The Motives, Timing and Subsequent Performance of Seasoned Equity Issues

by

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Abstract

This thesis includes a series of empirical studies of seasoned equity offerings (SEO). It investigates whether the poor long-term stock performance of issuers following SEO, as documented in recent studies, is caused by the issuer's intentionally selling new shares when it knows that they are over-valued.

In chapter 1, I find that equity issuers that do not use the proceeds for capital investment severely under-perform the market for three years after SEO, whereas those that invest the proceeds do not under-perform. This suggests that firms that do not invest the proceeds may know that their stocks are over-priced and issue when such over-pricing is most severe. The use of proceeds can be predicted using pre-issue information, thus avoiding simultaneity problems and making it possible to predict post-issue performance at issue time without observing the actual use of proceeds. The stocks of bond issuers do not under-perform the market after issue; and there is no difference in post-issue stock returns between the investing and non-investing bond issuers.

Chapter 2 studies a much larger set of SEO's than Chapter 1 and provides similar results. I hypothesize and find evidence that equity issuers with low leverage are more likely to be offering over-valued equities. An out-of-sample test yields consistent results for most years. I also find that although equity issuers' betas increase around SEO, such increase is temporary. The cross-sectional difference in beta cannot explain the difference in stock returns.

In Chapter 3, I confirm recent studies and show that equity issuers who aggressively manage accounting accruals before SEO in order to boost earnings have worse subsequent stock performance. The accruals variables are significant when included in the regression analysis of Chapter 2. Following SEO, the market is often negatively surprised by quarterly earnings announcements. For issuers that are likely to be intentionally selling over-priced stocks, the negative surprises are larger and are followed by negative drifts.

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Contents

Chapter 1

Equity Issue Under-performance and the Timing of Security Issues

1.1 Introduction

Recent studies on the long-term performance of the stocks of firms that sell or buy back equities reveal some striking results: firms that issue equities systematically under-perform the market while those that buy back stocks systematically out-perform the market for as long as five years after the issuing or repurchasing events (Loughran and Ritter (1995) and Ikenberry, Lakonishok and Vermaelen (1994)). Other studies have documented that the stock prices of equity issuers drop by about 3% when the issues are announced, while the opposite is true for announcements of buybacks. Thus the market initially guesses correctly the directions in which those stocks are moving, but falls far short on the magnitude of the movements. As a result, firms that issue equities enjoy abnormally low costs of capital because their stocks are over-valued, while those that buy back their stocks can do so at bargain prices.

One possible explanation for the under-performance of equity issues is that issuers deliberately try to sell new stocks when they are over-priced. However, recent studies have not addressed the question of whether firms have such timing ability. In this chapter, I use a cross section of seasoned equity offerings (SEO) and find that equity issuers that do not use the issue proceeds for capital investment severely under-perform the market, whereas those that invest the proceeds perform at par with the market after issue. Thus, the overall under-performance by SEO's is almost entirely contributed by those issuers that do not invest the proceeds.

This difference in post-issue performance between the investing and non-investing types of equity issuers suggests that equity issuers that do not invest the proceeds may sell new shares when they know they are over-priced the most and consequently reap the financial profits. These firms have no good investment opportunities; they wait for the moment when they know their stocks are over-valued the most and keep the proceeds for future use. Firms that raise capital to fund investment projects are concerned with the timing of both the investment projects and the value of the firms' stocks, so they do not always wait to issue when the over-pricing is most severe. Thus on average, the post-issue returns of firms that invest the proceeds are better than those that do not invest.

Besides SEO, this chapter also studies the performance of the stocks of firms that issue bonds. No significant under-performance is found for bond issuers. Nor is there any difference in stock performance between the investing and the non-investing bond issuers. This result is also consistent with the timing explanation of equity issue under-performance: firms whose stocks are over-priced have stronger incentives to issue equities than bonds. Therefore, the stocks of equity issuers, particularly those that do not invest, should do worse than the stocks of bond issuers.

When a new issue is offered, whether the proceeds will be used for capital investment can be predicted using available information. This makes the results robust for any simultaneity problem. I find that the market seems to know *a priori* whether the issuing firms have valuable investment projects and whether the offer proceeds will be invested. Firms that invest the proceeds issue after bigger price run-ups for their stocks relative to market, compared to those that don't invest the proceeds. Also, the short-term effect of an SEO on the issuer's stock price is significantly more negative for the non-investing type than for the investing type. For the former, the market takes the issue as worse news than for the latter. SEO's made in years when total issue volume is high are also more likely not for capital investment. All of these patterns can be used to predict how much the issuer will use the proceeds for capital investment. Equity issuers that are **predicted** to be the investing type have no significant long-term under-performance, whereas those that are predicted as the non-investing type under-perform the market significantly. Therefore, the long-term performance of the issuer can be predicted at the time of issue without observing the actual use of proceeds.

1.2 Timing as an Explanation of Under-performance

Following Ritter (1991), who documents the long-term under-performance by initial public offerings (IPO) of equities, Loughran and Ritter (1995) show that for seasoned equity offerings (SEO), the returns for five years after issue average 7% per year, compared to 15% for non-issuing firms of comparable sizes. The average five-year total return for all seasoned equity issues is 33%, half the return earned on the CRSP value-weighted index. In their study of equity repurchases, Ikenberry, Lakonishok and Vermaelen (1994) demonstrate the mirror image of under-performance by equity issuers: following on average 3% positive stock market reactions to announcements of stock buy backs, the buying companies' stocks out-perform the market by a considerable margin for several years.

These findings show that the capital market systematically over-values equity issuers and under-values companies that buy back stocks for a long period of time. In this chapter, I take a closer look at the phenomenon of under-performance of SEO. I do not attempt to address the question of why such apparent market irrationality exists in the first place. Rather, the explanations discussed and tested in this chapter shed light on the question of whether firm managers possess superior information and use it to take advantage of any mis-pricing by the market.

A simplistic explanation of these findings is market over-reaction. Several studies have documented the market's tendency to favor some stocks for several years only to penalize them later (De Bondt and Thaler (1985, 1987) and Chopra, Lakonishok and Ritter (1992)). In this context, under-performance of SEO would come as no surprise, given the fact that issuers' stocks tend to perform well in the months before SEO (Asquith and Mullins (1986), Masulis and Korwar (1986) and Mikkelson and Partch (1986)). However, as will be shown in Section 1.4, this is clearly the wrong explanation: the more an equity issuer's stock out-performs the market before SEO, the better it will continue to perform afterward.

The other possible source of poor performance is the issuer's ability to time its equity offering. The motivation for timing arises from the firm's desire to build financial slack and asymmetric information about the value of the firm's assets. Both are essential elements of the pecking-order hypothesis, which is one of the most important theoretical explanations of the firm's financing decisions.

The pecking-order hypothesis is best represented by the model developed by Myers and Majluf (1984). The model focuses on the problem of asymmetric information when firms try to raise external capital to finance investment projects when there is insufficient funds generated internally. Specifically, firm managers are assumed to know more about their firms' true value than the market; the market can only assign an average value of all firms to each potential equity issuer. The result of this asymmetric information is that firms that are over-valued by the market will have more incentives to raise external capital because they can sell stocks at prices higher than their true value. Under-valued firms may forego some good investment projects because they do not want to sell new stocks at a price below the true value. This under-investment problem would not exist if all investment projects could be financed internally or by risk-free debt. Thus, firms have incentives to build up financial slack to reduce the likelihood of having to raise external capital when valuable investment opportunities arise. Also, when external financing is necessary, risky debt is preferred to equity because it alleviates the under-investment problem.

The pecking-order hypothesis is consistent with several empirical facts. Besides the fact that public equity issues account for only a small portion of the total capital raised, recent studies also find that firms' investment is strongly affected by the amount of financial slack, e.g. cash flow (Fazzari, Hubbard and Peterson (1988)). There also have been many event studies of security issues in recent years that provide evidence consistent with the pecking-order hypothesis (Asquith and Mullins (1986), Masulis and Korwar (1986) and Mikkelson and Partch (1986)). These studies show that announcements of equity offerings are greeted by price drops of roughly 3% for the issuers' stocks. Mikkelson and Partch (1986) also find insignificant market reactions to bond issues, which is also consistent with theory's prediction: a firm selling equity is more likely to be over-priced; and the market corrects its valuation of the issuer in the right direction when it receives the news. Risky debt issues alleviate the asymmetric information problem and the market reacts accordingly.

Myers and Majluf's model assumes that firms will issue only when they need funds for investment projects. However, given firms' desire to build financial slack to guard against possible financial constraints in the future, it is conceivable that firms whose stocks are over-valued by a sufficiently large margin may have an incentive to issue equity even if they do not have investment projects to undertake immediately. If new equities can be sold at a price much above the true value of the firm's shares, then it may pay to issue now and store the proceeds for future use. Obviously, the more the firm's stock is over-valued, the stronger the incentives to issue. Firms that can consistently sell over-priced stock will enjoy low costs of capital. I shall label this explanation the timing hypothesis.

Intentional timing would not work if the market were fully rational and efficient. If everyone knew that only over-valued firms would issue, then when the news of an offering comes, the market should take it as a signal of the firm's knowledge of its asset value and lower its valuation of these firms to a new and unbiased level. The incentives to issue and not invest would then be taken away as soon as the offering is announced; and there would be no advantage for anyone to issue unless they have positive NPV investment projects on hand. However, the findings by Loughran and Ritter (1995) and Ikenberry, Lakonishok and Vermaelen (1994) suggest that the market may systematically over-value some firms while under-valuing others for a prolonged period. If a firm knows that it is over-valued and that such over-valuation may not be corrected immediately, it may try to take advantage of the high price by selling new shares even if the firm does not have any investment projects on hand. If the market indeed takes a long time to correct its valuation, then under-performance will result.

Recent studies have only provided weak evidence suggesting firms' ability to time their issues. Loughran and Ritter (1995) find that high issue volume years precede periods of low market returns. In an earlier study, Masulis and Korwar (1986) also show that firms issue new shares when the market in general has performed well: the mean daily market return is 0.17% for sixty days before issue compared to 0.04% after issue. Asquith and Mullins (1986), Masulis and Korwar (1986) and Mikkelson and Partch (1986) also demonstrate that firms sell stocks after they have out-performed the market for a period of time. However, these findings do not address the question of whether issuers know that their stocks are over-priced. A firm may decide to raise new equities when it passively accepts the market's optimistic outlooks of either the firm's future investment opportunities relative to other firms or the overall investment prospects for all firms, or both. This would result in all of the phenomena documented in the aforementioned studies. Therefore, those findings cannot be strong evidence of intentional timing.

If managers do know better than the market and act upon their superior knowledge, they will then deliberately choose to issue securities when they know their firm's stock is most over-priced. While some firms issue securities to finance investment projects whenever such projects become available, others may raise capital simply because it is cheap to do so at the particular moment. Thus, if timing is the dominant source of long-term under-performance, then we should see that firms that use the issue proceeds for investment projects should under-perform the market less than those that do not invest the proceeds. This is because those firms that have good investment projects (at least as determined by the managers) presumably will be concerned with the timing of both the offering and the investment project they want to undertake and therefore may not wait for the moment when their stocks are over-priced most. Thus on average, issuers that invest the proceeds are over-priced by less than those that do not invest.

Besides seasoned equity issues, this chapter also studies the stock performance of firms that issue bonds. Studying bond issues together with equity offerings is interesting for two reasons. First, it is interesting to see whether long-term under-performance exists for the stocks of bond issuers as it does for equity issuers. If bond issuers do better, it may lend support to the theory that views debt as providing discipline for managers who might otherwise use the excess cash to invest in bad projects (Jensen (1986)). Second, if bond issuers indeed do better than equity issuers, it would provide additional evidence for timing. Assuming that a firm's bond value fluctuates less than its equity value and that the bonds are over-priced by less when the firm's stock is over-priced, then companies whose stocks are over-priced more would have stronger incentives to issue equities. Therefore, if timing is important, then bond issuers should on average have less stock under-performance than equity issuers. There should also be proportionally more equity than bond issues whose proceeds are not used for capital investment. The difference in post-issue returns between the investing type and the non-investing type should also be more pronounced for equity issues than for bond issues for the same reason.

On the other hand, if firms do not know that their stocks are over-valued and issue new shares passively when the market signals are good, there should not be any significant difference in post-issue performance between firms that use the proceeds for investment projects and those that do not invest the proceeds. Indeed, firms may use the equity issue proceeds for bad investment projects, causing the under-performance. This would be consistent with the agency theory, which predicts that managers with too much free cash are likely to invest too much and in bad projects (Jensen (1986)). If bad investment contributed significantly to the overall under-performance, then the difference in post-issue performance between firms that invest the proceeds and those that do not invest would be reversed: those that invest the proceeds should suffer from poor investment projects and under-perform the market, while those that keep the proceeds for other use should earn the same rates of return as the rest of the market.

1.3 Data and Methodology

The data on security issues used in this study are obtained from the SEC's Registered Offering Statistics (ROS) tape. The ROS tape provides detailed information on all security issues registered with the SEC from 1970 to 1988. Offerings before 1977 are excluded because information is very incomplete for those years. Only seasoned, primary cash offerings of straight bonds and preferred and common stocks by U.S. firms are included in the sample. In other words, the study excludes mortgage bonds and other debt instruments, convertible securities, options and warrants (except as part of a unit offering), IPO's, secondary or non-cash offerings[1], shelf registrations, ESOP's or other employee purchase plans. In order to study the differences between bond and equity issues, multiple issues offered on the same day that include both stocks and bonds are excluded.

Issues by firms of the following industries are excluded: agriculture, utilities, communications, banking and finance. Banks often have to sell new equities to meet regulatory requirements on capital. The level and structure of debt for banks and financial companies is also very different from industrial firms. Utility and communication firms issue bonds at much higher frequencies than industrial firms. These firms usually operate in highly regulated environments with relatively stable cash flows. Their frequent debt issues are likely not motivated by the same investment or capital structure considerations that influence other firms' financing decisions.

Issues that remain in the sample after the above screening are then used to obtain stock return data for the issuers from CRSP daily files. 1,608 issues in the sample have at least one year plus one month of return data both before and after the issue date available from CRSP. Table 1.1 provides summary information for these offerings.

Following the practice by Loughran and Ritter (1995), three-year and five-year

1. The sample consists mostly of offerings without any non-cash or secondary components. However, due to inaccuracies in ROS's data coding, some issues containing secondary and non-cash components were left in the sample. They do not affect the overall results.

post-issue buy-and-hold returns are calculated by compounding the daily returns for each issue starting one month (22 trading days) after the registration effective date provided by the ROS tape.[2] A year is defined as 253 trading days. For three-year returns, the end of the compounding period is the earlier of three years (759 trading days) after the beginning of the compounding period defined above or the de-listing date, if it is at least one year after the beginning date. For five-year returns, the compounding period ends either five years (1,265 trading days) after the beginning date or the de-listing date, if it is earlier than five years but at least three years after the beginning date.[3] Buy-and-hold returns are also calculated in a similar manner for three years ending one month before registration effective dates. Finally, the CRSP equally-weighted and value-weighted index returns are calculated for the same periods for each issue. Firms listed on the New York Stock Exchange and the American Stock Exchange are matched against the CRSP NYSE/ASE index returns; and firms listed on NASDAQ use the CRSP NASDAQ index as the benchmark.

Ideally, the intended use of proceeds would be described by the issuer in its offering prospectus. However, a random check of about 100 prospecti shows that most of the issuers only outline very vaguely the intended use of proceeds. The phrase "general corporate purposes" is used more frequently than anything else. Firms are also known to change their capital investment plans very frequently. In order to determine the actual use of issue proceeds, I use information on capital expenditures provided by the issuers' financial statements and recorded in Compustat database.[4] 1,445 out of

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2. Compounding monthly instead of daily returns would have been more economical, but CRSP does not provide monthly data for NASDAQ stocks.

3. This is slightly different from Loughran and Ritter's treatment, which includes all truncated return periods in both three-year and five-year return calculations, no matter how short the truncated periods are.

4. Classifying the use of proceeds using change in capital expenditures is but one way to track firms' investment activities. R&D and acquisitions can also be viewed as investment. I ran the same tests described in the next section, but used the change in the sum of capital expenditures, R&D expenses, and cash used for acquisitions to classify investing and non-investing firms. The results remain the same.

1,608 offerings in the sample have financial data for the issuers available from Compustat. I calculate the average annual amount of capital expenditures for the two fiscal years before the issue and the two fiscal years starting with the year in which the issue falls, and then divide the change in the two-year average by the total amount of issue proceeds in the issuing fiscal year.[5] Expressed in formula, we have:

$$CHGCAPX_t = \frac{(CAPX_t + CAPX_{t+1}) - (CAPX_{t-1} + CAPX_{t-2})}{2\ PRCDS_t} \ ; \qquad (1)$$

where t is the fiscal year in which the issue is done; *CAPX* is capital expenditures; and $PRCDS_t$ is the total proceeds from all issues done in year t. If a firm issues more than once in a fiscal year, the proceeds from all issues are added and the effective date of the largest issue of the year is used to study returns. If a firm issues both equity and bonds in a fiscal year, all issues from that year are excluded from the study so that the comparison between equity and bond issues is clean. After this process, 1,117 issues are left in the sample, of which 1,036 have capital expenditures data from Compustat. Firms whose relative change in capital expenditures as defined above is greater than the median level (12.5%) are considered having used the proceeds for investment projects and are

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The results in the next section could also be driven by poor performance by firms that issue securities to acquire other firms. I ran the same tests excluding firms whose increase in cash used for acquisition is greater than 20% of the issue proceeds. Such exclusion does not affect the results.

5. The purpose for normalizing the change in capital expenditures by issue size is to emphasize the extent to which the firm uses issue proceeds for capital investment. A firm that increases capital expenditures by a small amount following a large issue is considered not having invested the proceeds. The disadvantage of this measure is the opposite case: it may create abnormally high positive or low negative ratios for firms that make small issues and change capital expenditures by large amounts. The results reported in the next section exclude six such outliers from the sample.

An alternative measure is to normalize the change by total assets. When this measure is used, all of the results reported in the next section remain essentially the same.

Using the change in two-year average capital expenditures instead of the change in one-year levels gives issuers sufficient time after issue to spend the proceeds and carry out the investment projects. Using one-year numbers would have resulted in overall smaller fractions of proceeds being used for capital investment; and the difference between the investing and the non-investing type would not have been as striking.

labeled as the investing type. Others are labeled as the non-investing type.

To study stock market reactions to security issues, I calculate excess returns for the issuer's stock from one month before to one month after the registration effective date. The use of a two-month period is similar to the practice by Ikenberry, Lakonishok, and Vermaelen (1994), but different from most other event studies of issue announcements (Asquith and Mullins (1986), Masulis and Korwar (1986) and Mikkelson and Partch (1986)). In those studies, the announcement period is typically defined as two days ending on the day on which an issue is reported in the news media such as the *Wall Street Journal (WSJ)*. There are several reasons that using a longer period is better. First, the exact date when the plan for an issue is revealed to the public is difficult to determine. The *Investment Dealer's Digest (IDD)*, the *New York Times* and the *WSJ* all have tables that report issues that are registered but not yet offered for sales, are expected to be offered soon, or are ready for sale. A new issue may be reported in any or all of these phases. It is likely, therefore, that crucial information related to the firm and the issue is gradually disseminated during this period, instead of on any one day.

