The IPO Quiet Period Revisited

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February 2004

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Journal of Investment Management Vol. 2, No. 3 (2004), pp. 1-11

Abstract

A newly public company is subject to a "quiet period," which restricts insiders and affiliated underwriters from issuing earnings forecasts and research reports regarding the firm for a specified period following the initial public offering (IPO). As soon as this quiet period ends, the analysts of managing underwriters typically initiate research coverage with favorable recommendations, and the market responds positively even though this information is predictable. In this article, we discuss previous findings regarding price patterns and analyst initiations at the end of the quiet period and introduce new evidence based on recent trends in the IPO market. We discuss trading implications and examine the effect of new regulatory requirements that extend the quiet period from 25 to 40 calendar days post-IPO.

Financial analysts that are affiliated with firms completing their IPOs are prohibited from issuing recommendations on them for a specified period of time. This period, referred to as the "quiet period," is mandated by the U.S. Securities and Exchange Commission (SEC), and also applies to executives and other insiders, restricting them from making or publishing statements with forward-looking information. In July of 2002, the quiet period was extended to 40 calendar days from 25 days after the IPO as one of the regulatory changes associated with the "Global Settlement" between regulators and ten large securities firms.[1] The general premise behind the quiet period is to give investors enough time to do their due diligence and allow market forces to establish a fair value without influence from the firm's management or affiliated analysts who may try to hype the stock. In other words, everything that is relevant should be included in the written prospectus.

Immediately upon expiration of the quiet period, analysts affiliated with investment banks that participated as the lead underwriter or as a co-manager in the deal typically initiate favorable research coverage. Anecdotal and empirical evidence suggests that stocks tend to rise in value around the quiet period expiration. In fact, the publicity of this event has fostered publication of many articles in the popular press and numerous web sites now track quiet period expirations.[2] This is surprising because market participants know with complete certainty when the quiet

period will expire. In an efficient market, abnormal returns should not exist around such an event.

One prior study, Bradley, Jordan, and Ritter (2003) [henceforth BJR], specifically focuses on quiet period expirations for IPOs brought to market between 1996 and 2000. BJR find an unconditional cumulative market-adjusted return (CMAR) of 3.1 percent in the 5-day window surrounding the end of the quiet period. This abnormal return is driven by analyst research coverage. BJR report that over three-fourths of IPOs have analyst research coverage initiated within three trading days of the end of the quiet period, with this proportion exceeding 90 percent in 1999-2000. The CMAR for firms receiving coverage is 4.1 percent compared to 0.1 percent for those with no coverage. Additionally, the CMAR is highly correlated with the number of analysts that initiate coverage. For example, the (-2,+2)-day CMAR for firms with one analyst initiating coverage is only 1.7 percent, while the abnormal return for firms with more than three analysts initiating is 6.4 percent.

Interestingly, most of the abnormal returns occur before the actual recommendations are issued, suggesting that investors can predict which firms will ultimately receive multiple recommendations. Using logit analysis, BJR show that the number of deal managers participating in the IPO is a good proxy for the number of analysts initiating coverage. Since the number of managers is observable at the IPO date, one potentially profitable trading strategy would be to purchase IPO firms with a large number of deal managers before the expiration of the quiet period and then sell after the recommendations are made public.

We extend the work of BJR by investigating quiet period expirations for IPOs that occur between January 2001 and mid-July 2002. (We stop in mid-July of 2002 for two reasons. First, on July 9, 2002, the SEC extended the quiet period to 40 days from 25. Second, many investment banks began using new rating systems after this period.) We find that the same pattern of analyst behavior exists in this period. That is, approximately 90 percent of IPOs receive analyst coverage immediately when the quiet period expires, with multiple analysts initiating simultaneously, and the vast majority of the recommendations are favorable. However, we do not find positive abnormal returns for these firms around the quiet period expiration date. Nor do we find a strong relationship between the number of analysts initiating and the abnormal return. We do find a pre-event run-up that is not transitory for IPOs that receive research coverage from four or more analysts, but the sample size is small, making any inference inconclusive. Our results suggest that while a profitable trading strategy may have been possible in the late 1990s and into 2000, this anomaly may have disappeared. Whether this change is permanent or just a bear market phenomenon can only be resolved using data from future IPOs.

