares locked are inevitably proxies for the level of selling and diversification by insiders at the time of unlock. As expected, a greater proportion of shares locked should lead to a greater need for diversification and thus should be associated with greater unlock volume activity. Although underwriter ranking is not found to be a driver of abnormal returns about the unlock date, it was found to be a significant factor acting on abnormal volume. Abnormal unlock volume was found to be a significant driver of abnormal returns.

As to the notion of the level of underpricing and the proportion of insiders locked in, when analysis was carried out on the data set there was no apparent relation between the two factors. Nor was there any significant[27] relation between these two variables and the abnormal return experienced from IPO to the unlock date. Further analysis was then run as to market conditions at the time of IPO, since it is at this point that decisions as to the lockup agreement and pricing are set forth. When an IPO takes place in a hot market there is no apparent relation between proportion locked in and underpricing. This may be a consequence of a hot IPO market affording opportunity to issues of varying qualities to come to market. However for those firms making IPOs in a cold market, the degree of

[26] Brav and Gompers (Feb. 2000) note these variables associated with lower informational asymmetry are associated with greater declines at unlock.

underpricing and proportion of insiders locked in are related to each other.[28] However, the abnormal returns experienced from IPO to 5 days prior to unlock was not found to be related to the proportion of insiders locked in nor the level of underpricing in either instance.

5.3 Market Conditions at IPO and Unlock

As hypothesized, the market conditions at time of IPO and at Unlock tend to result in different patterns of abnormal returns and abnormal volumes about the unlock. This suggests that the prevalent market conditions at IPO and unlock affect the performance of the offering about the unlock day. The results pertaining to the unlock day event window with respect to market conditions are presented in Figures 4-12. The results support differences in returns at the unlock date as being related to market conditions both at IPO and Unlock. For both the Hot/Hot market and the Cold/Cold market classifications, the greatest proportion of price deterioration is experienced on the event day which is followed by partial price adjustments, under the market adjusted model. This is both consistent with the unlock day effect being driven by temporary price pressure and by private information becoming public post unlock through the trading activity of insiders. The expectation of mean adverse information being revealed is a result of the incentive insiders have to conceal negative information prior to the unlock. However in the Market Model the unlock day deteriorations for the Hot/Hot market shows no sign of reversal. Returns for the (-1,1) event window are insignificant for firms

[27] Correlation of -0.03091 (p-Value 0.4237)
[28] Correlation of 0.17838 (p-Value 0.0032)

belonging to the Cold/Cold classification. This is in contrast to the other two market classifications which experienced abnormal returns for this event window.

The Hot/Cold classification is distinctly different from the other two classifications investigated in the study. Most notably, consistent price deterioration is experienced in the month surrounding the unlock with no evident stabilization occurring in the post event window. For both the Hot/Hot and Cold/Cold market classifications price adjustment begins to occur closer to the time of unlock itself. Further, the excess returns of the Hot/Cold classification for the week prior to unlock to the week post is -9.04% (-8.24%). The results support the argument that in hot issue markets, a larger proportion of lower quality firms are able to come to market when market sentiment and conditions are most favourable. When the market prospects change, these firms are affected most severely and thus contribute to greater price adjustments when combined with the effects of insiders selling at the unlock date.

The results of the regression reported in Tables 1-4 further point to the influence of market conditions at IPO and Unlock on the returns experienced about unlock. Most notably those issues making IPOs in a Cold market are less effected at unlock than those making IPOs in a Hot market. This relationship is reversed when considering market conditions at unlock: those firms undergoing unlock in a Hot market are less affected than those unlocking in a Cold market, when the Market Adjusted CAR were the dependent variables in the regression. However the Market Model did not yield the unlock market conditions as being significant as to unlock day abnormal returns. For this reason, tests were carried out to check whether the abnormal returns were equal when the firm made an IPO in either a cold or hot market. Similarly, tests were carried out for

different market conditions at unlock. In almost all cases the null hypothesis was rejected. Thus, conditions at both IPO and unlock affect the returns about the unlock day itself. These results are presented in Table 10 .

5.4 Industry Effects

Industry classification also appears to be significant in the determination of unlock day abnormal returns.[29] These results are evident from the CARs as classified by two digit SIC codes and graphically represented in Figures 13-23. When considering the returns about the unlock with respect to SIC code classifications, it is apparent that in many of the cases the unlock day abnormal return, where they exist, are only temporary. This appears to be the case for the SIC Code classifications 3800 (Instruments & Related Products) and 4800 (Communications), which include medical equipment, and 8700 (Engineering & Management Services). This is consistent with the price pressure argument in which the price drop is of a temporary nature whereby the market participants providing liquidity are compensated for offering liquidity to the selling insiders. Further, in other cases, there is a partial adjustment to the unlock day event, as is for the case of SIC Code classifications 3500 (Industrial Machinery & Equipment) and 3600 (Electronic & Other Electronic Equipment) which include computer hardware companies. These results are in agreement with the hypothesis that the unlock day event is a consequence of both price pressure and insiders revealing previously guarded expectations as to the firm's prospects which, after unlock, are revealed to the market via selling activity. However in some cases these arguments do not hold up well, in particular

for the largest sample group of firms belonging to SIC code classification 7300 (Business Services; which includes computer software). These results are presented in Figure 18. Similar results hold for SIC Code classification 5900 (Miscellaneous Retail) as seen in Figure 17. From the entire sample of firms undergoing lockup expiration, 275 are drawn from the two digit class 73, representing business services. Of these, 86% are VC-Backed firms (as compared to the remaining sample (non SIC code 73) of which 70% of the firms had VC-Backing). These firms belonging to the 7300 classification exhibit deteriorating returns leading up to the unlock and this trend continues in the post lockup period with no apparent stabilization even twenty days post unlock. This appears to be consistent with a Hot Issues Market[30] argument which suggests that issues brought to market when the market is most receptive are more likely to be lower quality issues to capitalize on the positive market sentiment for firms in certain sectors. As the sector goes out of favour, valuations readjust and the issues' value seemingly deteriorates relative to returns on the market. Readjustment occurs in response to changing investor perceptions towards the sector and to a greater concentration of lower quality firms which may have come to market, which under other conditions would not have. Adverse price adjustments are severe for both VC and Non VC backed firms for the classification and in fact are almost identical. Thus the results for classification 7300 returns about the unlock day may have less to do with the unlock but more so with the performance of the overall sector.

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[29] Field and Hanka run regressions using high tech classification. Results indicate that high tech firms experience more adverse abnormal returns but for only Non VC firms. Bradley, Jordan, Roten and Yi find AR significant for VC high tech.

[30] Ibbotson and Jaffe (1975) and Lerner (1993) document the Hot Issues Phenomenon

5.5 Price Support

When the matter of price deterioration about the unlock was considered, as to VC and Non VC backing, it was hypothesised that it may be a function of price support being provided by the underwriter. Evidence is put forth in Figures 37-38 that those firms having VC-backing have a lower probability of their trading price dropping below the offering price than do Non VC backed firms for at least the initial stages of the offering. Further however when the same data is considered as to market conditions at time of IPO, the two resulting patterns examined for Hot and Cold IPO markets are quite different. Most notably for the Hot IPO segment the results indicate a divergence to the likelihoods that the stock price will drop below the offer for VC and Non VC backed firms. For the 50 days prior to unlock to the unlock day itself, the proportion of VC backed firms dropping below their offer price remains essentially flat whereas this proportion increases for Non VC backed firms. Thus it maybe that VC backed firms are receiving some form of price support. However when the Cold classification is considered there seems to be visible difference between the two categories up to about sixty trading days into the offering.

However the charts do not provide any conclusive evidence as to the notion that up until the time of unlock VC backed firms are more likely to be recipients of price support than Non VC backed firms. It does appear that VC backed firms are recipients of price stabilization for at least some part of the pre unlock window. It may be that even for those VC Backed firms making IPOs in the Cold market, some firms receive price support up until unlock even though the aggregate picture tends to indicate that price support tends to dissolve about 60 trading days prior to the unlock. So it is not clear if

the expiration of the proposed pre unlock price support is partially responsible for the difference in abnormal performance of VC and Non VC backed firms at time of unlock.

5.6 Abnormal Volume

As was expected since there is a considerable increase in the available float of tradable shares post unlock, abnormal volume about the unlock day persists. Even in the days prior to the unlock abnormal trading activity is apparent. Trading activity peaks on the unlock day to about 94% but then subsides to levels which are still above pre unlock levels. These findings are consistent with those of Field and Hanka (2001). [31] When VC backed and Non VC backed firms are juxtaposed as to abnormal volume greater levels of trading activity about the unlock are associated with issues having VC backing. In fact, VC backed firms experience nearly twice the level of abnormal volume on the unlock day than do Non VC backed firms. As expected, it appears that VC backed firms and or their VC partners are inclined to diversify their investment more quickly as noted by Gompers and Lerner (1999). For VC backed firms trading activity peaks at 123% above previous levels and settles down to about 16% above pre unlock levels. For firms without VC backing, abnormal volume peaks at 61% and drops in the days following unlock but does not stabilize. This effect supports the notion that insiders of VC backed firms or their partners tend to liquidate their position more aggressively than those insiders in Non VC backed firms at unlock. The regression results as to determinants of abnormal volume about the unlock lends support to this argument. The VC dummy variable is positive and significantly related to the abnormal volume at unlock. Furthermore, it is seen that the

[31] This finding is also consistent with that of Ofek & Richardson (2000) as well as Brav and Gompers (2000)

drivers of unlock day abnormal volume are proportion of shares locked, level of underpricing, underwriter ranking and the presence of VC backing, all of which work to lessen informational asymmetry at the time of IPO. The market conditions about unlock are also found to influence the abnormal volume and patterns of such volume around the time of unlock. Regression results indicate that volume pressure is more evident for firms unlocking during hot market conditions. Interestingly when market conditions change from hot to cold at unlock, VCs exhibit considerably less selling activity indicating that VCs may control distributions or selling in order to mitigate worse outcomes as a result of abnormal volume of selling at unlock. Overall abnormal volume results about the event day is presented in Figures 24-36.

6. Summary and Conclusion

This study provides evidence that since the time information about the unlock day has become widely available information, the market response to the unlock day has altered. Primarily, in contrast to the Field and Hanka study, there is no evidence that Non VC backed firms experience abnormal returns either in the (-1,1) or in the (-5,5) event window. However the unlock effect for VC-backed firms persists, experiencing unlock day returns of –2.20% (-1.99%) and -2.29% (-1.88%) for the unlock day and the event window (-1,1) respectively. Non VC backed firms exhibited corresponding returns of -0.69% (-0.47%) and –0.01% (-0.34%) respectively but these figures were not significant. Thus, the results seem to indicate that the event date effect no longer persists for Non - VC-backed firms but when we consider longer windows about the unlock it is clear that price adjustment is taking place in anticipation of the unlock for both VC and Non-VC

backed firms. Further, the CAR for the (-5,1) window reported by Field and Hanka (-1.9%) persists and is in fact magnified more than two fold for the entire sample (-4.91% (-4.51%)). Thus, it seems the profit opportunity presented in the pre unlock window is not only statistically but may also economically significant.

The study also finds that the abnormal volume about the unlock still persists as was expected. The expiration of the lockup agreement signifies a permanent increase in the average daily trading volume with the most significant trading levels appearing on the unlock day itself and on the day following.

Further, as put forth by both the Field and Hanka (2001) and Ofek and Richardson (2000), aggregate results tend to support the notion that the unlock day drop is permanent and thus in support of a downward sloping demand curve hypothesis. However, on closer inspection the paper provides evidence that this may not be the full explanation. When the data is examined with respect to either market conditions or industry classifications, the results about the unlock vary considerably. Notably, when market conditions at the time of IPO and unlock are the same there appears to be some price recovery following the unlock when employing the Market Adjusted Model (the same observation holds for Cold/Cold markets when the Market Model is employed), pointing to both temporary price pressure and private information being revealed. However, when the market conditions change between the time of IPO and unlock, from hot to cold, not only does there not appear to be any rebound following the unlock but continued deterioration follows. When the data is examined with respect to industry classification there is support again for the notion of at least partial price recovery following the unlock when employing both the Market and Market Adjusted Models.

giving credence to the argument that the event may at least in part be a consequence of temporary price pressure in order for the market to provide liquidity to insiders. However other industry classifications do not show any signs of price recovery following the unlock and thus the unlock day effect for any longer term windows may be confounded by the general performance of a given sector. This is especially plausible given the evidence of hot issues markets and the cyclical nature of industry performance.

The paper does not purport the notion that the unlock day is an anomaly even though it appears as such but rather contends that it is a consequence of liquidity factors resulting in temporary price pressures in conjunction with market conditions and private information becoming public. For the sample period investigated, the unlock day is completely predictable and thus the effects of the unlock should be priced in well before the expiration of the unlock itself. To this end, we observe significant price adjustments prior to and on the event day itself. However, most of the adjustments occur only in the few days leading up to the unlock date. Clearly the unlock day effect is tied to some component associated with VC backing, most likely dealing with the type of companies/industries they invest in and with their decision as to when to take these firms public. Thus, it is suggested that further research on the topic of the unlock day could focus on the unlock day effects by employing finer industry classifications in combination with the use of industry benchmarks as to more accurately assess if in fact abnormal returns about the unlock day persist. That is when industry benchmarks are employed does the unlock day return remain significant or does it then become evident that price recovery as to any unlock day selling does in fact take place. Further, rather than relying on Hot Cold classifications as to overall market conditions, classifications as

to industry conditions may also yield further insight to the unlock phenomenon especially considering the empirical evidence and common anecdotal suggestions by the media and analysts that VCs concentrate on hot windows of opportunity with offerings occurring in waves as to investors interest. The proposed analysis may give further support to the explanation presented in this study giving credence to the unlock day anomaly being merely a consequence of temporary price pressure and insider information being revealed confounded by industry factors and market conditions.

Additionally, further research as to the unlock day effect may look towards a behavioral explanation. Market psychology may be especially helpful in providing further insight to the varying responses observed about the unlock day when market conditions at IPO and unlock are considered. Moreover, even though the unlock day represents a completely predictable event there may be a behavioral explanation as to why the response observed about the event day persists. Barber & Odean (1999) demonstrate that investors demonstrate biases, which are systematic in nature. Thus the response observed at unlock of a security may be to some extent a result of investors psychological reaction to the unlock day itself.

Tables

Table 1 a) Abnormal Return Regression 1

	Market Model											
	Overall		VC Backed		Overall		VC Backed		Overall		VC Backed	
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)
Intercept	0 06036	0 93 0 3544	0 11439	1 37 0 1703	0 03722	0 84 0 3988	0 06347	1 09 0 2768	0 02314	0 48 0 6316	0 05092	0 82 0 4146
UNDERWRITER	0 00241	0 44 0 6624	0 00484	0 76 0 449	0 00314	0 84 0 4015	0 00542	1 21 0 2267	-0 000726	-0 18 0 8593	-0 0005722	-0 12 0 9049
LOCKEDPROP	-0 1356	-1 66 0 0982	-0 24432	-2 34 0 0199	-0 08793	-1 59 0 1131	-0 14984	-2 05 0 0412	-0 04767	-0 79 0 4321	-0 09448	-1 21 0 2282
IPOCOLD	0 08269	3 47 0 0006	0 09492	3 55 0 0004	0 03041	1 89 0 0598	0 03722	1 99 0 0472	0 05227	2 96 0 0032	0 0577	2 88 0 0041
UNLOCKCOLD	-0 05261	-2 0 0462	-0 04808	-1 59 0 1114	-0 03137	-1 76 0 0789	-0 02846	-1 35 0 1781	-0 02124	-1 09 0 2766	-0 01963	-0 87 0 3849
ABNORMAL VOLUME	-0 02984	-3 44 0 0006	-0 03171	-3 18 0 0016	-0 0196	-3 34 0 0009	-0 0203	-2 91 0 0038	-0 01024	-1 6 0 111	-0 01141	-1 53 0 1274
RUNUP	0 000318	0 7 0 4857	0 000381	0 71 0 4781	0 0004481	1 45 0 1469	0 0005183	1 38 0 1681	-0 00013	-0 39 0 7001	-0 0001375	-0 34 0 7323
VC DUMMY	-0 01479	-0 6 0 55			-0 00952	-0 57 0 5697			-0 00527	-0 29 0 7737		
Adj R-Sqr	0 0286		0 0364		0 0208		0 0219		0 0071		0 0104	
F-Value	3 82		4 32		3 03		2 97		1 68		1 93	
p-Value	0 0004		0 0003		0 0038		0 0074		0 1099		0 0747	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, underwriter ranking (UNDERWRITER) as set out by Carter and Manaster, the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market the abnormal volume at unlock, the runup (RUNUP) defined as the buy and hold cumulative abnormal return experienced from IPO to 10 days prior to the unlock day and a dummy variable for VC backing (VC DUMMY) which takes on the value of 1 for firms having VC backing

Table 1 b) Abnormal Return Regression 1

	Market Adjusted Return Model											
	Overall		VC Backed		Overall		VC Backed		Overall		VC Backed	
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)
Intercept	0 09665	1 68 0 0932	0 18158	2 55 0 011	0 05246	1 23 0 2179	0 10729	1 97 0 0494	0 05237	1 12 0 2616	0 09134	1 61 0 109
UNDERWRITER	0 00454	0 93 0 3524	0 00548	1 0 3162	0 004	1 11 0 2679	0 00689	1 65 0 0998	-0 000333	-0 08 0 9329	-0 00153	-0 35 0 7258
LOCKEDPROP	-0 15933	-2 2 0 0278	-0 29199	-3 27 0 0012	-0 11394	-2 13 0 0335	-0 1933	-2 83 0 0049	-0 06823	-1 16 0 2447	-0 11623	-1 63 0 1044
IPOCOLD	0 08591	4 08 < 0001	0 09364	4 1 < 0001	0 04057	2 61 0 0094	0 04633	2 65 0 0083	0 0537	3 15 0 0017	0 05441	2 98 0 003
UNLOCKCOLD	-0 0778	-3 35 0 0009	-0 08961	-3 48 0 0005	-0 04234	-2 46 0 0141	-0 05157	-2 62 0 0091	-0 03579	-1 9 0 058	-0 04238	-2 06 0 0401
ABNORMAL VOLUME	-0 0167	-2 18 0 0293	-0 01799	-2 11 0 0354	-0 01225	-2 17 0 0307	-0 01478	-2 27 0 0239	-0 00346	-0 56 0 5775	-0 0024	-0 35 0 7246
RUNUP	0 000335	0 83 0 4054	0 000156	0 34 0 7329	0 0005617	1 89 0 0596	0 0005075	1 45 0 1485	-0 000176	-0 54 0 5887	-0 0003089	-0 84 0 3997
VCDUMB	-0 02234	-1 02 0 3065			-0 00262	-0 16 0 8714			-0 00764	-0 43 0 6659		
Adj R-Sqr	0 0348		0 0494		0 0214		0 0339		0 008		0 0128	
F-Value	4 46		5 58		3 1		4 09		1 77		2 14	
p-Value	< 0001		< 0001		0 0032		0 0005		0 0903		0 0474	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, underwriter ranking (UNDERWRITER) as set out by Carter and Manaster, the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market the abnormal volume at unlock, the runup (RUNUP) defined as the buy and hold cumulative abnormal return experienced from IPO to 10 days prior to the unlock day and a dummy variable for VC backing (VC DUMMY) which takes on the value of 1 for firms having VC backing

Table 2 a) Abnormal Return Regression II

	Market Model											
	Overall		VC Backed		Overall		VC Backed		Overall		VC Backed	
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)
Intercept	0 1824	1 9 0 0585	0 12177	0 93 0 3534	0 10092	1 26 0 2093	0 04824	0 44 0 6611	0 08876	1 25 0 2104	0 05399	0 55 0 5791
LOCKEDPROP	-0 11508	-1 41 0 1588	-0 21885	-2 05 0 0404	-0 11894	-1 75 0 0811	-0 16909	-1 89 0 059	-0 01772	-0 3 0 7678	-0 06179	-0 78 0 4348
IPOCOLD	0 06477	2 66 0 0079	0 07019	2 54 0 0115	0 02882	1 42 0 1559	0 03955	1 7 0 0889	0 04508	2 52 0 012	0 04693	2 29 0 0226
UNLOCKCOLD	-0 03092	-1 18 0 2401	-0 02101	-0 69 0 4879	0 00459	0 21 0 8342	0 01243	0 49 0 6247	-0 01183	-0 61 0 5411	-0 00753	-0 34 0 7376
RUNUP	0 00019344	0 43 0 6703	0 00022489	0 42 0 6756	0 00022408	0 59 0 5545	0 00008981	0 2 0 8421	-0 00019274	-0 58 0 5642	-0 00020106	-0 5 0 6141
UNDERPRICE	-0 00864	-1 16 0 2484	-0 01463	-1 55 0 1229	-0 00771	-1 23 0 2173	-0 01022	-1 29 0 1985	-0 00427	-0 78 0 4379	-0 00669	-0 95 0 3416
Pre VAR	-1 52083	-4 13 < 0001	-1 15542	-2 85 0 0045	-0 98739	-3 21 0 0014	-0 6935	-2 04 0 0419	-1 10292	-4 07 < 0001	-0 98271	-3 27 0 0012
UNDERWRITER	-0 00397	-0 43 0 6709	0 00861	0 66 0 5068	0 00045558	0 06 0 9534	0 00716	0 66 0 5105	-0 00181	-0 26 0 7922	0 00506	0 53 0 5995
Adj R-Sqr	0 0379		0 0358		0 0212		0 0185		0 0294		0 0269	
F-Value	4 78		3 8		3 07		2 42		3 9		3 09	
p-Value	< 0001		0 0005		0 0034		0 0191		0 0004		0 0034	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market, the runup (RUNUP) defined as the buy and hold cumulative abnormal return experienced from IPO to 10 days prior to the unlock day, the level of underpricing (UNDERPRICE), pre unlock standard deviation calculated over days -110 to day -10 relative to the unlock day and underwriter ranking (UNDERWRITER) as set out by Carter and Manaster

Table 2 b) Abnormal Return Regression II

	Market Adjusted Return Model											
	Overall		VC Backed						Overall		VC Backed	
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR(0,5)	Test Statistic (p-Value)	CAR(0,5)	Test Statistic (p-Value)
Intercept	0 18139	2 16 0 0314	0 17686	1 6 0 1112	0 10209	1 38 0 1683	0 0868	0 88 0 381	0 12155	1 78 0 075	0 11688	1 32 0 1858
LOCKEDPROP	-0 11621	-1 63 0 1036	-0 23884	-2 65 0 0082	-0 12957	-2 06 0 0393	-0 19162	-2 38 0 0176	-0 02472	-0 43 0 669	-0 06689	-0 93 0 3512
IPOCOLD	0 07809	3 67 0 0003	0 08301	3 55 0 0004	0 04945	2 64 0 0084	0 06344	3 04 0 0025	0 05186	3 01 0 0027	0 05077	2 73 0 0066
UNLOCKCOLD	-0 06565	-2 86 0 0044	-0 07437	-2 91 0 0038	-0 01647	-0 81 0 4158	-0 02459	-1 08 0 2823	-0 03087	-1 66 0 0979	-0 03665	-1 8 0 0725
RUNUP	0 00024962	0 63 0 5297	0 00005994	0 13 0 895	0 00032164	0 92 0 3575	0 00002094	0 05 0 9588	-0 00021407	-0 67 0 5059	-0 00033462	-0 93 0 3549
UNDERPRICE	-0 00409	-0 63 0 5316	-0 00576	-0 72 0 4718	-0 00475	-0 83 0 4096	-0 00428	-0 6 0 5492	-0 00184	-0 35 0 7284	-0 00316	-0 5 0 6196
Pre VAR	-1 63215	-5 07 < 0001	-1 34054	-3 91 0 0001	-1 00138	-3 54 0 0004	-0 81783	-2 67 0 0078	-1 16228	-4 46 < 0001	-1 08177	-3 97 < 0001
UNDERWRITER	-0 00039301	-0 05 0 9616	0 00925	0 84 0 399	0 00232	0 32 0 7472	0 00788	0 81 0 421	-0 003	-0 45 0 6499	0 00149	0 17 0 8642
Adj R-Sqr	0 0623		0 0682		0 0328		0 036		0 0375		0 041	
F-Value	7 37		6 52		4 25		3 82		4 73		4 22	
p-Value	< 0001		< 0001		0 0001		0 0005		< 0001		0 0002	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market, the runup (RUNUP) defined as the buy and hold cumulative abnormal return experienced from IPO to 10 days prior to the unlock day, the level of underpricing (UNDERPRICE), pre unlock standard deviation calculated over days -110 to day -10 relative to the unlock day and underwriter ranking (UNDERWRITER) as set out by Carter and Manaster

Table 3 Abnormal Return Regression III

Overall	Market Model						Market Adjusted Return Model					
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)
Intercept	0 07167	1 11 0 2659	0 05203	0 97 0 3301	0 02574	0 54 0 5893	0 11	1 93 0 0535	0 06226	1 48 0 1396	0 05476	1 19 0 235
UNDERPRICE	-0 00649	-0 86 0 3911	-0 00483	-0 77 0 4417	-0 00451	-0 8 0 4214	-0 00369	-0 55 0 5813	-0 00113	-0 23 0 8192	-0 00335	-0 62 0 5367
LOCKEDPROP	-0 13698	-1 68 0 0942	-0 11698	-1 73 0 0849	-0 05158	-0 85 0 3944	-0 15623	-2 16 0 0308	-0 10978	-2 05 0 0404	-0 07088	-1 21 0 2261
IPOCOLD	0 07709	3 1 0 002	0 04062	1 97 0 0491	0 04784	2 6 0 0095	0 08345	3 8 0 0002	0 04041	2 49 0 0131	0 05045	2 84 0 0047
UNLOCKCOLD	-0 04768	-1 77 0 0767	-0 00847	-0 38 0 7043	-0 01804	-0 91 0 3653	-0 07471	-3 15 0 0017	-0 04115	-2 34 0 0196	-0 03339	-1 73 0 0832
VC DUMMY	-0 01344	-0 54 0 5872	-0 02177	-1 06 0 289	-0 00463	-0 25 0 8004	-0 02117	-0 97 0 333	-0 00193	-0 12 0 9051	-0 00715	-0 4 0 6866
ABNORMAL VOLUME	-0 02801	-3 2 0 0014	-0 02343	-3 23 0 0013	-0 00941	-1 45 0 1469	-0 01508	-1 95 0 0515	-0 01128	-1 97 0 0492	-0 0028	-0 45 0 6547
RUNUP	0 0003089	0 68 0 4982	0 0003071	0 81 0 4169	-0 0001361	-0 4 0 6869	0 0003294	0 82 0 4135	0 0005597	1 88 0 0609	-0 000181	-0 55 0 5792
Adj R-Sqr	0 0294		0 0245		0 008		0 034		0 0197		0 0085	
F-Value	3 9		3 41		1 77		4 37		2 92		1 83	
p-Value	0 0004		0 0014		0 0898		< 0001		0 0051		0 0797	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, the level of underpricing (UNDERPRICE), the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on the value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) takes on the value of 1 for firms undergoing unlock in a cold market, dummy variable for VC backing (VC DUMMY) which takes on the value of 1 for firms having VC backing, unlock day abnormal volume and the runup (RUNUP) defined as the buy and hold cumulative abnormal return experienced from IPO to 10 days prior to the unlock day

Table 4 a) Abnormal Return Regression IV

	Market Model											
	Overall		VC Backed		Overall		VC Backed		Overall		VC Backed	
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)
Intercept	0 1801	1 88 0 0611	0 11889	0 91 0 3639	0 09825	1 23 0 2206	0 04709	0 43 0 668	0 09105	1 29 0 1979	0 05657	0 58 0 5603
LOCKEDPROP	-0 11321	-1 39 0 1648	-0 21586	-2 03 0 0426	-0 11677	-1 72 0 0861	-0 1679	-1 88 0 06	-0 01959	-0 33 0 7438	-0 06446	-0 82 0 4138
IPOCOLD	0 06447	2 65 0 0081	0 0701	2 54 0 0115	0 02847	1 4 0 1606	0 03951	1 7 0 0889	0 04538	2 54 0 0113	0 04702	2 29 0 0223
UNLOCKCOLD	-0 0308	-1 17 0 2415	-0 02126	-0 7 0 4823	0 00473	0 22 0 8293	0 01233	0 49 0 627	-0 01195	-0 62 0 5368	-0 00731	-0 33 0 7448
UNDERPRICE	-0 00873	-1 17 0 2433	-0 01466	-1 55 0 1218	-0 00781	-1 25 0 211	-0 01024	-1 29 0 1975	-0 00419	-0 76 0 4467	-0 00666	-0 95 0 3433
Pre VAR	-1 51851	-4 13 < 0001	-1 15037	-2 84 0 0047	-0 98471	-3 21 0 0014	-0 69148	-2 04 0 0422	-1 10522	-4 08 < 0001	-0 98722	-3 29 0 0011
UNDERWRITER	-0 00383	-0 41 0 6816	0 00871	0 67 0 5014	0 0006193	0 08 0 9366	0 0072	0 66 0 5077	-0 00195	-0 28 0 7762	0 00497	0 52 0 6057
Adj R-Sqr	0 0391		0 0374		0 0221		0 0203		0 0303		0 0283	
F-Value	5 55		4 42		3 53		2 82		4 5		3 57	
p-Value	< 0001		0 0002		0 0019		0 0103		0 0002		0 0018	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market, the level of underpricing (UNDERPRICE), pre unlock standard deviation calculated over days -110 to day -10 relative to the unlock day and underwriter ranking (UNDERWRITER) as set out by Carter and Manaster

Table 4 b) Abnormal Return Regression IV

	Market Adjusted Return Model											
	Overall		VC Backed		Overall		VC Backed		Overall		VC Backed	
	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,5)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (-5,-1)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)	CAR (0,5)	Test Statistic (p-Value)
Intercept	0 17842	2 13 0 0339	0 1761	1 59 0 1119	0 09826	1 33 0 184	0 08653	0 88 0 3814	0 1241	1 82 0 0685	0 12118	1 38 0 1696
LOCKEDPROP	-0 1138	-1 6 0 1103	-0 23805	-2 65 0 0083	-0 12646	-2 02 0 0439	-0 19135	-2 39 0 0174	-0 02679	-0 46 0 6425	-0 07133	-1 0 319
IPOCOLD	0 0777	3 66 0 0003	0 08299	3 55 0 0004	0 04895	2 62 0 009	0 06343	3 04 0 0025	0 05219	3 03 0 0025	0 05091	2 74 0 0064
UNLOCKCOLD	-0 0655	-2 85 0 0045	-0 07444	-2 91 0 0037	-0 01627	-0 8 0 4213	-0 02462	-1 08 0 2814	-0 031	-1 67 0 0963	-0 03628	-1 78 0 0753
UNDERPRICE	-0 0042	-0 64 0 5202	-0 00577	-0 72 0 4707	-0 00489	-0 85 0 3954	-0 00429	-0 6 0 5486	-0 00175	-0 33 0 7417	-0 00312	-0 49 0 6248
Pre VAR	-1 62917	-5 07 < 0001	-1 33919	-3 91 0 0001	-0 99754	-3 52 0 0005	-0 81736	-2 67 0 0077	-1 16484	-4 47 < 0001	-1 08929	-4 < 0001
UNDERWRITER	-0 0002107	-0 03 0 9794	0 00928	0 85 0 3971	0 00255	0 36 0 7223	0 00789	0 81 0 42	-0 00316	-0 48 0 6326	0 00134	0 15 0 8777
Adj R-Sqr	0 0632		0 0699		0 033		0 0378		0 0383		0 0412	
F-Value	8 54		7 62		4 82		4 46		5 45		4 78	
p-Value	< 0001		< 0001		< 0001		0 0002		< 0001		< 0001	

Linear regression with cumulative abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, the locked proportion of shares (LOCKEDPROP), dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market, dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market, the level of underpricing (UNDERPRICE), pre unlock standard deviation calculated over days -110 to day -10 relative to the unlock day and underwriter ranking (UNDERWRITER) as set out by Carter and Manaster

Table 5 Abnormal Volume Regression 1

	Overall		VC Backed		Non VC Backed	
	UNLOCK ABNORMAL VOLUME	Test Statistic (p-Value)	UNLOCK ABNORMAL VOLUME	Test Statistic (p-Value)	UNLOCK ABNORMAL VOLUME	Test Statistic (p-Value)
Intercept	-0 00021772	0 0 9999	0 84645	0 57 0 5671	-0 77828	-0 35 0 7304
IPOCOLD	0 53969	4 97 < 0001	0 5869	4 9 < 0001	0 47739	1 81 0 0721
UNLOCKCOLD	-0 54432	-4 6 < 0001	-0 59894	-4 55 < 0001	-0 40471	-1 48 0 1415
UNDERPRICE	0 14852	4 44 < 0001	0 19545	4 78 < 0001	0 06346	1 04 0 3004
LOCKEDPROP	1 29739	3 6 0 0003	1 01701	2 26 0 024	1 74791	2 71 0 0076
UNDERWRITER	0 06751	2 51 0 0124	0 0556	1 88 0 0607	0 09287	1 42 0 1592
LNOFFER	-0 06882	-1 05 0 2926	-0 08828	-1 08 0 2813	-0 05	-0 41 0 6854
RUNUP	0 0006914	0 34 0 7316	0 00142	0 62 0 5388	-0 00145	-0 34 0 7341
VC DUMMY	0 24651	2 25 0 0246				
Adj R-Sqr	0 0932		0 0875		0 0531	
F-Value	9 61		8 22		2 14	
p-Value	< 0001		< 0001		0 0438	

Linear regression with unlock abnormal volume as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variables include, dummy variable for market conditions at IPO (IPOCOLD) which takes on value of 1 for firms having an IPO in a cold market dummy variable for market condition at unlock (UNLOCKCOLD) which takes on value of 1 for firms undergoing unlock in a cold market the level of underpricing (UNDERPRICE), the locked proportion of shares (LOCKEDPROP), underwriter ranking (UNDERWRITER) as set out by Carter and Manaster the logarithm of firm size at IPO, the runup (RUNUP) defined as the buy and hold cumulative abnormal return experienced from IPO to 10 days prior to the unlock day and dummy variable for VC backing (VC DUMMY) which takes on the value of 1 for firms having VC backing

Table 6 Regression: Abnormal Unlock Day Volume as a driver of Abnormal Unlock Day Returns

	MARKET MODEL		MARKET ADJUSTED	
	UNLOCK DAY ABNORMAL RETURN	Test Statistic (p-Value)	UNLOCK DAY ABNORMAL RETURN	Test Statistic (p-Value)
Intercept	-0 01757	-4 81 < 0001	-0 01664	-4 24 < 0001
ABNORMAL UNLOCK VOLUME	-0 0107	-3 51 0 0005	-0 00928	-2 84 0 0047
Adj R-Sqr	0 0166		0 0104	
F-Value	12 33		8 04	
p-Value	0 0005		0 0047	

Linear regression with unlock day abnormal return as the dependent variable. The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001 The independent variable is unlock day abnormal volume

Table 7 a) Venture Capitalist Backing and SIC Code Classifications

Market Model	Full Sample	Venture Capital Backed	Non Venture Capital Backed	SIC Code 3500	SIC Code 3600	SIC Code 3800	SIC Code 4800	SIC Code 5900	SIC Code 7300	SIC Code 8700
CAR day -1 to 1	-1.99%	-2.29%	0.01%	-3.83%	-1.18%	1.44%	0.70%	-4.43%	-3.49%	1.55%
(Test Statistic)	(-3.32)	(-3.52)	(0.01)	(-2.45)	(-0.81)	(0.66)	(0.61)	(-2.14)	(-3.73)	(0.86)
Fraction with negative CAR	52.70%	56.36%	43.30%	56.76%	59.04%	53.57%	46.03%	76.19%	63.64%	47.50%
Sample Size	715	546	147	37	83	28	63	21	275	40

The overall sample consists of 715 firms undergoing unlock expirations between October 1999 and September 2001 The 3-day cumulative abnormal return about the unlock is calculated relative to the Nasdaq index using the Market Model

Table 7 b) Venture Capitalist Backing and SIC Code Classifications

Market Adjusted Returns	Full Sample	Venture Capital Backed	Non Venture Capital Backed	SIC Code 3500	SIC Code 3600	SIC Code 3800	SIC Code 4800	SIC Code 5900	SIC Code 7300	SIC Code 8700
CAR day -1 to 1	-1.57%	-1.88%	0.34%	-2.89%	-0.73%	1.80%	0.73%	-4.93%	-2.96%	2.56%
(Test Statistic)	(-2.69)	(-2.95)	(0.33)	(-1.81)	(-0.50)	(0.81)	(0.64)	(-2.37)	(-3.16)	(1.43)
Fraction with negative CAR	55.83%	57.27%	52.11%	54.05%	54.22%	53.57%	55.56%	71.43%	65.45%	55.00%
Sample Size	715	546	147	37	83	28	63	21	275	40

The overall sample consists of 715 firms undergoing unlock expirations between October 1999 and September 2001 The 3-day cumulative abnormal return about the unlock is calculated relative to the Nasdaq index using the Market Adjusted Return Model

Table 8 a) Market Conditions at IPO and Unlock.