Furthermore, the aforementioned studies construct event samples by searching the *WSJ Index* for news articles. When I randomly check the *WSJ Index* for issues in my study, I find that most issues do not get reported in separate news stories by the *WSJ*. Daily tables in the *WSJ* that list new issues are not included in the index. Thus, studies that search the *WSJ Index* for articles may limit and bias the sample selection to those issues that are newsworthy for whatever reasons and thus more likely to cause large stock price movements.

For the minority of issues that do get separate news articles, the article typically appears after the date when the registration becomes effective, which can be up to several weeks after the issue is first registered and reported in tables mentioned above. By then, it is likely that the issue is already well known among analysts, institutional investors, large shareholders and others that are considered as insiders. Therefore, the large announcement effects documented over the two days around the registration effective day may reflect over-reactions by small and uninformed investors who are unlikely to be acting based on sophisticated interpretations.

Given the above concerns, using a relatively long period around the registration effective date seems to be the best approach. To calculate abnormal returns around issue time, I use two methods that give very similar results. One method is the same as what is done by Asquith and Mullins (1986), namely calculating cumulative daily abnormal returns for the period using daily returns of beta-adjusted portfolios as the benchmark. CRSP calculates the beta for all of its stocks and divides them into ten portfolios by beta deciles. It then provides the returns of each individual stock adjusted by the returns of the beta portfolio to which the stock belongs. The measure of cumulative excess returns using these data can be expressed as the following:

$$CER1_i = \sum_{t=-22}^{22} (R_{it} - BETAR_{it}) \; ; \qquad (2)$$

where t is the number of days after registration effective date; $CER1_i$ is the cumulative excess return for security i; R_{it} is the return on security i on day t; and $BETAR_{it}$ is the return on day t of the beta portfolio to which security i is assigned.

The other method is to simply calculate the two-month buy-and-hold returns adjusted by CRSP value-weighted index. Expressed in a formula, it is:

$$CER2_i = \prod_{t=-22}^{22} (1 + R_{it}) - \prod_{t=-22}^{22} (1 + VWR_t) \; ; \qquad (3)$$

where VWR_t is the CRSP value-weighted index return on day t.[6]

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6. Another commonly used method among event studies is to measure prediction errors based on a market model that regresses the firm's stock returns on market returns over a period before issue. The market reaction is defined as the difference between the actual return on a stock and the return predicted by the market model. However, in light of the large differences in pre-issue stock returns illustrated in the next section, it seems implausible to assume that the period preceding the issue represents a "normal" period that can be used to predict future returns. As far as controlling for risks is concerned, I assume that the method by Asquith and Mullins (1986) will suffice.

1.4 Test Results

Figure 1.1 plots the performance of each of the four types of issuers relative to the CRSP value-weighted index from three years before to five years after issue, excluding the two months around issue time. The four types are equity/investing, equity/non-investing, bond/investing and bond/non-investing, as defined in Section 1.3. To generate the graph, I calculate the amounts of wealth that one would have had to invest in the stock of each issuer and the CRSP value-weighted index three years before issue so that both investments reach $1 at the issue time, based on the actual performance during the period. The $1 in both investments is then assumed to be held for five years after issue. Figure 1.1 plots the average wealth ratio of each of the four types of issuers to the CRSP index.

Figure 1.1 shows that on average, equity issuers that use the proceeds for capital investment out-perform the market tremendously for three years before issue. After issue, their performance is flat relative to market. On the other hand, the equity/non-investing firms have no big price run-ups before issue, but severely under-perform the market. There is no clear difference in post-issue performance between the two types of bond issuers, though the investing type out-performs the market before issue more than the non-investing type. These patterns mean that market over-reaction is clearly not an explanation of equity issue under-performance. Firms that have done well before issue are not the ones that under-perform the market after issue.

Table 1.2a shows the mean three-year buy-and-hold returns adjusted by the CRSP value-weighted index for different types of issuers.[7] The non-investing type of equity issuers under-perform the CRSP index by 43.1%, while the adjusted returns for other types are not significantly different from zero. The return difference between the two types of equity issues is 52.2% in favor of the investing type. Also, the stocks of equity

7. The same tests are conducted using the CRSP equally-weighted index. All results remain essentially the same. They are not reported here to conserve space.

issuers under-perform the market more than the stocks of bond issuers, both within the non-investing type (by 43.2%) and for the entire sample (by 25.2%). The degree of under-performance by all equity issues is consistent with Loughran and Ritter (1995), but such under-performance comes exclusively from the non-investing type. The differences in returns between the investing type equity and bond issuers as well as between the two types of bond issuers are insignificant.

The mean represents the return on a strategy that invests an equal amount in every stock in a portfolio. However, because returns are skewed toward the positive end and are bounded from below at -1, the mean return of a portfolio tends to overstate the performance of the majority of the stocks. Table 1.2b compares the median three-year returns for the sample. It reveals that while the same patterns found in Table 1.2a hold, under-performance is more wide-spread than the means indicate. The median returns for all four types of issuers are significantly negative. Even for the bond/investing type, the median return is -10.7%. For the entire sample, the median return is 21.1% lower than the CRSP index.

The above results are consistent with the timing explanation. Equity issuers that do not invest the proceeds are over-priced the most, given the long-term poor performance. However, an objection to the above findings that may be raised is the simultaneity between post-issue stock returns and investment decisions. Since returns are measured for three years starting one month after the issue and the period in which capital expenditures are measured covers at least one full fiscal year after the issue, it is possible that the investing type firms receive some good news about their investment opportunities shortly after the issue and that such good news results in both increased capital expenditures and high returns on the firm's stock, creating a spurious correlation.

One possible remedy is to delay the starting time of measuring post-issue returns so that there is no overlap between investment decisions and results. This method will ensure that the use of issue proceeds can be observed and used to predict the stock performance. However, the definition of change in capital expenditures defined in the last section makes it necessary to delay the starting time of measuring returns until as much as two years after an issue in order to completely avoid any overlap. If the non-investing firms time their issues, then their stocks are over-valued the most at the time of issue. In two to three years the market may have gradually corrected its valuation of these firms so that after the first two to three years, the average return for the non-investing type may not be much worse than that for the investing type. The graphs shown later will illustrate that this is indeed the case.

Another way to control for simultaneity is to use instrumental variables that can predict the use of proceeds without actually observing it. Figure 1.1 already suggests that pre-issue performance can help predict the use of proceeds. As shown in Table 1.3, the equity/investing type out-performs the market by 126.5% for three years before issue, compared with -1.7% for equity issuers that don't invest. For bond issues, the difference is between 54.1% and 15.8%, also significant. If we compare the medians (not shown in tables), the difference in pre-issue returns between investing and non-investing types is 99% for equity and 34% for bonds. Thus, the market anticipates that the investing type issuers have good investment opportunities on the horizon and adjusts its valuation upward prior to issue.

The market also seems able to differentiate between investing and non-investing types of equity issues when they are offered. Measured from one month before issue to one month after the registration effective date and using both the CRSP value-weighted index and beta portfolio adjusted excess returns, as is done by Asquith and Mullins (1986), I find that only the equity/non-investing type receives significantly negative stock market responses averaging about 3-5%, while the reactions to other types of issues are not significantly different from zero (See Table 1.4a and Table 1.4b). Thus, the market seems to sense that an equity issue without good investment prospects for the issuer is worse news than otherwise.

Table 1.1 shows that the total volume of new issues fluctuates greatly from year to year. The regressions in Table 1.5a show that issues made in high volume years (volumes are measured separately for bonds and equity.) are more likely not for capital investment.[8] This is not only additional information that can be used to predict the use of proceeds, it may also be interpreted as additional evidence of timing. A firm that is not perceived by the market as having good investment opportunities may know that the announcement of a new issue will be interpreted unfavorably by the market. Issuing during high volume periods helps to minimize the negative impact of the signal on the issuer's stock price.[9]

Using all of the above information available when the issue is offered, we can then predict the firm's use of proceeds when it announces the issue and in turn predict whether its stock is over-priced. Table 1.5a shows OLS regressions that predict the use of proceeds defined in Section 1.3 (measured continuously here instead of the investing and non-investing categories). The regressors include issuers' stock returns for three years before issue time adjusted by market, volumes of equity and bond issuance in the current calendar year, market reactions to events of issue, and issuers' cash flow in the fiscal year before issue time.[10] The use of cash flow is motivated by studies that link firms' investment with liquidity constraints (e.g. Fazzari, Hubbard and Peterson (1988)). Regressions are run separately for equity and for bonds because the predictive powers are quite different. In particular, the market reaction to bond issues is no different between the investing and the non-investing types.

Variables used in the OLS regressions discussed above are then used as instruments in two-stage least squares regressions of post-issue returns on the use of proceeds. As

8. A caveat for using issue volume to predict the use of proceeds of a particular issue is that if the issue is offered early in a year, then the total volume may not be fully observed. A better measure may be the total issue volume during the six-month period before issue.

9. However, this interpretation should not be pushed too far. Since the use of proceeds is measured as the change in capital expenditures, if a high volume year coincides with a market peak, the correlation between volume and use of proceeds could be due to firms increasing investment during the bull market period prior to the peak and decreasing capital expenditures in the subsequent bear market. This pattern could exist without any intentional timing.

10. The variable for short-term market reactions used here is the one defined in Equation 3, i.e. total issue period return adjusted by CRSP index. The other one à la Asquith and Mullins (1986) has too many missing observations.

illustrated in the first two equations in Table 1.5b (Equation 7 and 8 in the same table are the same regressions for five-year returns), the positive coefficients for variable CHGCAPX mean that the more the firm uses the issue proceeds to increase capital expenditures, **as predicted** one month after registration effective date, the better the stock of the firm will perform relative to market for three years after issue. This is consistent with the hypothesis that under-performance is mainly contributed by firms that time their issues when their stocks are over-priced instead of the ones that plan to engage in capital investment. The larger and more significant coefficients in the equity equations than in the bond equations is consistent with the predictions of the timing hypothesis: timing and over-pricing is less important for bond issuers.[11]

If we use the predicted rather than actual use of proceeds to divide the sample into two halves and label them as the investing and non-investing types, a table similar to Table 1.2a can be constructed in which the mean return of each type is summarized. Table 1.6 presents the comparison between the issuers that are **predicted** to be the investing type and those predicted as the non-investing type. The results are strikingly similar to those shown in Table 1.2a. These results mean that when an equity issue is offered, we can use the information available in the market to predict whether the firm is going to use the proceeds for capital investment; and we can further predict that if those firms are unlikely to invest the proceeds, then their stocks will on average severely under-perform the market for the next three to five years.

Both Table 1.2a and Table 1.6 also show that in general the stocks of equity issuers under-perform more than the stocks of bond issuers; and that there are proportionally more equity than bond issuers that are labeled as non-investing type. These results are also evidence supporting the timing hypothesis: a firm has stronger incentives to issue equity than bonds when its stocks are over-valued. If a firm has no good investment opportunities, then its main motivation to issue is to take advantage of the mis-pricing

11. The Hausman specification test rejects the hypothesis of no simultaneity if OLS is used to regress post-issue returns on actual use of proceeds. Thus, two-staged least squared regression is the correct method of estimation.

and is presumably most interested in issuing equity in order to reap the financial windfall.

All of the above results are summarized and best illustrated in Figure 1.2. While Figure 1.1 uses actual use of the proceeds to define investing and non-investing types and portfolios, Figure 1.2 uses as the cutoff point the median level (27%) of the **predicted** change in capital expenditures, normalized by issue size. The patterns are very similar between the two graphs. In both graphs, the difference in the changes in wealth ratios between the investing and non-investing equity issues is quite striking, at least through the third year after issue. The investing firms see their stock out-perform the market significantly for three years before issue time, while the non-investing firms issue immediately after a short-term jump in returns amid generally flat or poor performance.

If the measuring period is extended to five years after issue time, the difference between the investing and non-investing types of equity issues shrinks. As illustrated in the graphs, the wealth ratios of the non-investing type equity issuers are flat compared to the market after the third year following issue date, suggesting that the over-pricing may have been corrected by then. Also, the non-investing type no longer has worse returns than the investing type starting the fourth year after issue. However, as shown in Table 1.7b, over five years the overall under-performance for all issues becomes more severe as a significant majority of every category of issues have returns worse than the CRSP index.

One possible objection to the two-stage least squares specification is that some of the variables used as instruments, such as lagged returns and cash flow, should have been included in the main regression (the second stage) in the first place. In other words, the entire process of predicting returns by use of proceeds could just be an indirect and noisy way of predicting future returns using past returns and cash flow. The inclusion of cash flow in the main regression might be argued for on the ground that high cash flow may be a signal of good future investment opportunities and thus high future returns. However, high future returns will not be realized unless the firm actually invest. Thus, in terms of causality, using cash flow to predict returns indirectly through the prediction of investment behavior is valid. Regarding lagged returns, there is no reason to expect that firms having experienced high returns for three years will, independent of other factors, continue to perform better for the next three to five years than firms who have had flat performance in the past. Indeed, the notion of general market over-reaction would predict just the opposite.

To check against these possible alternative specifications, I run an OLS regression of post-issue return on all the exogenous variables used as instruments in Table 1.5a plus the actual use of proceeds. The coefficient for the use of proceeds variable is highly significant independent of the other explanatory variables, suggesting that the use of proceeds has explanatory power not captured by other variables. I also run an OLS regression of post-issue return on only the exogenous variables. The coefficient for lagged return is insignificant, and the overall fit is worse than an OLS regression that uses predicted use of proceeds and cash flow as explanatory variables. Finally, I also run two-stage least squares regressions, including both cash flow and lagged returns as exogenous variables in the main regression rather than instruments. As shown in equations 3 and 4 in Table 1.5b, the coefficient for the use of proceeds variable remains significant, while the coefficients for cash flow and lagged returns are not. Thus, cash flow and lagged returns work better when used as instruments to predict use of issue proceeds.

Another potential problem with the results is that the difference in performance between the investing and non-investing types could be driven by firms in financial distress. Financially distressed firms frequently issue new securities in exchange offers as a part of their reorganization process. These firms also are likely to sharply reduce their capital expenditures for the few years following the onset of the distress (Asquith, Gertner and Scharfstein (1992)). Previous studies also show that firms that emerge from bankruptcy continue to perform poorly (Hotchkiss (1995)). In my sample, about a third of the firms actually decrease capital expenditures after the issue. To check the existence of this problem, I run the same regressions as before but excluding those firms that decrease capital expenditures. As shown in Equations 5 and 6 in Table 1.5b, the results are not seriously affected.

In addition to using CRSP indexes as the benchmark, I also construct benchmark portfolios based on size and book-to-market-equity ratio and compare stock returns adjusted by their respective portfolio returns. This is mainly motivated by studies of cross-sectional stock returns by Fama and French (1992, 1993), who find that size and book-to-market ratios explain a large portion of cross-sectional returns. The correlation between market returns and size and book-to-market equity ratios varies considerably across time. Even the sign may change from year to year. Given the fact that the volume of security issues fluctuates widely over time (See Table 1.1b), it is possible that any patterns detected in the study are concentrated in certain years and that those patterns are due to the performance of certain size and book-to-market groups in those years.

To calculate returns adjusted by size and book-to-market-equity ratio benchmarks, portfolios based on size and book-to-market-equity ratio are formed following in spirit the practice by Fama and French (1992) and Ikenberry, Lakonishok and Vermaelen (1994). Twice a year, on May 1 and November 1, all firms in Compustat and CRSP are ranked by size (i.e. market value) and book-to-market-equity ratio and one-year returns are calculated starting on the same two dates. For May 1, I obtain book equity (Compustat annual data item 60) for all firms in Compustat at the end of their fiscal years that end in the previous calendar year. Market equity values on December 31 of the previous year are obtained from CRSP for the same firms. The ratio of book to market equity is calculated using these two items. For November 1, book equity for fiscal years ending between July 1 of the previous year and June 30 of the current year are included and market values on June 30 of the current year are used. The four-month minimum gap between fiscal year end and the beginning of return calculation allows time for disclosure of firms' financial information.[12]

For each of the two dates every year, all NYSE firms in CRSP are sorted by

12. This is less conservative than the six-month minimum gap that Fama and French (1992) impose.

market values to determine the four size quartile breakpoints. Firms listed on all three exchanges are then allocated to the four size portfolios based on the NYSE breakpoints.[13] Then within each size quartile, they are further divided into four quartiles by their book-to-market equity ratios. Equally-weighted one-year returns are then calculated for each of the sixteen resulting size/book-to-market portfolios.

Each of the 1,117 issues in the study sample is assigned a date starting with which the size/book-to-market adjusted return is calculated. This date is the first May 1 or November 1 after at least four months following the end of the issuing fiscal year. The issuer's market value is obtained from CRSP on December 31 or June 30 preceding the return starting date. The issue is then assigned to the appropriate size and book-to-market benchmark portfolio based on its own measures and the one-year stock return adjusted by the size and book-to-market benchmark return is calculated for the first year. Multi-year adjusted returns are calculated after reassigning the firm to a new benchmark portfolio each year based on updated information and compounding the annual returns of both the issuer and the different benchmark portfolios.[14] Tables 1.8a and 1.8b provide summary statistics of the size and book-to-market portfolio assignments for the issuers during the first year after the issue.

OLS Regressions are run using returns adjusted by size and book-to-market equity ratio portfolios. As dictated by the methodology, the starting time for measuring returns here is four to nine months after the end of the fiscal year in which the issue is made. Thus, the simultaneity problem discussed earlier may be reasonably assumed not to exist: almost all of the change in capital expenditures can be observed before returns are measured. On the other hand, because of the delay in the starting time of return

13. This follows the practice of Fama and French (1992) and is particularly important here. Since most public security issuers are large firms, they would all fall into the largest size group if NASDAQ firms were included to form size portfolios.

14. Forming portfolios twice a year and allowing a four month minimum gap results in a gap of up to twenty months between issuing date and the beginning of the return calculation period. Ideally, size and book-to-market portfolios should be formed monthly, but the amount of computation would be enormous.

measurement, the degree of under-performance by the non-investing type is likely to be understated, in light of the results in Figure 1.1.

The first two equations in Table 1.9 show that relative to the size and book-to-equity benchmark returns, the investing type out-performs the non-investing type for both equity and bond issuers, though the correlation is insignificant for bond issuers. In order to show the difference between the coefficients for equity and bonds and to test the difference in performance between all equity and bond issues, I run a regression using the combined sample, adding a dummy variable indicating equity issues, and letting the dummy interact with the use of proceeds variable. As Equation 3 in Table 1.9 shows, the coefficient for EQCAPX, which indicates the difference in the slopes for CHGCAPX between equity and bonds, is insignificant. Also the coefficient for the equity dummy variable is insignificant, although they all have the right signs.

Thus, the under-performance by non-investing equity issuers is robust after adjusting for size and book-to-market ratios. The overall under-performance by equity issuers, however, seems to be explained away by size and book-to-market portfolio returns. As mentioned above, this is partly due to the delay in the time when returns are measured. Another reason why the difference between equity and bond issuers all but disappears may be the distribution of issuers among the different size and book-to-market portfolios. As Table 1.8a shows, equity issuers are on average smaller firms than bond issuers. During the period from 1983 to 1990, small firms in general had a worse performance than large firms, which is opposite to the pattern that Fama and French (1992) find over a longer period. A closer look at the stock performance of equity and bond issuers in the sample reveals that the difference between the two groups is much more pronounced after 1983 than before. Thus, equity issues after 1983 have most of their low returns explained away by the low returns of other small stocks. Also, as Table 1.8b shows, there are proportionally more equity issuers than bond issuers that have low book-to-market ratios. In other words, more equity issues are glamour stocks; a large portion of their low returns subsequent to issue may be captured by their book-to-market benchmark returns.[15]

1.5 Conclusion

This chapter takes a close look at the phenomenon of under-performance of seasoned equity offerings and presents evidence strongly suggesting issuers' ability to time their issues so as to minimize the costs of capital. The overall under-performance of SEO documented by Loughran and Ritter (1995) is almost entirely due to the under-performance of firms that do not invest the proceeds. The under-performance by the non-investing type can be predicted at issue time without observing the actual use of proceeds, because the use of proceeds itself can be predicted using information already available such as the issuer's stock performance relative to market before issue and the market's reaction to the event of issue. Furthermore, the stocks of equity issuers under-perform the market by much more than the stocks of bond issuers; and the difference in performance between the investing and the non-investing types is much smaller for bond issuers than for equity issuers.