Finally, we examine analyst behavior following the regulatory changes instituted in July 2002 that extended the length of the quiet period. We find that affiliated analysts continue to issue mostly favorable recommendations as soon as the quiet period expires. Thus, the only practical implication of this new regulation is a 15-day delay in IPO firms receiving research coverage.

The remainder of this paper is as follows. Section 1 discusses the primary findings of the Bradley, Jordan, and Ritter (2003) article. Section 2 introduces new evidence on quiet period

expirations, while section 3 analyzes analyst behavior following new regulations that extend the quiet period expiration. Section 4 concludes.

1. Analyst behavior around the quiet period expiration

Bradley, Jordan, and Ritter (2003) (BJR) examine the expiration of the quiet period for 1,611 companies going public between 1996 and 2000. IPOs are identified through Thomson Financial's Securities Data Company U.S. Common Stock Initial Public Offerings database. Unit issues, REITs, ADRs, spinoffs, closed-end funds, reverse buyouts, banks, savings and loans, IPOs with original file range midpoints below $8, and firms with missing information from CRSP are eliminated from the sample.

The unconditional (-2,+2)-day cumulative market-adjusted return around the quiet period expiration is 3.1 percent, with most of this occurring before the quiet period actually expires.[3] For instance, the (-2,-1)-day CMAR is 2.32 percent compared to 0.80 percent on days 0 to +2.

BJR first examine whether analyst coverage is at least partly responsible for this peculiar result. Analyst recommendations were collected for the three trading days starting on the day that the quiet period ends.[4] About 76 percent of IPOs during 1996-2000 have analyst coverage initiated during these three days, with the majority of ratings either "Strong Buy" or "Buy." On a 5-point scale with 1 being the best rating ("Strong Buy") and 5 the worst ("Sell"), the average rating is 1.72 with only one recommendation of 4 and no recommendations of 5.[5] Most IPO firms have more than one analyst initiating coverage during this time. For example, 54 percent have at least two analysts initiating coverage with approximately 8 percent having four or more initiations.

Insert Figure 1 about here

In Figure 1, CMARs are plotted based on the number of analysts initiating coverage during 1996-2000. A clear positive relationship is shown between the number of analysts initiating coverage and the abnormal return. For instance, over the (-10,+10)-day window, firms that do not receive coverage exhibit about a -1 percent CMAR while those with four or more initiations experience approximately a 10 percent abnormal return. The effect appears to be permanent. Interestingly, most of the abnormal return is confined to the period just before the event date (day 0). Hence, the market seems to be able to discern which firms are likely to receive multiple initiations. The evidence seems most consistent with knowledgeable market participants postponing their selling in anticipation of positive analyst comments and then selling once the recommendations are released. At the same time, the buying pressure from less knowledgeable market participants bids up the prices, and then absorbs the selling when the recommendations are released.

These results raise an obvious question: Can the documented abnormal returns be profitably exploited? To do so, one must be able to determine which firms are likely to receive analyst coverage and even more specifically, which firms are most likely to receive multiple initiations.

Insert Figure 2 about here

In Figure 2, the relationship between CMARs and the number of deal managers (lead plus co-managers) participating in the syndicate is graphed. There is a striking similarity between Figure 1 and Figure 2, suggesting that the number of deal managers participating in the syndicate is a

good proxy for the number of initiations that will eventually occur at the end of the quiet period.[6] The number of deal managers is public information known to the market at the time the preliminary registration statement is filed with the SEC, months in advance of the quiet period expiration date. One way to exploit this anomaly would be to purchase IPO firms that have more than three deal managers before the expiration of the quiet period. In fact, as Figure 1 illustrates, the run-up begins approximately seven trading days before the event date, so one could conceivably buy at this point and sell when the recommendation is made public. For the 1996 to 2000 period, this strategy would have resulted in a market-adjusted return of approximately 8 percent**.**

The recent $1.4 billion settlement by securities firms centered on affiliated analysts issuing biased favorable recommendations on the stocks of their investment banking clients. While almost all recommendations in their sample come from either the lead or co-managing underwriters, and thus inherently may be subject to bias, Michaely and Womack (1999) argue that the conflicts of interest are much greater for lead underwriters compared to non-lead underwriters. Using a sample of IPOs from 1990 and 1991, they find three pieces of evidence consistent with the conflict of interest hypothesis: 1) lead underwriter ratings are more optimistic than non-lead underwriter ratings; 2) the market reactions are smaller for lead underwriter recommendations, consistent with the view that the market discounts them; and 3) lead underwriter recommendations perform worse than non-lead underwriter recommendations in the long-run.