Market Model

IPO-Unlock	All Firms				Venture Capital Backed				Non Venture Capital Backed			
Period	N	CAR(-1,1)	Neg. Return	ABV Day 0	N	CAR(-1,1)	Neg. Return	ABV Day 0	N	CAR(-1,1)	Neg. Return	ABV Day 0
Hot/Hot	190	-4.02%	69.02%	127.82%	139	-4.84%	74.81%	146.57%	51	-1.28%	53.06%	59.84%
		(-4.12)		(5.94)		(-4.45)		(5.85)		(-0.86)		(1.67)
Hot/Cold	236	-2.12%	57.67%	40.17%	180	-2.98%	60.69%	47.42%	43	1.61%	45.24%	36.95%
		(-2.50)		(1.79)		(-3.40)		(1.69)		0.82		(1.35)
Cold/Cold	289	-0.54%	55.88%	161.64%	227	0.08%	55.91%	216.81%	53	-0.01%	55.77%	80.22%
		(-0.74)		(7.77)		(-0.09)		(9.04)		(-0.01)		(1.94)

The sample consists of 715 firms undergoing unlock expiration between October 1999 and September 2001
X/Y indicates that the firms IPOed in an X market and unlocked in a Y market Negative Return refers to proportion of firms in the subsample with negative day 0 return

Table 8 b) Market Conditions at IPO and Unlock.

Market Adjusted Return

IPO-Unlock	All Firms				Venture Capital Backed				Non Venture Capital Backed			
Period	N	CAR(-1,1)	Neg. Return	ABV Day 0	N	CAR(-1,1)	Neg. Return	ABV Day 0	N	CAR(-1,1)	Neg. Return	ABV Day 0
Hot/Hot	190	-1.57%	66.85%	127.82%	139	-3.45%	71.85%	146.57%	51	-0.91%	53.06%	59.84%
		(-2.69)		(5.94)		(-3.22)		(5.85)		(-0.59)		(1.67)
Hot/Cold	236	-2.23%	54.88%	40.17%	180	-3.05%	58.96%	47.42%	43	1.78%	38.10%	36.95%
		(-2.63)		(1.79)		(-3.46)		(1.69)		(0.90)		(1.35)
Cold/Cold	289	-0.28%	54.78%	161.64%	227	0.15%	54.55%	216.81%	53	0.45%	55.77%	80.22%
		(-0.40)		(7.77)		(-0.18)		(9.04)		(0.33)		(1.94)

The sample consists of 715 firms undergoing unlock expiration between October 1999 and September 2001
X/Y indicates that the firms IPOed in an X market and unlocked in a Y market Negative Return refers to proportion of firms in the subsample with negative day 0 return

Table 9 Hypothesis Testing

MODEL	COMPONENT UNDER ANALYSIS	GROUP	T-Stat	P-Value
MARKET MODEL	CAR(-5,5)	VC BACKING	1 283	0 2008
MARKET MODEL	CAR(-1,1)	VC BACKING	1 678	0 096
MARKET MODEL	CAR(-5,5)	IPO COLD	2 277	0 0233
MARKET MODEL	CAR(-1,1)	IPO COLD	2 402	0 0167
MARKET MODEL	CAR(-5,5)	UNLOCK COLD	0 3802	0 7025
MARKET MODEL	CAR(-1,1)	UNLOCK COLD	2 491	0 0131
MARKET Adjusted MODEL	CAR(-5,5)	VC BACKING	1 591	0 113
MARKET Adjusted MODEL	CAR(-1,1)	VC BACKING	1 008	0 3148
MARKET Adjusted MODEL	CAR(-5,5)	IPO COLD	2 224	0 0266
MARKET Adjusted MODEL	CAR(-1,1)	IPO COLD	2 651	0 0083
MARKET Adjusted MODEL	CAR(-5,5)	UNLOCK COLD	1 843	0 0662
MARKET Adjusted MODEL	CAR(-1,1)	UNLOCK COLD	2 105	0 0321

The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001. The chart is set up in the following format; the first row indicates testing was performed as to the null hypothesis that the Market Model CAR for day -5 to day 5 about the unlock for those firms with and without VC backing are statistically the same. In all cases, the column group represents a dummy variable which gives rise to the two populations that are to be compared for equality with respect to the component under analysis

Table 10 Hypothesis Testing

	NULL HYPOTHESIS	T-Stat	P-Value
OVERALL SAMPLE	POSTVAR/PREVAR <=1	6 218	< 0001
VC BACKED FIRMS	POSTVAR/PREVAR<=1	2.797	0 0029
NON VC-BACKED FIRMS	POSTVAR/PREVAR<=1	6 037	< 0001

The sample consists of 672 firms undergoing unlock expiration between October 1999 and September 2001. The null hypothesis tests if the ratio of post unlock variance and pre unlock variance is less than . Pre variance is calculated over days (-60, -10) and post variance is calculated over days (10,60).

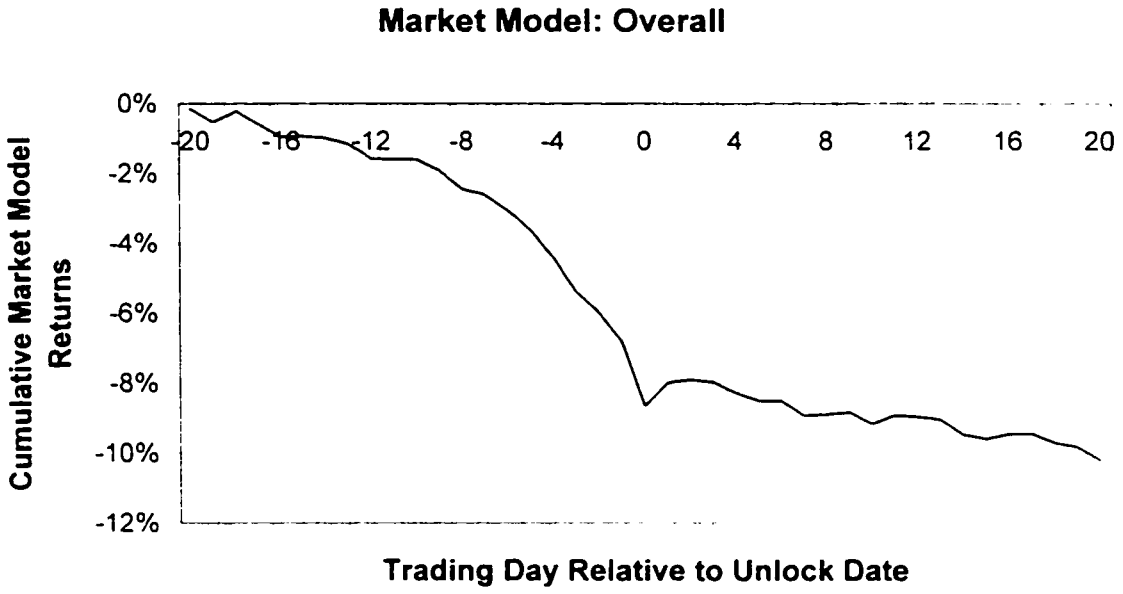
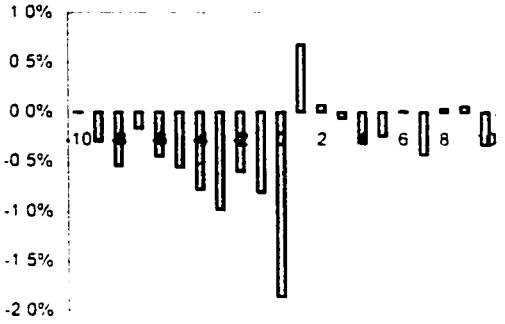


Figure 1 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 715 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.004%	-0.01	-1.601%
-9	-0.295%	-0.70	-1.896%
-8	-0.543%	-1.28	-2.439%
-7	-0.166%	-0.39	-2.605%
-6	-0.446%	-1.05	-3.051%
-5	-0.560%	-1.32	-3.610%
-4	-0.783%	-1.85	-4.393%
-3	-0.981%	-2.32	-5.374%
-2	-0.601%	-1.42	-5.975%
-1	-0.811%	-1.91	-6.786%
0	-1.857%	-4.38	-8.643%
1	0.679%	1.60	-7.964%
2	0.073%	0.17	-7.890%
3	-0.061%	-0.14	-7.952%
4	-0.311%	-0.73	-8.263%
5	-0.240%	-0.57	-8.503%
6	0.009%	0.02	-8.494%
7	-0.428%	-1.01	-8.921%
8	0.035%	0.08	-8.886%
9	0.058%	0.14	-8.828%
10	-0.329%	-0.78	-9.158%

	CAR	T-STAT
CAR(0,1)	-1.1776%	-1.97
CAR(-1,0)	-2.6678%	-4.45
CAR(-1,1)	-1.99%	-3.32
CAR(-2,2)	-2.52%	-4.20
CAR(-5,5)	-5.45%	-9.10
CAR(-5,1)	-4.91%	-8.20
CAR(-10,10)	-7.56%	-12.62
CAR(-10,1)	-6.37%	-10.63
CAR(-20,20)	-10.19%	-17.00
CAR(-20,1)	-7.96%	-13.29



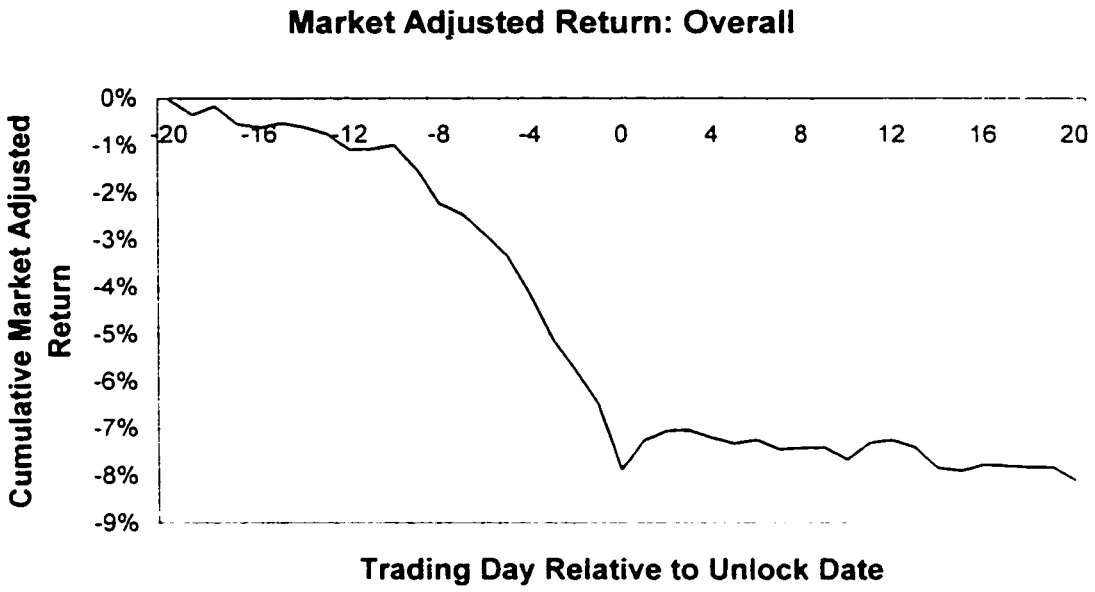
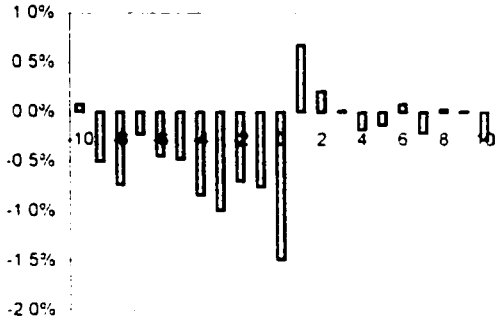


Figure 1 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 715 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.078%	0.19	-1.001%
-9	-0.502%	-1.22	-1.498%
-8	-0.738%	-1.79	-2.225%
-7	-0.228%	-0.55	-2.447%
-6	-0.442%	-1.07	-2.879%
-5	-0.474%	-1.15	-3.339%
-4	-0.840%	-2.04	-4.151%
-3	-0.994%	-2.41	-5.104%
-2	-0.700%	-1.70	-5.768%
-1	-0.756%	-1.83	-6.480%
0	-1.485%	-3.60	-7.868%
1	0.675%	1.64	-7.246%
2	0.210%	0.51	-7.051%
3	0.017%	0.04	-7.035%
4	-0.177%	-0.43	-7.199%
5	-0.127%	-0.31	-7.317%
6	0.083%	0.20	-7.240%
7	-0.211%	-0.51	-7.436%
8	0.029%	0.07	-7.409%
9	0.012%	0.03	-7.399%
10	-0.278%	-0.68	-7.657%

	CAR	T-STAT
CAR(0,1)	-0.8193%	-1.40
CAR(-1,0)	-2.2403%	-3.84
CAR(-1,1)	-1.57%	-2.69
CAR(-2,2)	-2.05%	-3.52
CAR(-5,5)	-4.57%	-7.84
CAR(-5,1)	-4.50%	-7.71
CAR(-10,10)	-6.65%	-11.40
CAR(-10,1)	-6.24%	-10.69
CAR(-20,20)	-8.09%	-13.87
CAR(-20,1)	-7.25%	-12.42



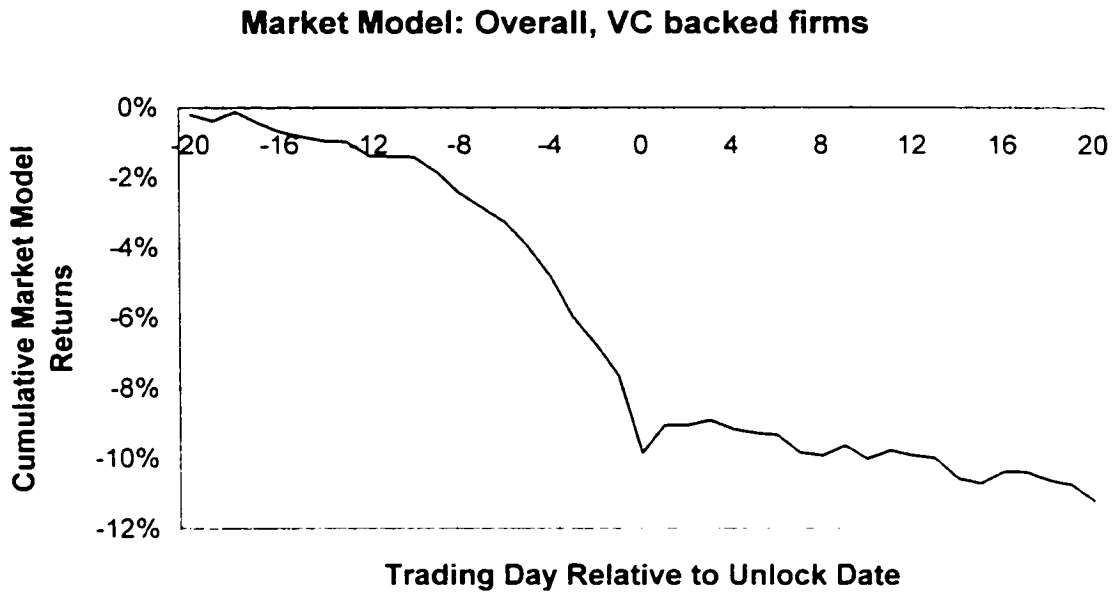
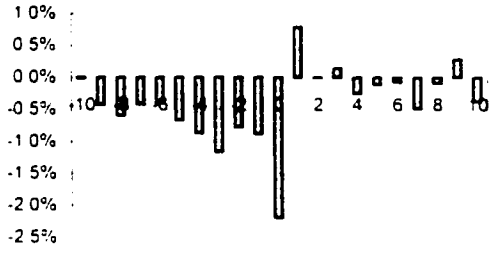


Figure 2 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 546 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.016%	-0.03	-1.416%
-9	-0.430%	-0.94	-1.846%
-8	-0.599%	-1.30	-2.445%
-7	-0.425%	-0.92	-2.870%
-6	-0.403%	-0.88	-3.273%
-5	-0.674%	-1.47	-3.948%
-4	-0.872%	-1.90	-4.820%
-3	-1.164%	-2.53	-5.984%
-2	-0.779%	-1.69	-6.763%
-1	-0.881%	-1.92	-7.644%
0	-2.197%	-4.78	-9.841%
1	0.787%	1.71	-9.054%
2	-0.004%	-0.01	-9.058%
3	0.141%	0.31	-8.916%
4	-0.250%	-0.54	-9.167%
5	-0.108%	-0.23	-9.275%
6	-0.069%	-0.15	-9.344%
7	-0.485%	-1.05	-9.829%
8	-0.083%	-0.18	-9.912%
9	0.279%	0.61	-9.632%
10	-0.374%	-0.81	-10.006%

	CAR	T-STAT
CAR(0,1)	-1.4103%	-2.17
CAR(-1,0)	-3.0780%	-4.73
CAR(-1,1)	-2.29%	-3.52
CAR(-2,2)	-3.07%	-4.73
CAR(-5,5)	-6.00%	-9.23
CAR(-5,1)	-5.78%	-8.89
CAR(-10,10)	-8.61%	-13.23
CAR(-10,1)	-7.65%	-11.77
CAR(-20,20)	-11.21%	-17.24
CAR(-20,1)	-9.05%	-13.92



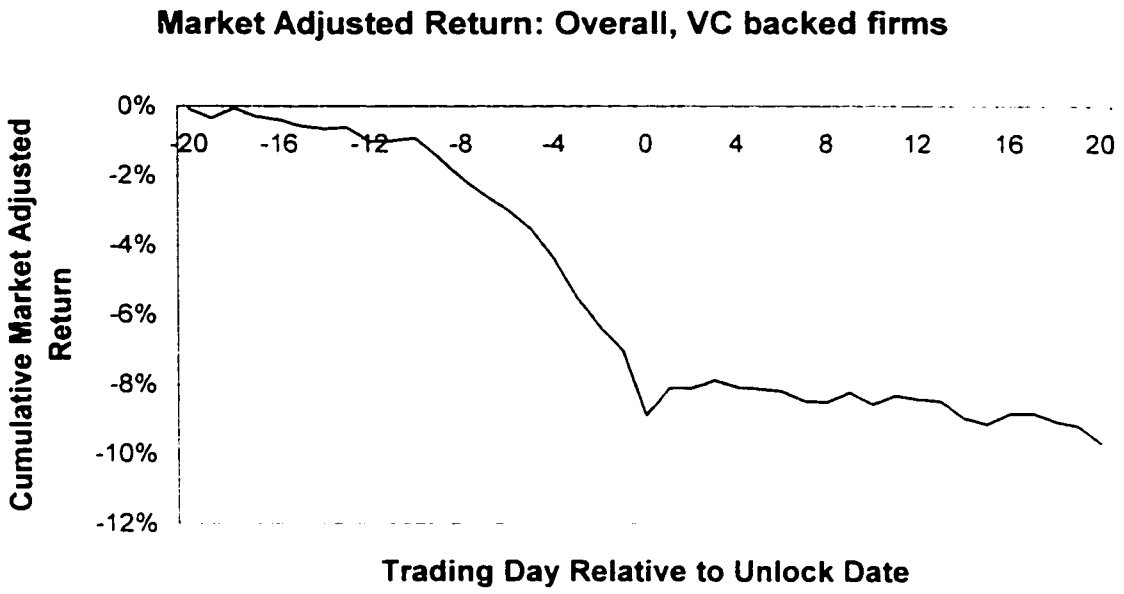
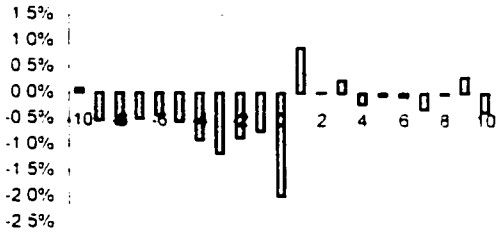


Figure 2 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 546 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.074%	0.16	-0.917%
-9	-0.536%	-1.19	-1.448%
-8	-0.614%	-1.36	-2.054%
-7	-0.501%	-1.11	-2.545%
-6	-0.436%	-0.97	-2.969%
-5	-0.558%	-1.24	-3.511%
-4	-0.914%	-2.03	-4.393%
-3	-1.171%	-2.60	-5.513%
-2	-0.869%	-1.93	-6.334%
-1	-0.744%	-1.65	-7.031%
0	-1.988%	-4.41	-8.879%
1	0.860%	1.91	-8.095%
2	0.008%	0.02	-8.088%
3	0.245%	0.54	-7.862%
4	-0.215%	-0.48	-8.061%
5	-0.054%	-0.12	-8.111%
6	-0.069%	-0.15	-8.174%
7	-0.309%	-0.69	-8.458%
8	-0.027%	-0.06	-8.482%
9	0.301%	0.67	-8.206%
10	-0.373%	-0.83	-8.549%

	CAR	T-STAT
CAR(0,1)	-1 1449%	-1 79
CAR(-1,0)	-2.7321%	-4 28
CAR(-1,1)	-1 88%	-2 95
CAR(-2,2)	-2.73%	-4 27
CAR(-5,5)	-5 30%	-8 31
CAR(-5,1)	-5 28%	-8 28
CAR(-10,10)	-7 63%	-11 97
CAR(-10,1)	-7 18%	-11 25
CAR(-20,20)	-9.67%	-15.16
CAR(-20,1)	-8.10%	-12 69



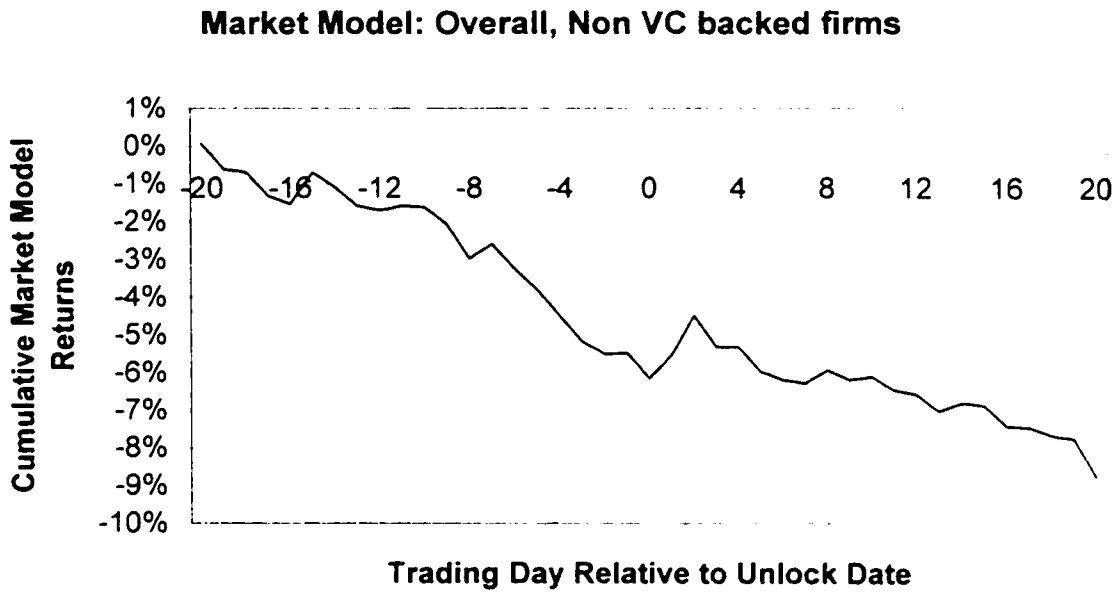
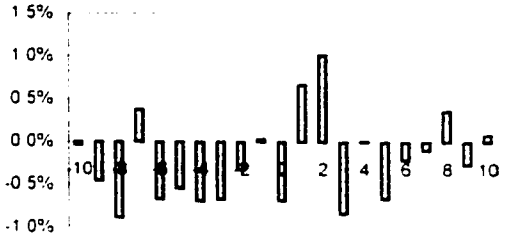


Figure 3 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 147 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.038%	-0.05	-1.619%
-9	-0.460%	-0.64	-2.078%
-8	-0.886%	-1.23	-2.965%
-7	0.378%	0.53	-2.586%
-6	-0.670%	-0.93	-3.257%
-5	-0.550%	-0.77	-3.806%
-4	-0.692%	-0.96	-4.499%
-3	-0.675%	-0.94	-5.174%
-2	-0.329%	-0.46	-5.502%
-1	0.032%	0.05	-5.470%
0	-0.687%	-0.96	-6.157%
1	0.669%	0.93	-5.487%
2	1.016%	1.42	-4.472%
3	-0.837%	-1.17	-5.309%
4	0.009%	0.01	-5.300%
5	-0.662%	-0.92	-5.962%
6	-0.214%	-0.30	-6.176%
7	-0.097%	-0.14	-6.273%
8	0.361%	0.50	-5.912%
9	-0.265%	-0.37	-6.177%
10	0.082%	0.11	-6.095%

	CAR	T-STAT
CAR(0,1)	-0.0176%	-0.02
CAR(-1,0)	-0.6546%	-0.64
CAR(-1,1)	0.01%	0.01
CAR(-2,2)	0.70%	0.69
CAR(-5,5)	-2.71%	-2.67
CAR(-5,1)	-2.23%	-2.20
CAR(-10,10)	-4.51%	-4.45
CAR(-10,1)	-3.91%	-3.85
CAR(-20,20)	-8.76%	-8.63
CAR(-20,1)	-5.49%	-5.41



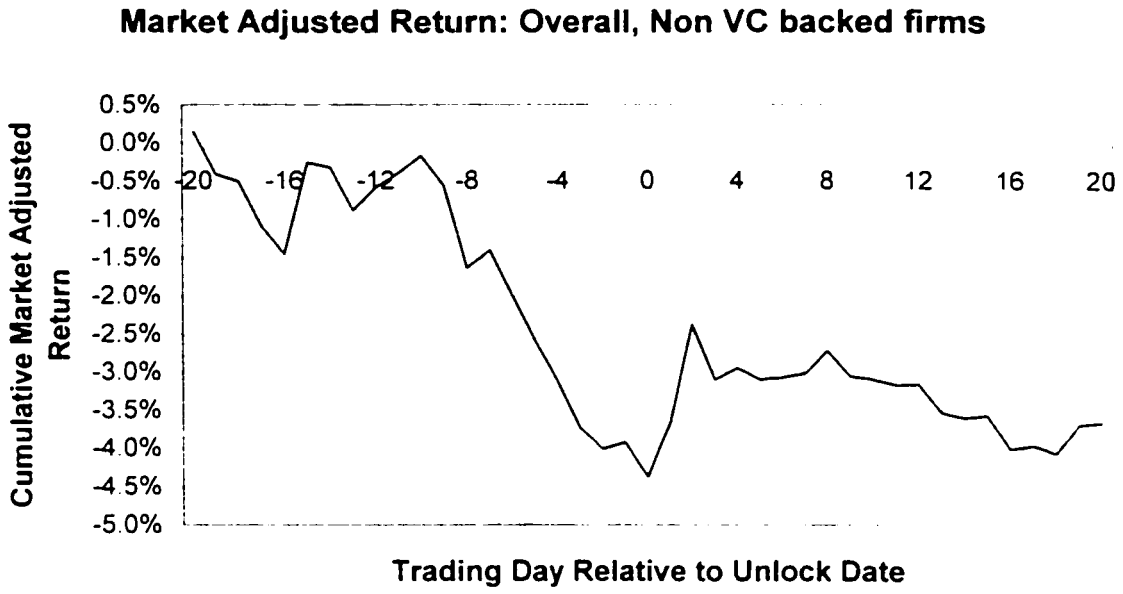
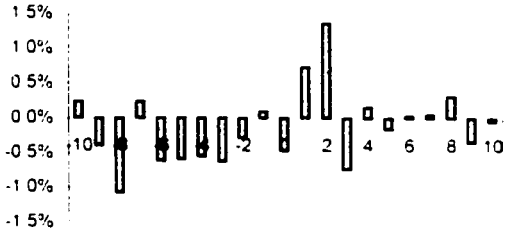


Figure 3 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 147 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.234%	0.32	-0.164%
-9	-0.397%	-0.54	-0.560%
-8	-1.077%	-1.48	-1.631%
-7	0.235%	0.32	-1.399%
-6	-0.618%	-0.85	-2.009%
-5	-0.595%	-0.82	-2.592%
-4	-0.552%	-0.76	-3.129%
-3	-0.623%	-0.86	-3.733%
-2	-0.289%	-0.40	-4.012%
-1	0.090%	0.12	-3.925%
0	-0.469%	-0.64	-4.375%
1	0.726%	1.00	-3.681%
2	1.351%	1.86	-2.380%
3	-0.736%	-1.01	-3.099%
4	0.158%	0.22	-2.945%
5	-0.158%	-0.22	-3.098%
6	0.031%	0.04	-3.069%
7	0.049%	0.07	-3.021%
8	0.312%	0.43	-2.719%
9	-0.344%	-0.47	-3.053%
10	-0.045%	-0.06	-3.097%

	CAR	T-STAT
CAR(0,1)	0.2536%	0.25
CAR(-1,0)	-0.3783%	-0.37
CAR(-1,1)	0.34%	0.33
CAR(-2,2)	1.41%	1.37
CAR(-5,5)	-1.11%	-1.08
CAR(-5,1)	-1.71%	-1.66
CAR(-10,10)	-2.71%	-2.63
CAR(-10,1)	-3.30%	-3.20
CAR(-20,20)	-3.66%	-3.56
CAR(-20,1)	-3.68%	-3.58



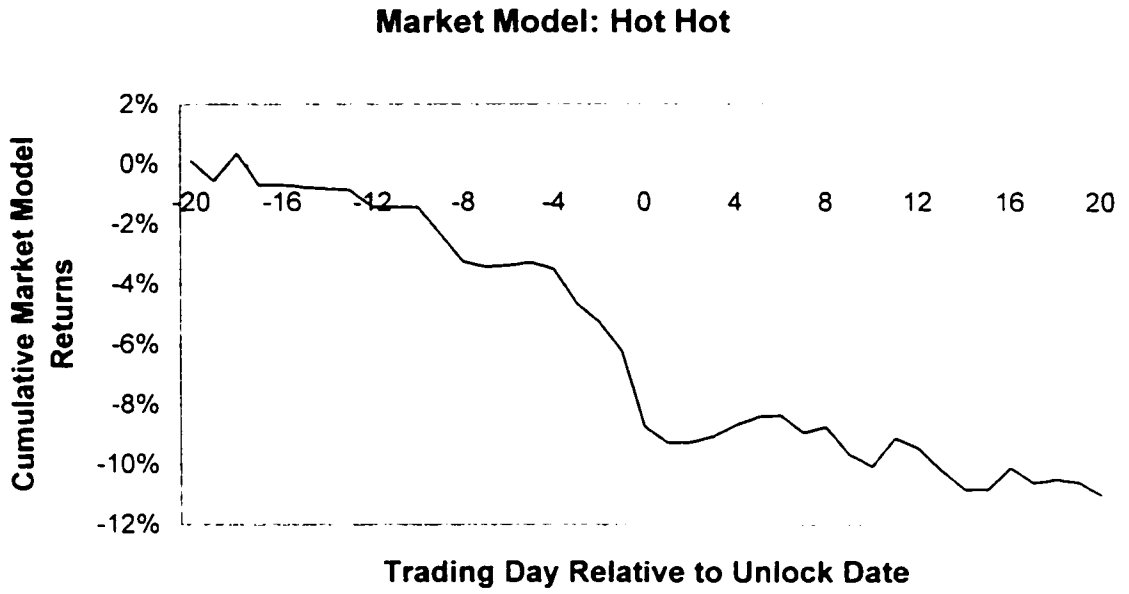
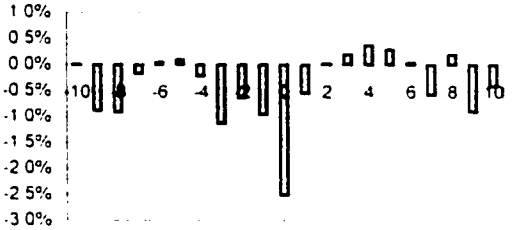


Figure 4 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 190 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.014%	-0.02	-1.435%
-9	-0.889%	-1.29	-2.325%
-8	-0.921%	-1.33	-3.246%
-7	-0.170%	-0.25	-3.415%
-6	0.052%	0.08	-3.363%
-5	0.096%	0.14	-3.267%
-4	-0.216%	-0.31	-3.483%
-3	-1.134%	-1.64	-4.618%
-2	-0.640%	-0.93	-5.258%
-1	-0.954%	-1.38	-6.212%
0	-2.514%	-3.64	-8.726%
1	-0.550%	-0.80	-9.276%
2	0.017%	0.02	-9.259%
3	0.196%	0.28	-9.062%
4	0.371%	0.54	-8.691%
5	0.288%	0.42	-8.403%
6	0.039%	0.06	-8.364%
7	-0.575%	-0.83	-8.939%
8	0.189%	0.27	-8.750%
9	-0.902%	-1.31	-9.652%
10	-0.412%	-0.60	-10.064%

	CAR	T-STAT
CAR(0,1)	-3.0637%	-3.14
CAR(-1,0)	-3.4679%	-3.55
CAR(-1,1)	-4.02%	-4.12
CAR(-2,2)	-4.64%	-4.76
CAR(-5,5)	-5.04%	-5.16
CAR(-5,1)	-5.91%	-6.06
CAR(-10,10)	-8.64%	-8.86
CAR(-10,1)	-7.85%	-8.05
CAR(-20,20)	-11.01%	-11.28
CAR(-20,1)	-9.28%	-9.50



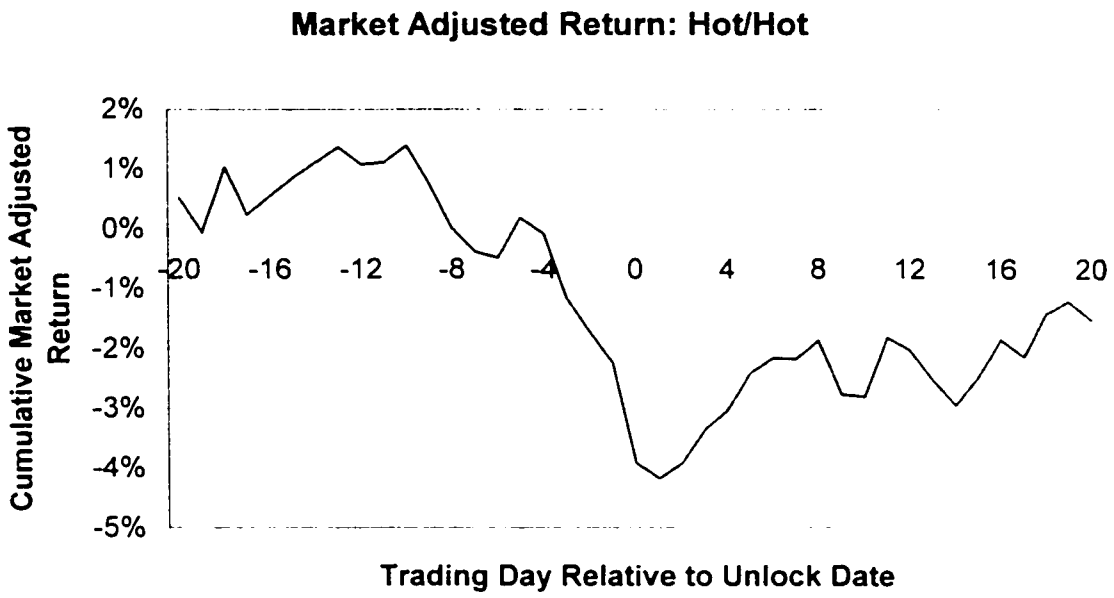
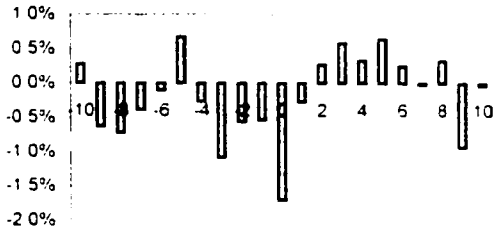