If the firm's stock is over-valued by a big margin, managers are tempted to issue equities even if they have no investment projects on the horizon. What is striking is that on the one hand, the market is not entirely ignorant; it seems able to tell the "good" firms from the "bad" as it perceives before and when the issues are offered and guess the future performance of new issues in the right directions. On the other hand, for the non-

15. In their study of stock repurchases, Ikenberry, Lakonishok and Vermaelen (1994) find that stock repurchasing firms with low book-to-market-equity ratios have higher returns even after adjusting for their benchmark returns. No similar pattern is found here. The investing type of firms tend to have lower book-to-market ratios, given the much larger pre-issue run-ups, than the non-investing type. Yet these firms have higher returns after issue. If the issuers' book-to-market ratios in the first year following issue are included in Equation 3 in Table 1.9, the coefficient is negative with marginal significance level, while the magnitudes and significance levels of other coefficients are unchanged.

investing type, the market takes a very long time to adjust its valuation downward sufficiently, despite all the signals it sends out itself beforehand. Despite the large pre-issue run-ups, the investing type of equity issues receives more or less unbiased valuation given the long-term post-issue returns at par with the market.

While this study does not attempt to address the more fundamental question of why the market systematically over- or under-values stocks, it does help to locate the area where the market seems to miss the target the most. It provides evidence supporting Loughran and Ritter's conclusion from their finding: under-performance results from equity issuers' timing their issues when their stocks are over-priced so as to minimize the costs of capital. If the finding by Loughran and Ritter offers an investment strategy that shorts all new equity issues, this chapter provides an extension: short the stock of an equity issuer if it is offered in a high volume year, has not significantly out-performed the market prior to issue, and if the market reaction to the event of the issue is significantly negative.

Table 1.1
Summary Statistics for Seasoned Security Issues

The table summarizes seasoned public issues between 1977 and 1988 for which CRSP provides return data for at least one year before and after issue date. Table 1.1a provides information on issues in all years; Table 1.1b summarizes information by issuing years.

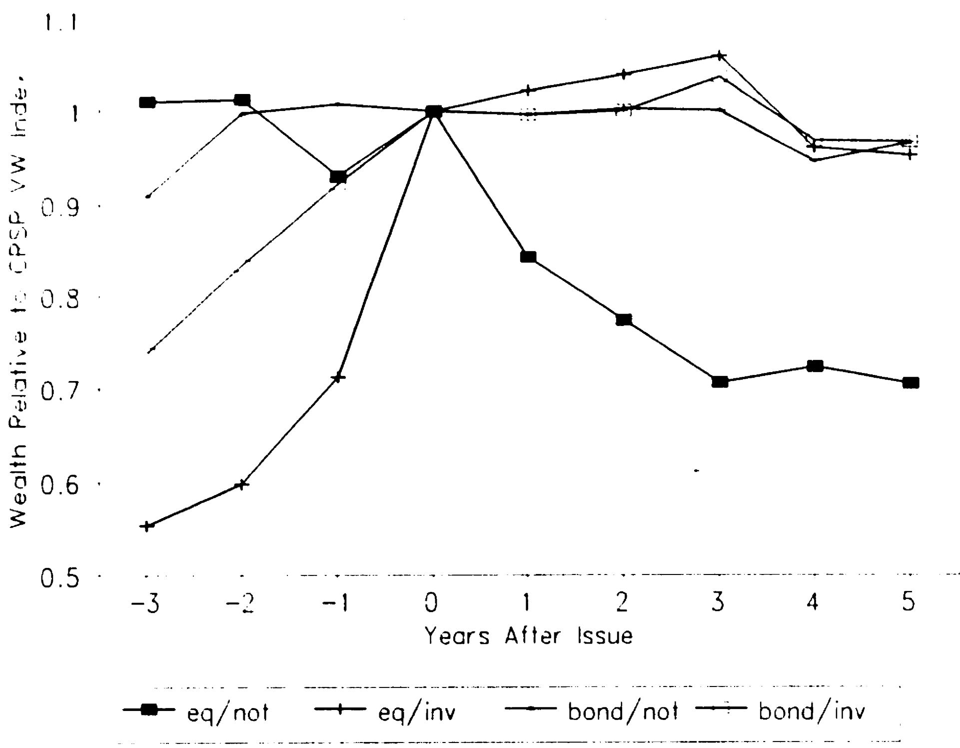
Table 1.1a

Equity			Bonds			All		
Number of Issues	Size ($MM) Mean	Size ($MM) Median	Number of Issues	Size ($MM) Mean	Size ($MM) Median	Number of Issues	Size ($MM) Mean	Size ($MM) Median
618	41.2	20.0	990	120.2	100.0	1,608	89.9	75.0

Table 1.1b

	Equity		Bonds		All	
Year	Freq.	Volume ($MM)	Freq.	Volume ($MM)	Freq.	Volume ($MM)
77	9	265	37	2,674	46	2,939
78	21	649	39	2,078	60	2,727
79	21	579	36	4,017	57	4,596
80	41	2,142	83	9,052	124	11,194
81	42	1,932	54	8,772	96	10,704
82	43	1,558	111	11,138	154	12,696
83	188	7,908	78	6,942	266	14,850
84	51	2,183	56	6,248	107	8,431
85	68	2,097	114	13,678	182	15,775
86	42	2,136	155	21,559	197	23,695
87	50	2,687	129	18,724	179	21,411
88	42	1,350	98	14,133	140	15,483

Figure 1.1
Change in Mean Value of Issuers Relative to CRSP VW Index, by Security and Actual Use of Proceeds



This figure displays the wealth ratios between the mean values of four types of security issuers and the CRSP value-weighted index. The types are determined using the actual use of proceeds as defined in Section 1.3. Wealth ratios are calculated based on total buy-and-hold returns and take the value of one at issue time. Market reaction during the two months around issue time are not reflected in the graph.

Table 1.2a
Mean 3-year CRSP VW Index Adjusted Return After Issue, by Security and Actual Use of Proceeds

Returns are mean 3-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based on actual capital expenditures. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.431	220	0.091	190	-0.522	-0.221	455
t-stat.	-8.28		0.79		-4.12	-3.88	
Bond	0.001	298	0.058	328	-0.057	0.031	662
t-stat.	0.02		1.14		-0.77	0.86	
Difference	-0.432		0.033			-0.252	
t-stat.	-5.81		0.27			-3.75	
Combined	-0.182	518	0.070	518	-0.252	-0.072	1,117
t-stat.	-4.69		1.32		-3.83	-2.27	

Table 1.2b
Median 3-year CRSP VW Index Adjusted Return After Issue, by Security and Actual Use of Proceeds

Returns are median 3-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based on actual capital expenditures. "% neg." is the percentage of issues within each category that have negative adjusted returns. The row titled "Difference" includes differences in median returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). Z-statistics are derived from Wilcoxon-Mann-Whitney rank sum tests for two unmatched samples. The null hypothesis is that the two samples are from the same distribution.

	Not Invest	z-stat.	Invest	z-stat.	Difference	z-stat.	Combined	z-stat.
Equity	-0.548		-0.299		-0.249	-4.09	-0.441	
(% neg.)	(74)*		(64)*				(70)*	
Bond	-0.081		-0.107		0.026	-0.32	-0.081	
(% neg.)	(56)*		(58)*				(56)*	
Difference	-0.467	-6.21	-0.192	-2.46			-0.360	-7.22
Combined	-0.269		-0.150		-0.119	-3.37	-0.211	
(% neg.)	(64)*		(60)*				(62)*	

* The null hypothesis that the median equals zero is rejected by binomial sign test at 5% significance level.

Table 1.3
Mean 3-year CRSP VW Index Adjusted Return Before Issue, by Security and Actual Use of Proceeds

Returns are mean 3-year total returns ending one month before issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based or actual capital expenditures. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.017	220	1.265	190	-1.282	0.519	455
t-stat.	-0.17		8.64		-7.22	6.10	
Bond	0.158	298	0.541	328	-0.383	0.370	662
t-stat.	2.69		7.18		-4.01	7.56	
Difference	-0.175		0.724			0.149	
t-stat.	-1.50		4.39			1.52	
Combined	0.084	518	0.807	518	-0.723	0.431	1,117
t-stat.	1.54		10.99		-7.91	9.53	

Table 1.4a
Mean Market Reaction to Issue Event Measured by CRSP VW Index Adjusted Return from One Month Before to One Month After Issue, by Security and Actual Use of Proceeds

Returns are mean 2-month total returns from one month before issue effective date to one month after, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based on actual capital expenditures. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.031	217	0.011	188	-0.042	-0.020	449
t-stat.	-2.23		0.91		-2.28	-2.10	
Bond	0.004	298	0.006	328	-0.002	0.004	662
t-stat.	0.58		1.21		-0.26	0.98	
Difference	-0.035		0.005			-0.024	
t-stat.	-2.25		0.36			-2.32	
Combined	-0.011	515	0.008	516	-0.019	-0.005	1,111
t-stat.	-1.50		1.46		-2.08	-1.19	

Table 1.4b
Mean Market Reaction to Issue Event Measured by Cumulative Beta-adjusted Daily Excess Returns from One Month Before to One Month After Issue, by Security and Actual Use of Proceeds

Returns are mean cumulative beta-adjusted daily returns from one month before issue effective date to one month after, using returns on beta portfolios defined by CRSP. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based on actual capital expenditures. Total sample size is considerably smaller due to missing values of beta-adjusted returns provided by CRSP. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.048	109	-0.013	124	-0.035	-0.032	255
t-stat.	-3.04		-1.12		-1.78	-3.36	
Bond	-0.008	264	-0.010	291	0.002	-0.011	581
t-stat.	-1.23		-1.78		0.23	-2.60	
Difference	-0.040		-0.003			-0.021	
t-stat.	-2.34		-0.24			-2.03	
Combined	-0.020	373	-0.011	415	-0.009	-0.005	836
t-stat.	-2.99		-2.08		-1.04	-4.20	

Table 1.5a
OLS Regressions that Predict Use of Issue Proceeds

This table reports OLS regressions that use pre-issue information to predict issuers' use of proceeds as defined in Section 1.3. T-statistics are in parentheses.

Security	Dependent Variable	RET3B	VOL	REACT	CF1B	_CONS.	N	Adj. R^2
Equity	CHGCAPX	0.206	-0.119	1.049	0.414	0.527	401	0.111
		(4.20)	(-4.28)	(2.47)	(1.98)	(3.89)		
Bond	CHGCAPX	0.149	-0.024		4.056	0.127	625	0.040
		(2.51)	(-2.54)		(3.59)	(0.72)		

Variable Definitions:

CHGCAPX: Use of proceeds, defined in Section 1.3 as the change in 2-year average capital expenditures relative to issue size; excludes 6 outliers (5 for equity and 1 for bond) whose values are greater than 20 or less then -20.

RET3B: 3-year total return adjusted by CRSP value-weighted index return ending 1 month before registration effective date.

VOL: Total issue volume, in billions of dollars, for equity and bonds, respectively, in calendar year.

REACT: 2-month market reaction measured as the return adjusted by CRSP value-weighted index return from 1 month before to 1 month after registration effective date.

CF1B: Cash flow divided by total assets in fiscal year before issue time. Cash flow is defined as income before extraordinary items (Compustat annual item 18) plus depreciation and amortization (Compustat annual item 14). Total assets is Compustat annual item 6.

_CONS.: Constant term.

Table 1.5b
Two-stage Least Squares Regressions that Predict 3-year and 5-year Returns

This table illustrates two-stage least squares regressions of three- and five-year returns, adjusted by CRSP value-weighted index returns. Variables in OLS regressions shown in Table 1.5a are used as instruments for the variable CHGCAPX in the equity and bond equations, respectively. T-statistics are in parentheses. * Equations 5 and 6 include only firms for which CHGCAPX> =0.

Equation	Security	Dependent Variable	CHGCAPX	RET3B	CF1B	_CONS.	N	Root MSE
1	Equity	RET3A	0.408			-0.291	401	1.32
			(3.57)			(-4.13)		
2	Bond	RET3A	0.301			-0.069	625	1.02
			(2.37)			(-1.21)		
3	Equity	RET3A	0.424	-0.033	0.456	-0.281	401	1.33
			(2.51)	(-0.64)	(1.69)	(-3.95)		
4	Bond	RET3A	0.467	-0.030	-0.993	0.007	625	1.15
			(1.49)	(-0.48)	(-0.57)	(0.05)		
5	Equity*	RET3A	0.463			-0.421	261	1.49
			(2.12)			(-2.18)		
6	Bond*	RET3A	0.615			-0.447	425	1.26
			(2.86)			(-2.46)		
7	Equity	RET5A	0.309			-0.413	344	1.83
			(1.82)			(-3.93)		
8	Bond	RET5A	0.282			-0.165	578	1.32
			(1.69)			(-2.12)		

Variable Definitions:

RET3A: 3-year total return adjusted by CRSP value-weighted index return starting 1 month after registration effective date.

RET5A: 5-year total return adjusted by CRSP value-weighted index return starting 1 month after registration effective date.

CHGCAPX: See Table 1.5a.

CF1B: See Table 1.5a.

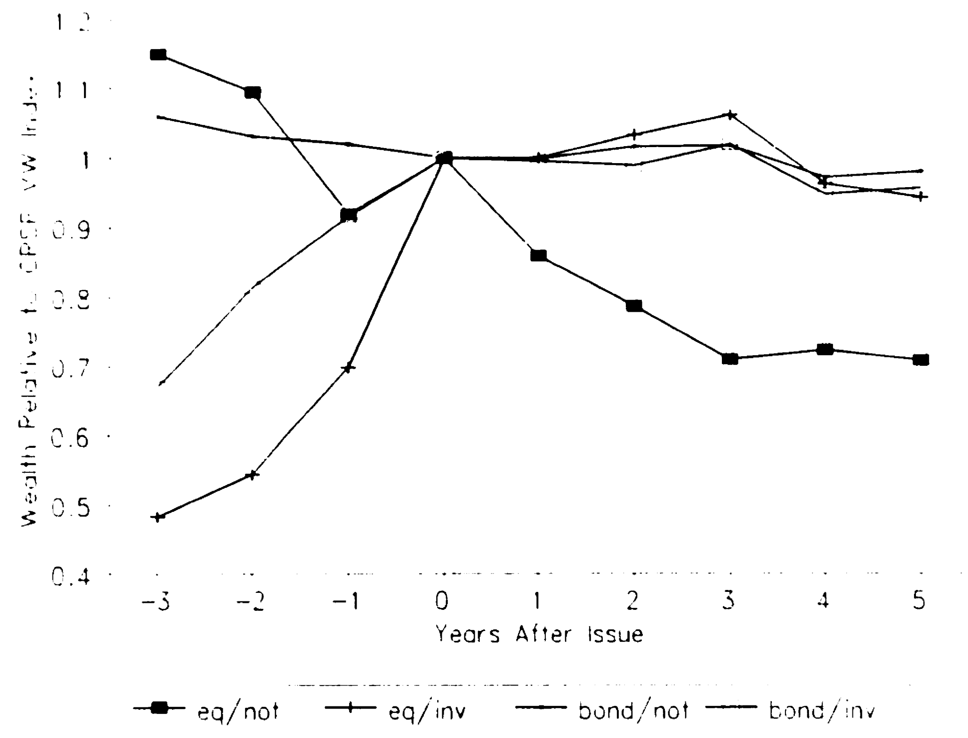
RET3B: See Table 1.5a.

Table 1.6
Mean 3-year CRSP VW Index Adjusted Return After Issue, by Security and Predicted Use of Proceeds

Returns are mean 3-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, based on the use of proceeds, as defined in Section 1.3 and **predicted** by regressions in Table 1.5a. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.425	228	0.095	177	-0.520	-0.221	455
t-stat.	-8.50		0.78		-3.93	-3.88	
Bond	0.028	287	0.031	338	-0.003	0.031	662
t-stat.	0.60		0.56		-0.04	0.86	
Difference	-0.453		0.064			-0.252	
t-stat.	-6.61		0.48			-3.75	
Combined	-0.173	515	0.053	515	-0.226	-0.055	1,117
t-stat.	-4.84		0.95		-3.42	-2.27	

Figure 1.2
Change in Mean Value of Issuers Relative to CRSP VW Index, by Security and Predicted Use of Proceeds



This figure displays the wealth ratios between the mean values of four types of security issuers and the CRSP value-weighted index. The types are determined using the **predicted** use of proceeds as defined in Section 1.3 and from regressions in Table 1.5a. Wealth ratios are calculated based on total buy-and-hold returns and take the value of one at issue time. Market reaction during the two months around issue time are not reflected in the graph.

Table 1.7a
Mean 5-year CRSP VW Index Adjusted Return After Issue, by Security and Actual Use of Proceeds

Returns are mean 5-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based on actual capital expenditures. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.542	191	-0.092	163	-0.450	-0.356	381
t-stat.	-6.66		-0.50		-2.22	-3.90	
Bond	-0.065	272	-0.063	307	-0.002	-0.075	603
t-stat.	-0.78		-0.95		-0.02	-1.47	
Difference	-0.477		-0.029			-0.281	
t-stat.	-4.10		-0.15			-2.69	
Combined	-0.262	463	-0.073	470	-0.189	-0.184	984
t-stat.	-4.35		-0.94		-1.92	-3.88	

Table 1.7b
Median 5-year CRSP VW Index Adjusted Return After Issue, by Security and Actual Use of Proceeds

Returns are median 5-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, as defined in Section 1.3, based on actual capital expenditures. "% neg." is the percentage of issues within each category that have negative adjusted returns. The row titled "Difference" includes differences in median returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). Z-statistics are derived from Wilcoxon-Mann-Whitney rank sum tests for two unmatched samples. The null hypothesis is that the two samples are from the same distribution.

	Not Invest	z-stat.	Invest	z-stat.	Difference	z-stat.	Combined	z-stat.
Equity	-0.866		-0.623		-0.243	-1.84	-0.767	
(% neg.)	(73)*		(69)*				(72)*	
Bond	-0.315		-0.245		-0.070	-0.86	-0.255	
(% neg.)	(62)*		(59)*				(61)*	
Difference	-0.551	-4.50	-0.378	-3.32			-0.512	-6.10
Combined	-0.504		-0.370		-0.134	-2.23	-0.461	
(% neg.)	(67)*		(63)*				(65)*	

* The null hypothesis that the median equals zero is rejected by binomial sign test at 5% significance level.