To evaluate whether or not a conflict of interest indeed exists, BJR compare analyst ratings issued by lead underwriter analysts and non-lead underwriter analysts. Of the 2,747 total recommendations, 1,089 are from lead underwriters, with the remaining 1,658 issued by non-lead underwriters. The average rating for lead underwriters is 1.65 compared to 1.76 for non-lead underwriters. Although lead underwriter recommendations are modestly more favorable in magnitude, they are neither statistically nor economically different from non-lead recommendations. Hence, this evidence is not consistent with the conflict of interest being worse for lead underwriters than for non-leads.

To further analyze potential conflicts of interest, BJR also examine market reactions for lead and non-lead underwriter recommendations. Under the conflict of interest hypothesis, lead underwriter recommendations should be discounted relative to non-lead recommendations. The following model is employed:

$$CMAR(-2,+2) = b_0 + b_1 \bullet INIT + b_2 \bullet LEAD + b_3 \bullet MULT + b_4 \bullet PLUS + b_5 \bullet LNSIZE + b_6 \bullet EARN + \varepsilon_i, \quad (1)$$

where:

CMAR(-2,+2) = five-day *CMAR* measured in percent, calculated by summing each market-adjusted return over these five days;
INIT = dummy variable equal to one if coverage is initiated, zero otherwise;
LEAD = dummy variable equal to one if coverage is initiated by the lead, zero otherwise;
MULT = dummy variable equal to one if coverage is initiated by two or more analysts, zero otherwise;
PLUS = dummy variable equal to one if coverage is initiated by three or more analysts, zero otherwise;
LNSIZE = natural logarithm of the IPO offer size;
EARN = dummy variable equal to one if an earnings announcement is simultaneously released, zero otherwise; and
ε_i = OLS residuals.

Insert Table 1 about here

The first four dummy variables capture the relative effect of the number of analysts initiating coverage and the effect of lead underwriter initiations. Conditioning variables *LNSIZE* and *EARN* are included to control for the IPO offer size and for the possibility of a simultaneous earnings release when the quiet period expires.

In Panel A of Table 1, which includes all ratings, the variable *LEAD* is positive, albeit not significantly so, in regressions 1-3. This is inconsistent with the conflict of interest hypothesis, which predicts a negative coefficient. The variable *PLUS* is positive and significant indicating that a move from two analysts to three or more analysts results in an incrementally statistically significant abnormal return; however, this is only true *before* the recommendation is released (regression 2), not after (regression 3). Since Panel A includes all ratings, the possibility exists that differential ratings could be biasing the results. Thus, Panel B of Table 1 only includes "Buy" ratings, excluding "Strong buys" and "Holds." The results remain unchanged.

To summarize, BJR find a positive abnormal return in the days immediately surrounding the end of the quiet period, a period when many analysts initiate coverage. This abnormal return is directly related to the number of analysts but not to the level of the ratings except in extreme cases (such as multiple "strong buy" recommendations). Additionally, BJR report anecdotal evidence that institutional investors, such as hedge fund managers, actively pursue a strategy of postponing selling IPO stock until after the expiration of the quiet period to take advantage of the run-up in price. Consistent with this, Puckett, Irvine, and Lipson (2004) report that institutional

investors are net buyers on the four trading days prior to analysts' initiations, although their sample does not include initiations at the end of the quiet period.

2. Updated results

To evaluate whether the same pattern in analyst recommendations and market reactions persist, we provide an update of the BJR results for IPOs issued from January 2001 through mid-July 2002. We use the same data sources and the same sample selection criteria as in BJR, with the exception that our sole source of analyst recommendations is *Briefing.com*, because of its comprehensiveness in 2001 and 2002.

Insert Table 2 about here

There are 94 observations in our sample, reflecting the weak IPO market during this period. The average IPO raises $222.3 million and is underpriced by 13.9 percent. BJR report much larger first-day returns of 37.4 percent, due to the unusually large underpricing observed during the internet bubble period. The average number of deal managers is 4.2, which is greater than the 2.9 documented by BJR. Hence, if the number of deal managers is a proxy for analyst coverage, we might infer that there should be more research coverage in this sample. The average IPO was taken public by a lead manager having a Carter-Manaster underwriter prestige rank of 8.4 on a 0-9 point scale, with bulge bracket firms rated 9.0. 58.5% of IPOs were backed by venture capitalists.