Figure 4 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 190 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.278%	0.41	1.389%
-9	-0.632%	-0.93	0.748%
-8	-0.729%	-1.07	0.014%
-7	-0.390%	-0.57	-0.376%
-6	-0.105%	-0.15	-0.481%
-5	0.674%	0.99	0.190%
-4	-0.269%	-0.40	-0.080%
-3	-1.085%	-1.60	-1.164%
-2	-0.558%	-0.82	-1.716%
-1	-0.536%	-0.79	-2.243%
0	-1.705%	-2.51	-3.909%
1	-0.273%	-0.40	-4.171%
2	0.273%	0.40	-3.910%
3	0.582%	0.86	-3.351%
4	0.332%	0.49	-3.030%
5	0.643%	0.95	-2.406%
6	0.253%	0.37	-2.160%
7	-0.022%	-0.03	-2.181%
8	0.327%	0.48	-1.861%
9	-0.928%	-1.36	-2.772%
10	-0.036%	-0.05	-2.806%

	CAR	T-STAT
CAR(0,1)	-1.9729%	-2.05
CAR(-1,0)	-2.2407%	-2.33
CAR(-1,1)	-2.50%	-2.60
CAR(-2,2)	-2.78%	-2.89
CAR(-5,5)	-1.93%	-2.01
CAR(-5,1)	-3.71%	-3.86
CAR(-10,10)	-3.87%	-4.03
CAR(-10,1)	-5.22%	-5.43
CAR(-20,20)	-1.52%	-1.58
CAR(-20,1)	-4.17%	-4.34



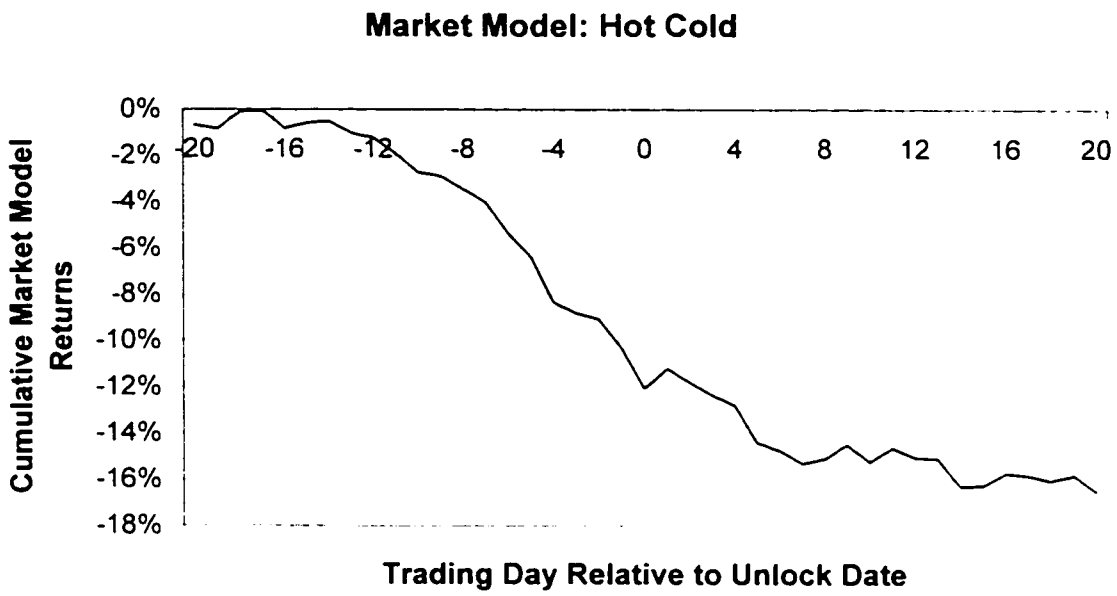
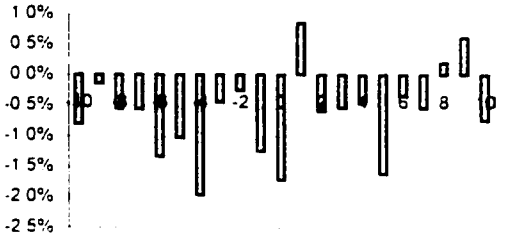


Figure 5 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 236 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.813%	-1.36	-2.720%
-9	-0.150%	-0.25	-2.870%
-8	-0.564%	-0.94	-3.434%
-7	-0.569%	-0.95	-4.003%
-6	-1.346%	-2.24	-5.349%
-5	-1.038%	-1.73	-6.387%
-4	-1.969%	-3.28	-8.356%
-3	-0.453%	-0.76	-8.809%
-2	-0.258%	-0.43	-9.067%
-1	-1.249%	-2.08	-10.316%
0	-1.724%	-2.88	-12.041%
1	0.850%	1.42	-11.191%
2	-0.596%	-0.99	-11.787%
3	-0.541%	-0.90	-12.327%
4	-0.441%	-0.74	-12.768%
5	-1.624%	-2.71	-14.392%
6	-0.350%	-0.58	-14.743%
7	-0.546%	-0.91	-15.289%
8	0.201%	0.34	-15.087%
9	0.610%	1.02	-14.477%
10	-0.745%	-1.24	-15.222%

	CAR	T-STAT
CAR(0,1)	-0.8743%	-1.03
CAR(-1,0)	-2.9735%	-3.51
CAR(-1,1)	-2.12%	-2.50
CAR(-2,2)	-2.98%	-3.51
CAR(-5,5)	-9.04%	-10.66
CAR(-5,1)	-5.84%	-6.89
CAR(-10,10)	-13.32%	-15.70
CAR(-10,1)	-9.28%	-10.95
CAR(-20,20)	-16.48%	-19.43
CAR(-20,1)	-11.19%	-13.19



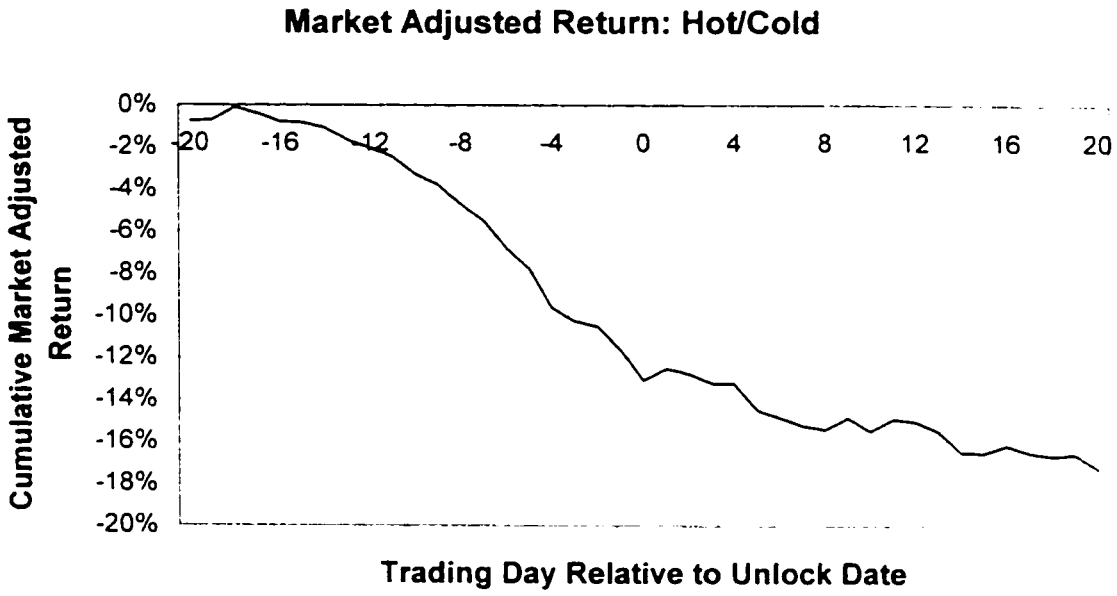


Figure 5 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 236 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.843%	-1.40	-3.280%
-9	-0.527%	-0.88	-3.790%
-8	-0.970%	-1.62	-4.723%
-7	-0.822%	-1.37	-5.506%
-6	-1.377%	-2.30	-6.807%
-5	-1.030%	-1.72	-7.767%
-4	-2.014%	-3.36	-9.625%
-3	-0.694%	-1.16	-10.253%
-2	-0.287%	-0.48	-10.511%
-1	-1.253%	-2.09	-11.632%
0	-1.609%	-2.68	-13.054%
1	0.628%	1.05	-12.508%
2	-0.279%	-0.46	-12.752%
3	-0.508%	-0.85	-13.195%
4	-0.039%	-0.06	-13.228%
5	-1.454%	-2.42	-14.490%
6	-0.444%	-0.74	-14.869%
7	-0.430%	-0.72	-15.235%
8	-0.209%	-0.35	-15.412%
9	0.653%	1.09	-14.860%
10	-0.751%	-1.25	-15.499%

	CAR	T-STAT
CAR(0,1)	-0.9905%	-1.17
CAR(-1,0)	-2.8622%	-3.37
CAR(-1,1)	-2.23%	-2.63
CAR(-2,2)	-2.78%	-3.28
CAR(-5,5)	-8.24%	-9.72
CAR(-5,1)	-6.12%	-7.21
CAR(-10,10)	-13.37%	-15.76
CAR(-10,1)	-10.30%	-12.14
CAR(-20,20)	-17.25%	-20.33
CAR(-20,1)	-12.51%	-14.74

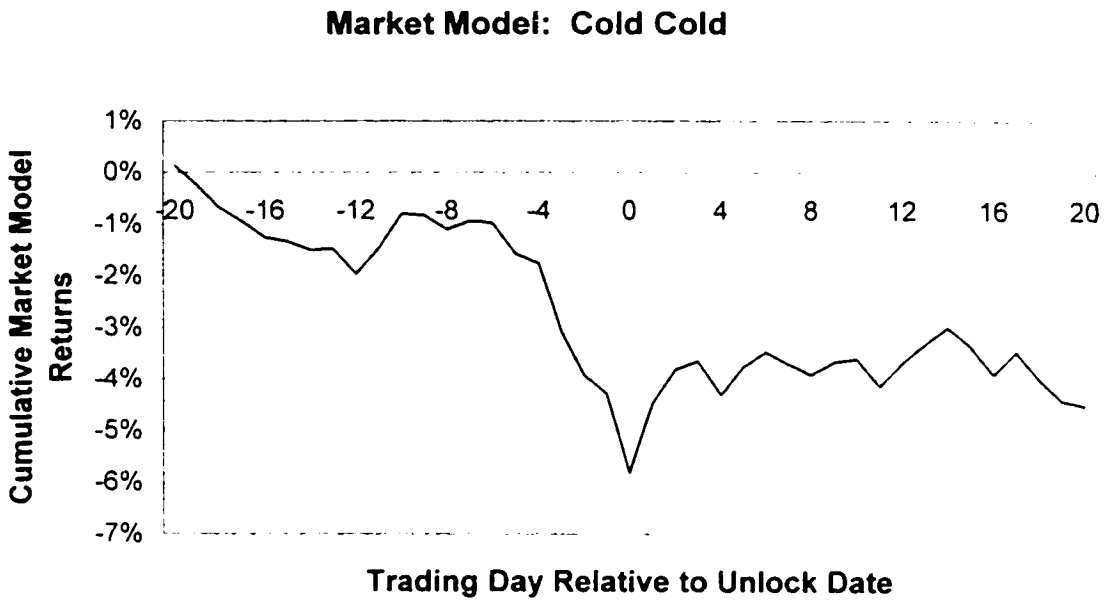
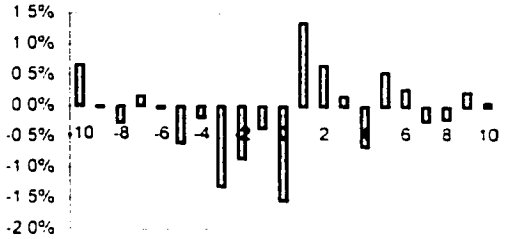


Figure 6 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 289 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.663%	1.28	-0.796%
-9	-0.023%	-0.05	-0.819%
-8	-0.276%	-0.54	-1.096%
-7	0.165%	0.32	-0.931%
-6	-0.038%	-0.07	-0.968%
-5	-0.600%	-1.16	-1.568%
-4	-0.187%	-0.36	-1.755%
-3	-1.312%	-2.54	-3.066%
-2	-0.856%	-1.66	-3.922%
-1	-0.359%	-0.70	-4.281%
0	-1.532%	-2.97	-5.813%
1	1.350%	2.62	-4.462%
2	0.659%	1.28	-3.804%
3	0.162%	0.31	-3.642%
4	-0.655%	-1.27	-4.297%
5	0.546%	1.06	-3.751%
6	0.284%	0.55	-3.467%
7	-0.233%	-0.45	-3.700%
8	-0.202%	-0.39	-3.902%
9	0.239%	0.46	-3.663%
10	0.066%	0.13	-3.597%

	CAR	T-STAT
CAR(0,1)	-0.1818%	-0.25
CAR(-1,0)	-1.8911%	-2.59
CAR(-1,1)	-0.54%	-0.74
CAR(-2,2)	-0.74%	-1.01
CAR(-5,5)	-2.78%	-3.81
CAR(-5,1)	-3.49%	-4.79
CAR(-10,10)	-2.14%	-2.93
CAR(-10,1)	-3.00%	-4.11
CAR(-20,20)	-4.50%	-6.16
CAR(-20,1)	-4.46%	-6.11



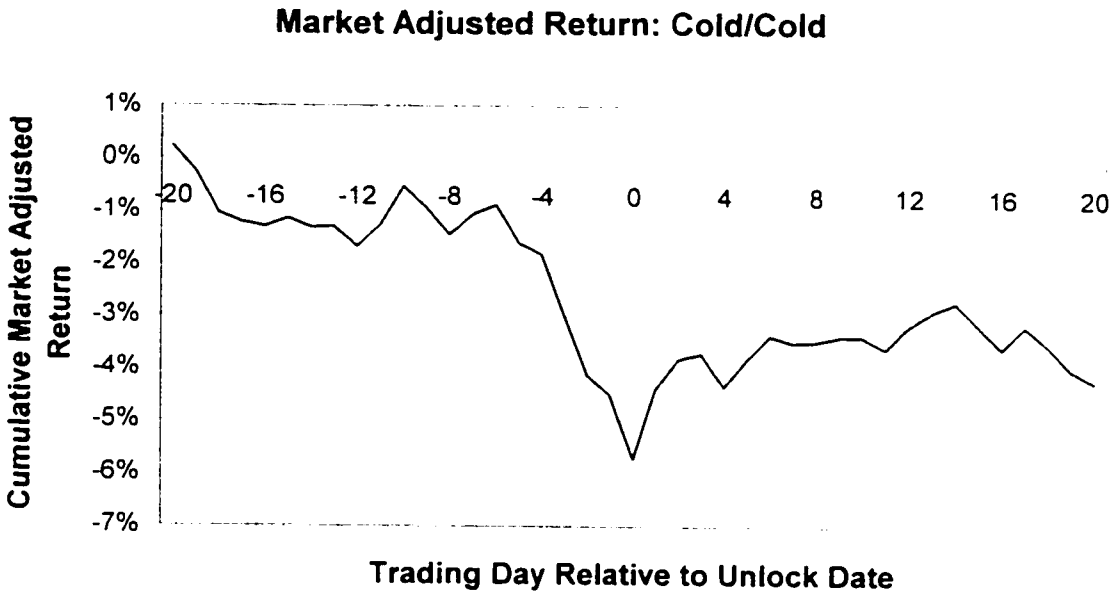
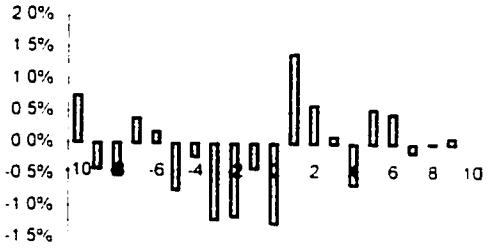


Figure 6 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 289 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.739%	1.48	-0.522%
-9	-0.412%	-0.83	-0.932%
-8	-0.514%	-1.03	-1.441%
-7	0.393%	0.79	-1.054%
-6	0.181%	0.36	-0.874%
-5	-0.738%	-1.48	-1.606%
-4	-0.214%	-0.43	-1.817%
-3	-1.204%	-2.41	-2.998%
-2	-1.156%	-2.31	-4.119%
-1	-0.403%	-0.81	-4.506%
0	-1.265%	-2.53	-5.714%
1	1.405%	2.81	-4.389%
2	0.600%	1.20	-3.816%
3	0.116%	0.23	-3.705%
4	-0.651%	-1.30	-4.332%
5	0.546%	1.09	-3.809%
6	0.468%	0.94	-3.359%
7	-0.133%	-0.27	-3.488%
8	0.017%	0.03	-3.472%
9	0.102%	0.20	-3.373%
10	0.001%	0.00	-3.372%

	CAR	T-STAT
CAR(0,1)	0.1221%	0.17
CAR(-1,0)	-1.6681%	-2.36
CAR(-1,1)	-0.28%	-0.40
CAR(-2,2)	-0.84%	-1.19
CAR(-5,5)	-2.96%	-4.19
CAR(-5,1)	-3.55%	-5.02
CAR(-10,10)	-2.15%	-3.04
CAR(-10,1)	-3.18%	-4.50
CAR(-20,20)	-4.21%	-5.96
CAR(-20,1)	-4.39%	-6.22



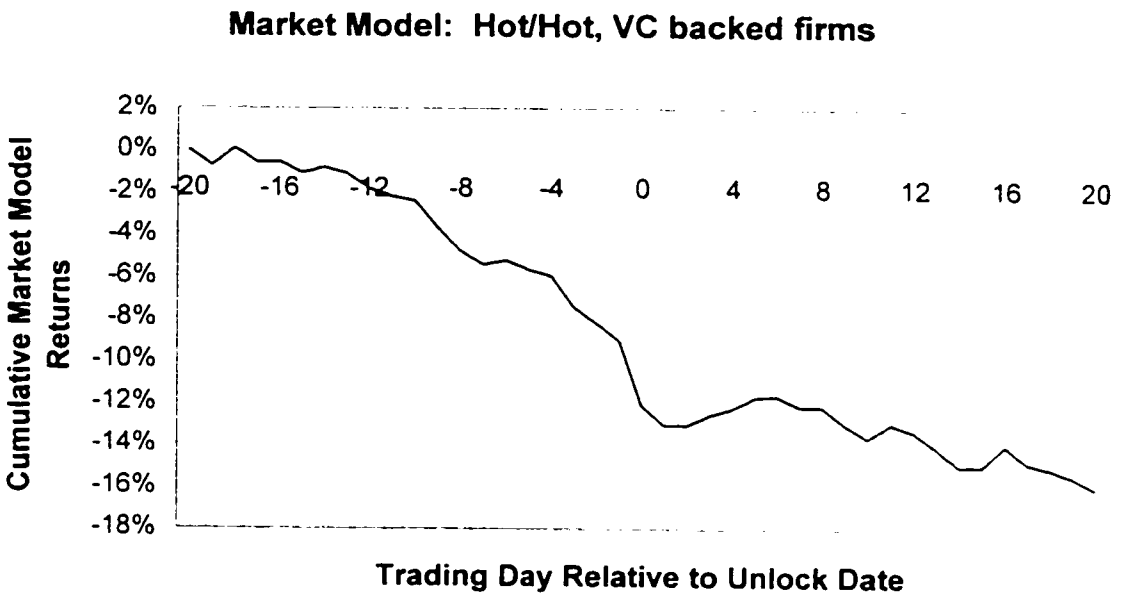
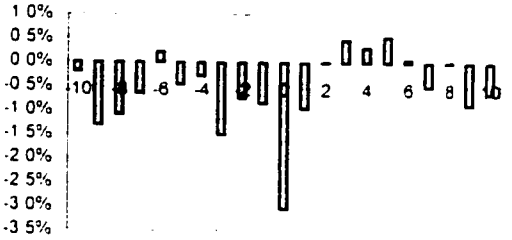


Figure 7 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 139 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.196%	-0.25	-2.393%
-9	-1.303%	-1.69	-3.696%
-8	-1.085%	-1.41	-4.781%
-7	-0.650%	-0.84	-5.430%
-6	0.222%	0.29	-5.208%
-5	-0.453%	-0.59	-5.662%
-4	-0.281%	-0.37	-5.943%
-3	-1.507%	-1.96	-7.450%
-2	-0.743%	-0.97	-8.194%
-1	-0.849%	-1.10	-9.042%
0	-3.047%	-3.96	-12.089%
1	-0.948%	-1.23	-13.037%
2	0.007%	0.01	-13.031%
3	0.480%	0.62	-12.551%
4	0.316%	0.41	-12.235%
5	0.536%	0.70	-11.699%
6	0.060%	0.08	-11.639%
7	-0.497%	-0.65	-12.136%
8	0.018%	0.02	-12.118%
9	-0.867%	-1.13	-12.985%
10	-0.635%	-0.82	-13.620%

	CAR	T-STAT
CAR(0,1)	-3.9951%	-3.67
CAR(-1,0)	-3.8956%	-3.58
CAR(-1,1)	-4.84%	-4.45
CAR(-2,2)	-5.58%	-5.12
CAR(-5,5)	-6.49%	-5.96
CAR(-5,1)	-7.83%	-7.19
CAR(-10,10)	-11.42%	-10.49
CAR(-10,1)	-10.84%	-9.95
CAR(-20,20)	-15.93%	-14.63
CAR(-20,1)	-13.04%	-11.97



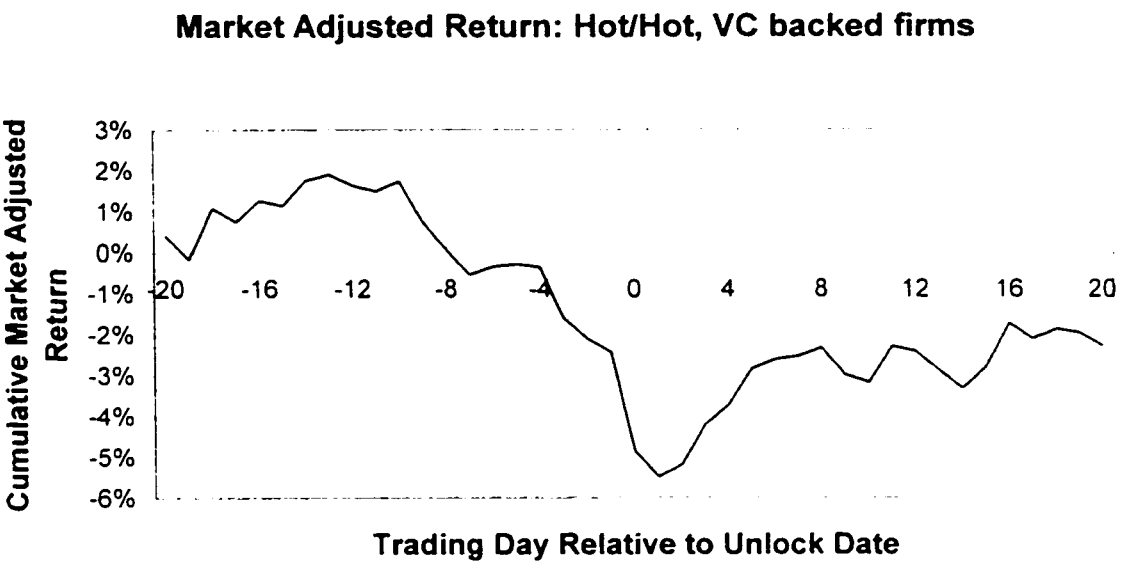
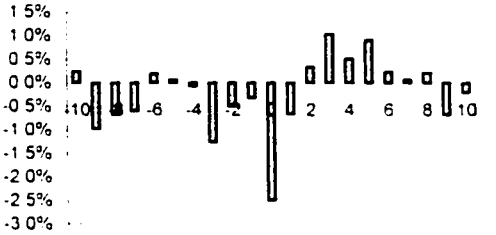


Figure 7 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 139 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.242%	0.32	1.743%
-9	-0.970%	-1.28	0.757%
-8	-0.675%	-0.89	0.076%
-7	-0.602%	-0.80	-0.526%
-6	0.190%	0.25	-0.337%
-5	0.063%	0.08	-0.275%
-4	-0.075%	-0.10	-0.350%
-3	-1.261%	-1.67	-1.607%
-2	-0.506%	-0.67	-2.104%
-1	-0.325%	-0.43	-2.423%
0	-2.493%	-3.29	-4.856%
1	-0.660%	-0.87	-5.483%
2	0.337%	0.44	-5.165%
3	1.029%	1.36	-4.189%
4	0.509%	0.67	-3.701%
5	0.912%	1.20	-2.823%
6	0.230%	0.30	-2.599%
7	0.073%	0.10	-2.528%
8	0.213%	0.28	-2.320%
9	-0.673%	-0.89	-2.978%
10	-0.196%	-0.26	-3.168%

	CAR	T-STAT
CAR(0,1)	-3.1364%	-2.93
CAR(-1,0)	-2.8185%	-2.63
CAR(-1,1)	-3.45%	-3.22
CAR(-2,2)	-3.62%	-3.38
CAR(-5,5)	-2.49%	-2.33
CAR(-5,1)	-5.16%	-4.82
CAR(-10,10)	-4.60%	-4.29
CAR(-10,1)	-6.88%	-6.42
CAR(-20,20)	-2.27%	-2.12
CAR(-20,1)	-5.48%	-5.12



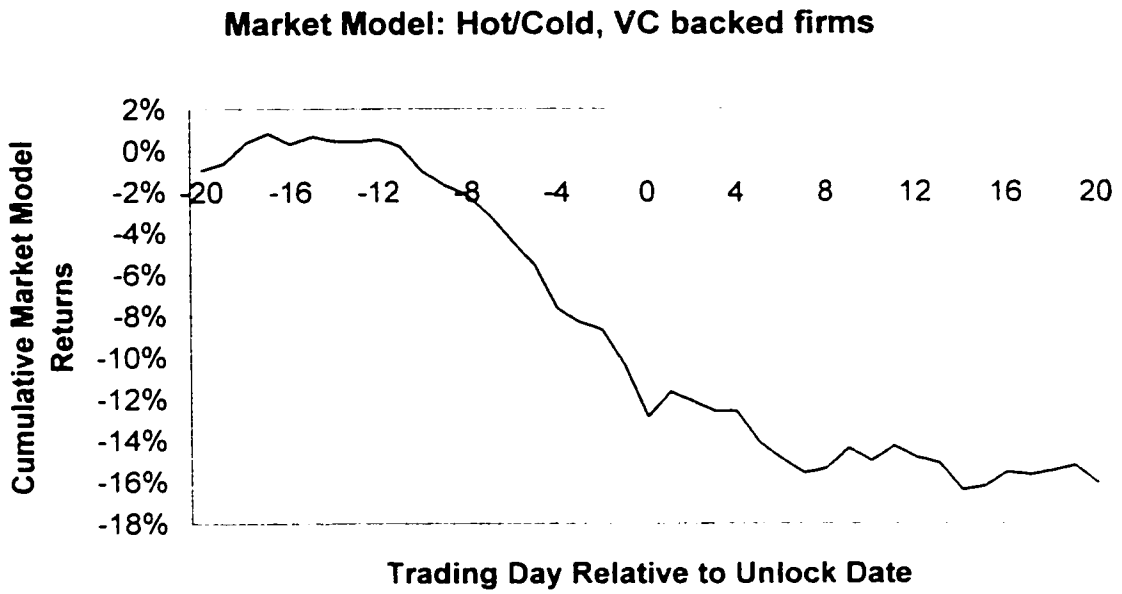
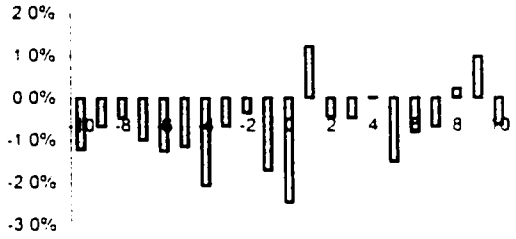


Figure 8 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 180 U S IPOs

Day	AR	Test Stat	CAR
-10	-1.213%	-1.96	-1.013%
-9	-0.672%	-1.08	-1.685%
-8	-0.477%	-0.77	-2.162%
-7	-0.987%	-1.59	-3.149%
-6	-1.252%	-2.02	-4.401%
-5	-1.152%	-1.86	-5.553%
-4	-2.074%	-3.34	-7.626%
-3	-0.675%	-1.09	-8.302%
-2	-0.360%	-0.58	-8.662%
-1	-1.723%	-2.78	-10.385%
0	-2.468%	-3.98	-12.853%
1	1.207%	1.95	-11.646%
2	-0.455%	-0.73	-12.101%
3	-0.482%	-0.78	-12.583%
4	0.009%	0.01	-12.574%
5	-1.507%	-2.43	-14.081%
6	-0.805%	-1.30	-14.886%
7	-0.680%	-1.10	-15.566%
8	0.226%	0.36	-15.340%
9	0.977%	1.58	-14.363%
10	-0.635%	-1.02	-14.998%

	CAR	T-STAT
CAR(0,1)	-1.2610%	-1.44
CAR(-1,0)	-4.1907%	-4.78
CAR(-1,1)	-2.98%	-3.40
CAR(-2,2)	-3.80%	-4.33
CAR(-5,5)	-9.68%	-11.04
CAR(-5,1)	-7.24%	-8.26
CAR(-10,10)	-15.20%	-17.33
CAR(-10,1)	-11.85%	-13.51
CAR(-20,20)	-16.07%	-18.33
CAR(-20,1)	-11.65%	-13.28



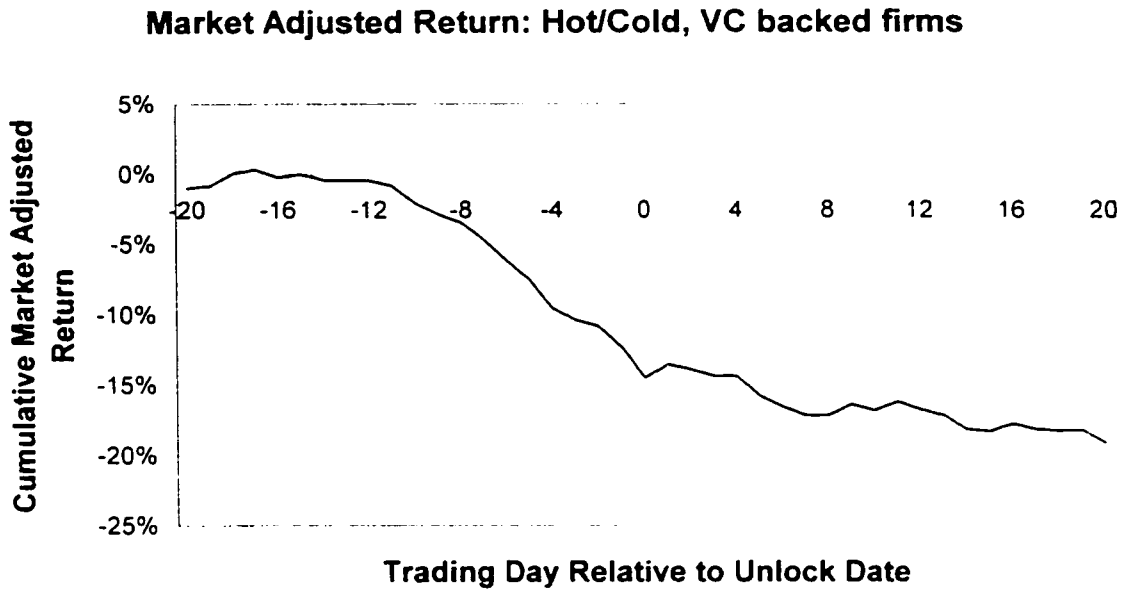
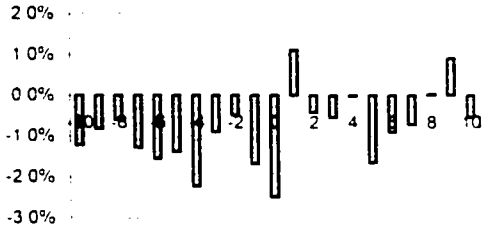


Figure 8 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 180 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-1.229%	-1.97	-2.057%
-9	-0.825%	-1.32	-2.864%
-8	-0.607%	-0.97	-3.454%
-7	-1.286%	-2.06	-4.696%
-6	-1.555%	-2.49	-6.177%
-5	-1.393%	-2.23	-7.484%
-4	-2.236%	-3.58	-9.553%
-3	-0.906%	-1.45	-10.372%
-2	-0.503%	-0.81	-10.823%
-1	-1.678%	-2.69	-12.319%
0	-2.488%	-3.99	-14.501%
1	1.120%	1.80	-13.543%
2	-0.422%	-0.68	-13.908%
3	-0.546%	-0.88	-14.378%
4	-0.020%	-0.03	-14.396%
5	-1.647%	-2.64	-15.806%
6	-0.908%	-1.46	-16.570%
7	-0.720%	-1.15	-17.172%
8	0.029%	0.05	-17.148%
9	0.906%	1.45	-16.397%
10	-0.536%	-0.86	-16.845%

	CAR	T-STAT
CAR(0,1)	-1.3960%	-1.58
CAR(-1,0)	-4.1668%	-4.72
CAR(-1,1)	-3.05%	-3.46
CAR(-2,2)	-3.95%	-4.47
CAR(-5,5)	-10.26%	-11.63
CAR(-5,1)	-7.85%	-8.90
CAR(-10,10)	-16.14%	-18.30
CAR(-10,1)	-12.81%	-14.52
CAR(-20,20)	-19.11%	-21.66
CAR(-20,1)	-13.54%	-15.35



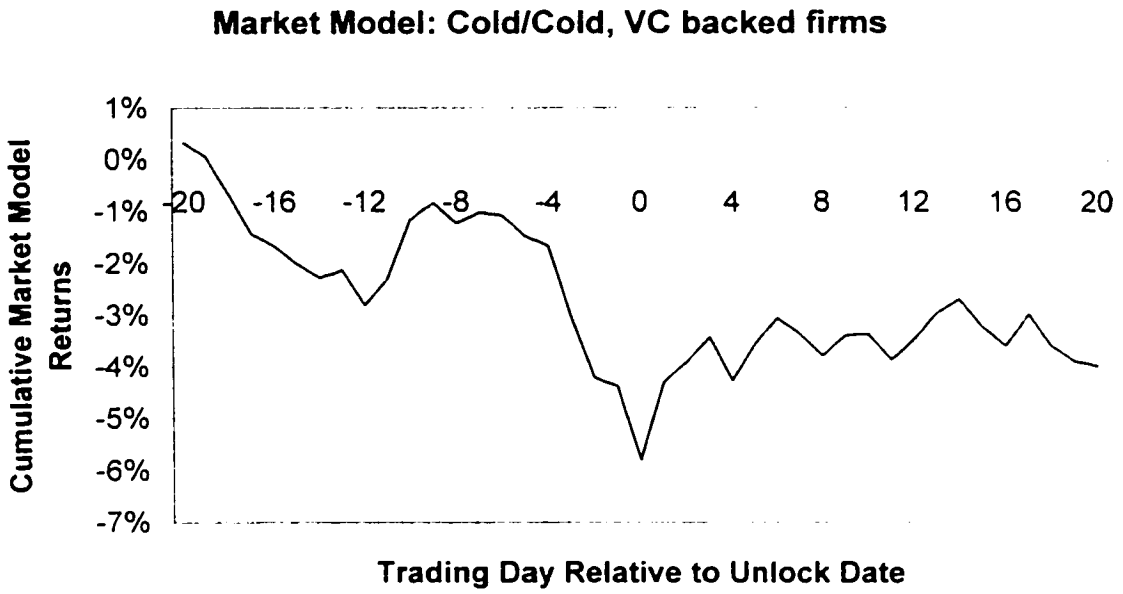
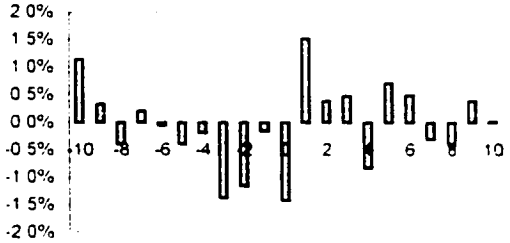