Table 1.7c
Mean 5-year CRSP VW Index Adjusted Return After Issue, by Security and Predicted Use of Proceeds

Returns are mean 5-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, based on the use of proceeds, as defined in Section 1.3 and **predicted** by regressions in Table 1.5a. Numbers in the last "N" column are larger than the sums of the other two because they include issues that do not have capital expenditures data from Compustat. The row titled "Difference" includes differences in mean returns between equity and bond issues for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for equity and bond issues respectively as well as for both issues combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. The test assumes that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Equity	-0.525	196	-0.114	153	-0.411	-0.356	381
t-stat.	-7.04		-0.57		-1.93	-3.90	
Bond	-0.035	265	-0.087	313	0.052	-0.075	603
t-stat.	-0.47		-1.20		0.50	-1.47	
Difference	-0.490		-0.027			-0.281	
t-stat.	-4.61		-0.12			-2.69	
Combined	-0.243	461	-0.096	466	-0.147	-0.184	984
t-stat.	-4.44		-1.18		-1.49	-3.88	

Table 1.8a
Summary Statistics of Size Portfolio Assignments

Size Quartile	Equity Issuers			Bond Issuers		
	Median($MM)	Freq.	%	Median($MM)	Freq.	%
1	33.8	168	41.9	39.7	60	9.7
2	156.1	74	18.5	193.8	70	11.3
3	485.1	83	20.7	610.8	133	21.5
4	1581.8	76	19.0	2624.7	355	57.4
All	152.7	401	100.0	1241.3	618	100.0

Note: Size quartiles are assigned based on the market value on the first 12/31 or 6/30 following the end of the fiscal year in which the issue is made.

Table 1.8b
Summary Statistics of Book-to-Market Portfolio Assignments

Book-to-Market Quartile	Equity Issuers			Bond Issuers		
	Median($MM)	Freq.	%	Median($MM)	Freq.	%
1	0.25	114	28.4	0.27	62	10.0
2	0.48	94	23.4	0.46	146	23.6
3	0.72	90	22.4	0.68	191	30.9
4	1.17	103	25.7	1.07	219	35.4
All	0.58	401	100.0	0.71	618	100.0

Note: Book-to-market quartiles are assigned based on the book value at the end of the fiscal year in which the issue is made and market value on the first 12/31 or 6/30 following the end of the fiscal year in which the issue is made.

Table 1.9
Regressions of Returns Adjusted by Size and Book-to-Market Portfolio Returns

This table presents OLS regressions of 3-year returns adjusted by size and book-to-market equity ratio portfolio returns on actual use of proceeds, as defined in Section 1.3. Regressions are run for equity and bond issues separately as well as jointly, using an interactive dummy variable indicating equity issues. T-statistics are in parentheses.

Equation	Security	Dependent Variable	CHGCAPX	EQ	EQCAPX	_CONS.	N	Adj. R^2
1	Equity	SBM3Y	0.072			-0.102	389	0.013
			(2.11)			(-2.13)		
2	Bond	SBM3Y	0.037			-0.058	604	0.004
			(1.09)			(-1.90)		
3	All	SBM3Y	0.036	-0.048	0.038	-0.058	971	0.009
			(1.07)	(-0.82)	(0.78)	(-1.90)		

Variable Definitions:

SBM3Y: 3-year total return adjusted by size and book-to-market ratio portfolio return starting on the first May 1 or November 1 after at least 4 months following the end of issuing fiscal year.

CHGCAPX: See Table 1.5a.

EQ: Dummy variable. Takes value of 1 if equity issue, 0 otherwise.

EQCAPX: Interactive variable. Product of CHGCAPX and EQ.

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Chapter 2

Further Analysis of the Timing and Performance of Seasoned Equity Issues

2.1 Introduction

In Chapter 1 I analyzed the stock performance of firms that issue seasoned equities and bonds. The results lend support to the hypothesis that firms may intentionally sell new equities when they are over-valued. Specifically, I used a sample of primary seasoned equity offers (SEO) and found that the long-term poor performance relative to market by the stocks of these equity issuers is concentrated in those firms that do not use the issue proceeds for capital investment. Also, compared to a sample of bond issues, I found that the stocks of bond issuers do not under-perform the market after the issue. This suggests that the equity issuers, particularly those that do not invest the proceeds, may intentionally sell new equities when they know they are over-valued. The result is robust after controlling for simultaneity by using instrumental variables that predict the use of issue proceeds at the time of issue. Since the instruments consist mostly of information already available at the time of issue, the results can be used to predict the performance of equity issues based on the predicted use of proceeds.

In this chapter I further explore the timing hypothesis. First, I repeat some of the key tests conducted in Chapter 1, using a much larger sample of SEO's. This sample includes not only purely primary cash equity offers, as is the case in Chapter 1, but also includes all seasoned equity issues that have a primary cash component (see Section 2.2

for detailed explanation). The result is that the majority of all SEO's are included in the study, thus reducing the possibility of data snooping. Compared to Chapter 1, the larger sample yields essentially the same results: Equity issuers that use a substantial portion of the proceeds for capital investment perform better for three years after issue than those that do not invest the proceeds. Even though the actual use of the SEO proceeds must be observed after issue, it can be predicted at the time of issue using the same set of information as is used in Chapter 1.

In addition to the use of issue proceeds, the issuer's financial leverage may provide additional insights into the importance of timing in the firm's decision to issue equity. According to Myers and Majluf's (1984) pecking order theory on capital structure, firms that face asymmetric information about its asset value should always prefer debt to equity issues. In reality, however, the amount of debt a firm is able to issue is limited by the potential costs associated with financial distress when the firm cannot generate enough cash flow for debt service. High levels of debt may also present the "over-hang" problem, which means that equity holders of the firm may decide to forgo profitable investment projects if the wealth transfer from equity to debt holders as a result of the investment exceeds the profits generated by the project (Myers (1977)).

Naturally, these problems of having too much debt are not significant for firms that have very little debt outstanding. Therefore, a firm whose financial leverage is low should be more likely to issue debt when it needs to raise external capital to finance new investment projects. This is also the prediction of the static trade-off theory, which depicts each firm as targeting a desired debt-to-equity ratio. From a tax savings standpoint, firms that have low leverage should also prefer to issue debt to take advantage of the tax deductibility of interest expenses. Given all this, an equity issuer that has very low leverage is likely to be selling equities because the managers believe that the firm's equity is over-priced. In other words, a low leveraged equity issuer is more likely to be selling over-priced equity because otherwise it should have chosen to issue debt. If managers are indeed timing their equity issues to take advantage of over-pricing, then we can predict that, other things being equal, an equity issue by a firm with low leverage is more likely to perform poorly relative to market after the issue.

The connection between financial leverage and timing of equity issues can be viewed from a different angle. While the analysis of the use of issue proceeds attempts to separate firms that issue new equity to take advantage of over-pricing from those that raise new capital for investment projects, there may be another element that motivates the firm to raise external capital. Some firms may be under liquidity constraints and need to raise new capital in order to avoid a decrease in capital expenditures. It is then reasonable to assume that over-valuation would not be as severe for equity issuers whose motives include easing liquidity constraints as those that are not under such constraints. To the extent that financial leverage is correlated with liquidity constraints, we should expect that highly leveraged equity issuers perform better than firms with low leverage.

In the tests described later in this chapter, I find that an equity issuer's financial leverage, defined as debt as a percentage of debt plus market equity value at the end of the fiscal year prior to issue, has significant predictive power of the firm's stock performance subsequent to the SEO. Specifically, low leveraged firms have significantly worse stock performance than highly leveraged firms for three years after issue. Furthermore, the correlation between financial leverage and post-SEO return is significant only among firms that do not invest the proceeds. Thus, the combination of having very little debt on the balance sheet and not investing the proceeds helps identify with greater precision those equity issuers that are likely to be selling over-priced equities.

One of the implications of the tests performed in this and last chapter is that, if information already available at the time of the issue can be used to predict the use of proceeds and in turn the subsequent stock performance, then a trading strategy could be implemented based on the test results. Since the tests are performed over the entire sample period, the returns of the equity issues included in the tests could not have been predicted at the time of the issue using the results of test. One way to assess the regression's predictive power and the consistency through time is to perform an out-of-sample test in which the use of proceeds for SEO's in each year is predicted using the coefficients from a regression that uses only observations from the past. The post-SEO returns in each year are then predicted using the use of proceeds, which is predicted by this out-of-sample test. The same test is repeated and the results are updated each year. Later in this chapter I will show that this test generates the predicted result for most of the years in the sample period.

One possible consequence of an SEO and the subsequent use of the issue proceeds is the change in the risk profile of both the firm's assets and its equity. Using a relatively small sample, Healy and Palepu (1990) find that equity issuers on average experienced a substantial increase in their asset beta; and that the increase continued through the second year after the SEO. After being offset by a decrease in financial leverage, these firms' equity beta also increased. The authors also find no significant decline in the issuers' earnings in the few years after issue. They conclude that equity issues convey management's knowledge about the future riskiness of the firms, not the level of cash flow or asset value. They point out that this interpretation is consistent with the short-term price decline around the time of issue, which is documented by several earlier studies (Asquith and Mullins (1986), Masulis and Korwar (1986) and Mikkelson and Partch (1986)).

Healy and Palepu's study on earnings performance of equity issuers has been repeated in more recent studies using much larger data sets (Loughran and Ritter (1994) and Teoh, Welch, and Wong (1995)). The results of these studies contradict Healy and Palepu's results. Firms do experience substantial earnings decline after they conduct seasoned equity offerings. In this chapter, I repeat Healy and Palepu's analysis on the change in risk using a large set of seasoned equity issues and test whether the change in beta is different for firms that invest the proceeds compared to those that do not invest.

A firm's asset beta would increase permanently following an SEO only if issuers invest the proceeds in projects that are more risky than their existing projects. The theoretical literature offers several possible reasons why this might happen. For firms that are heavily financed with debt, the bias toward highly risky investment may occur since equity holders' payoff function is convex. Alternatively, if firm managers obtain private benefits from a risky project if it succeeds without facing sufficient penalty if it fails, they may be prone to take excessive risks. To the extent that this behavior exists, it represents a potential challenge to my findings on the correlation between post-SEO stock performance and the use of issue proceeds. Firms that invest the proceeds may become more risky if they invest the proceeds in risky projects, whereas firms that use the proceeds to pay down debt or keep the proceeds in cash should become less risky. The capital market thus expects higher returns from the former type than the latter.

However, as shown later in this chapter, I find that the change in beta cannot explain the post-SEO returns. First, in the short run, defined as from one year before to one year after the SEO, both the investing and the non-investing equity issuers experience substantial increases in their equity betas. This is consistent with Healy and Palepu's finding, but contradictory to the above hypothesis, which predicts that only those that invest the proceeds become riskier. Second, the equity beta for all types of equity issuers drop rapidly starting in the second year after the SEO, back to the same level as one year before the SEO. This suggests that the short-term increase in beta following the SEO is unlikely caused by investment of proceeds in risky assets, resulting in permanent changes in the issuers' risk profiles. Third, both before and after the issue, the investing type has higher betas than the non-investing type. This appears to be consistent with the prediction of the hypothesis that beta changes explain the return difference. However, for all issuers and particularly for the non-investing firms, it is those that have high betas both before and after the SEO that generate the poorest performance. Therefore, changes in risk, at least as measured by changes in beta, do not seem to explain the differences in post-SEO stock returns.

Finally, the inclusion of issues that have non-cash and secondary components leads to the question of whether the existence of these components in any way helps predict the future returns. Secondary issues are issues offered by existing shareholders to sell shares already outstanding instead of the firm itself issuing new shares. If firm managers know that the firm's stock is over-valued, then they may have an incentive to sell their holdings in the firm through secondary offerings. Thus, secondary offerings should predict worse returns. On the other hand, the sale by the firm's principal officers may send a strong negative signal to the stock market about their knowledge of the firm's asset value, causing the stock price to drop sharply as soon as the pending sale is announced, thus taking away the incentive to sell secondary shares. The prediction of secondary offerings is therefore ambiguous, which is indeed what I find.[1] Also, the fact that registered secondary offerings include sales by shareholders other than the firm's principal officers may further dampen any predictive power of secondary offerings.

Non-cash offerings are shares registered by the firm either to exchange for other securities or for future issuance. In this chapter, I find that issues that have non-cash components generally have worse subsequent performance than pure cash offerings. The under-performance is particularly serious when an offering has a non-cash component that is registered at the same time when the firm issues warrants or options. It turns out that firms that make unit offers that include warrants and options are on average much smaller than other equity issuers and that their worse performance fits the overall pattern showing worse performance for small equity issuers.

2.2 Data

The data on seasoned equity issues used in this study are obtained from the SEC's Registered Offering Statistics (ROS) tape, which provides detailed information on all security issues registered with the SEC from 1970 to 1988. Issues before 1977 are excluded because information is very incomplete for those years. Only seasoned equity issues that include a primary cash portion by U.S. corporations to the public are included in the sample. In other words, the study excludes options and warrants (except as part of a unit offering), IPO's, purely secondary or non-cash offerings, ESOP's or other employee purchase plans. If a firm offered both debt and equity securities in the same

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1. This is consistent with Myron Scholes' (1972) finding in his Ph.D. thesis.

fiscal year, the equity issues are excluded from the study.

Issues by firms of the following industries are excluded: agriculture, utilities, communications, banking and finance. Firms in these industries often have to raise new capital to meet regulatory requirements and it is the standard practice of the literature that they be excluded.

Some firms make more than one equity offers in a fiscal year. In order to analyze the use of issue proceeds using the Compustat annual data, only one issue can be used for each firm each fiscal year to avoid repeated observations. In this case, the issue that has the largest primary cash portion in a fiscal is used as the representative issue. The total amount of proceeds from all issues in the same fiscal year is used in the use of proceeds calculation defined later in this section.[2] Observations that pass the above screening are then screened through the CRSP daily stock files and the Compustat annual industrial, over-the-counter, and the research files.

For stock returns, I follow Loughran and Ritter (1995) and calculate buy-and-hold returns for three and five years after issue. I compound the daily returns for each issue starting one month (22 trading days) after the registration effective date provided by the ROS tape. One year is defined as 253 trading days. For three-year returns, the end of the compounding period is the earlier of three years (759 trading days) after the beginning of the compounding period defined above or the de-listing date.[3] Thus, a firm must have return data available for at least part of the first year after issue to be included in the study. For five-year returns, the end of the compounding period is the earlier of five years (1265 trading days) after the beginning of the compounding period defined above or three years after the beginning day. Buy-and-hold returns are also calculated

2. Loughran and Ritter (1995) limit their sample to no more than one issue over five years for each firm to avoid overlapping in data observations. The result is eliminating many later issues from the sample. Most results in this papers were tested excluding later issues this way and are not affected by this restriction.

3. This follows Loughran and Ritter's practice, but is different from what is done in Chapter 1. In Chapter 1, a firm must have at least one year of return data available to be included in the sample. Including all truncated return periods eliminates any possibility of survivorship bias.

in a similar manner for three years ending one month before registration effective date. Finally, the CRSP value-weighted index returns are calculated for the same periods for each issue. Firms listed on the New York Stock Exchange and the American Stock Exchange are matched against the CRSP NYSE/ASE index returns; and firms listed on NASDAQ use the CRSP NASDAQ index as the benchmark. If a firm switched exchange in the middle of a year, the two part-year returns obtained from the respective exchanges as well as their respective indexes are compounded to obtain the return for the entire year.

In order to determine whether the firm invests the issue proceeds, I use Compustat's annual data on capital expenditures (item 128), R&D expenses (item 46), and cash spent for acquisitions (item 129). I calculate the average annual sum of these items for the two fiscal years before the issue and the two fiscal years starting with the year in which the issue falls, and then divide the change in the two-year average by the total amount of issue proceeds in the issuing fiscal year.[4] Expressed in a formula, we have:

$$CHGINV = \frac{(INV_t + INV_{t+1}) - (INV_{t-1} + INV_{t-2})}{2 * PRCDS_t} ; \qquad (1)$$

where INV is the sum of capital expenditures, R&D expenses and cash spent for acquisition; t is the fiscal year in which the SEO is made; and $PRCDS_t$ is the total proceeds from all issues done in year t.

The final sample consists of 1,637 seasoned equity issues for which return data are available for at least part of the first year after issue. Of this sample, 1,443 also have return data available before issue and the required data from Compustat. Table 2.1 summarizes the data. As is the case for the smaller sample in Chapter 1, the number and volume of SEO's peaked in 1983 and between 1986 and 1987. The industry distribution of the SEO's is also uneven. Firms whose use of issue proceeds as defined above is

4. Alternative measures include normalizing the change by total assets and not including R&D or acquisition, as is the case in Chapter 1. These changes do not affect the overall results.

greater than the median level (28.2%) are considered having used the proceeds for investment projects and are labeled as the investing type. The other half of the issues are labeled as the non-investing type.

To study stock market reactions to security issues, I calculate excess returns for the issuer's stock from one month before to one month after the registration effective date. The rationale for using a relatively long period to measure market reaction is discussed in detail in Chapter 1. The main reason is that most issues become known to the public over an extended period of time rather than within one day. To calculate abnormal returns around issue time, I use the two-month buy-and-hold returns adjusted by CRSP value-weighted index. Expressed in formula, it is:

$$REACT_i = \prod_{t=-22}^{22} (1 + R_{it}) - \prod_{t=-22}^{22} (1 + VWR_t) \; ; \tag{2}$$

where VWR_t is the CRSP value-weighted index return on day t.[5]

An issuer's financial leverage before the SEO is defined as follows:

$$LEV_{t-1} = \frac{CURLIAB_{t-1} + LTDEBT_{t-1}}{CURLIAB_{t-1} + LTDEBT_{t-1} + MKTEQ} ; \tag{3}$$

where $CURLIAB_{t-1}$ is the total amount of current liabilities (Compustat annual item 5), and $LTDEBT_{t-1}$ is the total amount of long-term debt outstanding (item 9), both measured at the end of fiscal year t-1; and *MKTEQ* is the market value of equity, calculated as the product of the number of shares outstanding and the share price, both obtained from CRSP, at three months before registration effective date. The time to measure market equity value is chosen relative to the issue time rather than the end of fiscal year to avoid taking the measure at different time intervals prior to issue.

To test the change in risk of equity issuers, I estimate the equity beta for each

5. In addition to this measure of market reaction, I also used in Chapter 1 beta portfolio adjusted excess returns, as is done by Asquith and Mullins (1986). The two measures yield the same results, but the beta adjusted returns are not available for NASDAQ stocks.

issuer's stock for each of the three years before and after issue, using daily return data. To match the period used to measure stock returns, the year immediately before the SEO ends one month before the registration effective date, while the first year following the SEO begins one month after the registration effective date. Equity beta is estimated using the market model:

$$R_i = \alpha + \beta_i R_m + \epsilon_i \; ; \qquad (4)$$

where R_i is the daily return for stock i; R_m is the daily return on the CRSP value-weighted index; and ϵ_i is the component of stock i's return that is uncorrelated with the market and is assumed to be normally distributed with zero mean and variance σ^2. A stock's beta is estimated for a given year if there are at least sixty days of return data available.

2.3 Test Results

2.3.1 Investment vs. No Investment

Figure 2.1 plots the performance of each of the two types of equity issuers relative to the CRSP value-weighted index from three years before to five years after issue, excluding the two months around issue time. The two types are equity/investing and equity/non-investing, as defined in Section 2.2. To generate the graph, I calculate the amounts of wealth that one would have had to invest in the stock of each issuer and the CRSP value-weighted index three years before issue so that both investments reach $1 at the issue time, based on the actual performance during the period. The $1 in both investments is then assumed to be held for five years after issue. Figure 2.1 plots the average wealth ratio of each of the four types of issuers to the CRSP index.