2.1 Do analysts continue to rush analyst coverage?

Table 3 summarizes analyst coverage. As shown in Panel A, there are 256 recommendations issued within three days of the expiration of the quiet period. The average recommendation is 1.62, which is optimistic and, in fact, slightly more favorable than the average rating of 1.72 reported in BJR.

Insert Table 3 about here

In Panel B of Table 3, information on the number of analysts initiating coverage is presented. Over 90 percent of IPOs during this period receive research coverage, with an average of 2.72 analysts initiating within three days of the end of the quiet period. Compared to BJR, who report a mean of 1.71 initiations for IPOs in 1996-2000, the average IPO during 2001-2002 receives research coverage from one more analyst. However, the mean number of initiations during both 1999 and 2000 is greater than 2.5 analysts, which is similar to the 2.72 reported here. While research coverage increased dramatically during the 1999 and 2000 internet bubble period, it continued to remain high even though the IPO market was relatively weak in 2001-2002.

The last panel of Table 3 breaks down recommendations by lead and non-lead underwriters. The proportion of lead to total recommendations is identical to that presented in BJR (39 percent). The average recommendations are slightly more optimistic for lead underwriters, albeit not significantly so, which is also consistent with the results in BJR.

2.2 Does the quiet period anomaly still exist?

In the updated sample, the characteristics of analyst behavior are similar in terms of the frequency of initiations and ratings strength to the 1999 and 2000 period in which the greatest abnormal returns were observed. Hence, one might suspect the same pattern in market reactions.

To ascertain if the quiet period anomaly continues to exist after 2000, we first run a standard event study as in BJR. The unconditional cumulative average market-adjusted return over the (-2,+2)-day window is 1.4 percent, which is not statistically different from zero at conventional levels. This is much smaller than the economically and statistically significant 3.1 percent documented by BJR. While these results suggest the anomaly may have largely disappeared, most of the abnormal returns were confined to the period before the event date. Therefore, there still may be a profound run-up well in advance of the quiet period expiration. To examine this possibility, we plot CMARs by the number of analysts initiating coverage over the (–10, +10)-day period.

Insert Figure 3 about here

Focusing on the pre-event run-up over days -10 to -2, at the extremes, firms that ultimately receive coverage from only one analyst lose approximately 6 percent (on a market-adjusted basis) while firms that receive coverage from four or more analysts gain about 6 percent. However, firms that do not receive analyst coverage remain unchanged while firms that receive coverage from three analysts decrease in value by approximately 4 percent. Hence, no clear-cut pattern seems to emerge before the event date.

Over the 21-day entire window period, firms that receive coverage from no one or from only one analyst have negative CMARs while IPOs with coverage from two or three analysts have CMARs close to zero. The best performing group receives coverage from four or more analysts. This analysis closely resembles results from the 1996-2000 period, but the magnitudes are smaller. One caveat is that the sample sizes are relatively small in this analysis, making inferences difficult. However, IPOs that receive four or more recommendations appear to be different.

Since all of the recommendations come from affiliated analysts, it must be the case that these IPOs have at least four managing underwriters participating in the deal. For completeness, we tabulate recommendation frequencies based on the number of managing underwriters and present them in Table 4.

Insert Table 4 about here

The number of initiations ranges from 0 to 10, and, as expected, the number of initiations increases with the number of deal managers. However, the percentage of firms that receive analyst coverage does not increase with the number of deal managers as one might expect. In all years, some of the IPOs with no initiations at the end of the quiet period have quiet periods ending before Christmas and New Years, with initiations occurring in early January. Although the correlation between the number of initiations and the number of managing underwriters is 0.45 and highly statistically significant, it is not perfect.

Finally, we apply the trading strategy discussed in Section 1. Purchasing the stock of any IPO firm, regardless of the number of deal managers, on day -7 and selling on day +1 would result in an insignificant abnormal return of 2.2 percent. Limiting the strategy to firms with three or more deal managers yields a return of 1.6 percent**,** both of which are insignificantly different from zero. Partly this is because the run-up in prices begins before day -7.