Figure 9 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 227 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	1.141%	1.92	-1.155%
-9	0.329%	0.55	-0.826%
-8	-0.400%	-0.67	-1.226%
-7	0.205%	0.35	-1.020%
-6	-0.055%	-0.09	-1.076%
-5	-0.397%	-0.67	-1.472%
-4	-0.193%	-0.32	-1.665%
-3	-1.376%	-2.31	-3.042%
-2	-1.166%	-1.96	-4.207%
-1	-0.167%	-0.28	-4.374%
0	-1.424%	-2.39	-5.798%
1	1.511%	2.54	-4.287%
2	0.385%	0.65	-3.902%
3	0.475%	0.80	-3.427%
4	-0.834%	-1.40	-4.261%
5	0.713%	1.20	-3.548%
6	0.494%	0.83	-3.054%
7	-0.306%	-0.51	-3.360%
8	-0.417%	-0.70	-3.777%
9	0.390%	0.66	-3.387%
10	0.022%	0.04	-3.365%

	CAR	T-STAT
CAR(0,1)	0.0876%	0.10
CAR(-1,0)	-1.5905%	-1.89
CAR(-1,1)	-0.08%	-0.09
CAR(-2,2)	-0.86%	-1.02
CAR(-5,5)	-2.47%	-2.94
CAR(-5,1)	-3.21%	-3.81
CAR(-10,10)	-1.07%	-1.27
CAR(-10,1)	-1.99%	-2.36
CAR(-20,20)	-3.97%	-4.72
CAR(-20,1)	-4.29%	-5.09



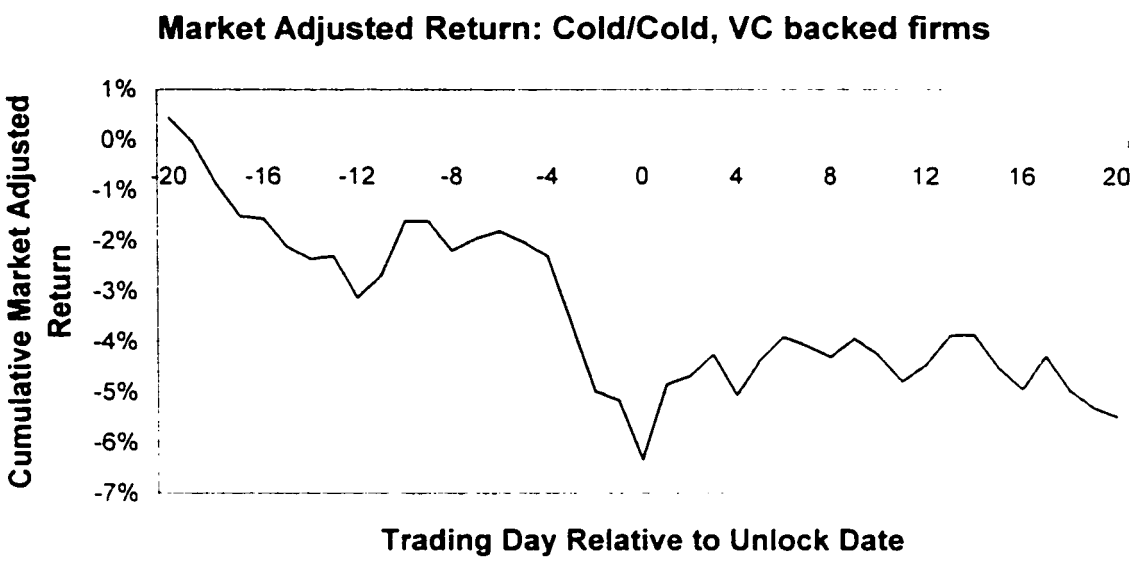
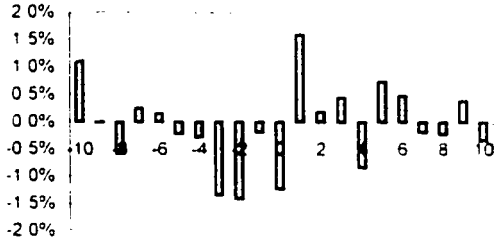


Figure 9 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 227 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	1.105%	1.90	-1.603%
-9	-0.012%	-0.02	-1.615%
-8	-0.583%	-1.00	-2.188%
-7	0.247%	0.42	-1.947%
-6	0.148%	0.25	-1.801%
-5	-0.220%	-0.38	-2.017%
-4	-0.286%	-0.49	-2.298%
-3	-1.346%	-2.31	-3.613%
-2	-1.416%	-2.43	-4.978%
-1	-0.191%	-0.33	-5.160%
0	-1.231%	-2.12	-6.327%
1	1.590%	2.73	-4.838%
2	0.178%	0.31	-4.669%
3	0.445%	0.76	-4.244%
4	-0.843%	-1.45	-5.051%
5	0.733%	1.26	-4.355%
6	0.479%	0.82	-3.897%
7	-0.190%	-0.33	-4.079%
8	-0.227%	-0.39	-4.297%
9	0.385%	0.66	-3.928%
10	-0.341%	-0.59	-4.255%

	CAR	T-STAT
CAR(0,1)	0.3393%	0.41
CAR(-1,0)	-1.4223%	-1.73
CAR(-1,1)	0.15%	0.18
CAR(-2,2)	-1.10%	-1.33
CAR(-5,5)	-2.60%	-3.16
CAR(-5,1)	-3.09%	-3.76
CAR(-10,10)	-1.62%	-1.97
CAR(-10,1)	-2.22%	-2.70
CAR(-20,20)	-5.48%	-6.66
CAR(-20,1)	-4.84%	-5.88



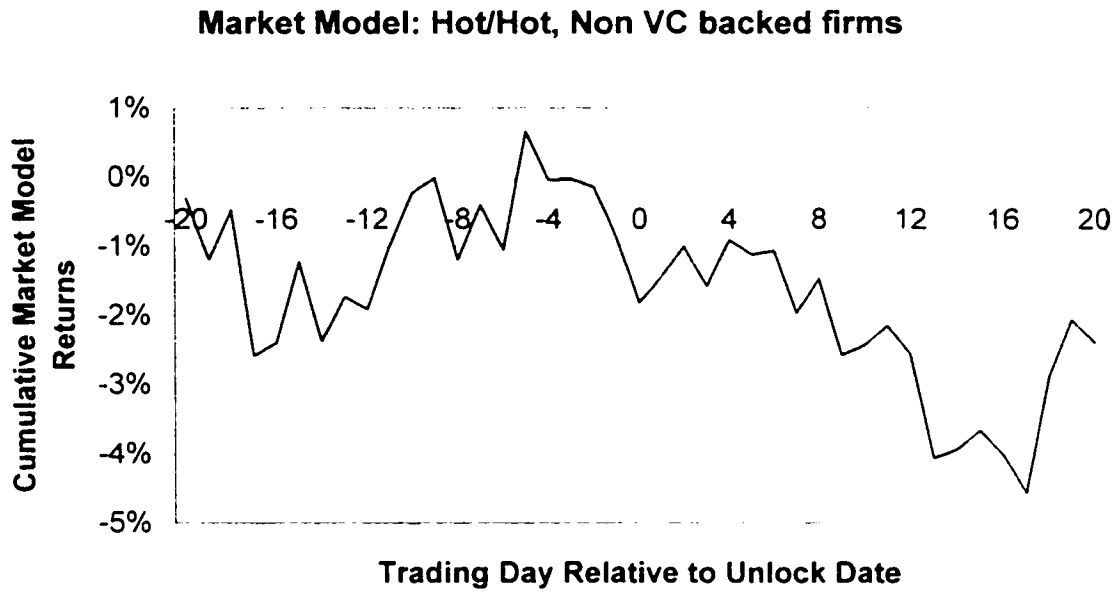
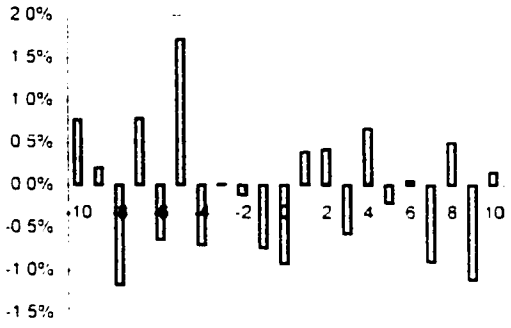


Figure 10 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 51 U S IPOs

Day	AR	Test Stat	CAR
-10	0.765%	0.73	-0.221%
-9	0.204%	0.19	-0.017%
-8	-1.173%	-1.12	-1.190%
-7	0.784%	0.75	-0.407%
-6	-0.644%	-0.62	-1.051%
-5	1.718%	1.64	0.668%
-4	-0.706%	-0.68	-0.038%
-3	0.011%	0.01	-0.027%
-2	-0.116%	-0.11	-0.143%
-1	-0.739%	-0.71	-0.882%
0	-0.926%	-0.89	-1.809%
1	0.387%	0.37	-1.422%
2	0.421%	0.40	-1.000%
3	-0.571%	-0.55	-1.571%
4	0.664%	0.64	-0.907%
5	-0.209%	-0.20	-1.116%
6	0.052%	0.05	-1.064%
7	-0.899%	-0.86	-1.963%
8	0.497%	0.48	-1.466%
9	-1.108%	-1.06	-2.574%
10	0.150%	0.14	-2.423%

	CAR	T-STAT
CAR(0,1)	-0.5394%	-0.36
CAR(-1,0)	-1.6654%	-1.13
CAR(-1,1)	-1.28%	-0.86
CAR(-2,2)	-0.97%	-0.66
CAR(-5,5)	-0.07%	-0.04
CAR(-5,1)	-0.37%	-0.25
CAR(-10,10)	-1.44%	-0.97
CAR(-10,1)	-0.44%	-0.29
CAR(-20,20)	-2.39%	-1.61
CAR(-20,1)	-1.42%	-0.96



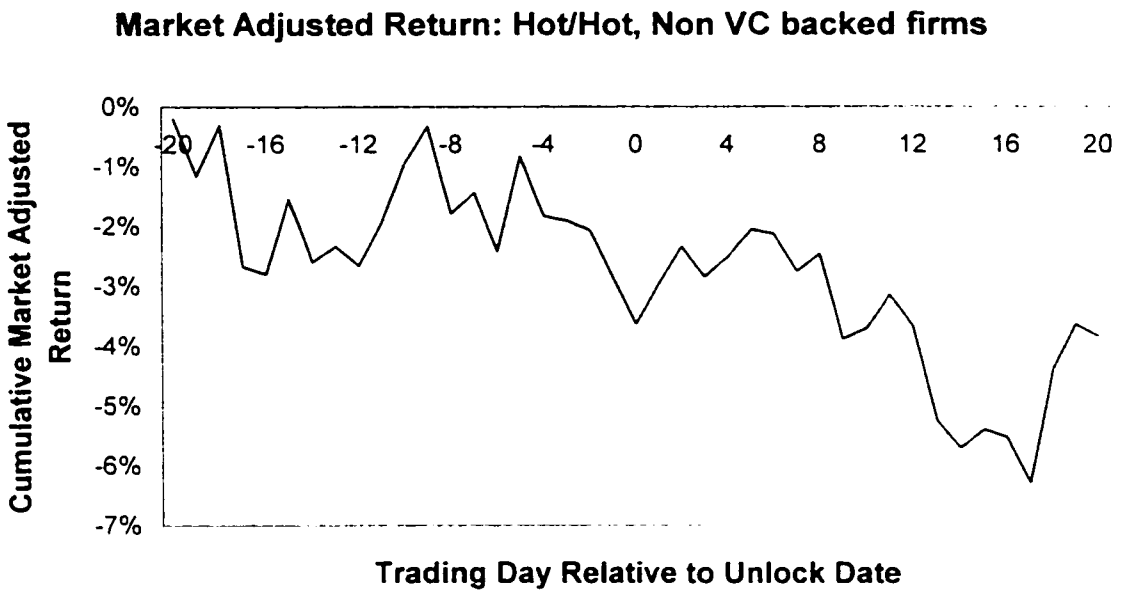
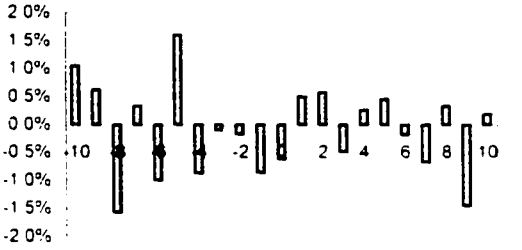


Figure 10 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 51 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	1.054%	0.99	-0.520%
-9	0.626%	0.58	0.102%
-8	-1.567%	-1.46	-1.466%
-7	0.335%	0.31	-1.136%
-6	-0.995%	-0.93	-2.120%
-5	1.599%	1.49	-0.555%
-4	-0.869%	-0.81	-1.419%
-3	-0.100%	-0.09	-1.517%
-2	-0.174%	-0.16	-1.688%
-1	-0.857%	-0.80	-2.531%
0	-0.621%	-0.58	-3.136%
1	0.499%	0.47	-2.652%
2	0.581%	0.54	-2.087%
3	-0.490%	-0.46	-2.566%
4	0.259%	0.24	-2.314%
5	0.455%	0.43	-1.869%
6	-0.181%	-0.17	-2.046%
7	-0.668%	-0.62	-2.701%
8	0.334%	0.31	-2.376%
9	-1.449%	-1.35	-3.791%
10	0.186%	0.17	-3.612%

	CAR	T-STAT
CAR(0,1)	-0 1024%	-0 07
CAR(-1,0)	-1 5956%	-1 04
CAR(-1,1)	-0 91%	-0 59
CAR(-2,2)	-0 44%	-0 29
CAR(-5,5)	0 37%	0 24
CAR(-5,1)	-0 56%	-0 36
CAR(-10,10)	-1 80%	-1 17
CAR(-10,1)	-1 05%	-0 68
CAR(-20,20)	-3 82%	-2 49
CAR(-20,1)	-2 96%	-1 92



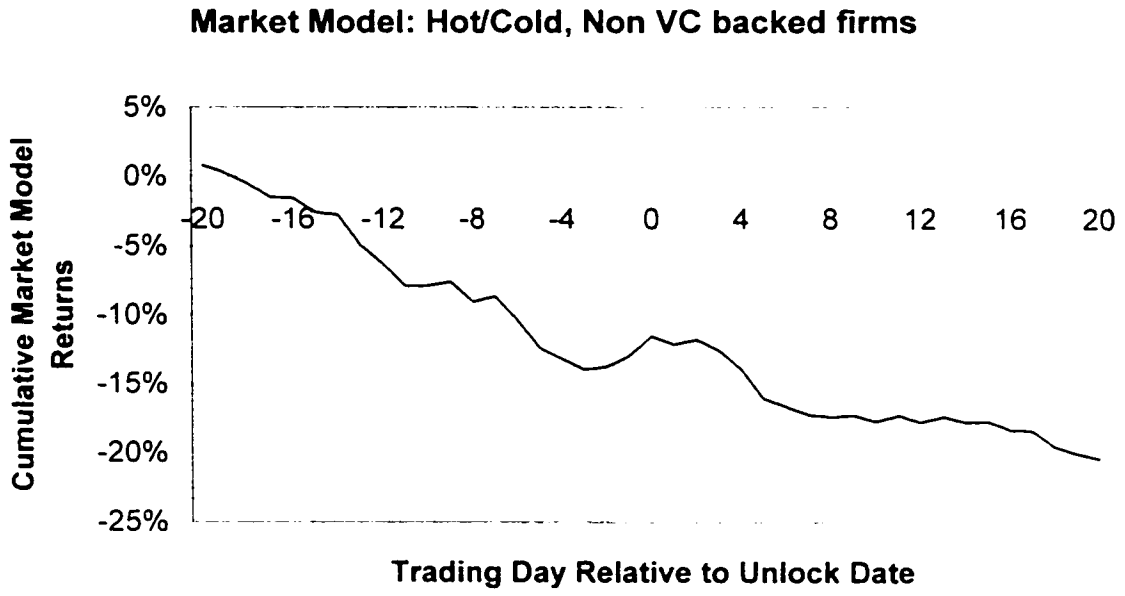
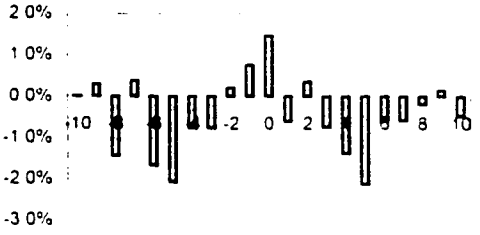


Figure 11 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 43 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.019%	0.01	-7.880%
-9	0.302%	0.22	-7.577%
-8	-1.445%	-1.04	-9.022%
-7	0.391%	0.28	-8.631%
-6	-1.676%	-1.20	-10.307%
-5	-2.078%	-1.49	-12.385%
-4	-0.774%	-0.56	-13.159%
-3	-0.769%	-0.55	-13.928%
-2	0.208%	0.15	-13.720%
-1	0.756%	0.54	-12.965%
0	1.462%	1.05	-11.503%
1	-0.608%	-0.44	-12.111%
2	0.352%	0.25	-11.759%
3	-0.749%	-0.54	-12.508%
4	-1.381%	-0.99	-13.890%
5	-2.127%	-1.53	-16.017%
6	-0.585%	-0.42	-16.601%
7	-0.587%	-0.42	-17.188%
8	-0.185%	-0.13	-17.373%
9	0.148%	0.11	-17.226%
10	-0.477%	-0.34	-17.702%

	CAR	T-STAT
CAR(0,1)	0.8535%	0.43
CAR(-1,0)	2.2175%	1.13
CAR(-1,1)	1.61%	0.82
CAR(-2,2)	2.17%	1.10
CAR(-5,5)	-5.71%	-2.90
CAR(-5,1)	-1.80%	-0.92
CAR(-10,10)	-9.80%	-4.98
CAR(-10,1)	-4.21%	-2.14
CAR(-20,20)	-20.38%	-10.35
CAR(-20,1)	-12.11%	-6.15



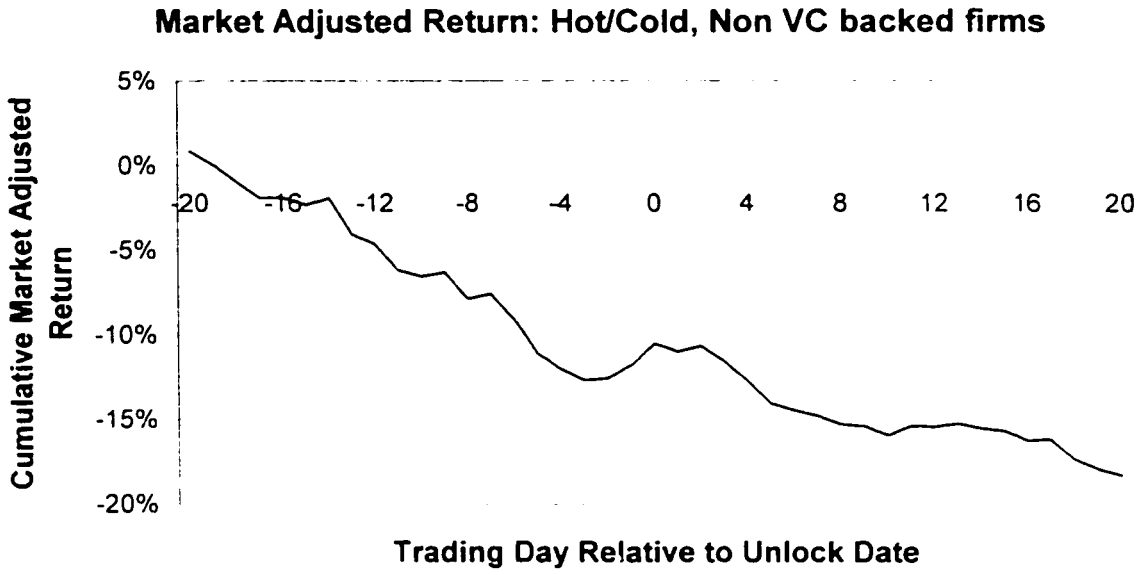
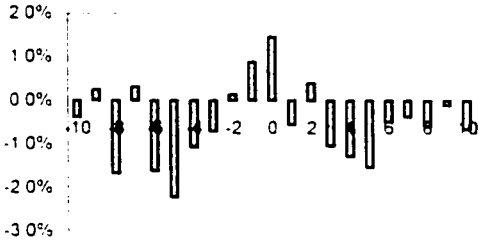


Figure 11 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 43 U S IPOs

Day	AR	Test Stat	CAR
-10	-0.379%	-0.27	-6.530%
-9	0.248%	0.18	-6.298%
-8	-1.673%	-1.19	-7.866%
-7	0.313%	0.22	-7.578%
-6	-1.620%	-1.15	-9.076%
-5	-2.224%	-1.58	-11.098%
-4	-1.072%	-0.76	-12.051%
-3	-0.702%	-0.50	-12.669%
-2	0.136%	0.10	-12.550%
-1	0.878%	0.63	-11.782%
0	1.460%	1.04	-10.494%
1	-0.553%	-0.39	-10.989%
2	0.391%	0.28	-10.641%
3	-1.045%	-0.74	-11.575%
4	-1.278%	-0.91	-12.706%
5	-1.535%	-1.09	-14.045%
6	-0.484%	-0.34	-14.461%
7	-0.379%	-0.27	-14.785%
8	-0.587%	-0.42	-15.285%
9	-0.114%	-0.08	-15.381%
10	-0.653%	-0.47	-15.934%

	CAR	T-STAT
CAR(0,1)	0.8984%	0 45
CAR(-1,0)	2.3381%	1 18
CAR(-1,1)	1 78%	0 90
CAR(-2,2)	2.32%	1 17
CAR(-5,5)	-5 47%	-2 75
CAR(-5,1)	-2 10%	-1 06
CAR(-10,10)	-10 40%	-5 24
CAR(-10,1)	-5 13%	-2 58
CAR(-20,20)	-18 29%	-9 21
CAR(-20,1)	-10 99%	-5 54



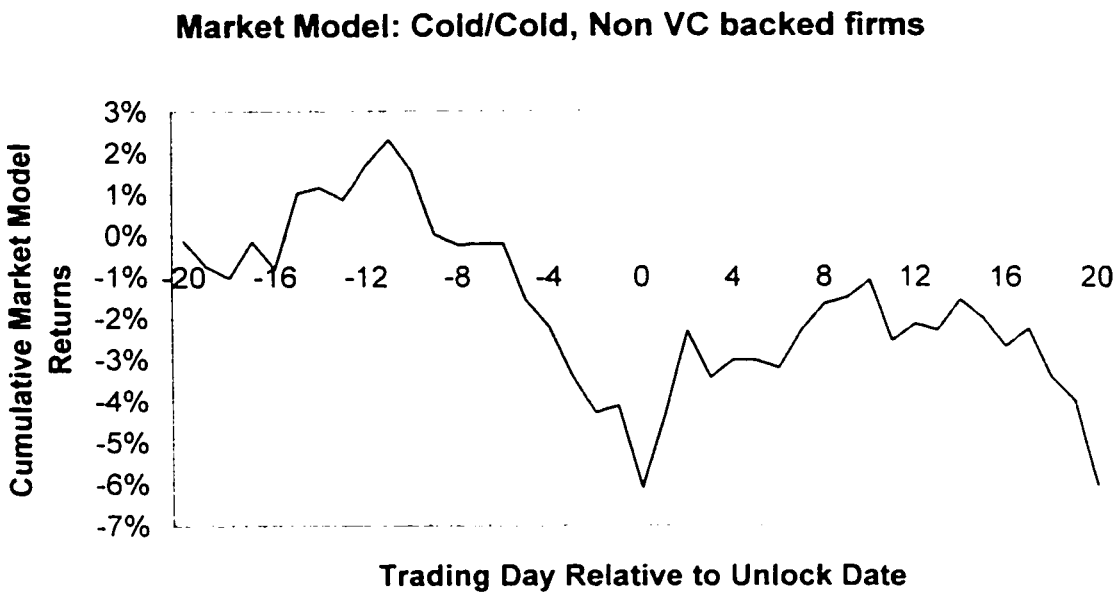
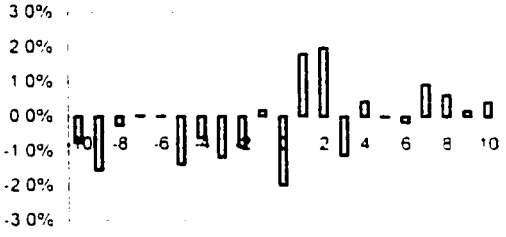


Figure 12 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 53 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.753%	-0.79	1.568%
-9	-1.547%	-1.62	0.021%
-8	-0.256%	-0.27	-0.235%
-7	0.028%	0.03	-0.206%
-6	0.009%	0.01	-0.198%
-5	-1.389%	-1.45	-1.587%
-4	-0.624%	-0.65	-2.211%
-3	-1.185%	-1.24	-3.396%
-2	-0.880%	-0.92	-4.276%
-1	0.176%	0.18	-4.100%
0	-1.982%	-2.08	-6.083%
1	1.796%	1.88	-4.287%
2	1.977%	2.07	-2.310%
3	-1.122%	-1.18	-3.432%
4	0.428%	0.45	-3.004%
5	-0.023%	-0.02	-3.027%
6	-0.178%	-0.19	-3.205%
7	0.917%	0.96	-2.288%
8	0.626%	0.66	-1.662%
9	0.155%	0.16	-1.507%
10	0.415%	0.43	-1.092%

	CAR	T-STAT
CAR(0,1)	-0.1862%	-0.14
CAR(-1,0)	-1.8064%	-1.34
CAR(-1,1)	-0.01%	-0.01
CAR(-2,2)	1.09%	0.80
CAR(-5,5)	-2.83%	-2.09
CAR(-5,1)	-4.09%	-3.03
CAR(-10,10)	-3.41%	-2.53
CAR(-10,1)	-6.61%	-4.89
CAR(-20,20)	-6.04%	-4.47
CAR(-20,1)	-4.29%	-3.17



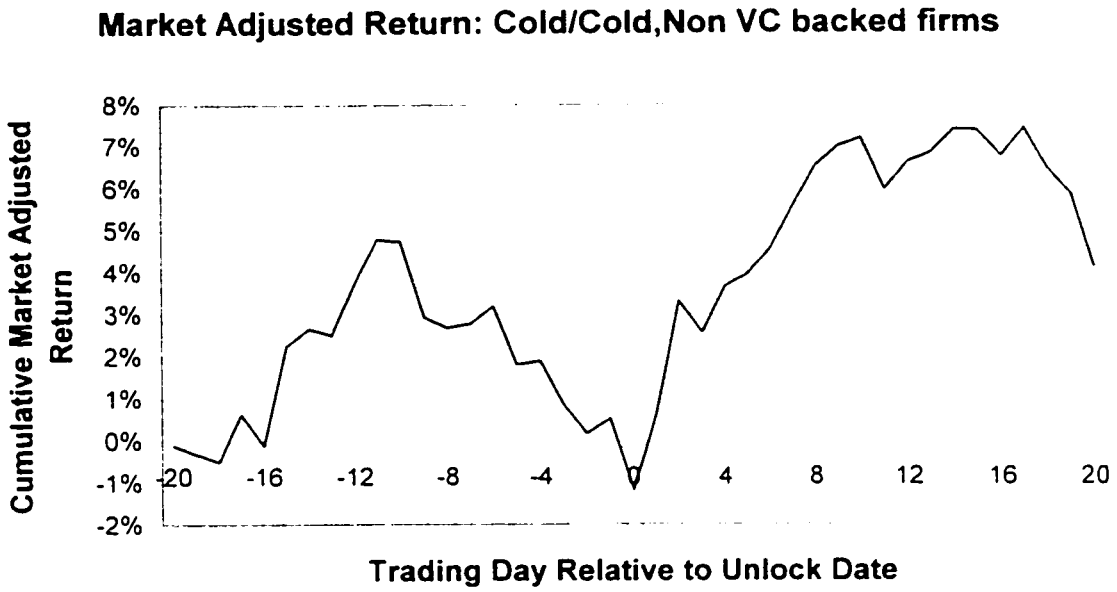
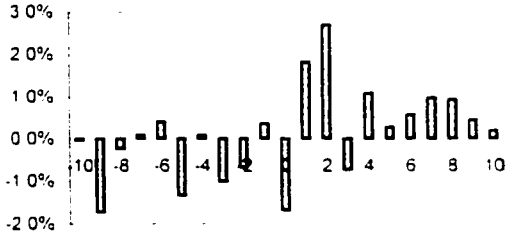


Figure 12 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 53 U.S. IPOs

Day	AR	Test Stat	CAR
-10	-0.042%	-0.04	4.738%
-9	-1.722%	-1.78	2.935%
-8	-0.241%	-0.25	2.687%
-7	0.095%	0.10	2.785%
-6	0.403%	0.42	3.198%
-5	-1.340%	-1.39	1.816%
-4	0.082%	0.09	1.899%
-3	-1.017%	-1.05	0.863%
-2	-0.684%	-0.71	0.173%
-1	0.353%	0.37	0.527%
0	-1.681%	-1.74	-1.163%
1	1.810%	1.88	0.626%
2	2.678%	2.78	3.322%
3	-0.731%	-0.76	2.566%
4	1.072%	1.11	3.665%
5	0.276%	0.29	3.951%
6	0.570%	0.59	4.544%
7	0.961%	1.00	5.548%
8	0.920%	0.95	6.520%
9	0.443%	0.46	6.992%
10	0.181%	0.19	7.185%

	CAR	T-STAT
CAR(0,1)	0.0989%	0.07
CAR(-1,0)	-1.3276%	-0.97
CAR(-1,1)	0.45%	0.33
CAR(-2,2)	2.44%	1.79
CAR(-5,5)	0.73%	0.53
CAR(-5,1)	-2.49%	-1.83
CAR(-10,10)	2.29%	1.68
CAR(-10,1)	-3.97%	-2.91
CAR(-20,20)	4.12%	3.02
CAR(-20,1)	0.63%	0.46



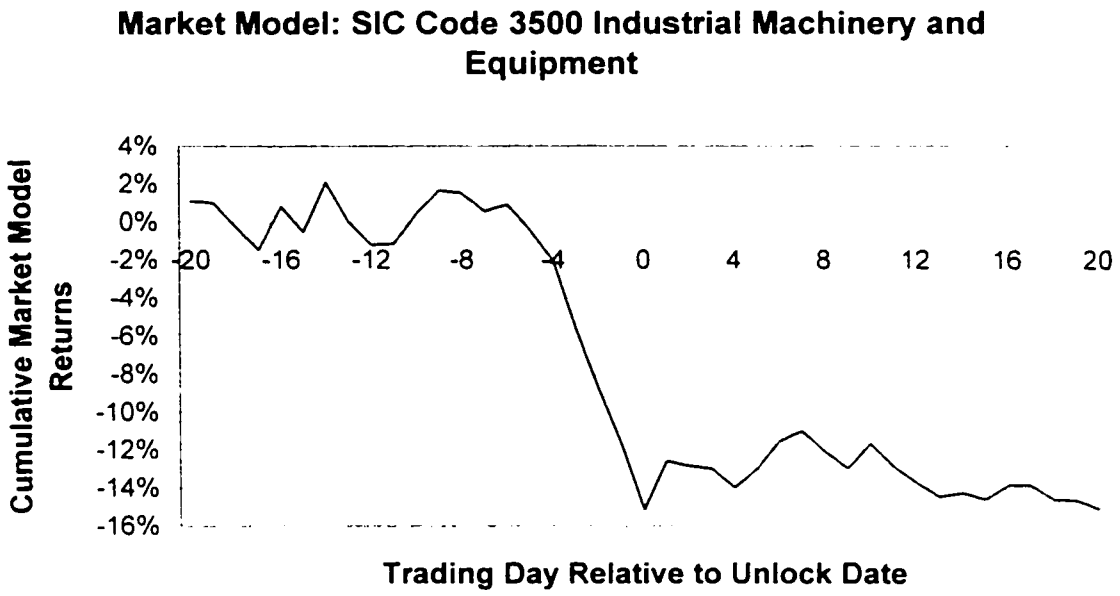
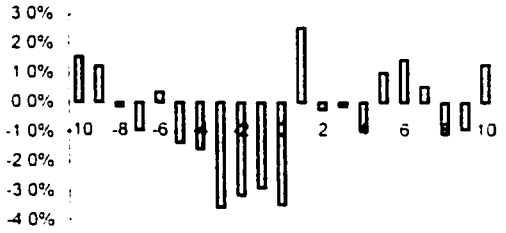


Figure 13 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index.Sample includes 37 U.S. IPOs. SIC Code 3500 contains within it computer hardware

Day	AR	Test Stat	CAR
-10	1.552%	1.40	0.432%
-9	1.220%	1.10	1.652%
-8	-0.139%	-0.13	1.513%
-7	-0.939%	-0.85	0.574%
-6	0.352%	0.32	0.926%
-5	-1.368%	-1.24	-0.442%
-4	-1.588%	-1.44	-2.030%
-3	-3.568%	-3.23	-5.598%
-2	-3.157%	-2.86	-8.755%
-1	-2.893%	-2.62	-11.648%
0	-3.466%	-3.14	-15.114%
1	2.527%	2.29	-12.586%
2	-0.253%	-0.23	-12.839%
3	-0.147%	-0.13	-12.986%
4	-0.979%	-0.89	-13.965%
5	1.002%	0.91	-12.963%
6	1.437%	1.30	-11.526%
7	0.539%	0.49	-10.987%
8	-1.049%	-0.95	-12.037%
9	-0.908%	-0.82	-12.945%
10	1.284%	1.16	-11.661%

	CAR	T-STAT
CAR(0,1)	-0.9384%	-0.60
CAR(-1,0)	-6.3590%	-4.07
CAR(-1,1)	-3.83%	-2.45
CAR(-2,2)	-7.24%	-4.63
CAR(-5,5)	-13.89%	-8.89
CAR(-5,1)	-13.51%	-8.65
CAR(-10,10)	-10.54%	-6.75
CAR(-10,1)	-11.47%	-7.34
CAR(-20,20)	-15.07%	-9.64
CAR(-20,1)	-12.59%	-8.05