Figure 2.1 shows that the equity issuers that invest the proceeds out-perform the market index tremendously for three years before issue, while those that do not invest the proceeds significantly out-perform the market only in the last year before issue. After the SEO, the performance for the non-investing type immediately deteriorates, whereas for the investing type, the deterioration begins after the first year. Table 2.2a illustrates the mean one-year market-adjusted returns for each type in each year. Table 2.2b shows the compounded multi-year returns before and after issue. For three years after issue, the market-adjusted total return is -32.2% for the non-investing type, significantly lower than the -17.8% for the investing type. Also, more non-investing stocks are delisted three years after issue than investing stocks, indicating that many of the firms may have failed during that period. For three years before issue, the investing type out-performs the market by 177.7%, compared to 89.1% for the non-investing type. This pattern is consistent with the results from Chapter 1 using a smaller sample. The main difference is that in this larger sample the performance for the investment type begins to deteriorate earlier, as shown in both Figure 2.1 and Table 2.2a. In Chapter 1, the investing type's performance is flat relative to the market for the first three years after issue and begins to worsen after that. As I will discuss later in this chapter, this difference arises from the inclusion of issues that have non-cash components.

The above results are consistent with the timing explanation. Equity issuers that do not invest the proceeds are over-priced the most, given the long-term poor performance. However, as is in Chapter 1, we need to control for the problem of simultaneity, which arises from the fact that post-issue returns and the use of proceeds are observed concurrently. Again, as in Chapter 1, I use information already available at the time of issue as instruments to predict the use of proceeds. A two-stage least squares regression is then run to predict the ex-post stock return based on the predictable portion of the use of proceeds.

Table 2.3 shows the OLS regressions of the use of proceeds, as defined in Section 2.2 and measured continuously here.[6] The first regression uses the same four variables

6. In this and all subsequent regressions, outliers for each variable are Winsorized at 1% and 99% levels.

used in Chapter 1: three-year market adjusted return before issue; two-month market adjusted return during issue time; issuer's cash flow, normalized by total assets, for the fiscal year before issue; and total issue volume for the issuing year. In the second regression, which is the one that will be used in subsequent tests in this chapter, issue volume is replaced by the CRSP value-weighted index return for one year prior to issue. As shown in Tables 2.2 and 2.3, the market's reaction to the equity issues during the two months around issue time and the three-year market adjusted return before issues are significantly different for the two types. Cash flow is again a significant predictor. The reason for replacing issue volume with pre-issue market return is that at the time of issue, the total volume for the year is not known unless the issue happens to be offered at the end of the year. Therefore, strictly speaking, total issue volume is not a valid instrument. However, previous studies have documented that more firms offer new equities during market peaks. Therefore, market performance prior to issue may be closely correlated with issue volume, and is something that can be observed at the time of issue. The negative coefficient for this variable means that issues offered immediately following very strong bull markets are less likely to be used for investment.[7]

Using the variables in the second regression in Table 2.3, we can run a two-stage least squares regression in which the firm's post-issue stock return is predicted using the predictable portion of the use of proceeds. As illustrated in the first regression in Table 2.4, the positive coefficient for variable CHGINV means that the more the firm uses the issue proceeds to increase investment, **as predicted** one month after registration effective date using the information from the second regression of Table 2.3, the better the stock of the firm will perform relative to market for three years after issue.[8] This is consistent with the hypothesis that under-performance is mainly contributed by firms that time their

7. However, the interpretation of this correlation should not be pushed too far. Since the use of proceeds is measured as the change in capital expenditures, the negative sign could simply be due to firms increasing investment during the bull market period and decreasing capital expenditures in the subsequent bear market. This pattern alone could exist without any intentional timing.

8. All regressions in Table 2.4 include a complete set of industry and year dummies, which are not listed in the table.

issues when their stocks are over-priced instead of the ones that plan to engage in capital investment. Tables 2.2a and 2.2b and Figure 2.1 are replicated in Tables 2.5a and 2.5b and Figure 2.2, respectively, where the classification is don. by the predicted use of proceeds, rather than the actual use. The median for the predicted use of proceeds is 41%. The results shown in Tables 2.5a and 2.5b and Figure 2.2 implies a trading strategy that uses publicly available information at the time of issue to predict the use of equity issue proceeds and in turn predict the post-issue returns of the issuer's stock. The half of the sample that is predicted as investing type out-performs the other half in each of the first three years following the issue. Therefore, even though the actual use of equity issue proceeds cannot be observed at the time of issue, through other indicators that are observable at the time of issue and are correlated with the use of proceeds, it can be indirectly used as a signal suggesting the issuer's knowledge of whether its stock is over-valued relative to the firm's underlying asset value.

2.3.2 Financial Leverage as Another Indicator of Timing

Besides the use of issue proceeds, an equity issuer's financial leverage can also be an indicator of any deviation of its stock price from its asset value. As I discussed in Section 2.1, both the pecking order theory and the static trade-off theory of the optimal capital structure predict that a firm with a low level of debt in its capitalization is more likely to issue debt whenever it chooses to raise external capital. To the extent that some firms that are under heavy debt burden may want to issue new equity to repay some of the debt, we should also expect to see that it is the firms with large amounts of debt outstanding that issue new equity. Given these predictions, when a firm with very little debt enters the equity market to sell new shares, investors should infer from this action that the managers of the issuer may have chosen equity over debt because they think that the firm's stock is over-valued and that it is a good time to raise new equities.

The second regression in Table 2.4 uses pre-SEO financial leverage as an exogenous variable.[9] The coefficient is positive and highly significant, meaning that the three-year post-SEO market adjusted return is higher the higher the issuer's leverage at the end of the fiscal year before issue. Also, the coefficient for the use of proceeds becomes larger and more significant once the leverage variable is added.

Since financial leverage is defined using market equity value, a potential problem with the interpretation of the coefficient is that the correlation may come from the market value itself rather than leverage. There are two ways to control this. One is to use financial leverage measured using book equity. However, book equity is a very noisy and misleading measure of firm's equity capital. Older firms tend to have large book equity, while firms that have had losses may have very low or even negative book equity. With these factors in mind, I run the same regression using book equity. As shown in the third regression in Table 2.4, both coefficients are still positive, but the significance levels are marginal.

A better way to control for the effect of market equity value is to enter it directly into the regression. Since market equity is commonly accepted as a measure of firm size, its inclusion has at least two additional justifications. First is the long-documented fact that small firms on average have high returns for most of the time. The other is the finding by Loughran and Ritter (1995) that among equity issuers, small firms have worse performance than large firms. The fourth and fifth regressions in Table 2.4 include the market value and the log of market value, respectively, as exogenous variables, as well as leverage measured using market value. The result shows that large firms have better performance than small firms, thus confirming Loughran and Ritter's result, and that leverage has strong independent explanatory power.

To better illustrate the economic significance of using leverage to predict post-SEO

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9. To the extent that highly leveraged firms are more likely to use the SEO proceeds to reduce debt, leverage may help predict the use of proceeds. Indeed, when leverage is added to the first equation in Table 2.3, the coefficient has the predicted sign with marginal significance. However, since leverage is included in the main regression as an exogenous variable to predict post-SEO returns directly, its role as an instrument becomes irrelevant.

returns, Table 2.6 shows three-year post-SEO returns of issuers that are divided into four groups according to their predicted use of proceeds and pre-issue leverage. A firm is classified as investing type if its use of proceeds, defined in Section 2.1 and predicted by the second equation in Table 2.3, is above median (41%). Also a firm is labeled as high leverage if its pre-issue leverage ratio is above median (31%). The mean return of issuers that are high leveraged and are predicted to invest the proceeds is 14.1% below the market index, compared to 40.9% below market for issuers that have low leverage and are not predicted to invest the proceeds. The return differences among the four types are all consistent with the timing hypothesis. The return difference between high leveraged and low leveraged firms is more significant among those predicted not to invest the proceeds than between those predicted to invest. Also, the return difference between investing and non-investing firms is more significant among low leveraged firms than among high leveraged ones. Thus, it appears that financial leverage helps to identify with greater precision those firms that are very likely to be intentionally selling over-priced equities.

2.3.3 Out-of-Sample Test

All of the above tests indicate that the market fails to react to signals available at the time of the SEO about the value of the issuer's stock. This implies that a trading strategy could be implemented using the results of these tests to generate positive abnormal returns. However, since the test results are obtained using all of the observations during the entire sample period, the results could not have been known at any point during the sample period. It is also not clear whether the results apply generally to other periods or reflect the peculiarity of this period alone. While the latter of the two questions is difficult to answer without additional years of data, an out-of-sample test can be conducted using subsets of the data used so far in this chapter to see whether at any point during the period between 1977 and 1988, a trading strategy could have been designed and implemented in the same way, using only information and data available at that time.

For this purpose, I run the OLS regression, as shown in the second regression in Table 2.3, for every year from 1979 to 1988, using only observations from the period ending two years before the testing year. For example, for the SEO's in 1988, I run the OLS regression predicting use of proceeds using all observations before and including 1986. This two-year gap ensures that the actual use of proceeds is fully observed before an observation is included in the regression. Since 1977 is the earliest year for which observations are included in the study, the earliest year for which this out-of-sample test can be done is 1979. The coefficients from the regression are then used to derive the predicted use of proceeds for all the SEO's offered in the given year. The predicted use of proceeds are then used as an independent variable in an OLS regression to predict post-SEO three-year returns. The other regressor in this second regression is the issuer's financial leverage. As more data become available in later years, the same tests are updated each year to produce new coefficients.

As shown in Table 2.7, the same regression analysis works for most of the individual years included in the sample. For every year starting 1982, the coefficients for both regressors have the right signs (for three of these years, at least one coefficient is significantly different from zero). For the earliest three years, for which few observations are available for the tests, one coefficient has the right sign and the other has the wrong sign. In two of these three years, the coefficient with the right sign is highly significant; and the coefficient with the wrong sign is not significant in any of the three years. Thus, the same tests and the implied trading strategy could have been implemented in most of the sample years and generated the predicted results.

2.3.4 Change in Firm Risk

As discussed in Section 2.1, a potential explanation of the return difference between the investing and the non-investing types is that the investing type becomes riskier after the SEO because the proceeds may be invested in risky assets, whereas the non-investing type may become less risky if the proceeds are kept in cash or used to pay down debt. Table 2.8 illustrates changes in the equity betas for the different types of seasoned equity issuers. For the entire sample (the first block in the table), there is a significant increase in beta from one year before to one year after the SEO, followed by sharp declines in beta for the next two years. Furthermore, as shown in the second block of Table 2.8, both the investing type and the non-investing type experience significant increase in beta immediately after the SEO, followed by sharp declines. The sharp increase in the first year following SEO is consistent with Healy and Palepu's (1990) finding, but the subsequent drop is not. If the increase in beta is a temporary phenomenon, then it is unlikely to reflect permanent changes in asset riskiness. Rather, it may be the result of increased trading activities for the newly issued stocks and the lack of information and the unfamiliarity with the issuers.[10] In addition, the increase in beta for the non-investing type makes it even more unlikely that there is a permanent increase in asset risks, since these firms did not use the SEO proceeds for investment. If the change in beta is not caused by the change in the riskiness of assets, then the notion that higher post-SEO equity returns for the investing type could be explained by higher risk seems implausible.

A further division of each type by the issuers' pre-SEO financial leverage reveals that on average, firms with low leverage have higher equity betas than highly leveraged firms (the third and fourth blocks of Table 2.8). This means that the asset beta for highly leveraged firms must be much lower than firms without much debt. Yet from Table 2.6 we know that it is those firms that have low debt levels that have the worst post-SEO returns. Thus, if anything, high beta helps to predict lower, not higher returns.

2.3.5 Non-cash and Secondary Offers

Compared to the results from Chapter 1, the post-SEO returns from this chapter is different in one way that is clearly demonstrated in Figures 2.1 and 2.2 and Table 2.2a:

10. The same tests were conducted using the Scholes-Williams beta and weekly beta to control for non-synchronized trading and thin trading. These two measures predictably result in higher betas, but all the patterns illustrated in Table 2.8 remain the same.

the returns for the investing type begin to deteriorate starting the second year after the SEO. Although the average three-year buy-and-hold return is still significantly better for the investing type than for the non-investing type, most of that difference comes from the first year after the SEO. Over three years, the average return for the investing type is significantly lower than the market index, while for the sample used in Chapter 1, the three-year return for the investing type is flat against the market index. The main difference between the sample used in Chapter 1 and the sample used in this chapter is that the sample used here includes offers that have non-cash or secondary components, as long as they include some primary cash portion, while the sample used in Chapter 1 includes only pure cash primary offers. A closer analysis of the sample reveals that SEO's with non-cash portions perform significantly worse than those without non-cash components; and that this is true whether the proceeds from the cash offers are invested or not. The inclusion of secondary offers does not change the overall results in any significant way.

Non-cash offers are made when the firm either exchanges new shares of its stock for other securities it issued by itself or by other firms, or needs to register shares in preparation for future issuance. The codes provided in the ROS tape reveals that the vast majority of non-cash offers are of the second type. Among offers of this type, the largest two groups of non-cash offers are shares registered (without being sold for cash) in preparation for over-allotment sales by the underwriters and shares registered in preparation for the future exercise of warrants and options the firm issues today. Over-allotment sales are the underwriters' option to sell up to 15% more shares than the number of shares the underwriters are committed to selling if the new issue is over-subscribed. Some of the equity issues included in this study are unit offerings that include warrants and options. At the same time these warrants and options are issued, the issuer must register enough shares to be authorized for future issuance in the event the warrants and options are exercised.[11]

11. I thank Paul Asquith for explaining all this to me.

Table 2.9 shows that on average, SEO's that include non-cash portions, especially those with warrants and options, have much worse long-term performance after issue than those without non-cash components. For non-cash offers, the difference in returns between the investing and the non-investing types is not significant, while the return pattern for the pure cash offerings is similar to the pattern illustrated in Chapter 1. The second column from right in Table 2.9 lists the median market equity values for various types of issues. Firms that make pure cash offers are on average much larger firms than those that include non-cash portions, particularly those that offer warrants and options. In light of the regression results shown in Table 2.4, size differences may explain at least some of the differences in average returns.

Secondary issues are those that are already outstanding and are being offered for sales by current shareholders. Like non-cash offers, secondary offers do not raise new cash for the original issuer of the stock. Persons making secondary offers may be the firm's principal officers who own large numbers of shares, but it could also be large outside shareholders such as mutual funds. SEC requires that such an offer be registered if the shares being offered represent a controlling interest of the firm (Scholes (1972)). As Table 2.9 shows, the existence of secondary issues does not appear to signal subsequent stock performance in any significant way. Given that many secondary sales are offered by parties other than the firm's principal officers, this comes as no surprise. These parties may sell their holdings for a variety of reasons, rather than all based on their inside knowledge about the firm's future prospects.

Even if most secondary sales were offered by firm insiders, the prediction on the firm's long-term stock performance is not clear: On the one hand, insiders who possess negative information may want to unload their shares. On the other hand, this action would reveal their knowledge and send a strong negative signal to the market, causing sharp decline in the stock price in the short run. Therefore, insiders who possess negative information may be deterred from selling their own shares together with a primary cash offering.

2.4 Conclusion

This chapter continues the study of the long-term stock performance of seasoned equity issues and performs additional tests that reinforce the evidence documented in Chapter 1. All the evidence provided so far is consistent with the notion that equity issuers intentionally try to sell new stocks when they are over-priced relative to the issuers' true asset value. The issuers can take advantage of such over-pricing and raise equity capital at low cost because the market is slow to correct its valuation.

This chapter uses a much larger sample of SEO's than Chapter 1 and offers empirical results that are consistent with the main findings of Chapter 1: Equity issuers that use the proceeds for invest do better in terms of their long-term stock performance after the SEO than those that do not invest the proceeds. The use of proceeds can be predicted at the time of the SEO using information already available at that time, thus avoiding the problem of simultaneity and making the test an implementable trading strategy.

Beyond repeating the same tests using a larger sample, this chapter offers new evidence that is consistent with the timing hypothesis. Equity issuers that have high leverage ratios have better subsequent stock performance than those that have very little debt. Various theories on the optimal capital structure predict that a firm that has very little debt should prefer to issue debt instead of equity. Therefore, when we observe the contrary, it is very likely that the firm is selling equity because it is over-valued. Indeed, the combination of the use of proceeds and pre-SEO leverage improves the accuracy with which we can predict the long-term post-SEO stock returns and identify those issuers that are likely to be timing their issues. A year-by-year out-of-sample test using these two indicators generates the predicted results for most of the years in the sample period.

This chapter also repeats the test done in previous studies on the change in firm risk around SEO and finds evidence contrary to the conclusions of earlier studies. It appears that the significant increase in equity beta in the year following the SEO is temporary, making it more likely the result of increased trading activities than a permanent increase in the issuer's asset risk. In any case, the beta changes do not explain the return patterns between different types of equity issuers.

Finally, the performance of non-cash and secondary issues are analyzed. They are the new additions to the sample used in this chapter. In general, SEO's that have non-cash components have worse long-term performances than those without. Most of the non-cash portions are registered for future exercise of warrants and options or for over-allotment sales. Issuers that make unit offers that include warrants and options are mostly very small firms, which on average have much worse performance after the SEO than large firms. The performance of SEO's with secondary sales is not significantly different from pure primary offers.

Table 2.1
Summary Statistics for Seasoned Security Issues

This table summarizes seasoned public equity issues between 1977 and 1988 for which CRSP provides return data for at least one year after issue date. Panel A provides information on issue size and firm size for the entire sample; Panel B summarizes issue volumes by issuing years; Panel C displays industry concentration.

Panel A: Size Characteristics

	Issue Size	Primary Size	Total Assets	Market Equity Value	Book Equity Value
Mean($MM)	44.2	26.3	351.8	205.2	127.9
Median($MM)	17.3	10.9	37.9	50.3	17.2
Std. Dev.	95.7	58.0	1,955.6	608.1	493.2

Note: Issue size is the sum of all issues in one fiscal year; primary size is the total primary cash offer proceeds in one fiscal year; market value is the product of the number of shares outstanding and the share price three months before registration effective date; book value of equity is measured at the end of the fiscal year -1.