3. Post-regulatory reform

NYSE Rule 472 and NASD Rule 2711 were phased in beginning July 9, 2002, pertaining to various facets of analyst behavior.[7] In particular, these new regulations extended the quiet period to 40 calendar days from 25 calendar days. We examine whether these new regulations simply just delayed post-IPO coverage, or, combined with the other restrictions, changed the behavior of financial analysts at the quiet period expiration.

Insert Table 5 about here

For the 14 companies that went public in 2002 after July 9, we collect analyst information, which is presented in Table 5. All but three firms have at least three deal managers, and most firms receive coverage from multiple analysts in the three-day period when the quiet period expires. As before, there is a clear relationship between the number of deal managers and the number of analysts initiating coverage. For instance, three firms with no coverage or only single coverage have either one or two deal managers. In contrast, the IPO with the greatest number of recommendations (6) has nine deal managers. Finally, the lead underwriter initiates coverage in 12 cases, and all of the recommendations are either from the lead or co-manager(s). This anecdotal evidence suggests that the new regulations delayed affiliated analyst coverage by

approximately 15 calendar days, but did not change the pattern of analysts rushing to issue post-IPO coverage when the quiet period expires.

From a trading standpoint, it seems likely that analysts will continue to initiate coverage when the quiet period expires, but whether or not a profitable strategy can be implemented remains to be seen. Initial calculations of CMARs (not reported) look similar to the results for the 2001-2002 period, but, with only 14 observations, statistical inference is problematic.

4. Conclusions

We update the findings of Bradley, Jordan, and Ritter (2003) by examining a sample of 94 IPOs issued between January 2001 and July 2002. We observe the same pattern of affiliated analysts initiating coverage when the quiet period expires. The average number of recommendations per firm is similar to that documented by BJR for the 1999 to 2000 period, and the recommendations are slightly more favorable. There is a similar distribution of "strong buy," "buy," and "sub-buy" recommendations.

Of more interest is whether the market reaction to the end of the quiet period persists after 2000. Instead of finding a statistically significant positive abnormal return of 3.1 percent, as in BJR, we find a much smaller and insignificant abnormal return of only 1.4 percent. When we condition on the number of initiations, only those firms receiving four or more recommendations have a significantly positive abnormal return. Firms receiving two or three recommendations have abnormal returns close to zero while those companies that receive no coverage or only one initiation have negative abnormal returns in the period surrounding expiration of the quiet period.

Anecdotal evidence suggests that some IPO investors actively pursue a strategy of waiting until after the recommendations are publicly announced to sell their shares. We investigate a trading strategy in which the stock of IPO firms with three or more deal managers is purchased seven trading days before and sold on the day after the quiet period ends. In the 1996 to 2000 period, this strategy would net a positive abnormal return of approximately 8 percent. When we apply this strategy to the 2001 to 2002 period, the abnormal return is only 1.59 percent and is no longer significant. Finally, we also examine a sample of 14 IPOs issued between July and December 2002, when the quiet period had been extended from 25 days to 40 days. We find the same pattern of initiations as in previous periods. They are merely delayed by 15 calendar days.

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Keywords

Analyst initiations; Analyst recommendations; Quiet period; Initial Public Offerings

Table 1. Regressions with the Number of Initiations as Independent Variables with p-values in Parentheses

Panel A: All ratings

Dep. Variable	Reg.	Int.	INIT	LEAD	MULT	PLUS	LNSIZE	EARN	Adj. R^2
CMAR (-2,+2)	1	0.17	0.92	1.31	1.39	3.43	-0.95	0.46	
		(.065)	(.483)	(.297)	(.219)	(.001)	(.065)	(.701)	.027
CMAR (-2,-1)	2	8.13	0.06	0.83	0.19	3.69	-0.47	1.03	
		(.201)	(.945)	(.289)	(.784)	(.001)	(.223)	(.165)	.044
CMAR (0,+2)	3	10.63	0.83	0.54	1.14	-0.36	-0.64	-0.55	
		(.159)	(.459)	(.613)	(.234)	(.673)	(.143)	(.584)	.002
Panel B: Buy-only ratings									
CMAR (-2,+2)	4	11.75	1.19	-0.50	2.19	2.11	-0.69	2.98	
		(.245)	(.351)	(.712)	(.099)	(.159)	(.238)	(.032)	.018
CMAR (-2,-1)	5	7.54	0.71	-0.60	1.53	3.72	-0.41	1.94	
		(.240)	(.381)	(.489)	(.070)	(.001)	(.263)	(.028)	.048
CMAR (0,+2)	6	4.21	0.48	0.10	0.66	-1.61	-0.27	1.03	
		(.616)	(.650)	(.933)	(.547)	(.196)	(.570)	(.369)	.000

Reprinted from Table V of Bradley, Jordan, and Ritter (2003) for 1,611 IPOs from 1996-2000.