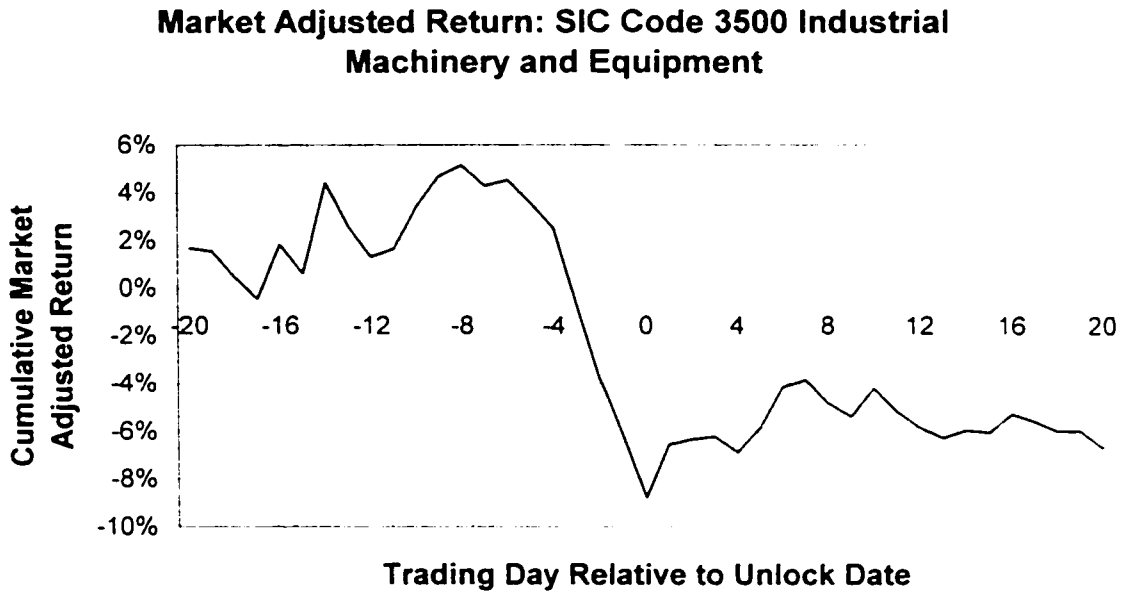
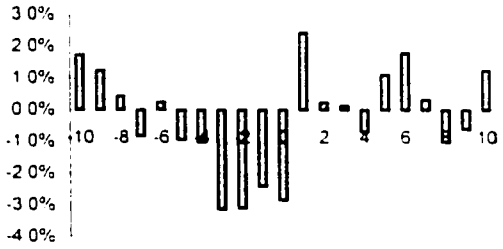


Figure 13 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 37 U.S. IPOs. SIC Code 3500 contains within it computer hardware

Day	AR	Test Stat	CAR
-10	1.732%	1.54	3.414%
-9	1.248%	1.11	4.704%
-8	0.432%	0.38	5.156%
-7	-0.823%	-0.73	4.291%
-6	0.244%	0.22	4.545%
-5	-0.938%	-0.83	3.564%
-4	-1.016%	-0.90	2.512%
-3	-3.130%	-2.78	-0.697%
-2	-3.107%	-2.76	-3.782%
-1	-2.418%	-2.15	-6.109%
0	-2.842%	-2.52	-8.777%
1	2.430%	2.16	-6.560%
2	0.230%	0.20	-6.346%
3	0.127%	0.11	-6.226%
4	-0.692%	-0.61	-6.875%
5	1.109%	0.98	-5.842%
6	1.790%	1.59	-4.157%
7	0.325%	0.29	-3.845%
8	-1.011%	-0.90	-4.818%
9	-0.593%	-0.53	-5.382%
10	1.247%	1.11	-4.202%

	CAR	T-STAT
CAR(0,1)	-0.4808%	-0.30
CAR(-1,0)	-5.2598%	-3.30
CAR(-1,1)	-2.89%	-1.81
CAR(-2,2)	-5.69%	-3.57
CAR(-5,5)	-9.94%	-6.24
CAR(-5,1)	-10.62%	-6.67
CAR(-10,10)	-5.76%	-3.62
CAR(-10,1)	-8.08%	-5.07
CAR(-20,20)	-6.71%	-4.21
CAR(-20,1)	-6.56%	-4.12



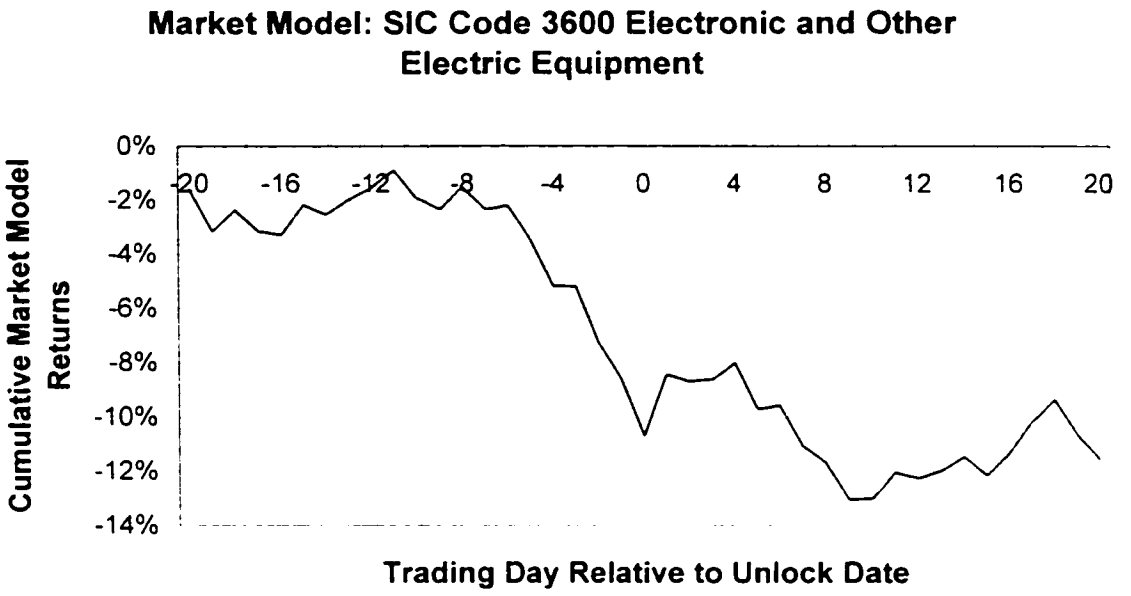
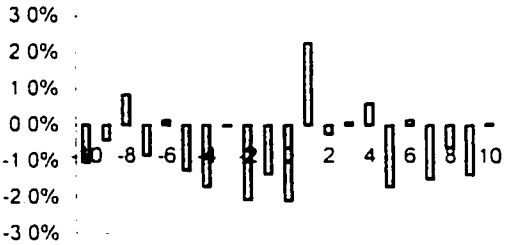


Figure 14 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 83 U S IPOs SIC Code 3600 contains within it computer hardware

Day	AR	Test Stat	CAR
-10	-1.033%	-1.00	-1.923%
-9	-0.421%	-0.41	-2.344%
-8	0.840%	0.82	-1.504%
-7	-0.839%	-0.81	-2.343%
-6	0.129%	0.13	-2.214%
-5	-1.252%	-1.22	-3.466%
-4	-1.701%	-1.65	-5.167%
-3	-0.031%	-0.03	-5.198%
-2	-2.056%	-2.00	-7.254%
-1	-1.351%	-1.31	-8.605%
0	-2.088%	-2.03	-10.693%
1	2.256%	2.19	-8.437%
2	-0.255%	-0.25	-8.692%
3	0.074%	0.07	-8.617%
4	0.602%	0.58	-8.015%
5	-1.698%	-1.65	-9.713%
6	0.136%	0.13	-9.576%
7	-1.486%	-1.44	-11.063%
8	-0.619%	-0.60	-11.682%
9	-1.365%	-1.32	-13.047%
10	0.044%	0.04	-13.002%

	CAR	T-STAT
CAR(0,1)	0.1682%	0 12
CAR(-1,0)	-3.4390%	-2.36
CAR(-1,1)	-1 18%	-0 81
CAR(-2,2)	-3 49%	-2 40
CAR(-5,5)	-7 50%	-5 15
CAR(-5,1)	-6 22%	-4 27
CAR(-10,10)	-12 11%	-8 32
CAR(-10,1)	-7 55%	-5 18
CAR(-20,20)	-11 55%	-7 93
CAR(-20,1)	-8 44%	-5 79



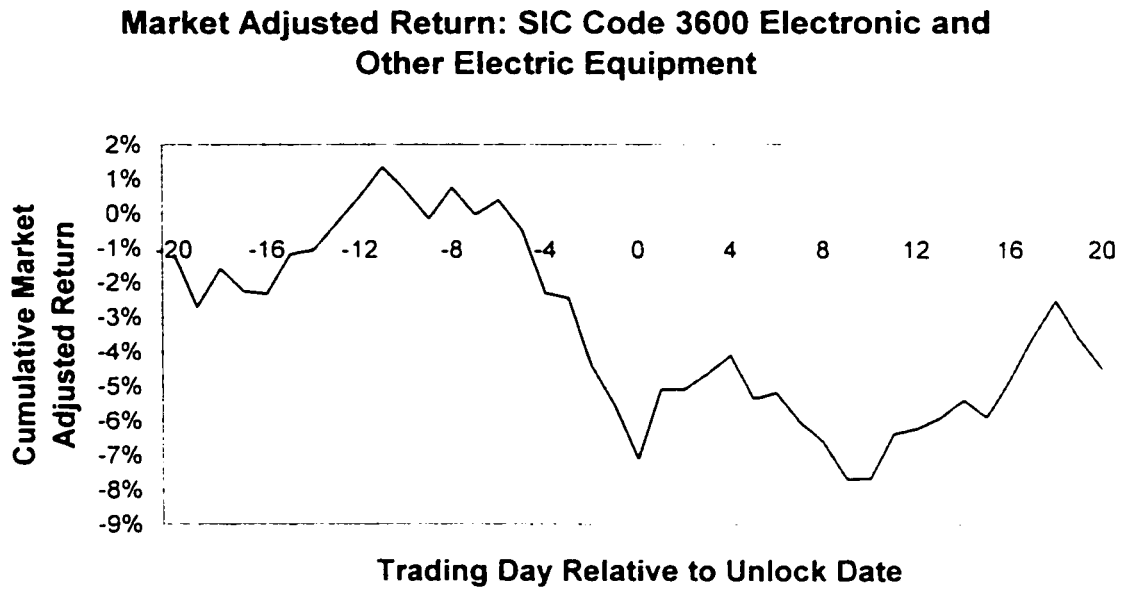
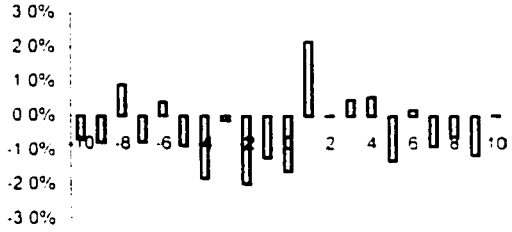


Figure 14 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 83 U.S. IPOs. SIC Code 3600 contains within it computer hardware

Day	AR	Test Stat	CAR
-10	-0.693%	-0.67	0.647%
-9	-0.785%	-0.76	-0.143%
-8	0.908%	0.88	0.764%
-7	-0.772%	-0.75	-0.014%
-6	0.413%	0.40	0.399%
-5	-0.869%	-0.84	-0.474%
-4	-1.833%	-1.77	-2.298%
-3	-0.143%	-0.14	-2.438%
-2	-1.990%	-1.92	-4.379%
-1	-1.220%	-1.18	-5.546%
0	-1.624%	-1.57	-7.080%
1	2.154%	2.08	-5.079%
2	0.014%	0.01	-5.066%
3	0.475%	0.46	-4.614%
4	0.561%	0.54	-4.080%
5	-1.313%	-1.27	-5.339%
6	0.175%	0.17	-5.173%
7	-0.894%	-0.86	-6.021%
8	-0.619%	-0.60	-6.603%
9	-1.147%	-1.11	-7.674%
10	0.027%	0.03	-7.649%

	CAR	T-STAT
CAR(0,1)	0.4948%	0.34
CAR(-1,0)	-2.8443%	-1.94
CAR(-1,1)	-0.73%	-0.50
CAR(-2,2)	-2.69%	-1.84
CAR(-5,5)	-5.72%	-3.90
CAR(-5,1)	-5.46%	-3.73
CAR(-10,10)	-8.88%	-6.07
CAR(-10,1)	-6.34%	-4.33
CAR(-20,20)	-4.47%	-3.05
CAR(-20,1)	-5.08%	-3.47



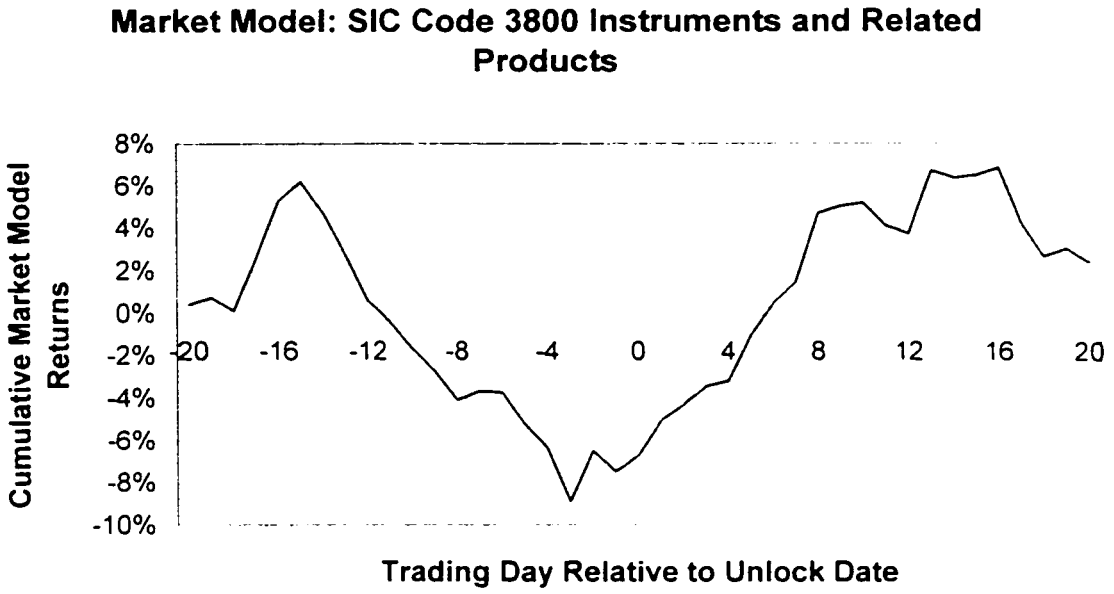
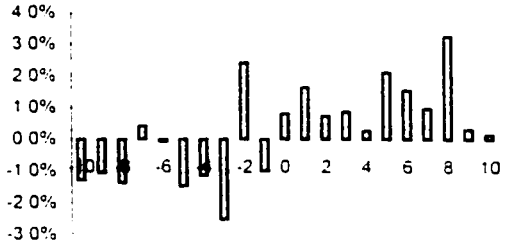


Figure 15 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 28 U.S. IPOs. SIC Code 3800 contains within it medical equipment

Day	AR	Test Stat	CAR
-10	-1.284%	-0.83	-1.658%
-9	-1.052%	-0.68	-2.711%
-8	-1.363%	-0.89	-4.074%
-7	0.424%	0.28	-3.650%
-6	-0.072%	-0.05	-3.722%
-5	-1.484%	-0.96	-5.206%
-4	-1.148%	-0.75	-6.354%
-3	-2.529%	-1.64	-8.883%
-2	2.414%	1.57	-6.469%
-1	-0.994%	-0.65	-7.464%
0	0.803%	0.52	-6.661%
1	1.634%	1.06	-5.027%
2	0.734%	0.48	-4.294%
3	0.868%	0.56	-3.426%
4	0.276%	0.18	-3.150%
5	2.114%	1.37	-1.035%
6	1.553%	1.01	0.518%
7	0.965%	0.63	1.482%
8	3.254%	2.11	4.736%
9	0.320%	0.21	5.056%
10	0.155%	0.10	5.211%

	CAR	T-STAT
CAR(0,1)	2.4364%	1.12
CAR(-1,0)	-0.1917%	-0.09
CAR(-1,1)	1.44%	0.66
CAR(-2,2)	4.59%	2.11
CAR(-5,5)	2.69%	1.23
CAR(-5,1)	-1.31%	-0.60
CAR(-10,10)	5.59%	2.56
CAR(-10,1)	-4.65%	-2.14
CAR(-20,20)	2.43%	1.12
CAR(-20,1)	-5.03%	-2.31



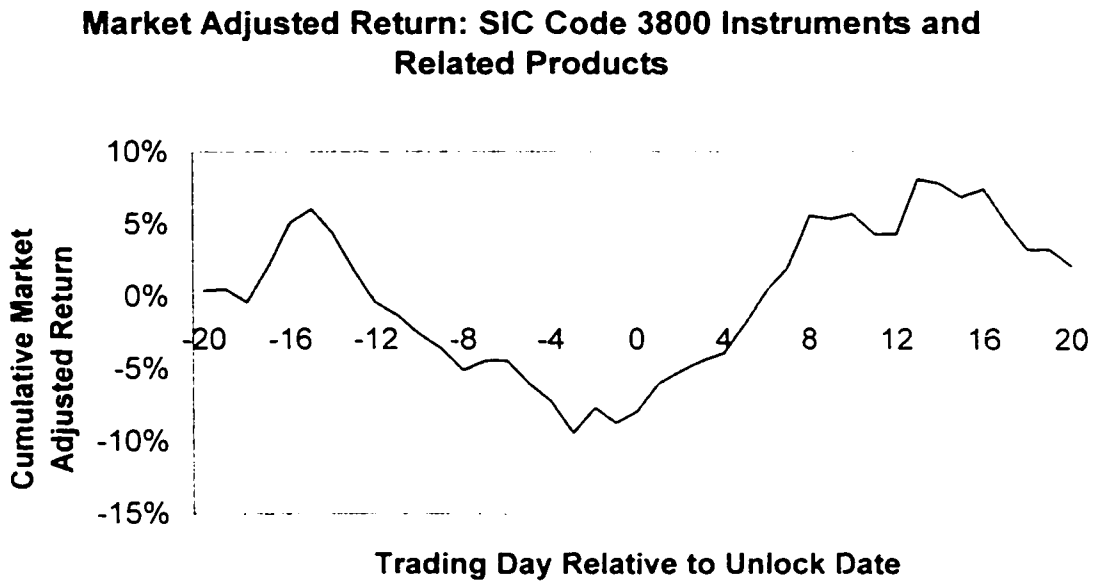
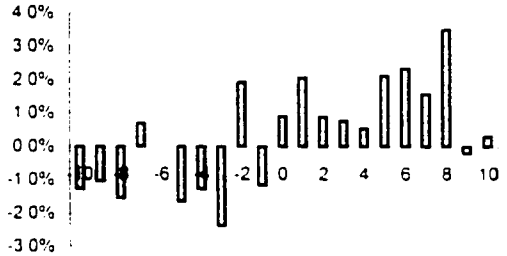


Figure 15 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 28 U S IPOs. SIC Code 3800 contains within it medical equipment

Day	AR	Test Stat	CAR
-10	-1.278%	-0.81	-2.567%
-9	-1.047%	-0.67	-3.587%
-8	-1.547%	-0.98	-5.079%
-7	0.692%	0.44	-4.422%
-6	-0.005%	0.00	-4.426%
-5	-1.648%	-1.05	-6.001%
-4	-1.277%	-0.81	-7.202%
-3	-2.374%	-1.51	-9.406%
-2	1.936%	1.23	-7.652%
-1	-1.158%	-0.74	-8.721%
0	0.903%	0.57	-7.897%
1	2.069%	1.31	-5.992%
2	0.891%	0.57	-5.154%
3	0.770%	0.49	-4.423%
4	0.539%	0.34	-3.908%
5	2.119%	1.35	-1.872%
6	2.340%	1.49	0.424%
7	1.573%	1.00	2.004%
8	3.506%	2.23	5.580%
9	-0.201%	-0.13	5.368%
10	0.306%	0.19	5.691%

	CAR	T-STAT
CAR(0,1)	2.9904%	1.34
CAR(-1,0)	-0.2554%	-0.11
CAR(-1,1)	1.80%	0.81
CAR(-2,2)	4.69%	2.11
CAR(-5,5)	2.67%	1.20
CAR(-5,1)	-1.64%	-0.74
CAR(-10,10)	7.09%	3.18
CAR(-10,1)	-4.75%	-2.13
CAR(-20,20)	2.11%	0.95
CAR(-20,1)	-5.99%	-2.69



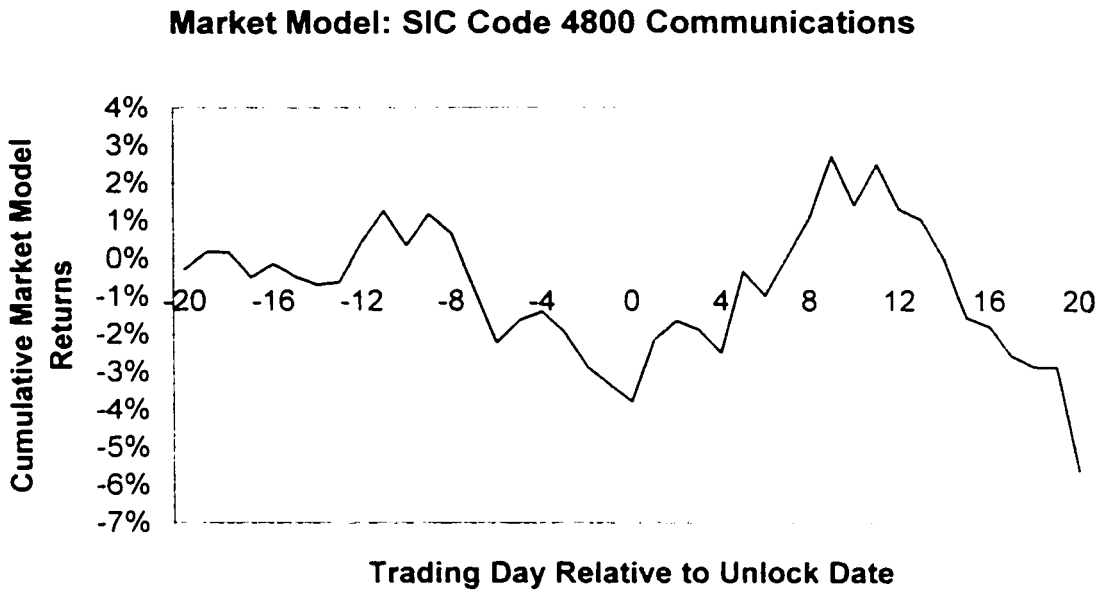
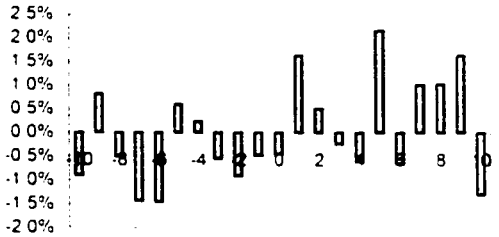


Figure 16 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 63 U.S. IPOs

Day	AR	Test Stat	CAR
-10	-0.901%	-1.11	0.359%
-9	0.823%	1.02	1.182%
-8	-0.508%	-0.63	0.674%
-7	-1.439%	-1.78	-0.765%
-6	-1.456%	-1.80	-2.221%
-5	0.596%	0.74	-1.625%
-4	0.236%	0.29	-1.389%
-3	-0.550%	-0.68	-1.939%
-2	-0.914%	-1.13	-2.853%
-1	-0.477%	-0.59	-3.329%
0	-0.447%	-0.55	-3.776%
1	1.626%	2.01	-2.150%
2	0.505%	0.62	-1.645%
3	-0.237%	-0.29	-1.883%
4	-0.611%	-0.76	-2.494%
5	2.158%	2.67	-0.335%
6	-0.640%	-0.79	-0.976%
7	1.015%	1.25	0.040%
8	1.032%	1.28	1.072%
9	1.628%	2.01	2.700%
10	-1.297%	-1.60	1.403%

	CAR	T-STAT
CAR(0,1)	1.1793%	1.03
CAR(-1,0)	-0.9233%	-0.81
CAR(-1,1)	0.70%	0.61
CAR(-2,2)	0.29%	0.26
CAR(-5,5)	1.89%	1.65
CAR(-5,1)	0.07%	0.06
CAR(-10,10)	0.14%	0.13
CAR(-10,1)	-3.41%	-2.98
CAR(-20,20)	-5.62%	-4.92
CAR(-20,1)	-2.15%	-1.88



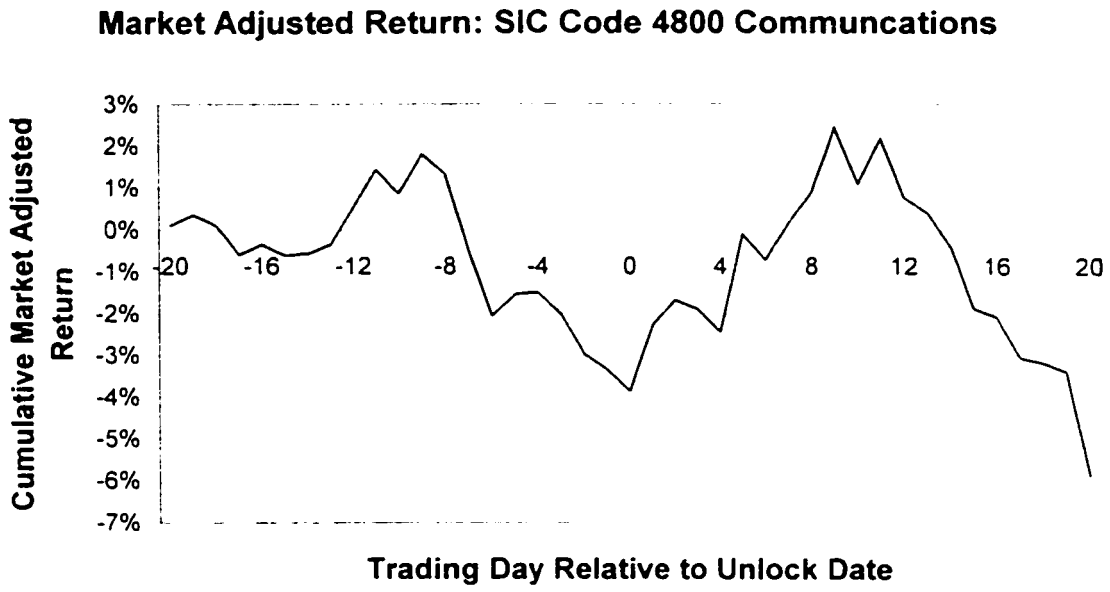
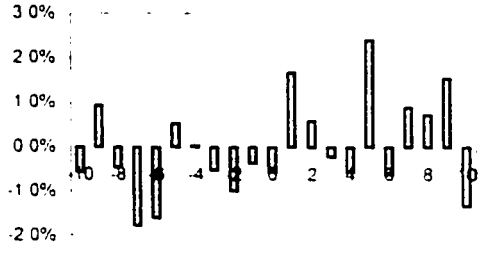


Figure 16 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 63 U S IPOs

Day	AR	Test Stat	CAR
-10	-0.560%	-0.69	0.863%
-9	0.934%	1.14	1.805%
-8	-0.463%	-0.57	1.334%
-7	-1.773%	-2.17	-0.463%
-6	-1.595%	-1.95	-2.051%
-5	0.531%	0.65	-1.530%
-4	0.036%	0.04	-1.495%
-3	-0.516%	-0.63	-2.003%
-2	-0.985%	-1.21	-2.968%
-1	-0 366%	-0.45	-3.323%
0	-0.559%	-0.68	-3.863%
1	1.672%	2.05	-2.256%
2	0.592%	0.72	-1.677%
3	-0.225%	-0.28	-1.899%
4	-0.554%	-0.68	-2.442%
5	2.404%	2.94	-0.097%
6	-0.618%	-0.76	-0.715%
7	0.894%	1.09	0.173%
8	0.726%	0.89	0.900%
9	1.547%	1.89	2.461%
10	-1.333%	-1.63	1.096%

	CAR	T-STAT
CAR(0,1)	1.1044%	0.96
CAR(-1,0)	-0 9249%	-0 80
CAR(-1,1)	0 73%	0 64
CAR(-2,2)	0 33%	0 29
CAR(-5,5)	1 99%	1 73
CAR(-5,1)	-0 21%	-0 18
CAR(-10,10)	-0 33%	-0 29
CAR(-10,1)	-3 63%	-3 15
CAR(-20,20)	-5 89%	-5 10
CAR(-20,1)	-2 26%	-1 95



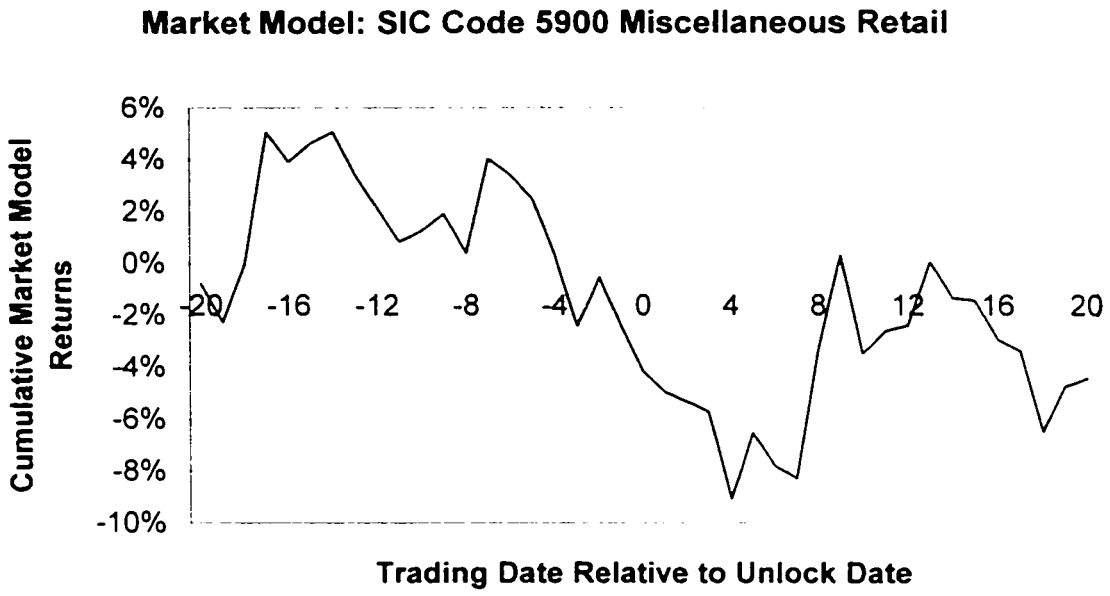
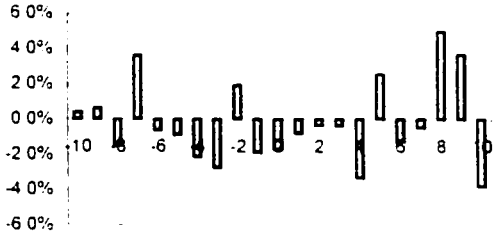


Figure 17 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 21 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.418%	0.29	1.252%
-9	0.650%	0.44	1.903%
-8	-1.494%	-1.02	0.409%
-7	3.617%	2.47	4.025%
-6	-0.630%	-0.43	3.395%
-5	-0.905%	-0.62	2.491%
-4	-2.149%	-1.47	0.342%
-3	-2.766%	-1.89	-2.424%
-2	1.890%	1.29	-0.534%
-1	-1.904%	-1.30	-2.438%
0	-1.721%	-1.17	-4.159%
1	-0.806%	-0.55	-4.965%
2	-0.366%	-0.25	-5.331%
3	-0.388%	-0.26	-5.719%
4	-3.347%	-2.28	-9.066%
5	2.525%	1.72	-6.542%
6	-1.268%	-0.86	-7.810%
7	-0.479%	-0.33	-8.289%
8	4.947%	3.37	-3.342%
9	3.659%	2.50	0.317%
10	-3.815%	-2.60	-3.498%

	CAR	T-STAT
CAR(0,1)	-2.5267%	-1.22
CAR(-1,0)	-3.6248%	-1.75
CAR(-1,1)	-4.43%	-2.14
CAR(-2,2)	-2.91%	-1.40
CAR(-5,5)	-9.94%	-4.79
CAR(-5,1)	-8.36%	-4.03
CAR(-10,10)	-4.33%	-2.09
CAR(-10,1)	-5.80%	-2.80
CAR(-20,20)	-4.44%	-2.14
CAR(-20,1)	-4.97%	-2.39



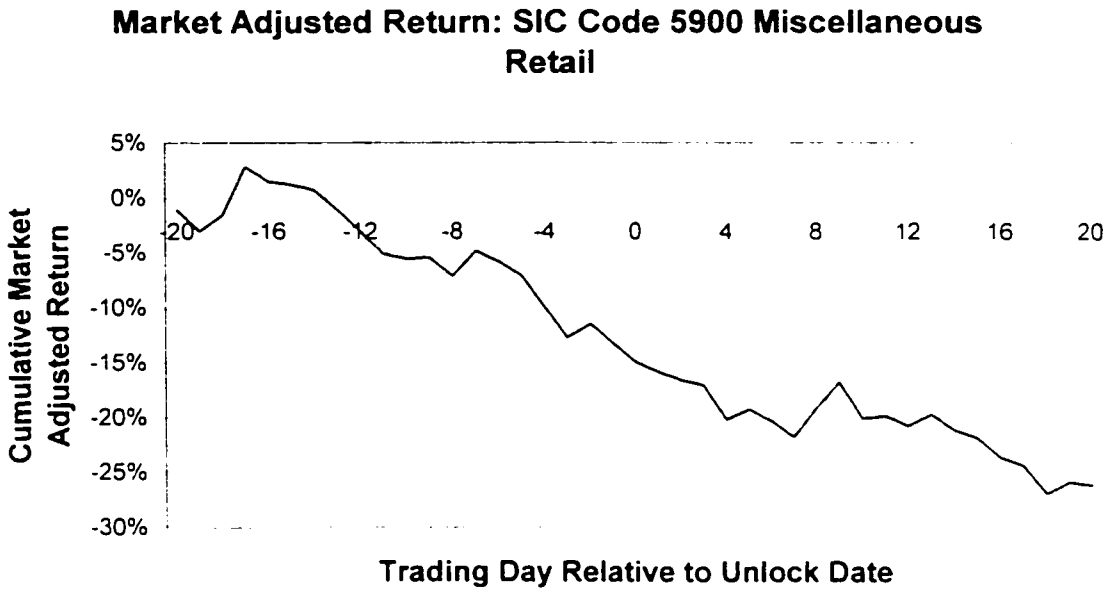
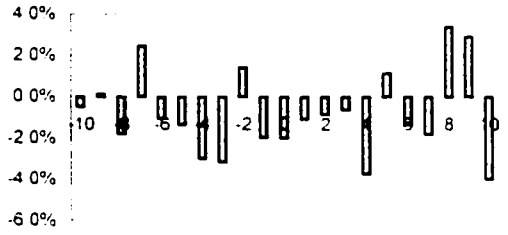


Figure 17 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative the Nasdaq index Sample includes 21 U S IPOs.