Table 2.1

Panel B: Time Distribution

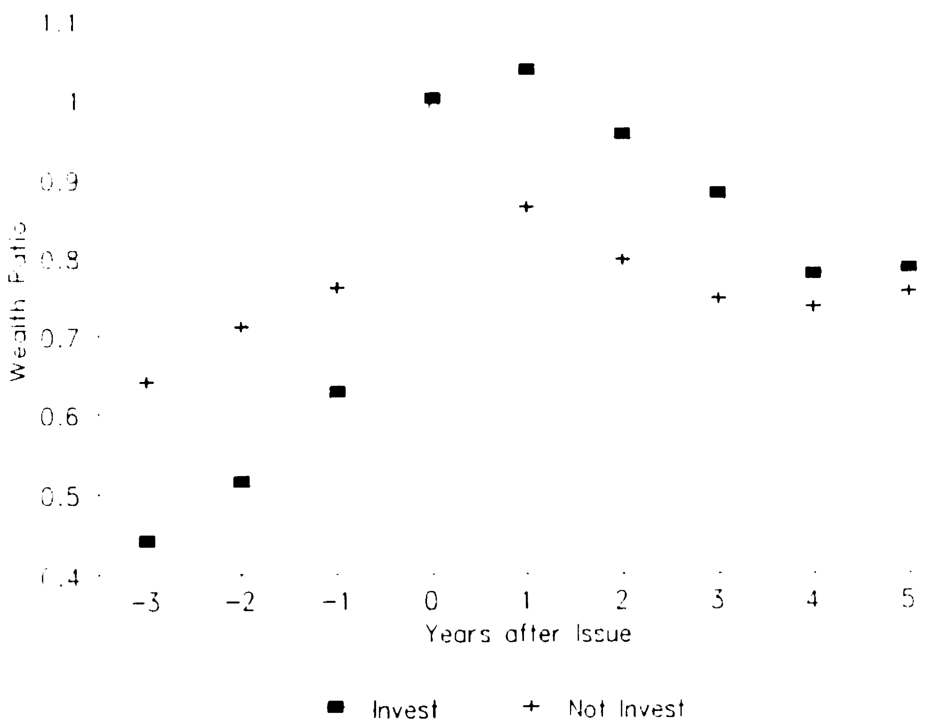
	No. of Issues				Issue Volume			
Year	Freq.	%	Cum. Freq.	Cum. %	$Bil	%	Cum. Vol	Cum. %
1977	30	1.83	30	1.83	0.42	0.96	0.42	0.96
1978	57	3.48	87	5.31	0.99	2.27	1.41	3.23
1979	63	3.85	150	9.16	0.81	1.85	2.22	5.08
1980	147	8.98	297	18.14	3.13	7.17	5.35	12.25
1981	157	9.59	454	27.73	3.14	7.19	8.49	19.44
1982	113	6.90	567	34.63	2.37	5.43	10.86	24.87
1983	404	24.68	971	59.31	9.61	22.00	20.47	46.87
1984	82	5.01	1,053	64.32	1.38	3.16	21.85	50.03
1985	143	8.74	1,196	73.06	3.25	7.44	25.10	57.47
1986	188	11.48	1,384	84.54	8.32	19.05	33.42	76.52
1987	177	10.81	1,561	95.35	8.07	18.48	41.49	95.00
1988	76	4.64	1,637	100.00	2.19	5.01	43.68	100.00
Total	1,637	100.00	1,637	100.00	43.68	100.00	43.68	100.00

Table 2.1

Panel C: Industry Concentration

Industry	SIC Codes	Freq.	%
Oil and Gas	13	96	7.2
Food Products	20	25	1.9
Paper and Paper Products	24, 25, 26, 27	60	4.5
Chemical Products	28	98	7.3
Manufacturing	30 - 34	120	9.0
Computer Equipment and Services	35, 73	351	26.2
Electronic Equipment	36	198	14.8
Transportation	37,39,40-42,44,45	68	5.1
Scientific Instruments	38	168	12.5
Durable Goods	50	48	3.6
Retail	53,54,56,57,59	96	7.2
Eating and Drinking Establishments	58	53	4.0
Entertainment Services	70,78,79	39	2.9
All Other		206	15.4

Figure 2.1
Change in Mean Value of Seasoned Equity Issuers Relative to CRSP VW Index, by Actual Use of Proceeds



This figure displays the wealth ratios between the mean values of the two types of seasoned equity issuers and the CRSP value-weighted index. The types are determined using the actual use of proceeds as defined in Section 2.2. Wealth ratios are calculated based on total buy-and-hold returns and take the value of one at issue time. Market reaction during the two months around issue time are not reflected in the graph.

Table 2.2a
Mean Annual CRSP VW Index Adjusted Returns
(By Actual Use of Proceeds)

Returns are mean 1-year total returns adjusted by CRSP value-weighted index for each of three years before and five years after issue, and two month around registration effective day. Columns labeled "Not Invest" and "Invest" indicate non-investing and investing firms, respectively, as defined in Section 2.2, based on actual use of proceeds. The number of observations in the column labeled "Combined" is larger than the sum of the numbers of observations in the two columns to the left because the combined sample includes issues for which use of proceeds data are not available from Compustat. T-statistics are below the means. T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. For two samples, the test assumes that the two samples have unequal variances.

Year	Not Invest	N	Invest	N	Difference	Combined	N
-3	0.186	559	0.203	538	-0.017	0.193	1109
	4.82		6.64		-0.34	7.88	
-2	0.062	655	0.283	642	-0.221	0.166	1312
	2.88		6.11		-4.32	6.56	
-1	0.413	721	0.745	722	-0.332	0.576	1465
	12.50		19.95		-6.67	22.57	
2 mo.	-0.016	721	0.015	722	-0.031	-0.004	1606
	-2.01		2.42		-3.09	-0.91	
1	-0.147	721	0.040	722	-0.187	-0.052	1637
	-8.50		1.89		-6.86	-3.78	
2	-0.095	686	-0.093	719	-0.002	-0.094	1590
	-5.33		-4.89		-0.08	-7.11	
3	-0.071	627	-0.108	706	0.037	0.086	1503
	-3.31		-6.13		1.32	-6.40	
4	-0.057	574	-0.134	667	0.077	-0.099	1390
	-2.42		-6.91		2.53	-6.86	
5	-0.005	523	-0.032	619	0.027	-0.023	1280
	-0.23		-1.12		0.73	-1.26	

Table 2.2b
Mean Multi-year Total CRSP VW Index Adjusted Returns
(By Actual Use of Proceeds)

Returns are mean by-and-hold total returns adjusted by CRSP value-weighted index from each of three years before issue to one month before registration day and from one month after registration day to each of five years after issue. Columns labeled "Not Invest" and "Invest" indicate non-investing and investing firms, respectively, as defined in Section 2.2, based on actual use of proceeds. The number of observations in the column labeled "Combined" is larger than the sum of the numbers of observations in the two columns to the left because the combined sample includes issues for which use of proceeds data are not available from Compustat. For three-year returns, all truncated returns are included for delisted stocks and stocks listed late. For five-year returns, truncated periods of greater than three years are included. T-statistics are below the means. T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. For two samples, the test assumes that the two samples have unequal variances.

Year	Not Invest	N	Invest	N	Difference	Combined	N
-3	0.891	721	1.778	722	-0.887	1.31	1465
	9.85		14.44		-5.80	17.23	
-2	0.560	721	1.231	722	-0.671	0.881	1465
	9.71		14.75		-6.62	17.31	
-1	0.413	721	0.745	722	-0.332	0.576	1465
	12.50		19.95		-6.67	22.57	
1	-0.147	721	0.040	722	-0.187	-0.052	1637
	-8.50		1.89		-6.86	-3.78	
2	-0.226	721	-0.057	722	-0.169	-0.141	1637
	-9.13		-1.67		-3.99	-6.81	
3	-0.322	721	-0.178	722	-0.144	-0.240	1637
	-10.13		-3.95		-2.61	-8.78	
4	-0.447	626	-0.361	706	-0.086	-0.382	1501
	-10.59		-7.23		-1.31	-10.99	
5	-0.474	626	-0.410	706	-0.064	-0.408	1501
	-8.71		-6.33		-0.75	-8.18	

Table 2.3
OLS Regressions that Predicts Use of Issue Proceeds

This table reports OLS regressions that use pre-issue information to predict issuers' use of proceeds as defined in Section 2.2. Outliers for each variable are Winsorized at the 1% and 99% levels. White adjusted T-statistics are in parentheses.

	Dependent Variable	RET3B	REACT	CF1B	VOL	VWR1B	_CONS.	N	Adj. R^2
1	CHGINV	0.072	0.583	0.485	-0.045		0.553	1443	0.061
		(5.33)	(3.52)	(5.00)	(-5.04)		(8.92)		
2	CHGINV	0.082	0.536	0.525		-0.496	0.429	1443	0.054
		(5.96)	(3.25)	(5.32)		(-4.45)	(8.91)		

Variable Definitions:

CHGINV: Use of proceeds, defined in Section 2.2 as the change in two-year average sum of capital expenditures (Compustat annual item 128), R&D expenses (item 46), and cash spent for acquisition (item 129), normalized by issue size.

RET3B: 3-year total return adjusted by CRSP value-weighted index return ending 1 month before registration effective date.

REACT: 2-month market reaction measured as the return adjusted by CRSP value-weighted index return from 1 month before to 1 month after registration effective date.

CF1B: Cash flow divided by total assets in fiscal year before issue time. Cash flow is defined as income before extraordinary items (Compustat annual item 18) plus depreciation and amortization (item 14). Total assets is Compustat annual item 6.

VOL: Total issue volume, in billions of dollars, for equity and bonds, respectively, in calendar year.

VWR1B: One-year total return of CRSP value-weighted index ending 1 month before registration effective date.

Table 2.4
Two-stage Least Squares Regressions that Predict 3-year Returns

This table illustrates two-stage least squares regressions of three-year returns after SEO, adjusted by CRSP value-weighted index returns. Variables in the second OLS regression shown in Table 2.3 are used as instruments for the variable CHGINV. Regression 3 excludes observations for which BKLEV is negative. Outliers for each variable are Winsorized at the 1% and 99% levels. A full set of industry and year dummies are included in the regressions, but not reported in tables. T-statistics are in parentheses.

Dependent Variable: RET3A

	CHGINV	LEV	BKLEV	SIZE	LSIZE	_CONS.	N	Root MSE
1	0.199					-0.505	1443	0.92
	(1.89)					(-3.82)		
2	0.244	0.403				-0.680	1443	0.92
	(2.25)	(3.53)				(-4.69)		
3	0.190		0.125			-0.588	1432	0.91
	(1.78)		(1.31)			(-3.99)		
4	0.253	0.404		0.075		-0.695	1443	0.92
	(2.33)	(3.54)		(1.32)		(-4.76)		
5	0.238	0.598			0.035	-0.916	1371	0.91
	(2.01)	(3.52)			(1.95)	(-5.43)		

Variable Definitions:

RET3A: 3-year total return adjusted by CRSP value-weighted index return starting 1 month after registration effective date.

CHGINV: Use of proceeds. See Table 3.

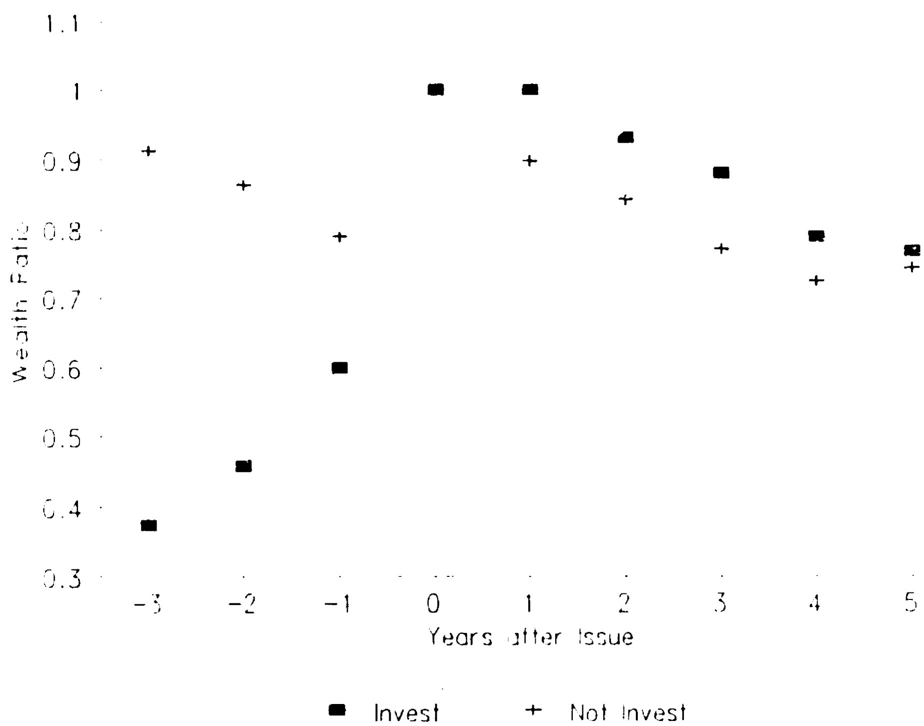
LEV: Financial leverage, defined as the sum of current liabilities and long-term debt at the end of the fiscal year before issue time, divided by the sum of the numerator and the firm's market equity value three months before registration effective date.

BKLEV: Financial leverage, defined as the sum of current liabilities and long-term debt at the end of the fiscal year before issue time, divided by the sum of the numerator and the firm's book equity value at the end of the fiscal year before issue time.

SIZE: Market equity value three months before registration effective date.

LSIZE: Log of market equity value three months before registration effective date.

Figure 2.2
Change in Mean Value of Seasoned Equity Issuers Relative to CRSP VW Index, by Predicted Use of Proceeds



This figure displays the wealth ratios between the mean values of the two types of seasoned equity issuers and the CRSP value-weighted index. The types are determined using the **predicted** use of proceeds as defined in Section 2.2 and from regressions in Table 2.5a. Wealth ratios are calculated based on total buy-and-hold returns and take the value of one at issue time. Market reaction during the two months around issue time are not reflected in the graph.

Table 2.5a
Mean Annual CRSP VW Index Adjusted Returns
(By Predicted Use of Proceeds)

Returns are mean 1-year total returns adjusted by CRSP value-weighted index for each of three years before and five years after issue. Columns labeled "Not Invest" and "Invest" indicate non-investing and investing firms, respectively, as defined in Section 2.2, based on use of proceeds as predicted using the second equation in Table 2.3. The number of observations in the column labeled "Combined" is larger than the sum of the numbers of observations in the two columns to the left because the combined sample includes issues for which use of proceeds data are not available from Compustat. T-statistics are below the means. T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. For two samples, the test assumes that the two samples have unequal variances.

Year	Not Invest	N	Invest	N	Difference	Combined	N
-3	0.021	561	0.375	536	-0.354	0.193	1109
	0.63		10.54		-7.35	7.88	
-2	-0.055	662	0.407	635	-0.462	0.166	1312
	-2.71		8.88		-9.22	6.56	
-1	0.368	721	0.790	722	-0.422	0.576	1465
	11.69		20.76		-8.54	22.57	
1	-0.107	721	0.000	722	-0.107	-0.052	1637
	-6.30		0.02		-3.93	-3.78	
2	-0.106	698	-0.081	707	-0.025	-0.094	1590
	-5.43		-4.73		-0.98	-7.11	
3	-0.138	651	-0.045	682	-0.093	-0.086	1503
	-7.52		-2.22		-3.43	-6.40	
4	-0.056	597	-0.138	644	0.082	-0.099	1390
	-2.31		-7.44		2.70	-6.86	
5	0.046	541	-0.079	601	0.125	-0.023	1280
	1.42		-3.81		3.25	-1.26	

Table 2.5b
Mean Multi-year Total CRSP VW Index Adjusted Returns
(By Predicted Use of Proceeds)

Returns are mean by-and-hold total returns adjusted by CRSP value-weighted index from each of three years before issue to one month before registration day and from one month after registration day to each of five years after issue. Columns labeled "Not Invest" and "Invest" indicate non-investing and investing firms, respectively, as defined in Section 2.2, based on use of SEO proceeds as predicted using the second regression in Table 2.3. The number of observations in the column labeled "Combined" is larger than the sum of the numbers of observations in the two columns to the left because the combined sample includes issues for which use of proceeds data are not available from Compustat. For three-year returns, all truncated returns are included for delisted stocks and stocks listed late. For five-year returns, truncated periods of greater than three years are included. T-statistics are below the means. T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. For two samples, the test assumes that the two samples have unequal variances.

Year	Not Invest	N	Invest	N	Difference	Combined	N
-3	0.158	721	2.509	722	-2.351	1.313	1465
	4.24		18.38		-16.61	17.23	
-2	0.228	721	1.562	722	-1.334	0.881	1465
	6.62		17.29		-13.79	17.31	
-1	0.368	721	0.790	722	-0.422	0.576	1465
	11.69		20.76		-8.54	22.57	
1	-0.107	721	0.000	722	-0.107	-0.052	1637
	-6.30		0.02		-3.93	-3.78	
2	-0.191	721	-0.091	722	-0.100	-0.141	1637
	-6.71		-2.91		-2.37	-6.81	
3	-0.321	721	-0.179	722	-0.142	-0.240	1637
	-8.52		-4.45		-2.56	-8.78	
4	-0.442	651	-0.363	681	-0.079	-0.382	1501
	-10.16		-7.32		-1.19	-10.99	
5	-0.438	651	-0.442	681	0.004	-0.408	1501
	-7.70		-6.95		0.05	-8.18	

Table 2.6
Mean 3-year CRSP VW Index Adjusted Return After Issue, by Leverage and Predicted Use of Proceeds

Returns are mean 3-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, based on the use of SEO proceeds predicted using the second regression in Table 2.3. Numbers in the last "N" column are larger than the sums of the other two columns because they include issues that do not have use of proceeds data. "Low Leverage" means pre-SEO leverage below median; "High Leverage" means leverage above median. The row titled "Difference" includes differences in mean returns between high leveraged and low leveraged firms for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for high leveraged and low leveraged firms respectively as well as for both types combined (the row titled "Combined"). T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. Two-sampled tests assume that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Low Leverage	-0.409	364	-0.208	414	-0.201	-0.296	798
t-stat.	-6.83		-3.64		-2.43	-6.82	
High Leverage	-0.231	357	-0.141	308	-0.090	-0.174	798
t-stat.	-5.44		-2.56		-1.26	-5.02	
Difference	-0.178		-0.067			-0.122	
t-stat.	-2.38		-0.83			-2.20	
Combined	-0.321	721	-0.179	722	-0.142	-0.240	1637
t-stat.	-8.52		-4.45		-2.56	-8.78	

Table 2.7
Out-of-Sample Prediction of 3-year Returns for SEO's for Each Year, Using Observations from Previous Years

An OLS regression is run for each year between 1979 and 1988 to predict the three-year market adjusted return after SEO. For each year, the second OLS regression in Table 2.3 is run, using all observations from two or more years before the testing year. The predicted values of the use of SEO proceeds (CHGINV) is derived using the coefficients from that regression, and used as an independent variable in the regression shown below corresponding to that year. Variable definitions are in Table 2.4. White adjusted T-statistics are in parentheses.

Year	Dep. Var.	CHGINV	LEV	_CONS.	N	Adj. R^2
88	RET3A	0.985	0.495	-1.034	64	0.090
		(2.27)	(1.63)	(-4.04)		
87	RET3A	0.584	0.613	-0.537	133	0.065
		(2.45)	(2.37)	(-5.36)		
86	RET3A	0.042	0.154	-0.229	162	-0.011
		(0.16)	(0.37)	(-1.24)		
85	RET3A	0.063	0.497	-0.572	126	0.007
		(0.21)	(1.43)	(-3.52)		
84	RET3A	0.529	0.523	-1.095	69	0.016
		(1.73)	(1.26)	(-4.37)		
83	RET3A	0.179	0.095	-0.531	372	-0.000
		(1.16)	(0.56)	(-5.66)		
82	RET3A	0.794	0.725	-1.353	108	0.057
		(1.69)	(2.71)	(-3.21)		
81	RET3A	-0.023	0.540	-0.387	138	0.017
		(-0.13)	(2.14)	(-2.13)		
80	RET3A	0.013	-0.161	-0.206	135	-0.014
		(0.07)	(-0.46)	(-0.74)		
79	RET3A	0.152	-0.074	-0.191	56	-0.000
		(2.18)	(-0.09)	(-0.58)		

Table 2.8
Mean Equity Beta and Changes
(By Year, Actual Use of Proceeds and Pre-SEO Leverage)

This table illustrates mean changes in equity beta for each of three years before and after SEO. Beta is estimated using daily returns with the CRSP value-weighted index return as the market return. The last year before SEO ends one month before registration effective date; the year after SEO begins one month after registration effective date. Means are calculated for the following types: NI=not investing; IN=investing (both based on actual use of proceeds, as defined in Section 2.2). Within each type, means are calculated for two types defined by pre-SEO leverage ratio, defined in Section 2.2: HL=leverage above median; LL=leverage below median; $\Delta\beta$=change in beta from previous year; Diff=difference in β between two types; * indicates that $\Delta\beta$ or Diff is significantly different from zero at 5% level; ** indicates that $\Delta\beta$ or Diff is significantly different from zero at 1% level.