Table 2. Descriptive Statistics for IPOs from January 2001 to July 2002

Variable	N	Mean	Minimum	Maximum
Proceeds (millions)	94	$222.3	8.0	3025.0
Managers	94	4.2	1.0	15.0
Underpricing	94	13.9%	-33.1%	76.7%
CMrank	94	8.4	3.0	9.0
VC	94	58.5%	0	1

Table 3. Analyst Characteristics for IPOs from January 2001 to July 2002

Panel A: Analyst Ratings

		Ratings				
Number of ratings	Average rating	1 Strong Buy	2 Buy	3 Accumulate	4 Hold	5 Sell
256	1.62	112	132	10	2	0

Panel B: Coverage Frequency

Number of firms	Ratings per firm	Number of analysts initiating				
		0	1	2	3	4+
94	2.72	9	14	18	24	29

Panel C: Ratings Based on Affiliation (Lead versus Non-lead)

			Ratings				
			1	2	3	4	5
Affiliation	Number	Average	Strong Buy	Buy	Accumulate	Hold	Sell
Lead/Co-lead	101	1.56	46	53	2	0	0
Non-lead	155	1.65	66	79	8	2	0

Table 4. Mean Recommendation Frequency by Number of Managing Underwriters

	Number of Managers						
Variable	1	2	3	4	5	6+	All
% Coverage	100%	87.5%	100%	88.0%	86.6%	75%	90.4%
# Initiations	1	1.25	2.30	2.76	3.40	4.08	2.72
Number	1	8	33	25	15	12	94

Table 5. Post-Regulatory Change IPOs and Analyst Characteristics

Firm	IPO Date	Managers	Initiations	Lead Coverage	% Affiliated
Kirkland's Inc	7/10/2002	4	3	No	100
Healthetech Inc	7/12/2002	4	2	Yes	100
Red Robin Gourmet Burgers	7/18/2002	3	2	Yes	100
Dicks Sporting Goods	10/15/2002	4	4	Yes	100
USI Holdings	10/21/2002	5	2	Yes	100
Wynn Resorts	10/25/2002	9	4	Yes	100
Wellchoice	11/7/2002	9	6	Yes	100
Portfolio Recovery Associates	11/7/2002	2	1	Yes	100
SI International	11/11/2002	3	2	Yes	100
Impac Medical Systems	11/19/2002	3	2	Yes	100
Cosi	11/21/2002	1	1	Yes	100
Safety Insurance Group	11/21/2002	2	0	No	NA
Chicago Mercantile Exchange	12/6/2002	5	3	Yes	100
VistaCare	12/28/2002	4	2	Yes	100

Figure 1. Cumulative Market-Adjusted Returns (CMAR) by Coverage Frequency: 1996-2000