Day	AR	Test Stat	CAR
-10	-0.468%	-0.32	-5.521%
-9	0.138%	0.09	-5.390%
-8	-1.794%	-1.22	-7.087%
-7	2.473%	1.68	-4.789%
-6	-1.049%	-0.71	-5.788%
-5	-1.341%	-0.91	-7.051%
-4	-3.004%	-2.04	-9.843%
-3	-3.155%	-2.14	-12.687%
-2	1.437%	0.98	-11.433%
-1	-1.956%	-1.33	-13.165%
0	-1.994%	-1.35	-14.896%
1	-1.062%	-0.72	-15.800%
2	-0.846%	-0.57	-16.513%
3	-0.611%	-0.42	-17.023%
4	-3.736%	-2.54	-20.123%
5	1.153%	0.78	-19.201%
6	-1.341%	-0.91	-20.285%
7	-1.811%	-1.23	-21.728%
8	3.390%	2.30	-19.075%
9	2.896%	1.97	-16.731%
10	-3.985%	-2.71	-20.049%

	CAR	T-STAT
CAR(0,1)	-3.0346%	-1.46
CAR(-1,0)	-3.9499%	-1.90
CAR(-1,1)	-4.93%	-2.37
CAR(-2,2)	-4.38%	-2.10
CAR(-5,5)	-14.24%	-6.84
CAR(-5,1)	-10.63%	-5.10
CAR(-10,10)	-15.77%	-7.58
CAR(-10,1)	-11.30%	-5.43
CAR(-20,20)	-26.11%	-12.54
CAR(-20,1)	-15.80%	-7.59



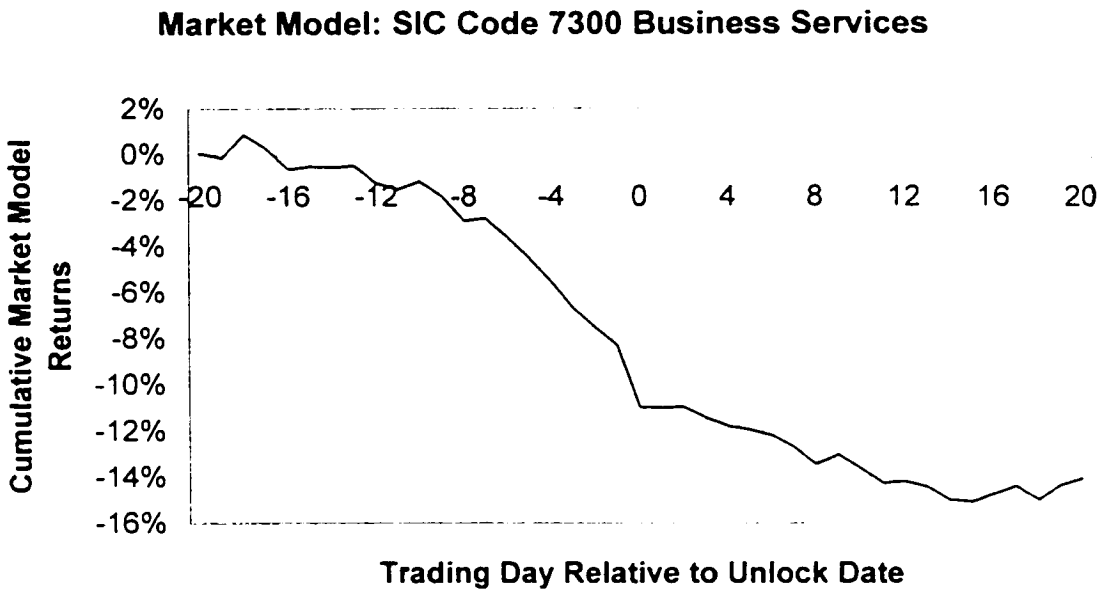
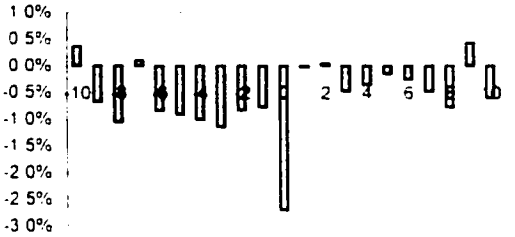


Figure 18 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 275 U.S. IPOs. SIC Code 7300 contains within it computer software

Day	AR	Test Stat	CAR
-10	0.362%	0.55	-1.156%
-9	-0.676%	-1.02	-1.833%
-8	-1.052%	-1.59	-2.885%
-7	0.100%	0.15	-2.785%
-6	-0.838%	-1.27	-3.622%
-5	-0.912%	-1.38	-4.535%
-4	-1.008%	-1.52	-5.543%
-3	-1.144%	-1.73	-6.687%
-2	-0.835%	-1.26	-7.521%
-1	-0.773%	-1.17	-8.295%
0	-2.689%	-4.07	-10.984%
1	-0.028%	-0.04	-11.012%
2	0.041%	0.06	-10.971%
3	-0.466%	-0.71	-11.437%
4	-0.355%	-0.54	-11.792%
5	-0.152%	-0.23	-11.944%
6	-0.256%	-0.39	-12.201%
7	-0.481%	-0.73	-12.682%
8	-0.771%	-1.17	-13.453%
9	0.426%	0.64	-13.027%
10	-0.597%	-0.90	-13.624%

	CAR	T-STAT
CAR(0,1)	-2.7171%	-2.91
CAR(-1,0)	-3.4623%	-3.70
CAR(-1,1)	-3.49%	-3.73
CAR(-2,2)	-4.28%	-4.58
CAR(-5,5)	-8.32%	-8.90
CAR(-5,1)	-7.39%	-7.90
CAR(-10,10)	-12.11%	-12.95
CAR(-10,1)	-9.49%	-10.15
CAR(-20,20)	-14.06%	-15.03
CAR(-20,1)	-11.01%	-11.78



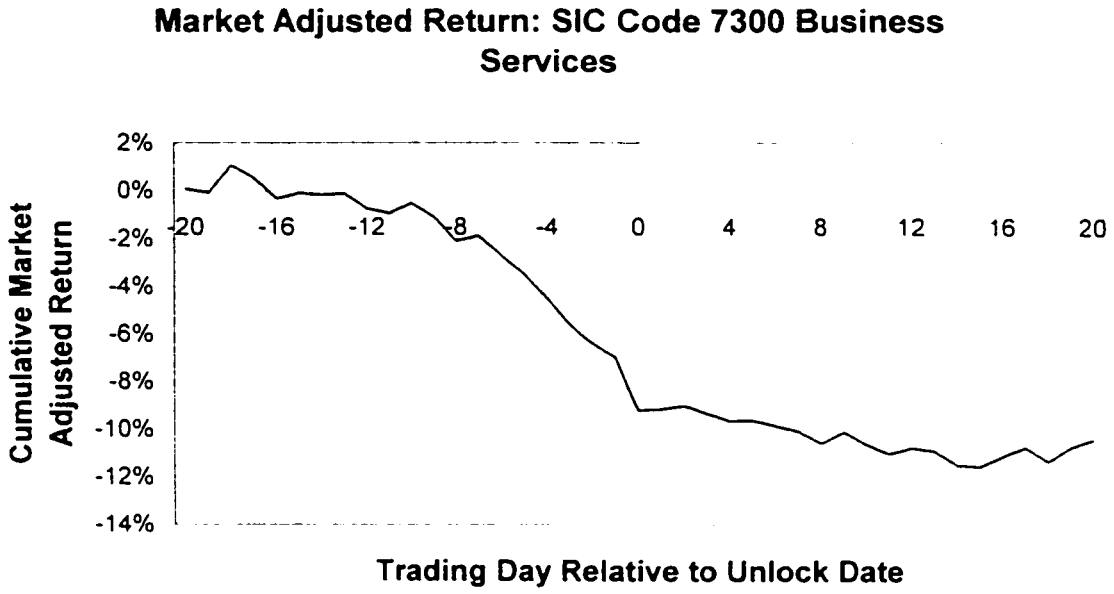
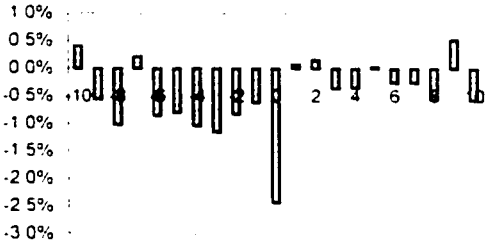


Figure 18 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 275 U.S. IPOs. SIC Code 7300 contains within it computer software

Day	AR	Test Stat	CAR
-10	0.409%	0.62	-0.526%
-9	-0.555%	-0.84	-1.078%
-8	-1.019%	-1.54	-2.086%
-7	0.215%	0.32	-1.876%
-6	-0.853%	-1.29	-2.713%
-5	-0.798%	-1.20	-3.489%
-4	-1.035%	-1.56	-4.488%
-3	-1.153%	-1.74	-5.589%
-2	-0.830%	-1.25	-6.373%
-1	-0.614%	-0.93	-6.948%
0	-2.429%	-3.67	-9.208%
1	0.074%	0.11	-9.140%
2	0.157%	0.24	-8.998%
3	-0.358%	-0.54	-9.323%
4	-0.343%	-0.52	-9.634%
5	0.035%	0.05	-9.602%
6	-0.256%	-0.39	-9.834%
7	-0.256%	-0.39	-10.065%
8	-0.558%	-0.84	-10.566%
9	0.524%	0.79	-10.097%
10	-0.565%	-0.85	-10.606%

	CAR	T-STAT
CAR(0,1)	-2.3566%	-2.52
CAR(-1,0)	-3.0430%	-3.25
CAR(-1,1)	-2.96%	-3.16
CAR(-2,2)	-3.61%	-3.85
CAR(-5,5)	-7.08%	-7.56
CAR(-5,1)	-6.61%	-7.05
CAR(-10,10)	-9.77%	-10.43
CAR(-10,1)	-8.29%	-8.85
CAR(-20,20)	-10.40%	-11.10
CAR(-20,1)	-9.14%	-9.76



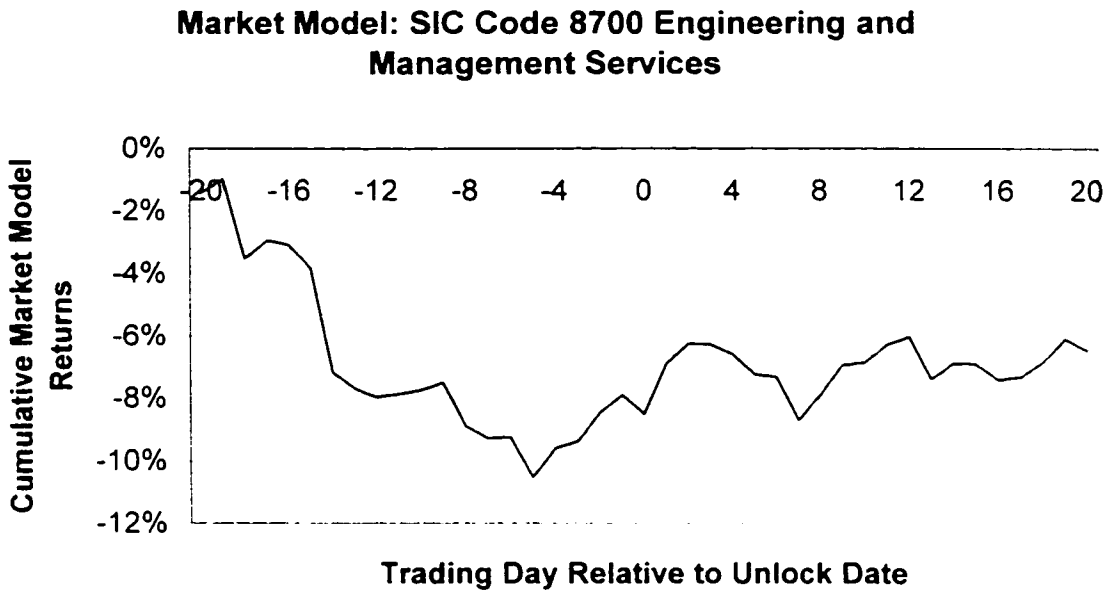
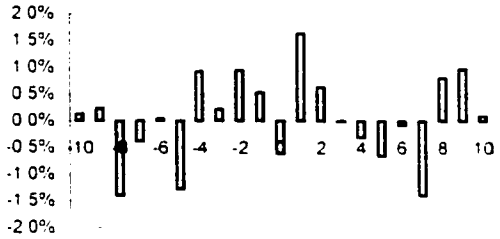


Figure 19 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index Sample includes 40 U S IPOs

Day	AR	Test Stat	CAR
-10	0.125%	0.10	-7.738%
-9	0.239%	0.19	-7.499%
-8	-1.402%	-1.10	-8.901%
-7	-0.389%	-0.30	-9.290%
-6	0.044%	0.03	-9.246%
-5	-1.284%	-1.01	-10.530%
-4	0.928%	0.73	-9.602%
-3	0.220%	0.17	-9.382%
-2	0.947%	0.74	-8.434%
-1	0.539%	0.42	-7.895%
0	-0.618%	-0.48	-8.513%
1	1.627%	1.27	-6.886%
2	0.636%	0.50	-6.250%
3	-0.012%	-0.01	-6.262%
4	-0.312%	-0.24	-6.574%
5	-0.657%	-0.51	-7.232%
6	-0.084%	-0.07	-7.315%
7	-1.393%	-1.09	-8.708%
8	0.809%	0.63	-7.899%
9	0.969%	0.76	-6.930%
10	0.093%	0.07	-6.837%

	CAR	T-STAT
CAR(0,1)	1.0094%	0.56
CAR(-1,0)	-0.0789%	-0.04
CAR(-1,1)	1.55%	0.86
CAR(-2,2)	3.13%	1.73
CAR(-5,5)	2.01%	1.12
CAR(-5,1)	2.36%	1.31
CAR(-10,10)	1.03%	0.57
CAR(-10,1)	0.98%	0.54
CAR(-20,20)	-6.47%	-3.58
CAR(-20,1)	-6.89%	-3.81



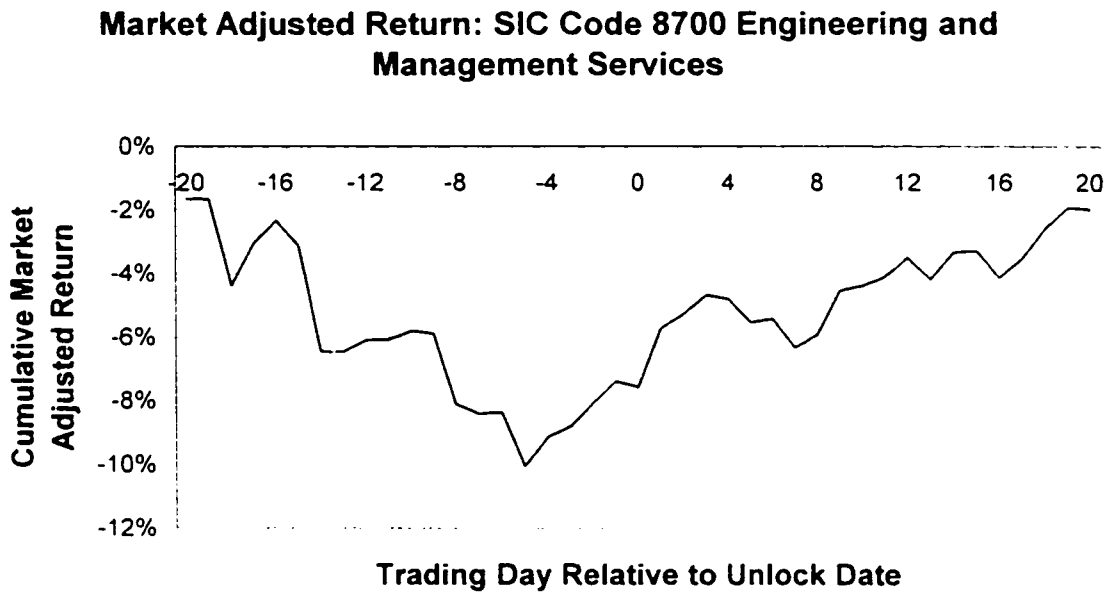
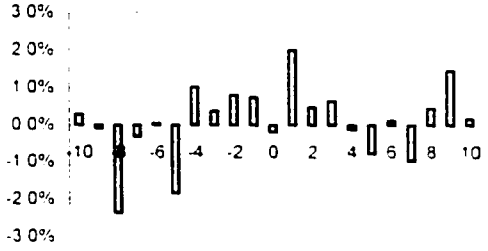


Figure 19 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 40 U.S. IPOs

Day	AR	Test Stat	CAR
-10	0.288%	0.23	-5.798%
-9	-0.095%	-0.07	-5.888%
-8	-2.361%	-1.86	-8.110%
-7	-0.324%	-0.25	-8.407%
-6	0.046%	0.04	-8.365%
-5	-1.836%	-1.45	-10.048%
-4	1.011%	0.80	-9.138%
-3	0.372%	0.29	-8.800%
-2	0.797%	0.63	-8.073%
-1	0.743%	0.59	-7.390%
0	-0.190%	-0.15	-7.566%
1	1.999%	1.58	-5.718%
2	0.474%	0.37	-5.271%
3	0.635%	0.50	-4.669%
4	-0.127%	-0.10	-4.790%
5	-0.775%	-0.61	-5.529%
6	0.118%	0.09	-5.417%
7	-0.961%	-0.76	-6.326%
8	0.447%	0.35	-5.907%
9	1.458%	1.15	-4.535%
10	0.168%	0.13	-4.375%

	CAR	T-STAT
CAR(0,1)	1.8055%	1.01
CAR(-1,0)	0.5533%	0.31
CAR(-1,1)	2.56%	1.43
CAR(-2,2)	3.87%	2.16
CAR(-5,5)	3.10%	1.72
CAR(-5,1)	2.89%	1.61
CAR(-10,10)	1.80%	1.00
CAR(-10,1)	0.37%	0.21
CAR(-20,20)	-1.96%	-1.09
CAR(-20,1)	-5.72%	-3.19



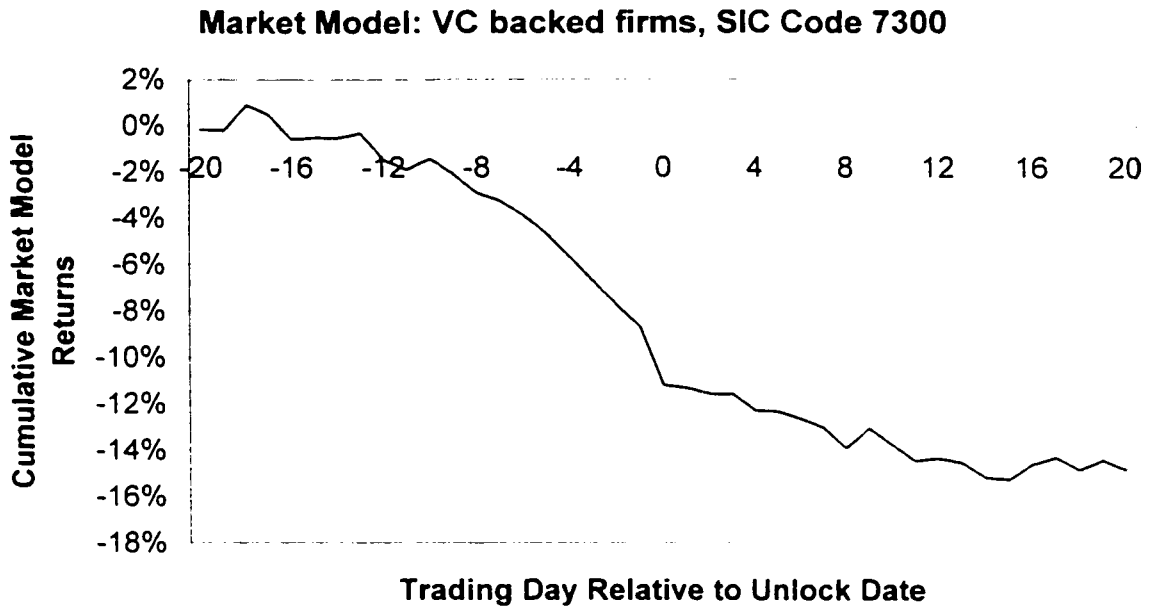
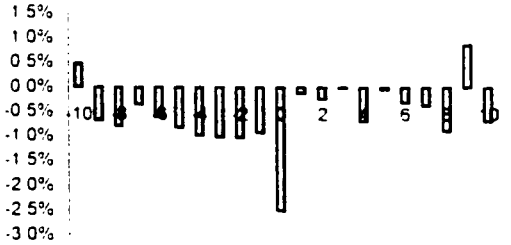


Figure 20 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index Sample includes 238 U.S IPOs.

Day	AR	Test Stat	CAR
-10	0.466%	0.68	-1.439%
-9	-0.673%	-0.98	-2.112%
-8	-0.799%	-1.16	-2.911%
-7	-0.357%	-0.52	-3.267%
-6	-0.619%	-0.90	-3.886%
-5	-0.822%	-1.20	-4.708%
-4	-0.988%	-1.44	-5.696%
-3	-1.025%	-1.49	-6.721%
-2	-1.032%	-1.50	-7.753%
-1	-0.926%	-1.35	-8.678%
0	-2.507%	-3.65	-11.186%
1	-0.125%	-0.18	-11.311%
2	-0.242%	-0.35	-11.552%
3	-0.016%	-0.02	-11.568%
4	-0.692%	-1.01	-12.260%
5	-0.051%	-0.07	-12.311%
6	-0.312%	-0.45	-12.623%
7	-0.380%	-0.55	-13.003%
8	-0.892%	-1.30	-13.895%
9	0.856%	1.25	-13.038%
10	-0.697%	-1.02	-13.736%

	CAR	T-STAT
CAR(0,1)	-2.6325%	-2.71
CAR(-1,0)	-3.4329%	-3.54
CAR(-1,1)	-3.56%	-3.67
CAR(-2,2)	-4.83%	-4.98
CAR(-5,5)	-8.42%	-8.68
CAR(-5,1)	-7.42%	-7.65
CAR(-10,10)	-11.83%	-12.19
CAR(-10,1)	-9.41%	-9.70
CAR(-20,20)	-14.83%	-15.29
CAR(-20,1)	-11.31%	-11.66



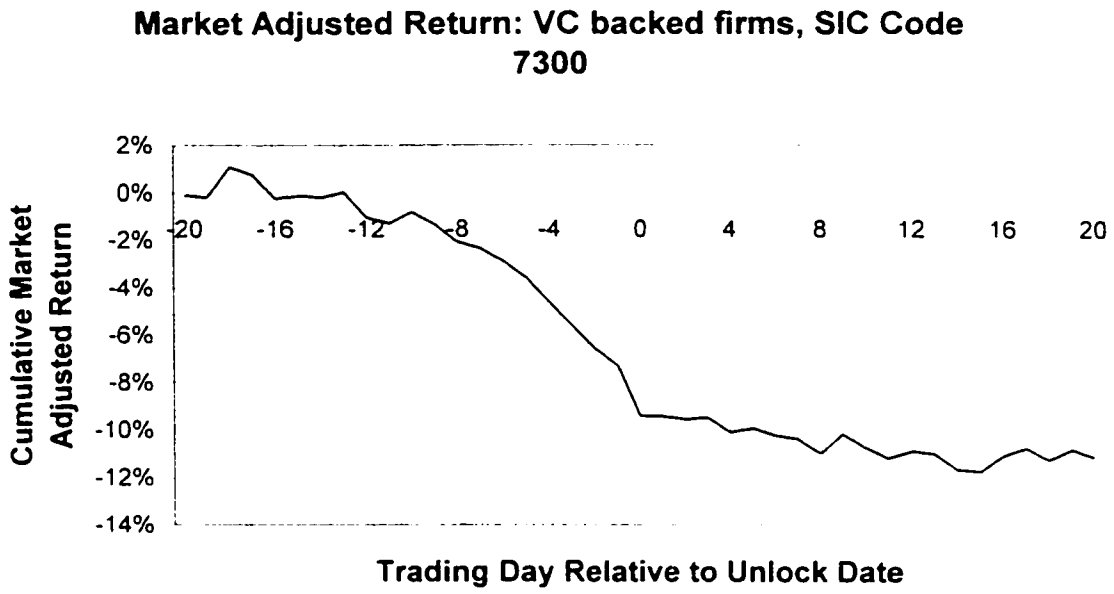
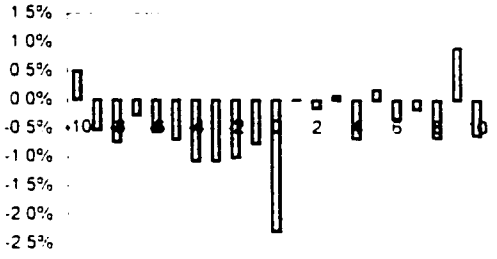


Figure 20 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 238 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	0.498%	0.73	-0.799%
-9	-0.538%	-0.79	-1.332%
-8	-0.741%	-1.09	-2.063%
-7	-0.276%	-0.40	-2.333%
-6	-0.566%	-0.83	-2.886%
-5	-0.694%	-1.02	-3.559%
-4	-1.072%	-1.57	-4.593%
-3	-1.066%	-1.56	-5.610%
-2	-1.011%	-1.48	-6.564%
-1	-0.769%	-1.13	-7.283%
0	-2.289%	-3.35	-9.406%
1	0.002%	0.00	-9.404%
2	-0.147%	-0.22	-9.537%
3	0.077%	0.11	-9.468%
4	-0.677%	-0.99	-10.081%
5	0.183%	0.27	-9.917%
6	-0.335%	-0.49	-10.218%
7	-0.169%	-0.25	-10.370%
8	-0.664%	-0.97	-10.965%
9	0.898%	1.32	-10.165%
10	-0.623%	-0.91	-10.725%

	CAR	T-STAT
CAR(0,1)	-2.2872%	-2.37
CAR(-1,0)	-3.0587%	-3.17
CAR(-1,1)	-3.04%	-3.15
CAR(-2,2)	-4.16%	-4.31
CAR(-5,5)	-7.24%	-7.50
CAR(-5,1)	-6.71%	-6.95
CAR(-10,10)	-9.56%	-9.90
CAR(-10,1)	-8.22%	-8.51
CAR(-20,20)	-11.14%	-11.53
CAR(-20,1)	-9.40%	-9.74



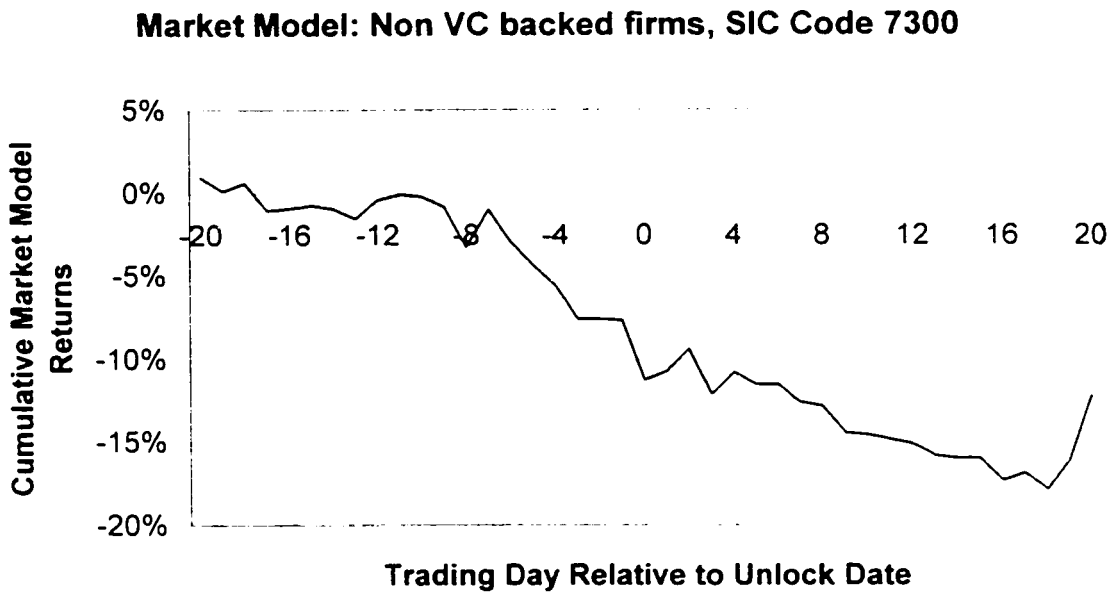
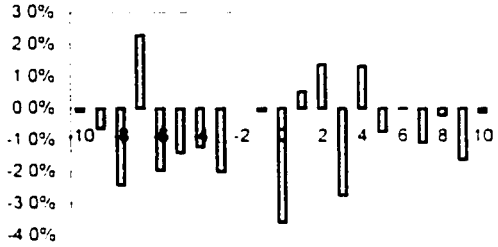


Figure 21 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 37 U S. IPOs

Day	AR	Test Stat	CAR
-10	-0.104%	-0.08	-0.216%
-9	-0.634%	-0.50	-0.850%
-8	-2.415%	-1.91	-3.265%
-7	2.281%	1.80	-0.984%
-6	-1.969%	-1.56	-2.953%
-5	-1.397%	-1.11	-4.350%
-4	-1.232%	-0.97	-5.582%
-3	-2.003%	-1.58	-7.585%
-2	-0.005%	0.00	-7.590%
-1	-0.078%	-0.06	-7.668%
0	-3.599%	-2.85	-11.267%
1	0.529%	0.42	-10.739%
2	1.367%	1.08	-9.371%
3	-2.742%	-2.17	-12.113%
4	1.317%	1.04	-10.796%
5	-0.739%	-0.58	-11.535%
6	-0.008%	-0.01	-11.543%
7	-1.084%	-0.86	-12.627%
8	-0.221%	-0.17	-12.848%
9	-1.625%	-1.29	-14.473%
10	-0.121%	-0.10	-14.594%

	CAR	T-STAT
CAR(0,1)	-3 0705%	-1 72
CAR(-1,0)	-3.6773%	-2.06
CAR(-1,1)	-3.15%	-1 76
CAR(-2,2)	-1 79%	-1 00
CAR(-5,5)	-8 58%	-4 80
CAR(-5,1)	-7 79%	-4 36
CAR(-10,10)	-14 48%	-8 10
CAR(-10,1)	-10 63%	-5 94
CAR(-20,20)	-12.20%	-6 82
CAR(-20,1)	-10 74%	-6 01



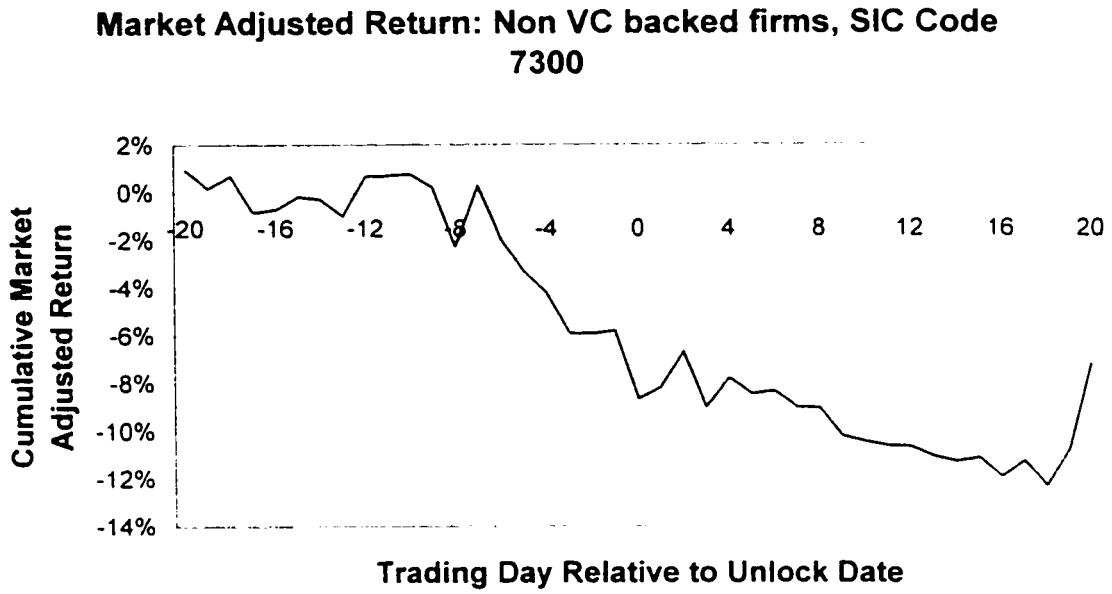
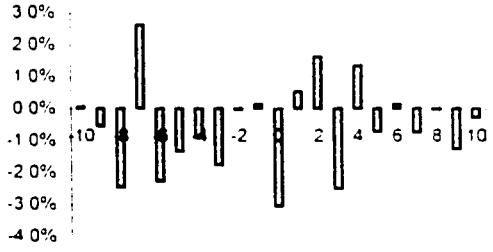


Figure 21 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 37 U.S. IPOs

Day	AR	Test Stat	CAR
-10	0.060%	0.05	0.779%
-9	-0.551%	-0.42	0.224%
-8	-2.470%	-1.89	-2.252%
-7	2.613%	2.00	0.302%
-6	-2.278%	-1.74	-1.983%
-5	-1.349%	-1.03	-3.305%
-4	-0.920%	-0.70	-4.194%
-3	-1.775%	-1.36	-5.894%
-2	-0.034%	-0.03	-5.926%
-1	0.140%	0.11	-5.794%
0	-3.056%	-2.34	-8.673%
1	0.547%	0.42	-8.173%
2	1.634%	1.25	-6.673%
3	-2.515%	-1.92	-9.020%
4	1.353%	1.03	-7.789%
5	-0.729%	-0.56	-8.461%
6	0.140%	0.11	-8.332%
7	-0.748%	-0.57	-9.018%
8	-0.029%	-0.02	-9.045%
9	-1.278%	-0.98	-10.207%
10	-0.273%	-0.21	-10.452%

	CAR	T-STAT
CAR(0,1)	-2.5255%	-1.37
CAR(-1,0)	-2.9157%	-1.58
CAR(-1,1)	-2.39%	-1.29
CAR(-2,2)	-0.83%	-0.45
CAR(-5,5)	-6.61%	-3.58
CAR(-5,1)	-6.32%	-3.42
CAR(-10,10)	-11.09%	-6.00
CAR(-10,1)	-8.83%	-4.78
CAR(-20,20)	-7.21%	-3.90
CAR(-20,1)	-8.17%	-4.42



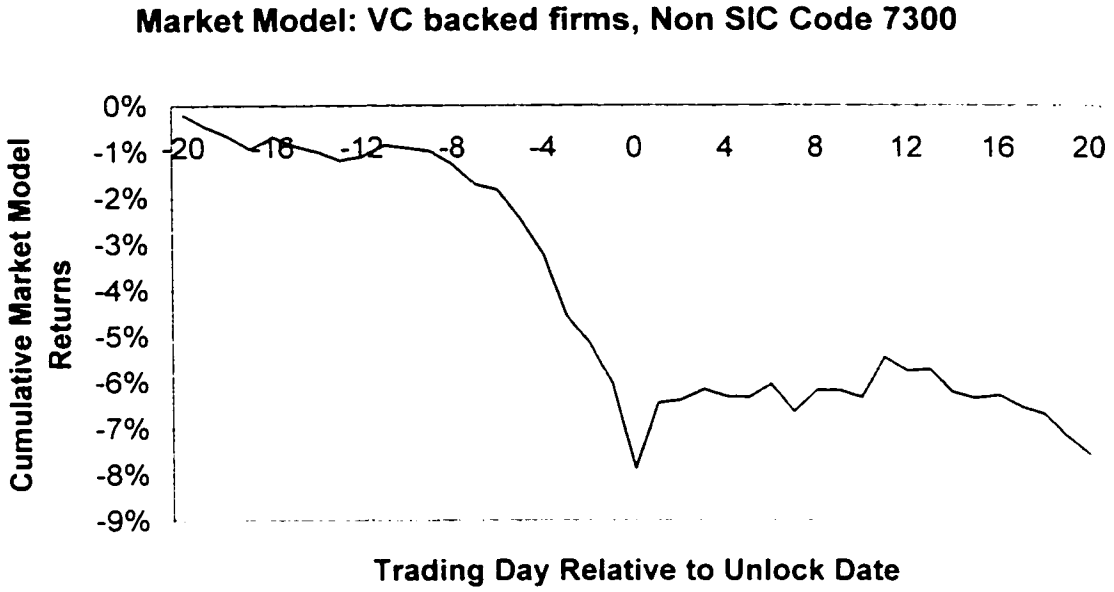
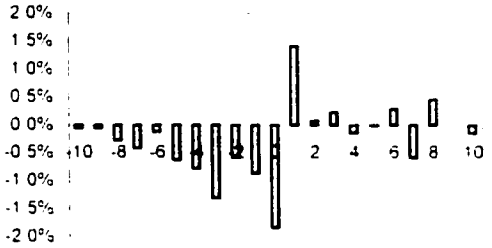


Figure 22 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 308 U.S. IPOs.