Year	-3	-2	-1	1	2	3
All	1.055	1.100	1.129	1.257	1.141	1.037
$\Delta\beta$		0.045	0.029	0.128 **	-0.116 **	-0.104 **
IN	1.060	1.151	1.225	1.377	1.280	1.120
$\Delta\beta$		0.091 *	0.074 **	0.152 **	-0.097 **	-0.160 **
NI	1.051	1.051	1.036	1.141	1.002	0.952
$\Delta\beta$		0.000	-0.015	0.105 **	-0.139 **	-0.050 *
Diff	0.009	0.100 *	0.189 **	0.236 **	0.278 **	0.168 **
IN/HL	0.933	1.003	1.082	1.226	1.097	0.990
$\Delta\beta$		0.070	0.079 *	0.144 **	-0.129 **	-0.107 **
IN/LL	1.192	1.282	1.336	1.494	1.423	1.225
$\Delta\beta$		0.090 *	0.054	0.158 **	-0.071 *	-0.198 **
Diff	-0.259 **	-0.279 **	-0.254 **	-0.268 **	-0.326 **	-0.235 **
NI/HL	0.940	0.899	0.875	0.950	0.871	0.886
$\Delta\beta$		-0.041	-0.024	0.075 *	-0.079 *	0.015
NI/LL	1.188	1.212	1.189	1.324	1.130	1.017
$\Delta\beta$		0.024	-0.023	0.135 **	-0.194 **	-0.113 **
Diff	-0.248 **	-0.313 **	-0.314 **	-0.374 **	-0.259 **	-0.131 *

Table 2.9
Mean 3-Year Total CRSP VW Index Adjusted Returns For Non-Cash and Secondary Offerings (By Actual Use of Proceeds)

Returns are mean 3-year by-and-hold total returns adjusted by CRSP value-weighted index for three years start one month after registration day. Columns labeled "Not Invest" and "Invest" indicate non-investing and investing firms, respectively, as defined in Section 2.2, based on actual use of SEO proceeds. Labels in the first column are defined as follows: Pure Cash: offerings that have no non-cash components; Non-cash: all offerings that have some non-cash components; Over-allot: offerings that have non-cash offers prepared for over-allotment sales; Warrants: offerings that have non-cash offers prepared for future exercise of warrants and options; Pure prim: offerings that have no secondary components; secondary: offerings that have secondary components. Median Size is the median market equity value ($ million) three months before registration effective date. T-statistics are below the means. T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. For two samples, the test assumes that the two samples have unequal variances.

Type	Not Invest	Invest	Difference	Combined	Median Size	N
All	-0.322	-0.178	-0.144	-0.240	50.3	1637
	-10.13	-3.95	-2.61	-8.78		
Pure Cash	-0.275	0.055	-0.330	-0.119	83.6	315
	-4.17	0.53	-2.69	-1.94		
Non-cash	-0.333	-0.242	-0.091	-0.269	43.6	1322
	-9.23	-4.87	-1.49	-8.81		
Over-Allot	-0.305	-0.236	-0.069	-0.239	45.7	1187
	-7.68	-4.54	-1.05	-7.21		
Option	-0.575	-0.648	0.073	-0.580	9.5	254
	-8.21	-3.76	0.39	-9.20		
Pure Prim.	-0.345	-0.171	-0.174	-0.259	54.5	1088
	-8.94	-2.98	-2.52	-7.64		
Secondary	-0.271	-0.192	-0.079	-0.203	43.8	549
	-4.86	-2.64	-0.87	-4.38		

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Chapter 3

Earnings Management Before Seasoned Equity Offerings and Post-SEO Market Reactions to Earnings Announcements

3.1 Introduction and Related Literature

In the previous two chapters, I illustrated evidence consistent with the hypothesis that firms issuing new equities try to time the offering when their stocks are over-valued. Recent studies (Ritter (1991) and Loughran and Ritter (1995)) document overall long-term under-performance of initial public offerings (IPO) or seasoned equity offerings (SEO), suggesting that issuers' stocks are over-valued at the time of issue and that the market is slow to correct its valuation. Although no one has offered a clear explanation of why the market in general may mis-value a firm's stocks for extended periods, there is strong interest among finance scholars in knowing whether firms who issue new equities know that their stocks are over-valued and take advantage of the over-valuation. In other words, do we observe long-term post-issue under-performance because both the market and the issuer are overly optimistic about investment prospects or because issuers know better than the market and intentionally sell new shares when their over-priced by the market?

The timing hypothesis, which supports the latter explanation, extends from established theories on corporate capital structure and external financing decisions. It predicts that given that firms are in general reluctant to raise equity in the external capital market, a firm will offer new equities only when it knows that they are over-valued, unless there are clear indications that the firm will use the proceeds from the equity issue for investment projects or issuing debt is not feasible because the firm's debt burden is already high. In Chapters 1 and 2, I performed tests that confirm these predictions. First, I find that unlike equity issues, the stocks of firms that issue bonds do not under-perform the market. Thus, given that a firm decides to raise external capital, it is more likely to offer equity when its stock is over-priced. Second, I find that among firms that make SEO's, those that use the offer proceeds for investment projects perform better than those that do not invest the proceeds. Moreover, whether the issuer will use the proceeds for investment can be predicted at the time of the offering using available information. The fact that the under-performance of SEO's are mainly contributed by those that appear to have no good use of the SEO proceeds lends strong support for the timing hypothesis. Third, I find that equity issues made by highly leveraged firms perform significantly better than by those that have very little debt. Almost all existing theories of corporate capital structure predict that if a firm needs to raise external capital and has very little debt, it should offer debt instead of equity. The fact that a firm with low debt level offers equity strongly indicates that its equity may be over-priced. Overall, the combination of low leverage and not investing the proceeds (as predicted using available indicators) predicts severe under-performance by a seasoned equity issue. All this is strong evidence supporting the hypothesis that the under-performance by equity issues is mainly caused by issuers' intentionally selling over-priced shares.

3.1.1 Accounting Accruals

In this chapter, I further exploit the timing hypothesis, employing analytical tools developed in the accounting literature and drawing some of the results from recent studies by accounting scholars on the performance of firms that make equity offerings. Since the under-performance of equity issues was documented, accounting scholars have been investigating the phenomenon from a slightly different angle. Specifically, they study changes in accounting measures of earnings and cash flow to detect possible manipulations of accounting earnings by equity issuers. Following Ritter's (1991) study of the long-term poor performance of IPO's, Teoh, Wong and Rao (1994a) (TRW) find that firms that conduct IPO's experience increases in accruals in the year of the IPO, followed by decreases in accruals in years following the IPO. Accruals are the portion of earnings that are not in the form of cash flow. A firm can report an increase in earnings without an increase in cash flow if it accelerates the recognition of revenues and slows the recognition of expenses. For example, the firm can recognize credit sales as current revenue even though it usually delays such recognition until cash payments are received. It can also reduce the amount of bad debt it writes off as expenses. A delay in depreciation scheduie can also boost current earnings. A firm can thus artificially increase accounting earnings for one period at the expense of earnings in some later periods by actively managing its accruals within the limits allowed by the Generally Accepted Accounting Principles (GAAT). An increase in accruals before IPO followed by a decrease raises the suspicion that firms may intentionally try to fool the market through active earnings management.

In their studies, TRW focus on the component of accruals most subject to management's manipulation, namely discretionary working capital accruals (*DWKA*).[1] In TRW (1994b), the authors find that pre-IPO *DWKA* are negatively correlated with post-IPO stock returns. Thus, firms that most aggressively manage their accruals to boost earnings before IPO have the worst stock performance after IPO. More recently, Teoh, Welch and Wong (1995) (TWW) extend the same analysis to seasoned equity offerings and find similar results: firms conducting SEO's have increasing *DWKA* for three years leading up to the SEO, followed by steady decreases after the SEO. Furthermore, high *DWKA* in the fiscal year immediately before the SEO predicts low post-SEO long-term return. These results are consistent with another recent finding of

1. See Section 3.2 for detailed description of the classification of working capital and non-working capital accruals and the estimation methodology for discretionary accruals.

a negative correlation between accruals and subsequent stock return for all firms (Sloan (1994)), implying that the stock market naively reacts to accounting earnings, rather than correctly interpreting the different implications of accruals and cash flows for future earnings. TRW (1994b) and TWW (1995) go beyond this. By distilling from total accruals the component that is most subject to management manipulation and showing that this portion has strong implications for future returns of new equity issues, the authors provide a cause for the under-performance of equity issues that is more cynical than the timing hypothesis I analyzed in the previous two chapters. Not only may equity issuers intentionally offer new shares when they are over-priced, the over-pricing itself may be caused by the issuers' manipulation of their earnings in the first place.

Motivated by TWW's finding, I test in this chapter whether various pre-SEO accruals components provide additional explanatory power to my earlier tests using financial leverage and the use of SEO proceeds to predict post-SEO under-performance. TWW include change in capital expenditures in their regressions, but they use it as an exogenous variable and the coefficient is marginally significant. In this chapter, I include accruals as exogenous variables in the two-stage least squares regressions used in Chapter 2, thereby avoiding the simultaneity problems associated with using *ex post* capital expenditures. The result is that all components of pre-SEO accruals have significantly negative coefficients, with the coefficient for *DWKA* having the highest significance level.[2] Meanwhile, the coefficients for the use of SEO proceeds and financial leverage remain highly significant. Thus, accruals are not only another predictor of over-valuation, but also provide more conclusive evidence of equity issuers' active efforts to push share prices higher and the market's inability to incorporate publicly available information and react sufficiently to it.

2. The other components are discretionary non-working capital accruals (*DNWKA*), expected working capital accruals (*EWKA*), and expected non-working capital accruals (*ENWKA*). Details of their estimation will be explained in Section 3.2.

3.1.2 Earnings Announcements

The market's failure to incorporate all available information is also illustrated in another body of accounting literature that analyzes the stock market's reaction to events that supposedly make new information available to the market. It has long been documented that market activities on a firm's stock increase dramatically around the time of earnings announcements, in terms of volatility, volume and abnormal returns. The interpretation of such increased activities is straightforward: earnings announcements provide the market with new information and the market reacts to it. What is not easy to interpret is the equally well documented drifts following the abnormal returns around quarterly earnings announcements, i.e. firms that release good (bad) news have positive (negative) abnormal returns during the announcement period, followed by positive (negative) abnormal returns during the period before the next quarterly earnings announcement.

Most prominent among recent studies of earnings announcements is the one by Bernard and Thomas (1989), who not only document extensively the phenomenon of return drifts following abnormal returns around earnings announcements, but also analyze alternative interpretations of the drifts. Although the drift phenomenon points toward market inefficiency, it could also be explained as compensation for risk. That is, good news firms may be riskier and bad news firms may be less risky than the benchmark portfolios. The conclusion of Bernard and Thomas' analysis is that even under highly implausible assumptions, risk can at best explain a very small portion of the post-earnings announcement drifts. In a subsequent study, Bernard and Thomas (1990) find that part of the earnings announcement surprise is due to the market's failure to fully reflect the implications of current earnings for future earnings.

Besides quarterly earnings announcements, there is evidence that other events also generate surprises and drifts. For example, Michaely, Thaler and Womack (1995) document large price reactions to announcements of dividend initiations and omissions, followed by significant drifts. The magnitude of the surprises and drifts are larger than those found for earnings announcements. Womack (1994) also studies buy and sell recommendations made by stock analysts and finds similar patterns of market surprise and drifts.

Following the study by Lakonishok, Shleifer and Vishny (1994) (LSV), which shows that a contrarian investment strategy of buying value stocks and shorting glamour stocks generates predictable positive returns, La Porta, Lakonishok, Shleifer and Vishny (1995) (LLSV) show that surprises around earnings announcements contribute to 25-30% of the annual return differences between value and glamour stocks for two to three years after the formation of value and glamour portfolios. The fact that a substantial portion of long-term excess returns comes from earnings announcement surprises suggests that the market indeed has mis-priced stocks based on old information. In other words, the market has formed overly optimistic expectations on glamour stocks based on positive information from the past and is subsequently surprised by negative news. The contrary is true for value stocks. The alternative explanation which claims that higher returns are the result of higher risks cannot explain the concentration of excess returns around earnings announcements.

In light of the findings by LLSV and in the context of equity issues, an interesting question is whether the positive abnormal returns before equity issues and the subsequent poor returns are also concentrated around quarterly earnings announcements. Moreover, the results from the previous two chapters suggest that equity issuers that do not use the proceeds for investment are over-valued more than those that invest the proceeds. If this is indeed the case, then we should observe larger negative surprises at earnings announcements after the SEO for those that do not invest the proceeds.

In this chapter, I show that for firms conducting SEO's, earnings announcement surprises contribute to a substantial portion of abnormal returns both during the pre-SEO run-up and for the post-SEO under-performance. In other words, the market is positively surprised by good news on earnings before issue and negatively surprised by bad news after issue. When the sample is divided by the use of SEO proceeds, the predicted pattern emerges: for one and two years after the SEO, the non-investing type has larger and more significant negative surprises around earnings announcements than the investing type. This result lends more support to the hypothesis that the non-investing type is indeed more severely over-priced at the time of the SEO.

As will be shown in Section 3.3, the non-investing type has larger negative surprises than the investing type in terms of absolute magnitude, but the difference between the magnitude of the surprise and the subsequent drifts is not highly significant. Also, the contribution of negative surprises to the overall under-performance is relatively low compared to the contribution of positive surprises to the pre-SEO run-ups; most of the under-performance comes in the form of drifts following earnings announcements. One possible reason for this is survivorship bias resulted from not having access to the Compustat quarterly research data, thereby excluding all issuers that subsequently failed. Excluding these firms may result in the negative earnings announcements being understated.

This result is also consistent with the finding by several studies that on average, quarterly earnings announcements are positive (Chari, Jagannathan and Ofer (1988), Bernard and Thomas (1990), and Ball and Kothari (1991)). Two explanations have been offered by accounting scholars. One is that firms tend to report good news early and bad news late (Chambers and Penman (1984)). If a firm misses an expected earnings report date, it is likely to have bad news and the market reacts negatively to the absence of earnings report in anticipation of bad news, thus making the surprise around the actual announcements smaller. The other explanation is that firms with extremely bad news may intentionally release it early through voluntary disclosure rather than surprising the market at the quarterly announcements (Skinner (1994)). Such preemptive moves are mainly motivated by the threat of shareholders lawsuits in which the management is accused of withholding vital information. Thus, firms with very bad news may choose not to surprise the market around earnings announcements.

3.2 Data

The data on seasoned equity issues are the same as in Chapter 2. Also, the measures of stock returns, use of SEO proceeds, and pre-SEO financial leverage are all identical to those used in Chapter 2. The sample consists of 1,637 SEO's between 1977 and 1988, of which 1,443 has return data available from CRSP for at least one month before and one month after the offering date and Compustat 1993 tape has all required data. Table 3.1 provides summary statistics.[3]

3.2.1 Accrual Estimation

The estimation of accounting accruals is performed in identical fashion to the estimation in TWW.[4] Total accruals (*TAC*) are defined as the difference between net income (Compustat annual item 172) and cash flow from operations. For 1987 and later years, cash flow from operations is available from Compustat item 308. Prior to 1987, it is calculated as working capital from operations (item 11) minus working capital accruals (*WKA*). Total accruals are divided into *WKA* and non-working capital accruals (*NWKA*). *WKA* involve items of current assets and current liabilities. Managers can affect *WKA* by changing the recognition schedule of current account items such as credit sales and bad debt provisions. *WKA* are defined as the change in non-cash current assets (item 4 minus item 1) minus the change in current liabilities (item 5) excluding the current maturity of long-term debt (item 44). *NWKA* are defined as the difference between *TAC* and *WKA*. *NWKA* involve long-term assets and liabilities items such as depreciation of plant and equipment and deferred taxes. It is generally believed that managers have greater power to manipulate *WKA* than *NWKA*. Thus, changes in *WKA*

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3. For detailed description, see Section 2.2.

4. I am grateful to the authors for agreeing to provide their data on accruals. However, due to insufficient overlap between their sample and mine, I estimated accrual data for my sample using their estimation method. The following discussion on the definition and estimation of accruals also draws heavily from the same paper.

have greater implications on earnings management than changes in *NWKA*.

While an increase in accruals may be a signal of earnings management, it may also simply be the result of sales growth. To separate the portion of accruals increase that is likely due to manipulation, an issuing firm's expected working capital accruals (*EWKA*) in a given year is estimated from a cross-sectional regression of *WKA* on change in sales, using all Compustat firms with the same two-digit SIC code as the issuing firm and for the same fiscal year. All variables are normalized by lagged total assets (item 6). The regression of *WKA* in fiscal year t is thus:

$$\frac{WKA_{jt}}{TAS_{j,t-1}} = a_0 \frac{1}{TAS_{j,t-1}} + a_1 \frac{\Delta SALES_{jt}}{TAS_{j,t-1}} + \epsilon_{jt} \; ; \tag{1}$$

where j is the firm subscript; *TAS* is total assets; and $\Delta SALES$ is change in sales (item 12). The *EWKA* for the issuing firm are the predicted level of *WKA* from regression (1). In order to allow for the possibility that an SEO firm manipulates sales growth prior to the SEO by allowing generous credit policies, the growth in trade receivables (item 151) for the issuing firm is subtracted from the growth in sales when calculating *EWKA*. Thus, an issuing firm's *EWKA* for the fiscal year before the SEO is:

$$EWKA_{-1} = \hat{a}_0 \frac{1}{TAS_{-1}} + \hat{a}_1 \frac{\Delta SALES_{-1} - \Delta TR_{-1}}{TAS_{-1}} \; ; \tag{2}$$

where $\hat{a}_0$ and $\hat{a}_1$ are the estimated coefficients from (1) and ΔTR_{-1} is change in trade receivables. The discretionary working capital accruals (*DWKA*) are the unexplained portion of *WKA*, i.e. the difference between *WKA* and *EWKA*.

To estimate discretionary non-working capital accruals (*DNWKA*), expected total accruals (*ETAC*) are first obtained by estimating the following equation:

$$\frac{TAC_{jt}}{TAS_{j,t-1}} = b_0 \frac{1}{TAS_{j,t-1}} + b_1 \frac{\Delta SALES_{jt}}{TAS_{j,t-1}} + b_2 \frac{PPE_{jt}}{TAS_{j,t-1}} + \epsilon_{jt} \; ; \tag{3}$$

where *PPE* is the gross property, plant and equipment (item 7). This variable is added because long-term accruals are affected by the amount of depreciation, which in turn is correlated with the size of long-term fixed assets. *ETAC* is the predicted portion of *TAC* based on (3). The difference between *ETAC* and *EWKA* is the expected non-working capital accruals (*ENWKA*); and the difference between *NWKA* and *ENWKA* is *DNWKA*.

Of the 1,443 SEO's in the sample, accruals are estimated for 1,341 for the fiscal year immediately prior to the SEO. The reduction in observations is partly due to the recent update of the Compustat data tape from 1993 to 1994, which erased some firms' data that were available on an older tape. Also, a firm's accruals are not estimated if there are fewer than twenty other firms in Compustat that have the same two-digit SIC code. Table 3.2 summarizes the four types of accruals. The mean, median, and the percentile levels are all close to TWW's data.