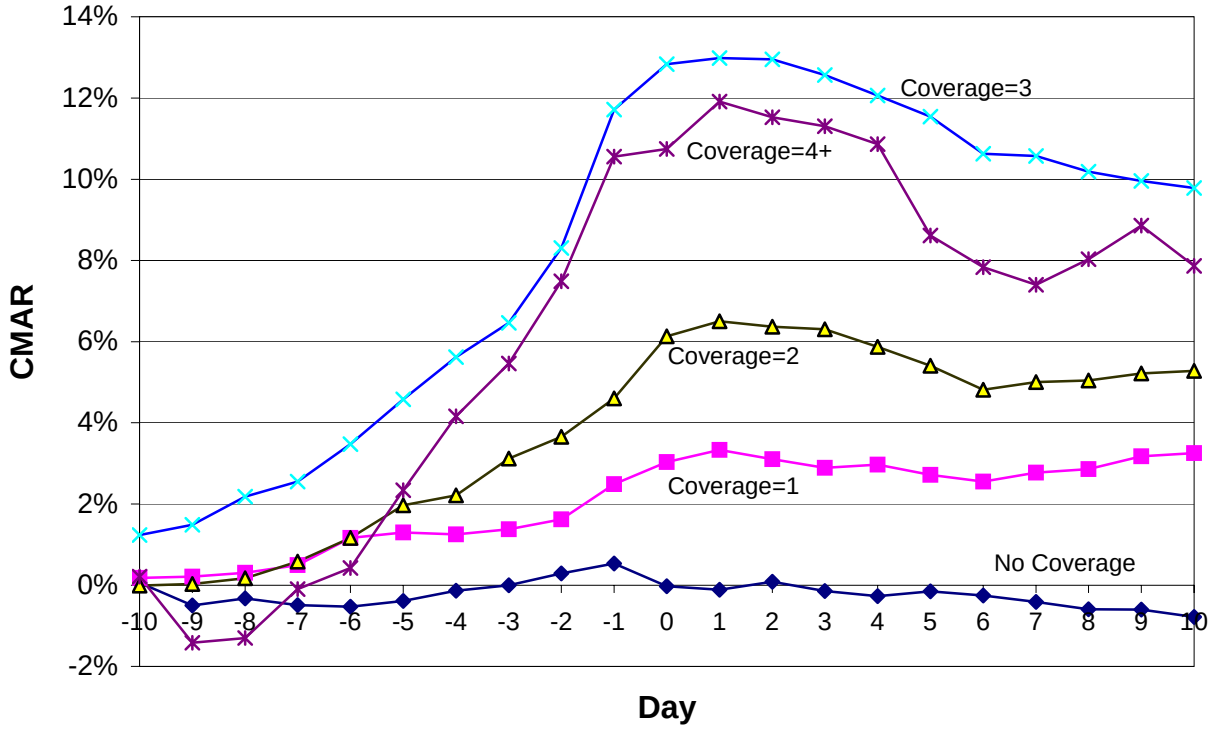


Figure 2. Cumulative Market-Adjusted Returns (CMAR) by Number of Managing Underwriters: 1996-2000.