Day	AR	Test Stat	CAR
-10	-0.065%	-0.12	-0.923%
-9	-0.060%	-0.12	-0.984%
-8	-0.291%	-0.56	-1.274%
-7	-0.426%	-0.82	-1.700%
-6	-0.128%	-0.25	-1.828%
-5	-0.632%	-1.21	-2.460%
-4	-0.784%	-1.51	-3.244%
-3	-1.315%	-2.53	-4.559%
-2	-0.595%	-1.14	-5.154%
-1	-0.875%	-1.68	-6.029%
0	-1.834%	-3.53	-7.864%
1	1.406%	2.70	-6.458%
2	0.073%	0.14	-6.385%
3	0.226%	0.43	-6.159%
4	-0.152%	-0.29	-6.311%
5	-0.016%	-0.03	-6.327%
6	0.285%	0.55	-6.042%
7	-0.592%	-1.14	-6.634%
8	0.456%	0.88	-6.178%
9	-0.001%	0.00	-6.179%
10	-0.149%	-0.29	-6.327%

	CAR	T-STAT
CAR(0,1)	-0.4285%	-0.58
CAR(-1,0)	-2.7096%	-3.68
CAR(-1,1)	-1.30%	-1.77
CAR(-2,2)	-1.83%	-2.48
CAR(-5,5)	-4.50%	-6.12
CAR(-5,1)	-4.63%	-6.29
CAR(-10,10)	-5.47%	-7.43
CAR(-10,1)	-5.60%	-7.61
CAR(-20,20)	-7.57%	-10.28
CAR(-20,1)	-6.46%	-8.78



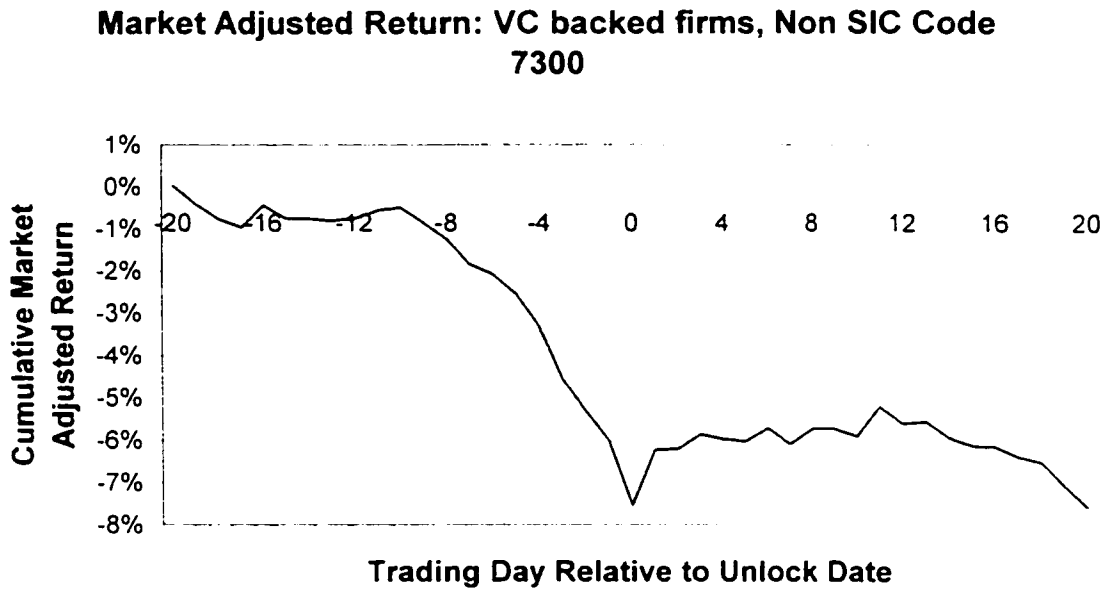
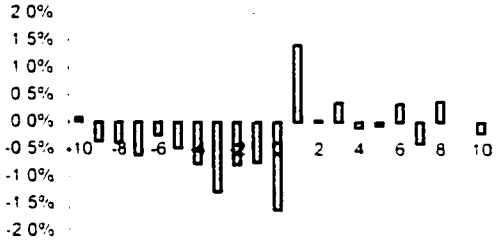


Figure 22 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 308 U S. IPOs.

Day	AR	Test Stat	CAR
-10	0.078%	0.15	-0.483%
-9	-0.360%	-0.71	-0.842%
-8	-0.387%	-0.76	-1.225%
-7	-0.614%	-1.20	-1.832%
-6	-0.249%	-0.49	-2.076%
-5	-0.480%	-0.94	-2.547%
-4	-0.774%	-1.52	-3.301%
-3	-1.286%	-2.52	-4.544%
-2	-0.791%	-1.55	-5.299%
-1	-0.746%	-1.46	-6.005%
0	-1.620%	-3.18	-7.528%
1	1.411%	2.77	-6.223%
2	0.031%	0.06	-6.194%
3	0.358%	0.70	-5.858%
4	-0.107%	-0.21	-5.959%
5	-0.071%	-0.14	-6.026%
6	0.341%	0.67	-5.705%
7	-0.399%	-0.78	-6.081%
8	0.388%	0.76	-5.717%
9	-0.001%	0.00	-5.718%
10	-0.198%	-0.39	-5.904%

	CAR	T-STAT
CAR(0,1)	-0.2316%	-0 32
CAR(-1,0)	-2.3660%	-3 28
CAR(-1,1)	-0.98%	-1 35
CAR(-2,2)	-1.73%	-2 40
CAR(-5,5)	-4 03%	-5 59
CAR(-5,1)	-4 23%	-5 87
CAR(-10,10)	-5.37%	-7 45
CAR(-10,1)	-5.69%	-7 89
CAR(-20,20)	-7 58%	-10 51
CAR(-20,1)	-6 22%	-8 63



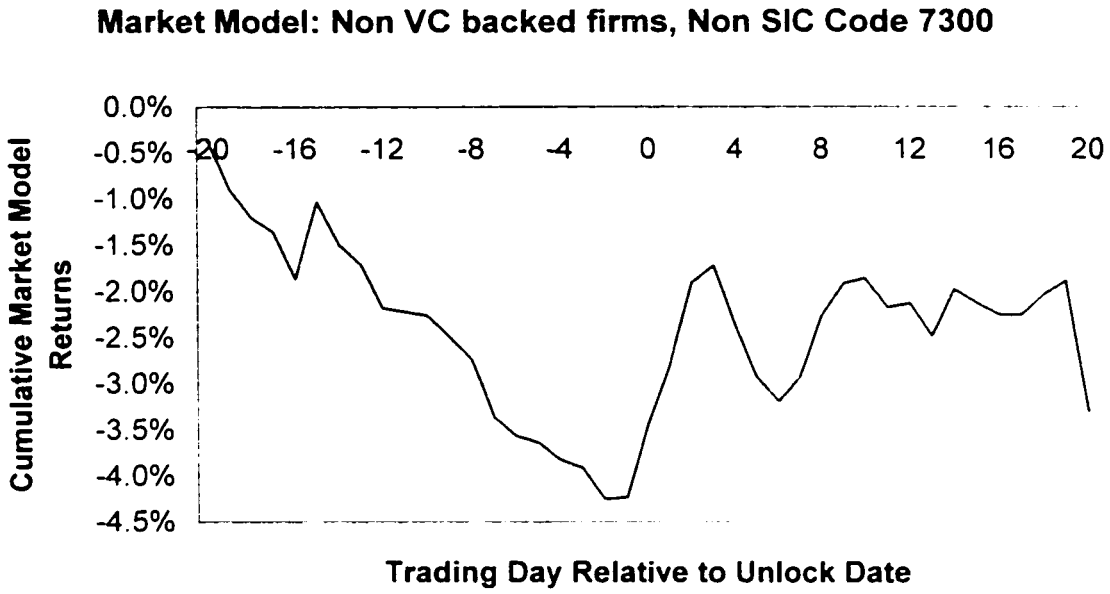


Figure 23 a). Market Model Returns around the unlock day. Market Model return is measured relative to the Nasdaq index. Sample includes 110 U.S IPOs

Day	AR	Test Stat	CAR
-10	-0.039%	-0.05	-2.255%
-9	-0.233%	-0.29	-2.489%
-8	-0.245%	-0.31	-2.734%
-7	-0.627%	-0.78	-3.361%
-6	-0.204%	-0.25	-3.564%
-5	-0.074%	-0.09	-3.638%
-4	-0.186%	-0.23	-3.825%
-3	-0.085%	-0.11	-3.910%
-2	-0.340%	-0.43	-4.250%
-1	0.022%	0.03	-4.228%
0	0.818%	1.02	-3.410%
1	0.622%	0.78	-2.788%
2	0.890%	1.11	-1.898%
3	0.181%	0.23	-1.718%
4	-0.641%	-0.80	-2.359%
5	-0.567%	-0.71	-2.926%
6	-0.260%	-0.32	-3.185%
7	0.268%	0.33	-2.917%
8	0.660%	0.82	-2.258%
9	0.351%	0.44	-1.907%
10	0.051%	0.06	-1.855%

	CAR	T-STAT
CAR(0,1)	1.4396%	1.27
CAR(-1,0)	0.8393%	0.74
CAR(-1,1)	1.46%	1.29
CAR(-2,2)	2.01%	1.78
CAR(-5,5)	0.64%	0.56
CAR(-5,1)	0.78%	0.69
CAR(-10,10)	0.36%	0.32
CAR(-10,1)	-0.57%	-0.51
CAR(-20,20)	-3.30%	-2.92
CAR(-20,1)	-2.79%	-2.46

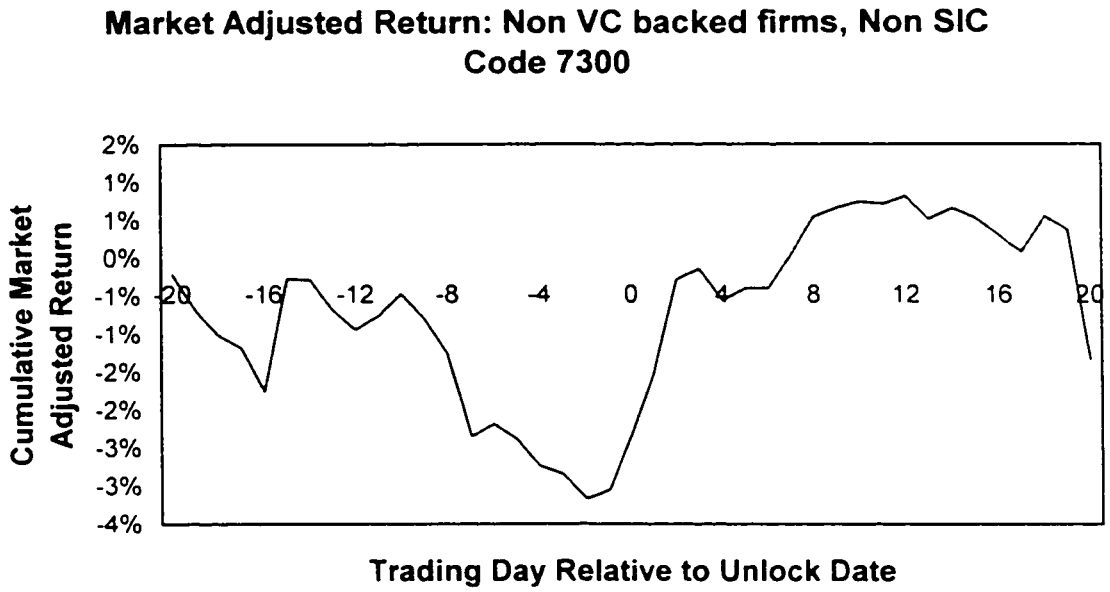
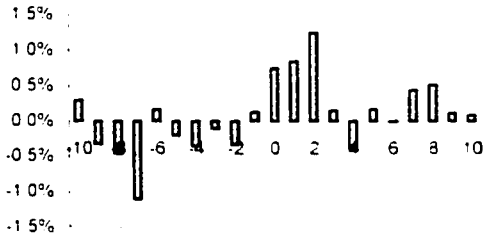


Figure 23 b). Market Adjusted Returns around the unlock day. Market adjusted return is measured relative to the Nasdaq index. Sample includes 110 U.S IPOs.

Day	AR	Test Stat	CAR
-10	0.293%	0.36	-0.460%
-9	-0.333%	-0.41	-0.791%
-8	-0.465%	-0.57	-1.252%
-7	-1.107%	-1.36	-2.345%
-6	0.166%	0.21	-2.183%
-5	-0.207%	-0.25	-2.385%
-4	-0.360%	-0.44	-2.736%
-3	-0.109%	-0.13	-2.842%
-2	-0.336%	-0.41	-3.169%
-1	0.123%	0.15	-3.050%
0	0.742%	0.91	-2.331%
1	0.843%	1.04	-1.507%
2	1.245%	1.53	-0.281%
3	0.145%	0.18	-0.136%
4	-0.418%	-0.52	-0.554%
5	0.164%	0.20	-0.391%
6	-0.005%	-0.01	-0.396%
7	0.435%	0.54	0.038%
8	0.512%	0.63	0.550%
9	0.113%	0.14	0.664%
10	0.083%	0.10	0.747%

	CAR	T-STAT
CAR(0,1)	1.5914%	1.39
CAR(-1,0)	0.8649%	0.75
CAR(-1,1)	1.72%	1.50
CAR(-2,2)	2.64%	2.30
CAR(-5,5)	1.83%	1.60
CAR(-5,1)	0.69%	0.60
CAR(-10,10)	1.51%	1.31
CAR(-10,1)	-0.76%	-0.66
CAR(-20,20)	-1.33%	-1.16
CAR(-20,1)	-1.51%	-1.31



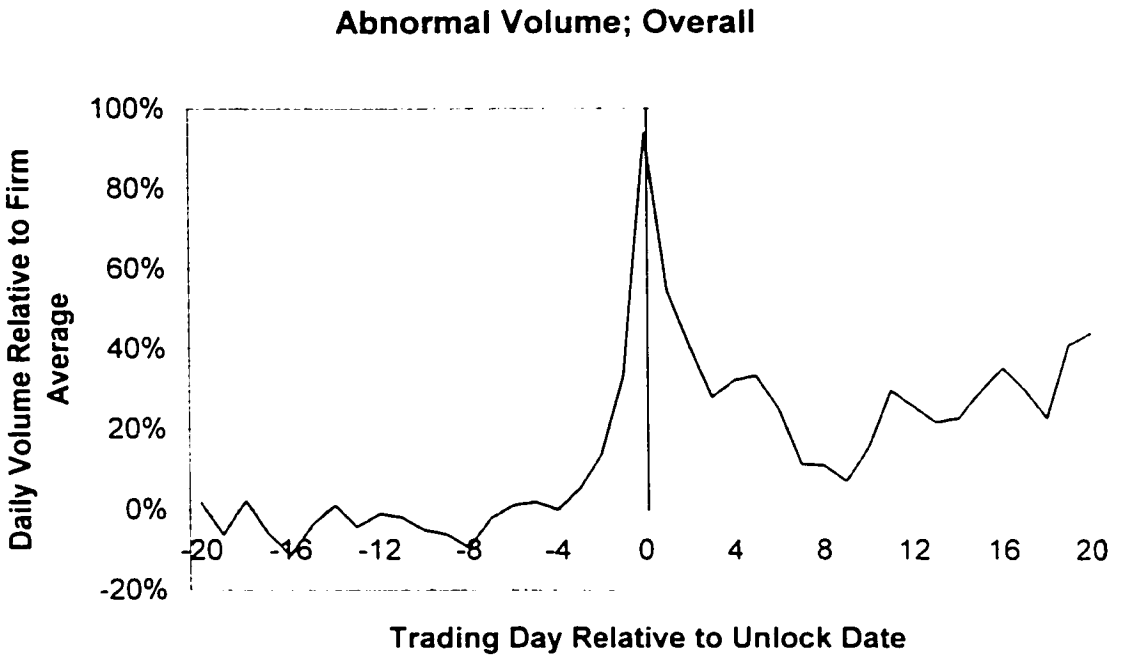


Figure 24. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 715 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	1.804%	0.09
-19	-6.240%	-0.32
-18	2.237%	0.11
-17	-6.026%	-0.31
-16	-11.397%	-0.58
-15	-3.522%	-0.18
-14	1.111%	0.06
-13	-4.293%	-0.22
-12	-1.045%	-0.05
-11	-1.952%	-0.10
-10	-5.089%	-0.26
-9	-6.117%	-0.31
-8	-9.574%	-0.49
-7	-2.011%	-0.10
-6	1.087%	0.06
-5	1.909%	0.10
-4	-0.048%	0.00
-3	5.358%	0.27
-2	13.683%	0.69
-1	33.014%	1.67

Day	Abnormal Volume	Test Statistic
0	93.729%	4.75
1	54.462%	2.76
2	40.808%	2.07
3	27.903%	1.41
4	32.227%	1.63
5	33.203%	1.68
6	24.874%	1.26
7	11.255%	0.57
8	10.961%	0.56
9	7.083%	0.36
10	15.712%	0.80
11	29.593%	1.50
12	25.631%	1.30
13	21.711%	1.10
14	22.662%	1.15
15	29.449%	1.49
16	35.187%	1.78
17	29.682%	1.50
18	22.680%	1.15
19	40.856%	2.07
20	43.832%	2.22

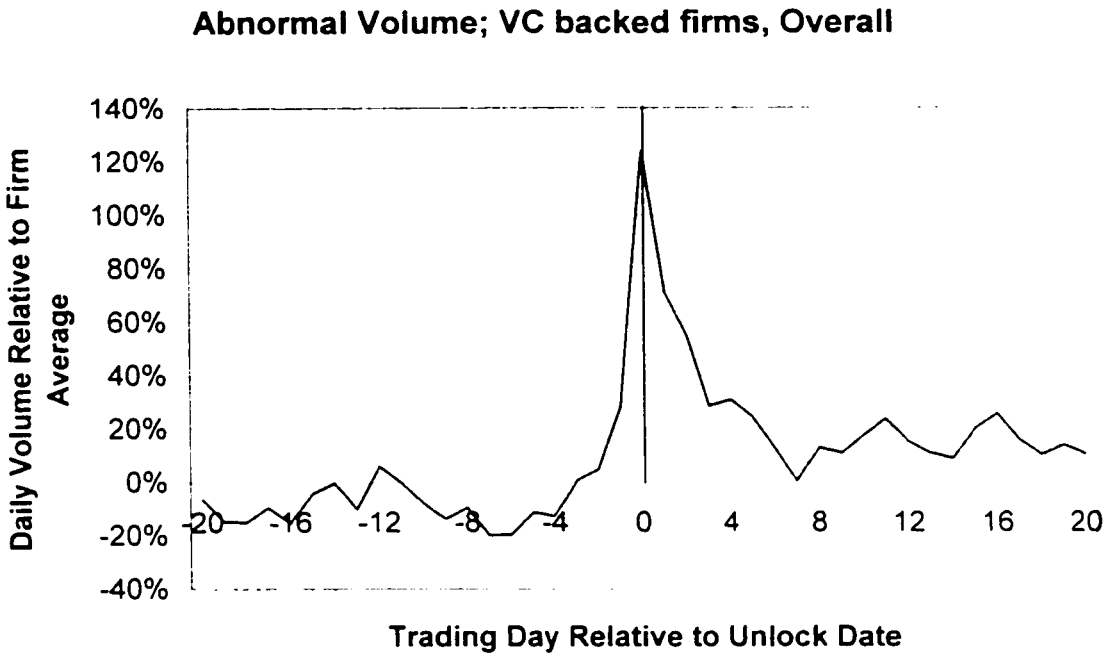


Figure 25. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 546 U.S. IPOs

Day	Abnormal Volume	Test Statistic
-20	-6.151%	-0.25
-19	-14.710%	-0.59
-18	-14.937%	-0.60
-17	-9.401%	-0.38
-16	-15.173%	-0.61
-15	-4.168%	-0.17
-14	-0.259%	-0.01
-13	-10.197%	-0.41
-12	6.036%	0.24
-11	-0.039%	0.00
-10	-7.764%	-0.31
-9	-13.721%	-0.55
-8	-9.556%	-0.38
-7	-19.952%	-0.80
-6	-19.573%	-0.78
-5	-11.324%	-0.45
-4	-12.781%	-0.51
-3	0.655%	0.03
-2	4.910%	0.20
-1	27.997%	1.12

Day	Abnormal Volume	Test Statistic
0	123.873%	4.94
1	70.701%	2.82
2	55.047%	2.20
3	28.577%	1.14
4	30.933%	1.23
5	24.500%	0.98
6	12.826%	0.51
7	0.494%	0.02
8	13.024%	0.52
9	10.902%	0.43
10	17.464%	0.70
11	23.770%	0.95
12	15.134%	0.60
13	10.765%	0.43
14	8.888%	0.35
15	20.205%	0.81
16	25.713%	1.03
17	15.872%	0.63
18	10.280%	0.41
19	13.878%	0.55
20	10.525%	0.41994

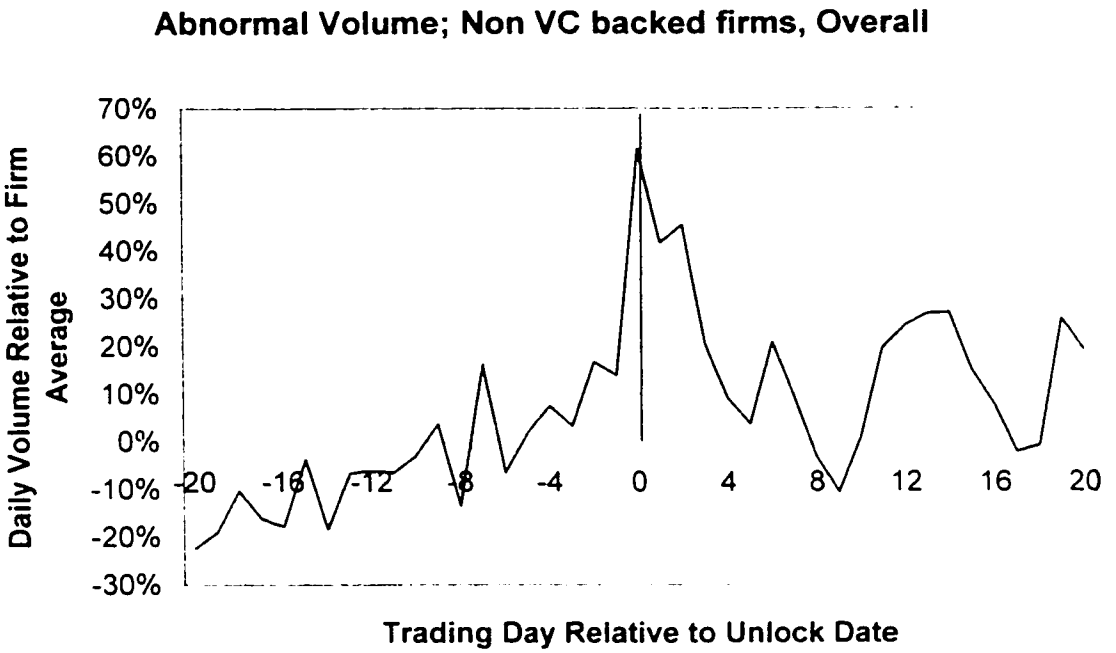


Figure 26. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 147 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	-22.353%	-0.73
-19	-18.963%	-0.62
-18	-10.349%	-0.34
-17	-16.191%	-0.53
-16	-17.767%	-0.58
-15	-3.749%	-0.12
-14	-18.326%	-0.59
-13	-6.657%	-0.22
-12	-6.174%	-0.20
-11	-6.536%	-0.21
-10	-3.037%	-0.10
-9	3.671%	0.12
-8	-13.468%	-0.44
-7	16.309%	0.53
-6	-6.522%	-0.21
-5	1.936%	0.06
-4	7.483%	0.24
-3	3.311%	0.11
-2	16.760%	0.54
-1	13.952%	0.45

Day	Abnormal Volume	Test Statistic
0	61.478%	2.00
1	41.766%	1.36
2	45.594%	1.48
3	20.487%	0.66
4	9.058%	0.29
5	3.751%	0.12
6	20.948%	0.68
7	9.525%	0.31
8	-3.239%	-0.11
9	-10.588%	-0.34
10	1.026%	0.03
11	19.757%	0.64
12	24.539%	0.80
13	26.911%	0.87
14	27.152%	0.88
15	14.998%	0.49
16	7.767%	0.25
17	-2.132%	-0.07
18	-0.767%	-0.02
19	25.961%	0.84
20	19.375%	0.63

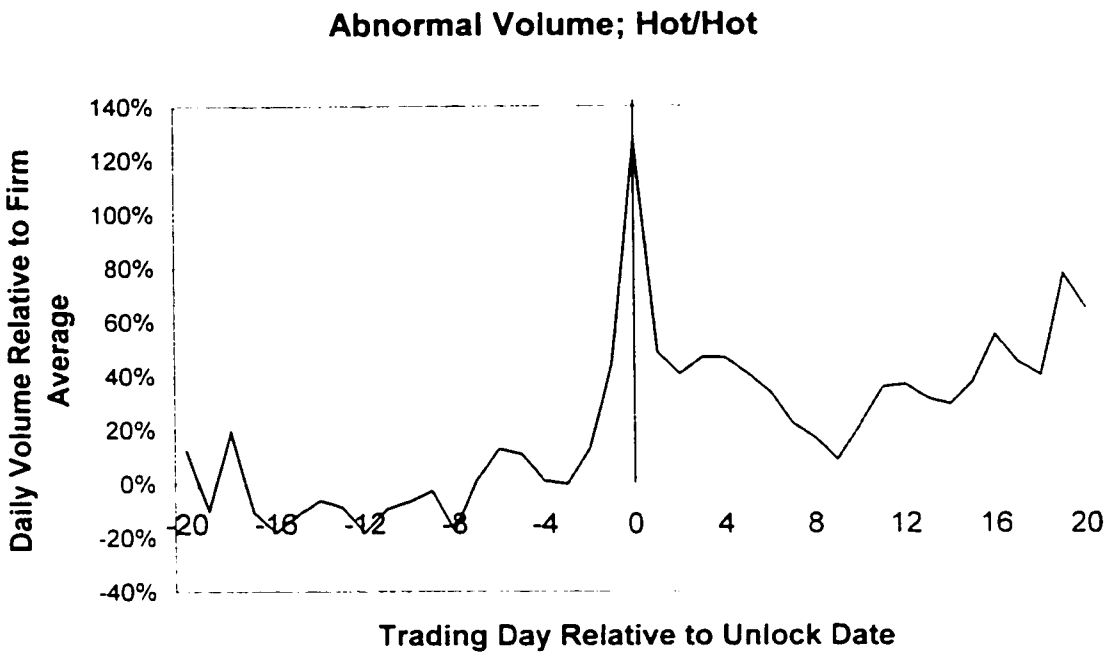


Figure 27. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10 Sample includes 190 U S IPOs

Day	Abnormal Volume	Test Statistic
-20	12.526%	0.58
-19	-10.054%	-0.47
-18	19.388%	0.90
-17	-10.509%	-0.49
-16	-17.977%	-0.84
-15	-11.285%	-0.52
-14	-6.141%	-0.29
-13	-8.873%	-0.41
-12	-18.056%	-0.84
-11	-9.378%	-0.44
-10	-6.543%	-0.30
-9	-2.613%	-0.12
-8	-17.433%	-0.81
-7	1.316%	0.06
-6	13.044%	0.61
-5	10.935%	0.51
-4	1.070%	0.05
-3	0.028%	0.00
-2	13.204%	0.61
-1	44.824%	2.08

Day	Abnormal Volume	Test Statistic
0	127.821%	5.94
1	48.832%	2.27
2	40.758%	1.89
3	46.993%	2.18
4	46.577%	2.16
5	40.637%	1.89
6	33.775%	1.57
7	22.238%	1.03
8	16.881%	0.78
9	8.784%	0.41
10	21.630%	1.00
11	35.718%	1.66
12	36.605%	1.70
13	31.377%	1.46
14	29.197%	1.36
15	37.444%	1.74
16	55.198%	2.56
17	44.809%	2.08
18	40.069%	1.86
19	77.716%	3.61
20	64.949%	3.02

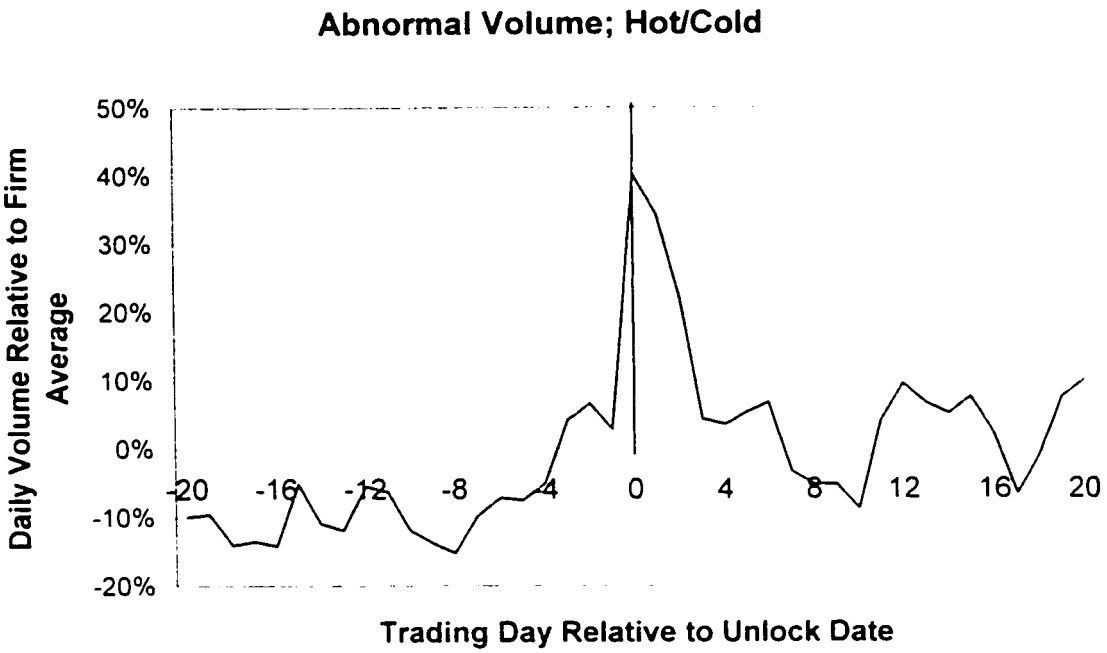


Figure 28. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 236 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	-9.934%	-0.44
-19	-9.554%	-0.42
-18	-14.052%	-0.62
-17	-13.489%	-0.60
-16	-14.185%	-0.63
-15	-5.091%	-0.23
-14	-10.916%	-0.49
-13	-11.913%	-0.53
-12	-5.488%	-0.24
-11	-6.288%	-0.28
-10	-11.922%	-0.53
-9	-13.711%	-0.61
-8	-15.196%	-0.68
-7	-9.791%	-0.44
-6	-7.111%	-0.32
-5	-7.478%	-0.33
-4	-4.964%	-0.22
-3	4.207%	0.19
-2	6.674%	0.30
-1	2.874%	0.13

Day	Abnormal Volume	Test Statistic
0	40.172%	1.79
1	34.461%	1.53
2	22.462%	1.00
3	4.300%	0.19
4	3.551%	0.16
5	5.343%	0.24
6	6.746%	0.30
7	-3.331%	-0.15
8	-5.186%	-0.23
9	-5.145%	-0.23
10	-8.767%	-0.39
11	4.062%	0.18
12	9.490%	0.42
13	6.722%	0.30
14	5.135%	0.23
15	7.532%	0.33
16	2.150%	0.10
17	-6.623%	-0.29
18	-0.822%	-0.04
19	7.479%	0.33
20	9.962%	0.44

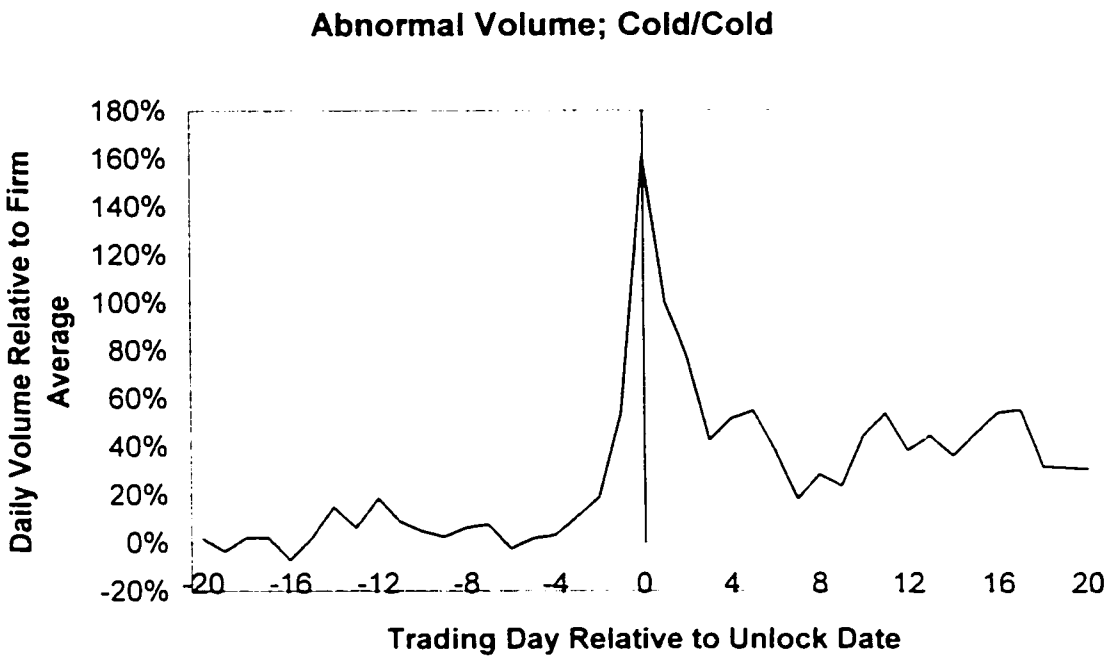


Figure 29. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 289 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	1.763%	0.08
-19	-3.465%	-0.17
-18	2.123%	0.10
-17	2.260%	0.11
-16	-7.130%	-0.34
-15	2.201%	0.11
-14	14.936%	0.72
-13	6.253%	0.30
-12	18.456%	0.89
-11	8.772%	0.42
-10	4.887%	0.24
-9	2.442%	0.12
-8	6.429%	0.31
-7	7.550%	0.36
-6	-2.242%	-0.11
-5	1.867%	0.09
-4	3.279%	0.16
-3	11.057%	0.53
-2	19.159%	0.92
-1	53.734%	2.58

Day	Abnormal Volume	Test Statistic
0	161.635%	7.77
1	100.373%	4.83
2	77.713%	3.74
3	42.878%	2.06
4	51.831%	2.49
5	55.105%	2.65
6	38.680%	1.86
7	18.348%	0.88
8	28.445%	1.37
9	23.667%	1.14
10	44.722%	2.15
11	53.956%	2.59
12	38.419%	1.85
13	44.632%	2.15
14	36.308%	1.75
15	45.354%	2.18
16	54.139%	2.60
17	55.265%	2.66
18	31.712%	1.53
19	31.238%	1.50
20	30.703%	1.48

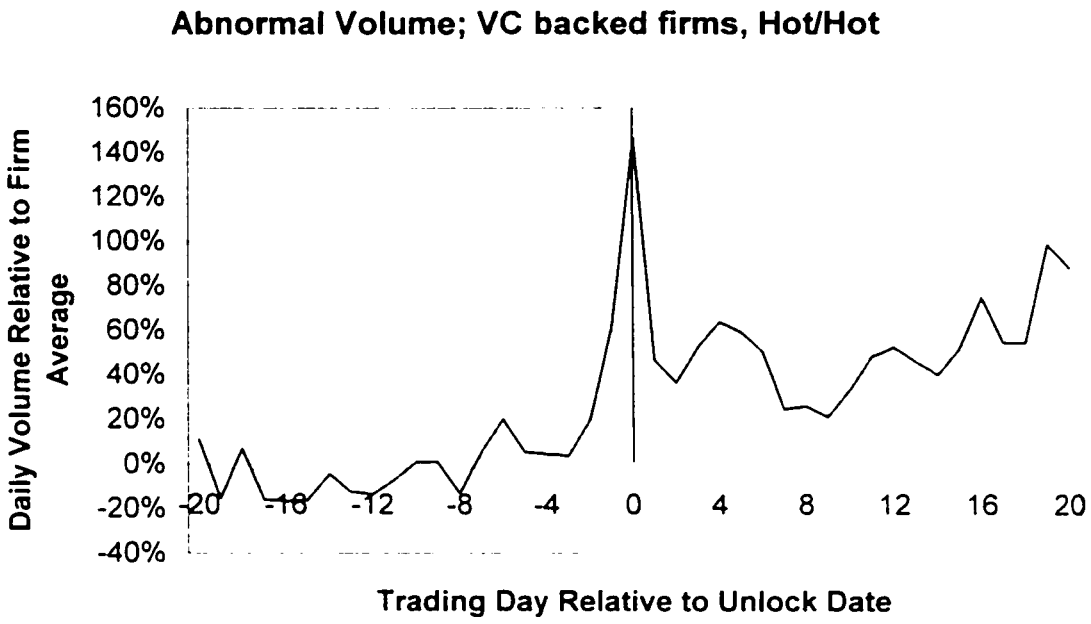


Figure 30. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 139 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	10.969%	0.44
-19	-15.427%	-0.62
-18	7.025%	0.28
-17	-16.005%	-0.64
-16	-16.681%	-0.67
-15	-16.354%	-0.65
-14	-4.385%	-0.18
-13	-12.585%	-0.50
-12	-13.500%	-0.54
-11	-7.008%	-0.28
-10	0.905%	0.04
-9	1.009%	0.04
-8	-13.274%	-0.53
-7	5.475%	0.22
-6	20.131%	0.80
-5	5.509%	0.22
-4	4.531%	0.18
-3	3.777%	0.15
-2	19.728%	0.79
-1	61.087%	2.44

Day	Abnormal Volume	Test Statistic
0	146.568%	5.85
1	46.640%	1.86
2	36.549%	1.46
3	52.849%	2.11
4	63.957%	2.55
5	59.452%	2.37
6	50.838%	2.03
7	24.691%	0.99
8	26.083%	1.04
9	21.224%	0.85
10	33.310%	1.33
11	48.332%	1.93
12	52.538%	2.10
13	46.195%	1.84
14	40.201%	1.61
15	51.932%	2.07
16	75.090%	3.00
17	54.633%	2.18
18	54.673%	2.18
19	98.682%	3.94
20	87.952%	3.51

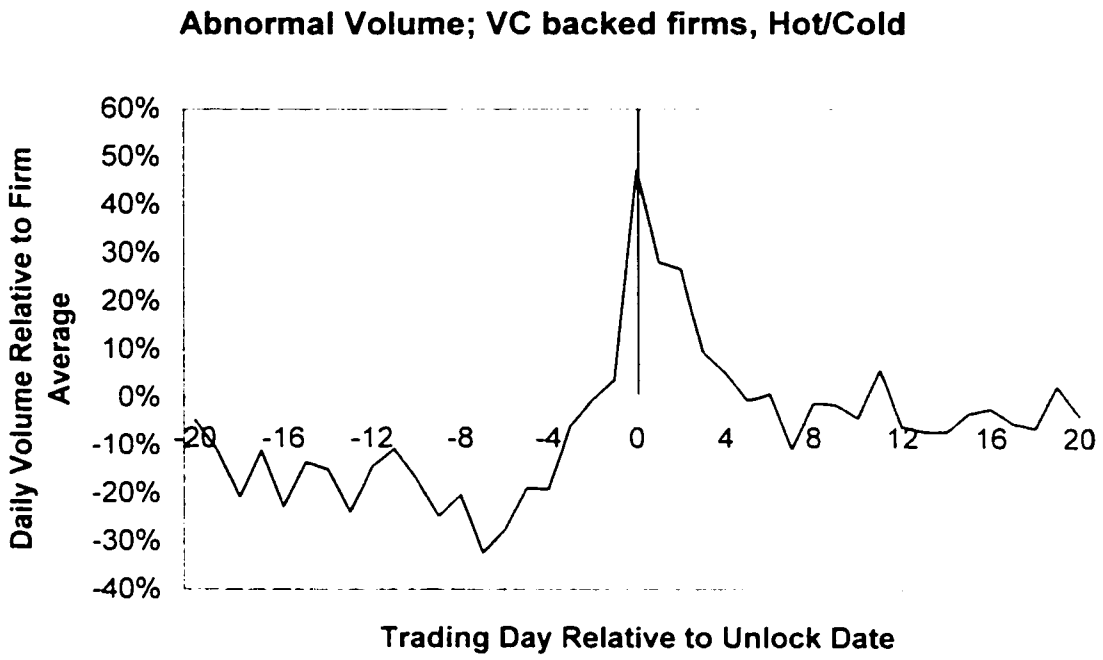


Figure 31. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10 Sample includes 180 U S IPOs

Day	Abnormal Volume	Test Statistic
-20	-4.694%	-0.17
-19	-10.913%	-0.39
-18	-20.777%	-0.74
-17	-11.014%	-0.39
-16	-22.765%	-0.81
-15	-13.478%	-0.48
-14	-15.041%	-0.53
-13	-23.905%	-0.85
-12	-14.429%	-0.51
-11	-10.629%	-0.38
-10	-16.965%	-0.60
-9	-24.787%	-0.88
-8	-20.265%	-0.72
-7	-32.341%	-1.15
-6	-27.577%	-0.98
-5	-18.926%	-0.67
-4	-19.122%	-0.68
-3	-5.943%	-0.21
-2	-0.412%	-0.01
-1	3.729%	0.13

Day	Abnormal Volume	Test Statistic
0	47.424%	1.69
1	28.162%	1.00
2	26.711%	0.95
3	9.478%	0.34
4	5.112%	0.18
5	-0.555%	-0.02
6	0.720%	0.03
7	-10.625%	-0.38
8	-1.119%	-0.04
9	-1.469%	-0.05
10	-4.232%	-0.15
11	5.829%	0.21
12	-6.063%	-0.22
13	-7.035%	-0.25
14	-6.984%	-0.25
15	-3.226%	-0.11
16	-2.218%	-0.08
17	-5.306%	-0.19
18	-6.263%	-0.22
19	2.523%	0.09
20	-3.642%	-0.13

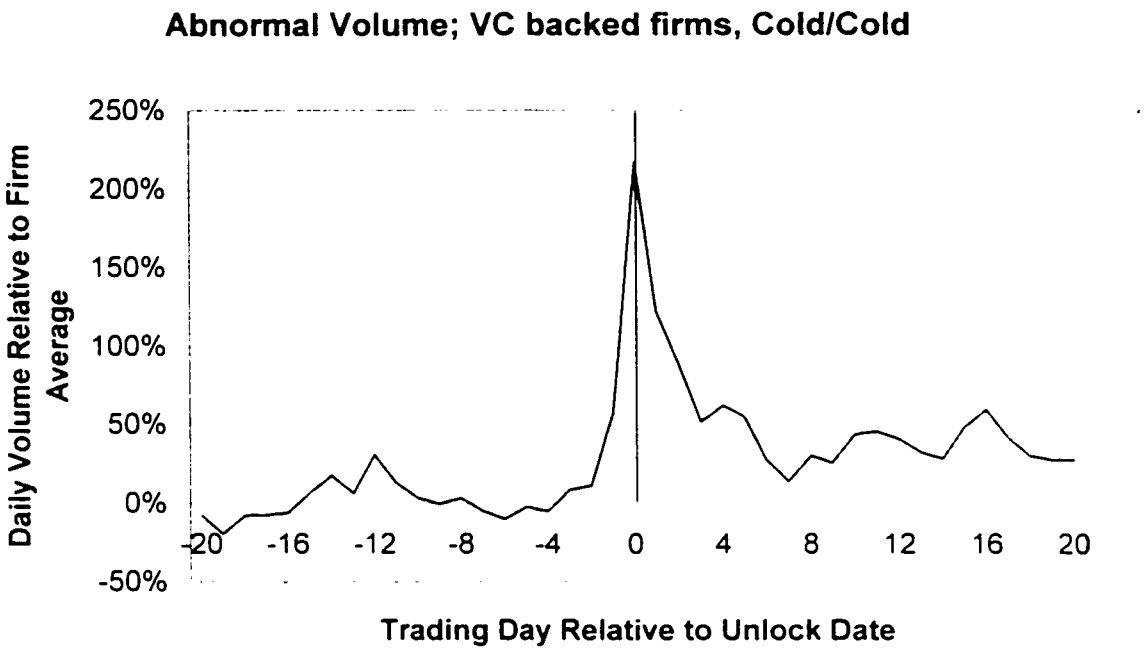


Figure 32. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 227 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	-7.918%	-0.33
-19	-19.315%	-0.81
-18	-7.854%	-0.33
-17	-7.445%	-0.31
-16	-5.966%	-0.25
-15	7.122%	0.30
-14	17.666%	0.74
-13	6.425%	0.27
-12	30.853%	1.29
-11	12.803%	0.53
-10	3.392%	0.14
-9	-0.303%	-0.01
-8	3.431%	0.14
-7	-4.928%	-0.21
-6	-9.866%	-0.41
-5	-2.106%	-0.09
-4	-5.091%	-0.21
-3	8.655%	0.36
-2	11.364%	0.47
-1	57.424%	2.40

Day	Abnormal Volume	Test Statistic
0	216.811%	9.04
1	122.377%	5.10
2	89.435%	3.73
3	51.734%	2.16
4	62.276%	2.60
5	54.917%	2.29
6	27.477%	1.15
7	13.954%	0.58
8	30.158%	1.26
9	25.854%	1.08
10	43.815%	1.83
11	45.516%	1.90
12	40.880%	1.71
13	32.361%	1.35
14	28.128%	1.17
15	48.642%	2.03
16	59.624%	2.49
17	41.570%	1.73
18	30.341%	1.27
19	27.656%	1.15
20	27.708%	1.16

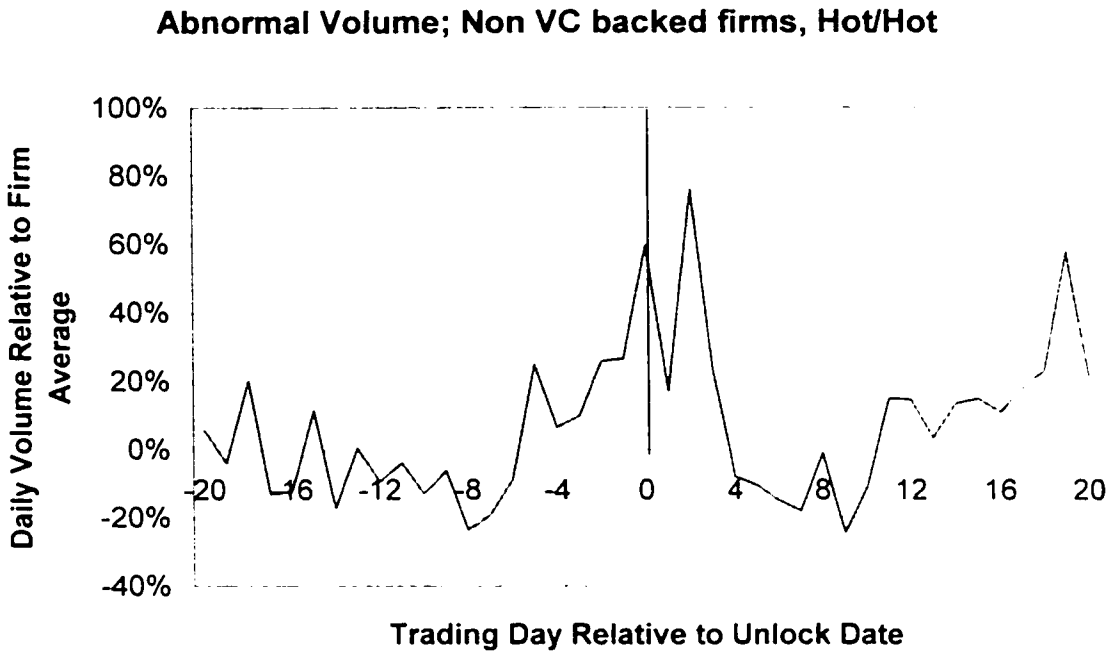


Figure 33. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 51 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	5.571%	0.16
-19	-3.969%	-0.11
-18	20.136%	0.56
-17	-13.071%	-0.36
-16	-12.142%	-0.34
-15	11.449%	0.32
-14	-17.173%	-0.48
-13	0.385%	0.01
-12	-9.406%	-0.26
-11	-3.812%	-0.11
-10	-12.992%	-0.36
-9	-6.083%	-0.17
-8	-23.553%	-0.66
-7	-18.955%	-0.53
-6	-8.743%	-0.24
-5	25.087%	0.70
-4	6.613%	0.18
-3	9.937%	0.28
-2	25.991%	0.72
-1	26.705%	0.74

Day	Abnormal Volume	Test Statistic
0	59.845%	1.67
1	17.013%	0.47
2	76.185%	2.12
3	23.721%	0.66
4	-7.910%	-0.22
5	-10.406%	-0.29
6	-14.815%	-0.41
7	-17.898%	-0.50
8	-0.894%	-0.02
9	-24.186%	-0.67
10	-10.694%	-0.30
11	15.112%	0.42
12	14.690%	0.41
13	3.536%	0.10
14	13.485%	0.38
15	14.996%	0.42
16	11.141%	0.31
17	17.998%	0.50
18	23.361%	0.65
19	58.191%	1.62
20	21.594%	0.60

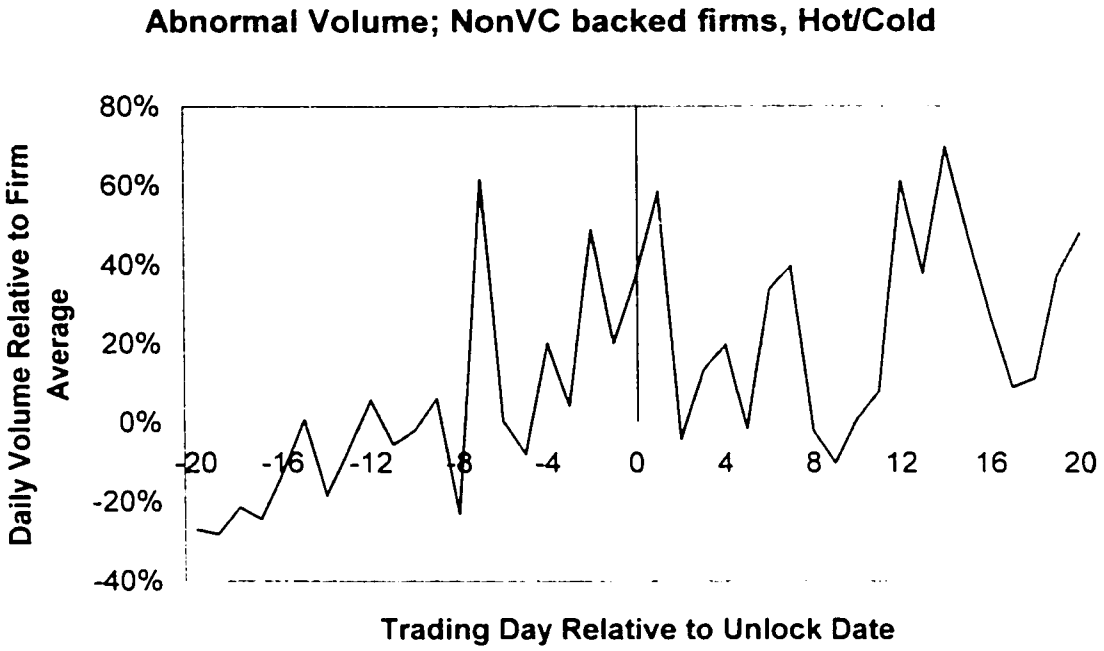


Figure 34. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 43 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	-26.985%	-0.99
-19	-28.183%	-1.03
-18	-21.403%	-0.78
-17	-24.430%	-0.89
-16	-12.621%	-0.46
-15	0.820%	0.03
-14	-18.483%	-0.68
-13	-6.628%	-0.24
-12	5.838%	0.21
-11	-5.541%	-0.20
-10	-1.847%	-0.07
-9	6.141%	0.22
-8	-23.127%	-0.85
-7	61.580%	2.25
-6	0.525%	0.02
-5	-7.961%	-0.29
-4	20.205%	0.74
-3	4.290%	0.16
-2	48.904%	1.79
-1	20.242%	0.74

Day	Abnormal Volume	Test Statistic
0	36.953%	1.35
1	58.481%	2.14
2	-4.138%	-0.15
3	13.312%	0.49
4	19.871%	0.73
5	-1.471%	-0.05
6	33.803%	1.24
7	39.692%	1.45
8	-1.939%	-0.07
9	-10.139%	-0.37
10	1.035%	0.04
11	7.996%	0.29
12	61.277%	2.24
13	37.902%	1.39
14	69.730%	2.55
15	47.393%	1.73
16	27.291%	1.00
17	9.003%	0.33
18	11.382%	0.42
19	37.379%	1.37
20	48.054%	1.76

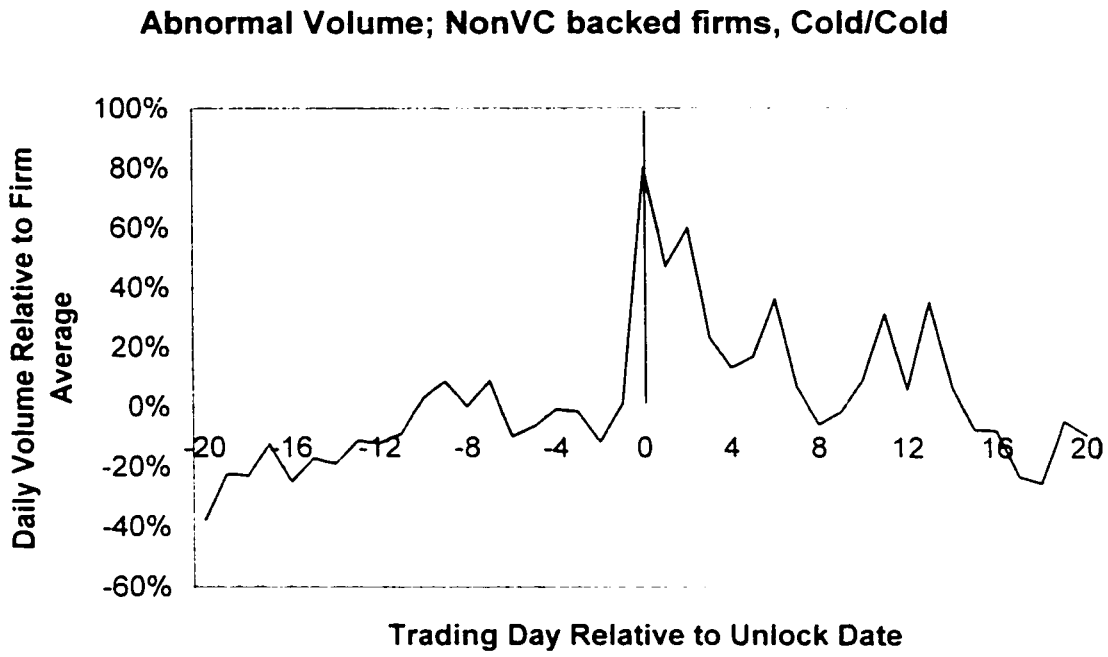


Figure 35. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10. Sample includes 53 U.S. IPOs.

Day	Abnormal Volume	Test Statistic
-20	-37.784%	-0.91
-19	-22.405%	-0.54
-18	-22.904%	-0.55
-17	-12.291%	-0.30
-16	-24.934%	-0.60
-15	-17.101%	-0.41
-14	-18.961%	-0.46
-13	-11.219%	-0.27
-12	-12.111%	-0.29
-11	-8.775%	-0.21
-10	3.094%	0.07
-9	8.710%	0.21
-8	0.316%	0.01
-7	8.764%	0.21
-6	-9.691%	-0.23
-5	-6.428%	-0.16
-4	-0.714%	-0.02
-3	-1.535%	-0.04
-2	-11.594%	-0.28
-1	1.309%	0.03

Day	Abnormal Volume	Test Statistic
0	80.223%	1.94
1	47.208%	1.14
2	60.208%	1.46
3	23.396%	0.57
4	13.229%	0.32
5	17.018%	0.41
6	36.368%	0.88
7	6.767%	0.16
8	-5.796%	-0.14
9	-1.516%	-0.04
10	9.228%	0.22
11	31.450%	0.76
12	5.903%	0.14
13	35.378%	0.86
14	7.017%	0.17
15	-7.333%	-0.18
16	-7.820%	-0.19
17	-23.180%	-0.56
18	-25.253%	-0.61
19	-4.550%	-0.11
20	-9.236%	-0.22

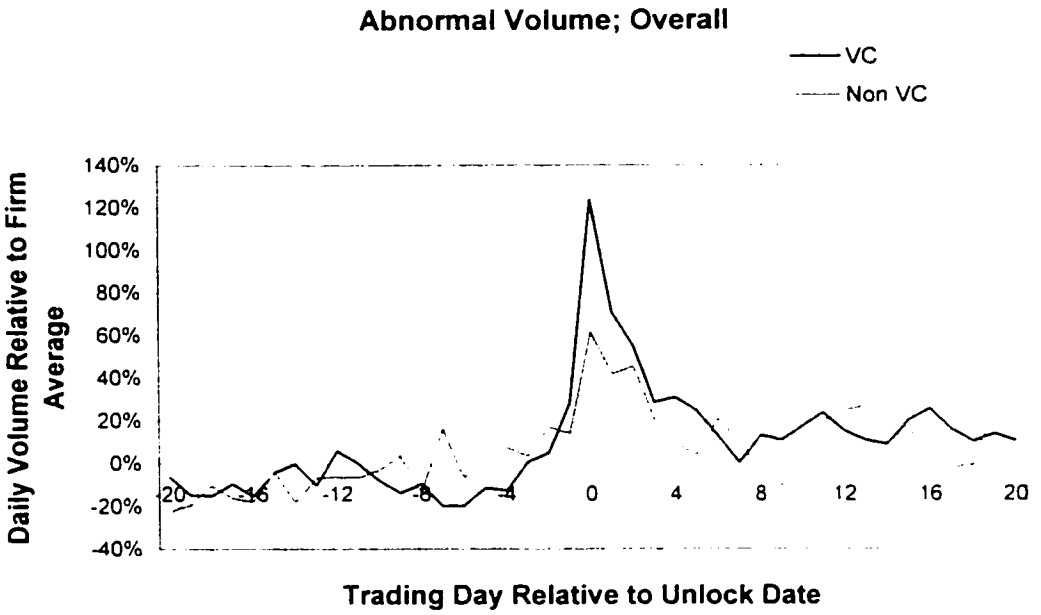


Figure 36. Abnormal Trading around the unlock day. Volume is measured relative to each firm's mean volume over days -110 to -10

Figure 37 Proportion of Firms Trading Below Offer Price

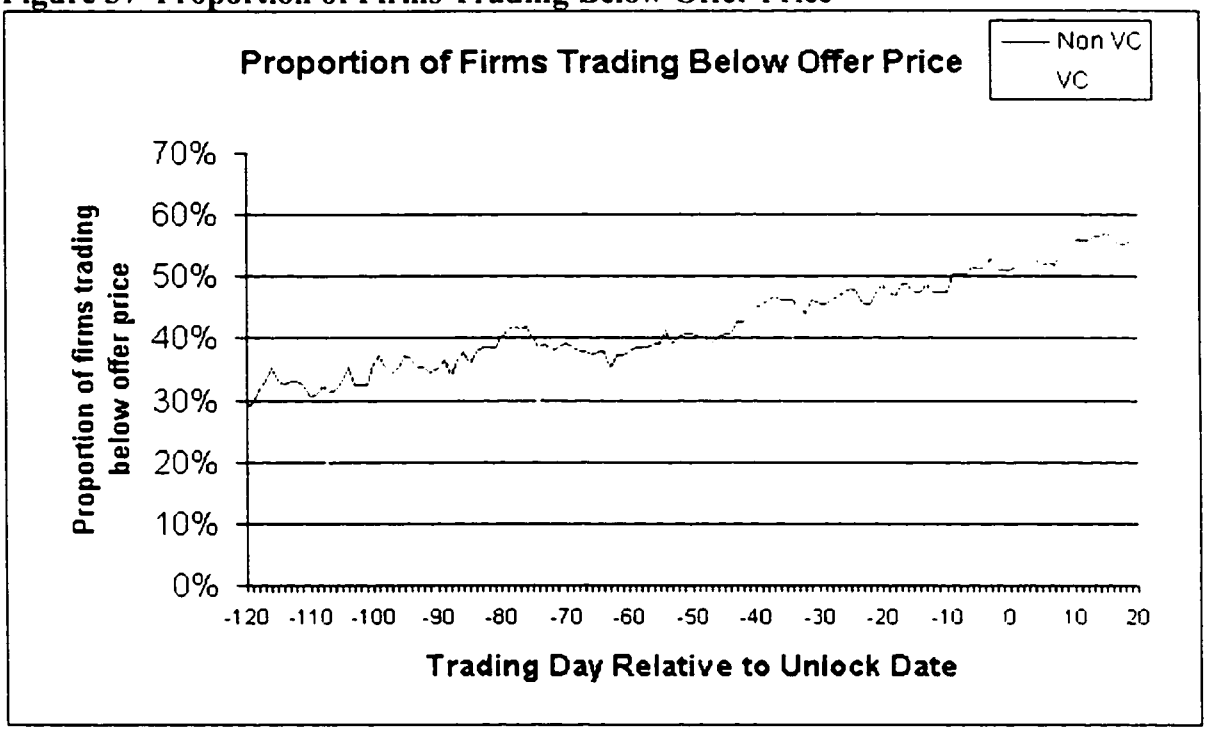


Figure 37 Proportion of firms trading below offer

Figure 38 Proportion of Firms Trading Below Offer Price, IPO Hot

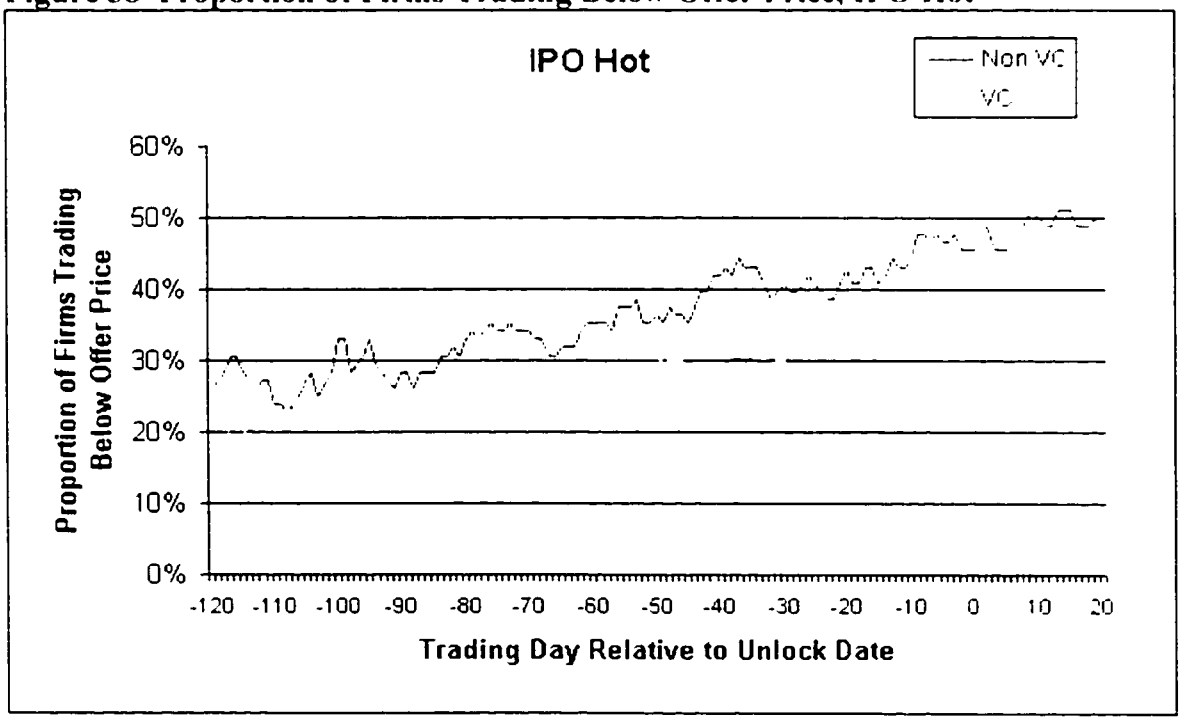


Figure 38 Proportion of firms trading below offer Sample includes all firms that underwent IPO during "hot" market

Figure 39 Proportion of Firms Trading Below Offer Price, IPO Cold

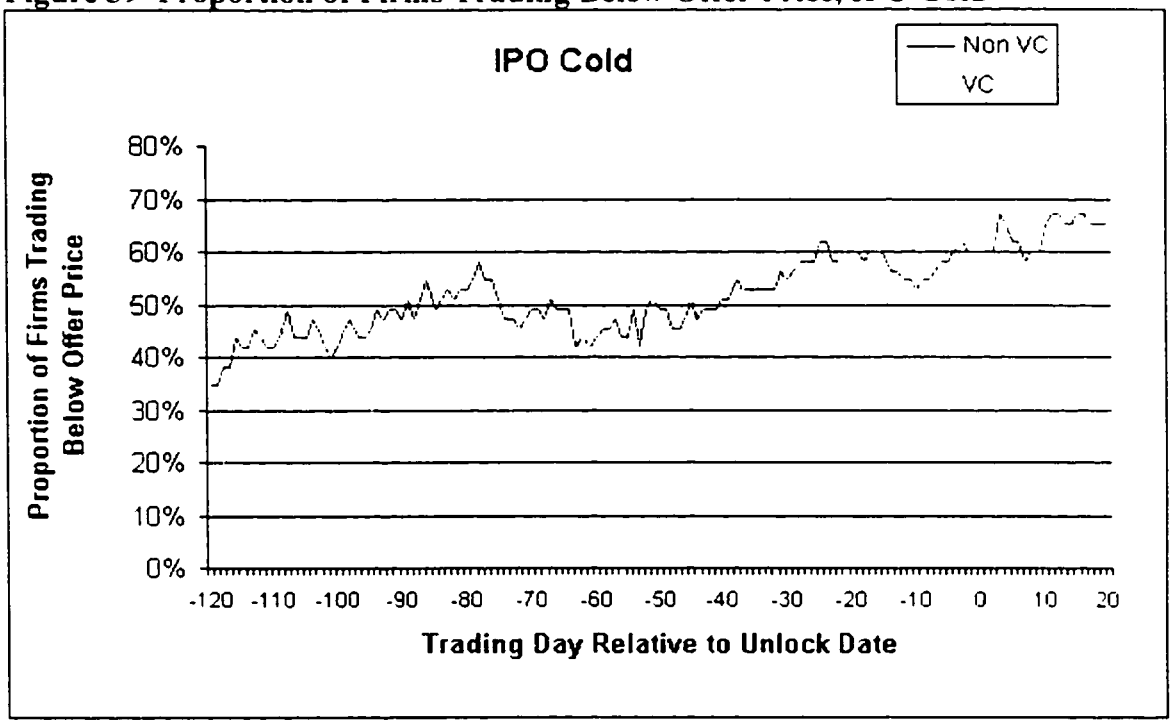


Figure 39 Proportion of firms trading below offer. Sample includes all firms that underwent IPO during "cold" market

Figure 40 Proportion of Shares Locked Up

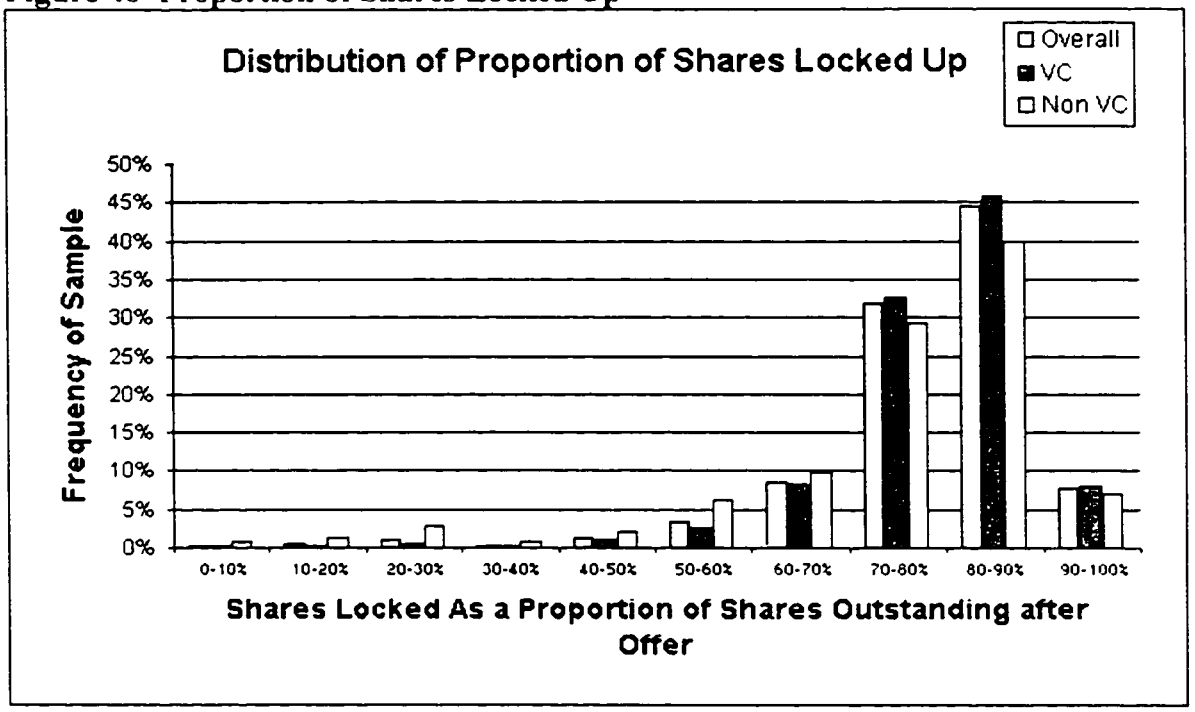


Table 40. Distribution of proportion of shares locked up as a proportion of shares outstanding after offer

Figure 41 SIC Code Distribution

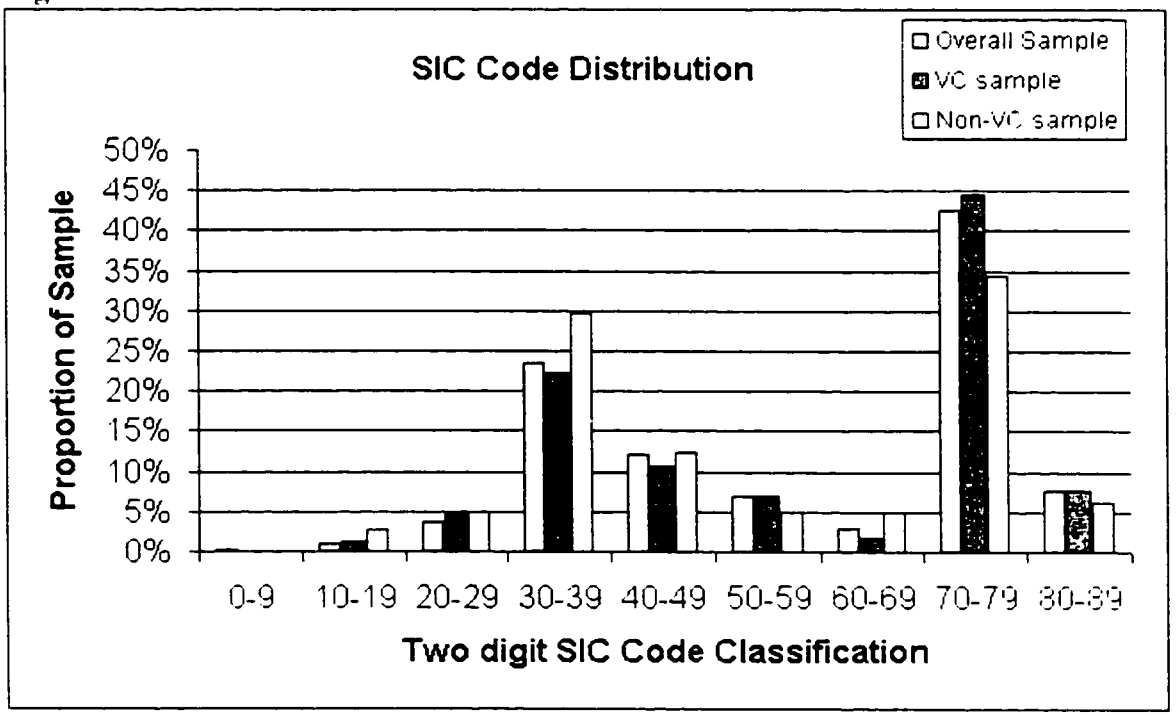


Table 41. SIC Code Distribution based on two digit classifications.

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