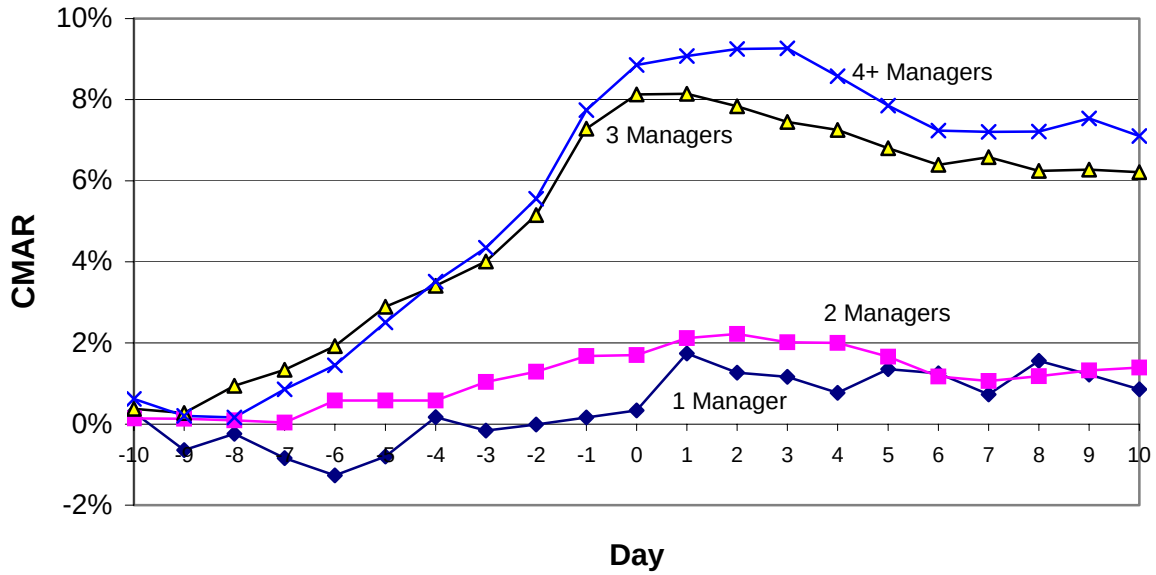
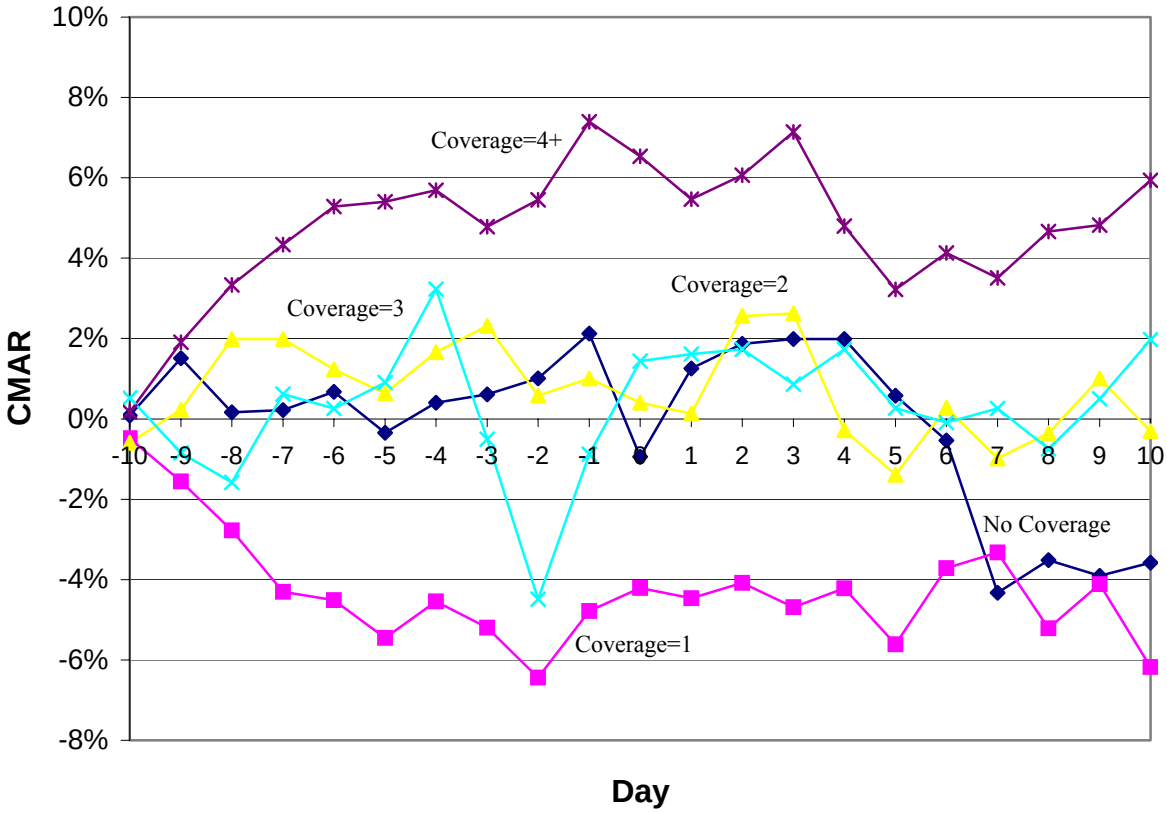


Figure 3. Cumulative Market-Adjusted Returns (CMAR) by Coverage Frequency: January 2001 to July 2002



[1] See http://www.sec.gov/news/speech/factsheet.htm for details regarding the settlement.

[2] A few examples of internet websites that track quiet period expirations are www.ipohome.com and www.alert-ipo.com.

[3] The Nasdaq composite is used as the market proxy since approximately 90 percent of firms are listed in this market.

[4] Analyst recommendations come from several sources to maximize the comprehensiveness of the sample. Recommendations are from The Dow Jones Publication Library over the period January 1996 to June 1999; the *IPO Reporter* and *Briefing.com* from January 1998 to December 2000; and the *IPO Monitor* from January 2000 to December 2000.

[5] Recommendations are typically placed on this 5-point scale, but many investment banks use different terminology, such as "market outperform." For instance, Bear Stearn's highest recommendation is "Buy" whereas CS First Boston and many others use the term "Strong Buy." In all cases, a bank's highest recommendation is coded as a 1, consistent with the practice of IBES and First Call.

[6] BJR use logistic regression to explore the predictability of the number of analysts initiating coverage. Besides the number of deal managers, significant predictors are venture capital backing, firm size, initial underpricing, and Nasdaq listing.

[7] NYSE Rule 472 can be viewed at http://www.nyse.com/pdfs/2002-09Am1-AmendedExhA.pdf. NASD Rule 2711 can be viewed at http://www.nasdr.com/pdf-text/rf02_21_final.pdf.