3.2.2 Earnings Announcements

The Compustat quarterly data files provide the dates of quarterly earnings announcements. Unfortunately, the quarterly data only cover the most recent twelve years, which means no data is available before 1983. Also the quarterly research data file, which covers firms that subsequently failed, is not available, resulting in a much smaller data set and possible survivorship bias that understates post-SEO negative performance. Even for firms included in the quarterly data files, earnings announcement dates are available with less regularity than other data items. Of the 1,443 issues in the sample, only 558 have announcement dates available for two years after the SEO; and only 324 have announcement dates available for one year before the SEO. If longer periods were studied, even fewer observations would remain. Thus, the tests performed in the next section are limited to these observations and short periods.

Following standard practice in the literature, I define the announcement period as the three-day period beginning two trading days before the announcement date and ending on the announcement date. The non-announcement period is the period between two announcement periods. In a year with 253 trading dates, this period corresponds to about sixty trading days. For each period, I calculate the buy-and-hold return adjusted by the CRSP value-weighted index. In order to assess the magnitude of the announcement period returns, or surprises, relative to non-announcement period returns, or drifts, I analyze two measures. First, I calculate the average daily excess returns over a period of one or two years for all surprises as well as all drifts. For example, the average daily excess return during all surprise periods in one year is:

$$DS1Y_i = \frac{\sum_{q=1}^{4} (R^s_{qi} - R^s_{qm})}{12} \; ; \tag{4}$$

where $DS1Y_i$ is one-year average daily surprise for firm i; R^s_{qi} is the total return during the three-day surprise period for firm i in quarter q; and R^s_{qm} is the CRSP value-weighted index return for the same period. The sum of the surprises over the four quarters is divided by twelve, which is the number of trading days over the four surprise periods. Similarly, the average daily drift over one year is:

$$DD1Y_i = \frac{\sum_{q=1}^{4} (R^d_{qi} - R^d_{qm})}{240} \; ; \tag{5}$$

where $DD1Y_i$ is one-year average daily drift for firm i; R^d_{qi} is the total return during the sixty-day drift period for firm i in quarter q; and R^d_{qm} is the CRSP value-weighted index return for the same period. The sum of all the drifts over the four quarters is then divided by 240, the number of trading days over the four drift periods. Average daily surprise and drift can be calculated in similar manner for two years by adding returns over eight quarters and dividing by the appropriate numbers of trading days.

Besides comparing the magnitude of average daily surprises with average daily drifts, I also compare their impact on the total returns over a period of one or two years. Specifically, I calculate the total excess returns during all surprise periods in a year as a share of the total excess return for the entire year. Since the number of days in surprise periods is one-twentieth of all the trading days in a year, a share that is significantly greater than 5% would indicate the existence of earnings announcement surprises.

3.3 Test Results

3.3.1 Accruals as Predictors of SEO Under-performance

Table 3.3 lists OLS regressions that predict the use of SEO proceeds with information available at the time of the SEO. The first regression is identical to the one used in Chapter 2. In the second regression, pre-SEO accruals are added to see whether firms that aggressively manage earnings before SEO are the ones that do not invest the proceeds. The coefficients for the two discretionary accruals variables have the predicted sign, but they are marginally significant. Later in the section, it will become apparent that both the investing and the non-investing type include firms that actively manage pre-SEO earnings.

Table 3.4 lists two-stage least squares regressions that predict three-year post-SEO market adjusted returns using exogenous variables and the use of proceeds. The use of proceeds is predicted by instruments from the first regression of Table 3.3. The first regression in Table 3.4 is identical to the second regression in Table 2.4. Accruals variables are included in the second regression as exogenous variables. A size variable is included in regressions 3 and 4. Regressions 2 and 4 show that all accruals variables are negatively correlated with post-SEO returns, with the coefficient for *DWKA* being the most significant. The negative coefficients for the two discretionary accruals variables *DWKA* and *DNWKA* means that firms that aggressively manage their accruals to boost pre-SEO earnings will have worse stock returns for three years after the SEO.

The regressions in Table 3.4 also show that, with the accruals variables added to the regression and having the predicted signs, the variables used in the previous two chapters, e.g. use of proceeds and financial leverage, remain highly significant. Together they tell a very cynical story of firms that conduct SEO's: not only do they try to sell equities when they are over-priced, but there may be deliberate actions on the part of the issuers that cause their shares to be over-priced. The market, on the other hand, is very slow to incorporate all the information available at the time of the SEO to correctly value these shares. In Table 3.5, I divide the sample at the median points of the predicted use of proceeds and *DWKA*, which are most subject to management manipulation. The by now familiar pattern appears again: the issuers that have most aggressively managed working capital accruals and are not likely to invest the proceeds have the worst performance after SEO, while the opposite group has the best. Indeed, if the entire sample is divided by all three criteria used so far, i.e. use of proceeds, leverage and *DWKA*, the best group, which is the investing type that has high leverage and with low *DWKA*, has a mean three-year return of 5.2% below market (insignificantly different from zero), while the return for the worst group is 44.5% below market (this is not shown in tables).

One other interesting outcome is that the division by *DWKA* seems to differentiate the investing type more than the non-investing type. The return difference between the aggressive and the conservative types is more pronounced among the investing type than the non-investing type. There are also more issuers among the investing type that fall into the aggressive category. This suggests that earnings management by equity issues is prevalent among the investing type issuers as much as among the non-investing type.

3.3.2 Earnings Announcement Surprises and Post-Announcement Drifts

Figure 3.1 illustrates the market adjusted excess returns from one year before to two years after the SEO for firms that have quarterly earnings announcement dates available in the Compustat quarterly files. The sample is divided into two groups by the actual use of SEO proceeds. The kinks along the curves represent abnormal returns during the three-day earnings announcement periods. Thus, it is obvious that there are larger than usual excess returns, or surprises around earnings announcements both before and after SEO. Between announcements, there are also significant drifts generally in the same directions as the previous surprises.

Tables 3.6 and 3.7 show the analysis of these surprises and drifts for the two types. Table 3.6 compares the average daily excess returns for the surprise and drift periods.

We see that in the year leading up to SEO, both the investing and the non-investing types have positive surprises around earnings announcements as well as positive drifts between announcements. For both types, the average daily surprise is significantly larger than the average daily drift (0.00188 vs 0.00035 for the not invest, and 0.00378 vs 0.00084 for invest). The surprises and drifts are about twice as large for the investing type than for the non-investing type, which is not surprising given the results seen so far.

During the two years after SEO, the non-investing type has both negative surprises and drifts, while the investing type has no significant surprises or drifts. For the non-investing type, the magnitude of the average daily surprise is about three times as large as the average daily drift (over two years, it is -0.00097 compared to -0.00029). Also, only the non-investing type has significantly negative surprises during the same period, while there is virtually no surprises for the investing type. These patterns are consistent with the predictions of the timing hypothesis discussed earlier. Since the non-investing type produces more negative surprises after the SEO than the investing type, over-valuation is a much more plausible explanation of under-performance than change in risk.

Table 3.7 shows the relative contributions of surprises and drifts to the total excess returns. In the first row, we see that during the year before SEO, surprises around earnings announcements account for about 20% of the total excess returns, even though the announcement periods cover only 5% of the entire year. For two years after SEO, surprises explain 26% of the total excess returns for the investing type, but only 14.4% for the non-investing type. Of the difference in returns between the two types, 9.1% comes from surprises around earnings announcements, though this is still proportionally larger than an even distribution of returns over time.

Thus, in the post-SEO period, negative earnings announcement surprises explain between 14% to 26% of the total under-performance, even though announcement periods are only 5% of the entire period. This result is similar to the finding by LLSV (1995). It suggests that the under-performance by equity issues is unlikely caused by risk changes, as suggested by some. As I showed in Chapter 2, the change in equity beta around SEO seems to be temporary; and high beta firms do not have better returns than low beta firms.

A main weakness of the results in Table 3.6 is that most of the differences in surprise between the two types as well as the differences between the surprise and the drift for the non-investing type are only marginally significant. Also as shown in Table 3.7, the groups of firms that have worse performance have larger drifts relative to surprises. In other words, the worse the news is, proportionally the more bad news seems to come between earnings announcements, rather than during announcements. Also, when comparing the returns between two groups, a larger share of the difference comes from the surprise if the two excess returns being compared are positive, as is the case for pre-SEO run-ups, than if the two returns are negative, as in post-SEO under-performance.

One possible reason for this is survivorship bias due to the lack of firms in the Compustat quarterly research file, which include firms that eventually failed or were merged with other firms. Not having these firms in the sample could cause the negative earnings announcements to be understated, making it harder to obtain significant results. Also, compared to LLSV, who study all firms in Compustat and CRSP, the sample studied here is much smaller.

The fact that worse returns come primarily through drifts is consistent with a fact many accounting scholars have documented: for all firms, earnings announcement surprises are on average always positive. The magnitude of positive surprises is always larger than negative surprises (Chari, Jagannathan and Ofer (1988), Bernard and Thomas (1990), and Ball and Kothari (1991)). Although these studies do not make serious efforts to explain the phenomenon, others do. Skinner (1994) finds that bad quarterly earnings surprises are preempted more often than good surprises. Surprises are preempted when the firm voluntarily disclose earnings related information before the quarterly announcement dates. Skinner offers two reasons that firms have incentives to voluntarily disclose bad news. One is that when the share price drops sharply upon a large negative surprise, shareholders may file lawsuits charging that managers intentionally withheld material information. Releasing information early helps to fend off such allegations.

The other reason is that managers may incur reputation costs when they are perceived as less than candid by not disclosing bad news in a timely manner. Money managers may decide not to hold stocks of firms with such a reputation. These costs of not releasing bad news early are asymmetric in that there is no benefits of equal magnitude for releasing good news early. Therefore, more negative surprises are preempted than positive ones.

An alternative reason that has been offered for smaller average negative earnings announcement surprises is almost opposite to Skinner's explanation. Chambers and Penman (1984) find that firms tend to announce quarterly earnings earlier than expected when there is good news; and the announcement generates positive surprise. On the other hand, if a firm makes the announcement late, the announcement is more likely to be bad, causing negative surprise. Moreover, when the firm has not made the announcement at the expected date, the market reacts negatively to the silence, as if to anticipate future bad news. Since the tests I performed in this chapter assume that there are always exactly sixty trading days between adjacent quarterly announcements, if a firm makes an announcement late, the market's anticipation would be included in the drift for the preceding quarter.

Thus, a larger portion of the market's reaction to bad news is likely to occur before the earnings announcements whether because the firm intentionally preempts negative surprises by releasing bad news early, or because the firm fails to release it on time. For firms with bad news, the surprises around earnings announcements are likely to understate the true reaction if they were really surprises. If the firm's stock is on a continuous decline, as is the case for most firms conducting SEO's, the negative drifts between negative announcements may be partly drifts following a previous bad surprise and partly anticipations of the next negative shock.

3.4 Conclusion

This chapter provides yet another angle to analyze the issue of timing in equity issues. By drawing the tools and past results from the accounting literature, I showed that firms conducting SEO's not only try to issue when the market over-values their stocks, but also try to fool the market by boosting their earnings through manipulations of accruals, thereby causing the market to over-value their stocks. After the SEO, the market is surprised by series of negative earnings reports as the issuers undo the increases in accruals. Discretionary accruals, along with the use of SEO proceeds and financial leverage, makes it possible to predict with added accuracy those equity issuers that are likely to have extremely poor performance for several years after the SEO.

The results presented in this and the previous chapters as well as numerous recent studies by other scholars present a strong challenge to the notion of the efficient stock market. Mounting evidence suggests that the market does not seem to incorporate all available information when setting prices. Increasingly large varieties of long-term excess returns can be identified and predicted by using readily available information such as firm size and book-to-market ratio, events of equity issues and repurchases, predictable use of issue proceeds, financial leverage, and cash flow relative to earnings. Even market surprises to quarterly earnings announcements can be predicted from one quarter to the next because the market apparently cannot impound the implications of current earnings for future earnings (Bernard and Thomas (1990)).

All this shows that, despite major advances in the theory of the capital markets, the abundant supply of academic scholars trying to explain the market with various theoretical models and empirical tools, the abundant supply of institutional investors managing large amounts of assets with sophisticated trading strategies, and the technological advances that make information much easier and less costly to obtain, we still have a long way to go to fully understand the working of the capital markets and what drives stock prices. Substantially better understanding of the capital markets may require no less than re-examining some of the basic frameworks within which scholars and practitioners alike have worked for decades and developing completely new ways of thinking and analysis. Until then, we will surely continue to discover new evidence of how the market fails to work rather than how it works.

Table 3.1
Summary Statistics for Seasoned Security Issues

The table summarizes seasoned public issues between 1977 and 1988 for which CRSP provides return data for at least one year before and after issue date. Panel A provides information on issue size and firm size for the entire sample; Panel B summarizes issue volumes by issuing years.

Panel A: Size Characteristics

	Issue Size	Primary Size	Total Assets	Market Equity Value	Book Equity Value
Mean($MM)	44.2	26.3	351.8	205.2	127.9
Median($MM)	17.3	10.9	37.9	50.3	17.2
Std. Dev.	95.7	58.0	1,955.6	608.1	493.2

Note: Issue size is the sum of all forms of issue from all issues in one fiscal year; primary size is the total primary cash offer proceeds in one fiscal year; market value is the product of the number of shares outstanding and the share price three months before registration effective date; book value of equity is measured at the end of the fiscal year -1.

Table 3.1

Panel B: Time Distribution

	No. of Issues				Issue Volume			
Year	Freq.	%	Cum. Freq.	Cum. %	$Bil	%	Cum. Vol	Cum. %
1977	30	1.83	30	1.83	0.42	0.96	0.42	0.96
1978	57	3.48	87	5.31	0.99	2.27	1.41	3.23
1979	63	3.85	150	9.16	0.81	1.85	2.22	5.08
1980	147	8.98	297	18.14	3.13	7.17	5.35	12.25
1981	157	9.59	454	27.73	3.14	7.19	8.49	19.44
1982	113	6.90	567	34.63	2.37	5.43	10.86	24.87
1983	404	24.68	971	59.31	9.61	22.00	20.47	46.87
1984	82	5.01	1,053	64.32	1.38	3.16	21.85	50.03
1985	143	8.74	1,196	73.06	3.25	7.44	25.10	57.47
1986	188	11.48	1,384	84.54	8.32	19.05	33.42	76.52
1987	177	10.81	1,561	95.35	8.07	18.48	41.49	95.00
1988	76	4.64	1,637	100.00	2.19	5.01	43.68	100.00
Total	1,637	100.00	1,637	100.00	43.68	100.00	43.68	100.00

Table 3.1

Panel C: Industry Concentration

Industry	SIC Codes	Freq.	%
Oil and Gas	13	81	6.0
Food Products	20	20	1.5
Paper and Paper Products	24, 25, 26, 27	52	3.9
Chemical Products	28	78	5.8
Manufacturing	30 - 34	73	5.4
Computer Equipment and Services	35, 73	302	22.5
Electronic Equipment	36	175	13.1
Transportation	37,39,40-42,44,45	60	4.5
Scientific Instruments	38	136	10.1
Durable Goods	50	38	2.8
Retail	53,54,56,57,59	72	5.4
Eating and Drinking Establishments	58	43	3.2
Entertainment Services	70,78,79	30	2.2
All Other	10,15,16,17,23,29,47,48, 49,51,52,62,64,65,67,72, 75,80,87,99	133	9.9

Table 3.2
Summary Statistics of Accruals in Fiscal Year before SEO

All accruals are expressed as percentage of lagged total assets. See Section 3.2 for definitions of accruals. Number of observation: 1,341.

	DWKA	DNWKA	EWKA	ENWKA
Mean	3.72	3.39	3.75	-11.07
Median	1.90	-0.73	1.58	-4.71
Std. Dev.	53.51	39.90	24.18	40.17
25th pc.	-3.57	-3.75	-0.41	-0.47
75th pc.	9.78	1.94	5.89	-2.57

Table 3.3
OLS Regressions that Predicts Use of Issue Proceeds

This table reports OLS regressions that use pre-issue information to predict issuers' use of proceeds as defined in Section 3.2. Outliers for each variable are Winsorized at the 1% and 99% levels. White adjusted T-statistics are in parentheses. Dependent variable: CHGINV

Indep. Variable	1		2	
RET3B	0.082	(5.96)	0.081	(5.78)
REACT	0.536	(3.25)	0.538	(3.07)
CF1B	0.525	(5.32)	0.611	(5.36)
VWR1B	-0.496	(-4.45)	-0.453	(-3.84)
DWKA			-0.206	(-1.80)
DNWKA			-0.770	(-1.68)
EWKA			0.066	(0.32)
ENWKA			-0.681	(-1.57)
_CONS.	0.429	(8.91)	0.360	(5.85)
N	1443		1341	
ADJ. R^2	0.054		0.056	

Variable Definitions:

CHGINV: Use of proceeds, defined in Section 2.2 as the change in two-year average sum of capital expenditures, R&D expenses and cash spent for acquisition, normalized by issue size.

RET3B: 3-year total return adjusted by CRSP value-weighted index return ending 1 month before registration effective date.

REACT: 2-month market reaction measured as the return adjusted by CRSP value-weighted index return from 1 month before to 1 month after registration effective date.

CF1B: Cash flow divided by total assets in fiscal year before issue time. Cash flow is defined as income before extraordinary items (Compustat annual item 18) plus depreciation and amortization (item 14). Total assets is Compustat item 6.

VWR1B: One-year total return of CRSP value-weighted index ending 1 month before registration effective date.

DWKA: Discretionary working capital accruals for fiscal year before SEO.

DNWKA: Discretionary non-working capital accruals for fiscal year before SEO.

EWKA: Expected working capital accruals for fiscal year before SEO.

ENWKA: Expected non-working capital accruals for fiscal year before SEO.

Table 3.4
Two-stage Least Squares Regressions that Predict 3-year Returns

This table illustrates two-stage least squares regressions of three-year returns after SEO, adjusted by CRSP value-weighted index returns. Variables in the first OLS regression shown in Table 3.3 as well as all exogenous variables listed in this table are used as instruments for the variable CHGINV. Outliers for each variable are Winsorized at the 1% and 99% levels. A full set of industry and year dummies are included in the regressions, but not reported in tables. T-statistics are in parentheses to the right of coefficients.

Dependent Variable: RET3A

	1		2		3		4	
CHGINV	0.243	(2.25)	0.277	(2.55)	0.238	(2.01)	0.246	(2.11)
LEV	0.403	(3.53)	0.313	(2.67)	0.598	(3.52)	0.469	(2.70)
LSIZE					0.035	(1.95)	0.046	(2.50)
DWKA			-0.340	(-2.77)			-0.353	(-2.84)
DNWKA			-0.830	(-2.28)			-0.684	(-1.88)
EWKA			-0.505	(-2.30)			-0.351	(-1.58)
ENWKA			-0.692	(-1.98)			-0.507	(-1.46)
_CONS.	-0.680	(-4.69)	-0.716	(-4.53)	-0.916	(-5.43)	-0.960	(-5.36)
N	1443		1341		1443		1341	

Variable Definitions:

RET3A: 3-year total return adjusted by CRSP value-weighted index return starting 1 month after registration effective date.

CHGINV: Use of proceeds. See Table 3.3.

LEV: Financial leverage, defined as the sum of current liabilities and long-term debt at the end of the fiscal year before issue time, divided by the sum of the numerator and the firm's market equity value three months before registration effective date.

LSIZE: Log of market equity value three months before registration effective date.

DWKA: Discretionary working capital accruals for fiscal year before SEO.

DNWKA: Discretionary non-working capital accruals for fiscal year before SEO.

EWKA: Expected working capital accruals for fiscal year before SEO.

ENWKA: Expected non-working capital accruals for fiscal year before SEO.

Table 3.5
Mean 3-year CRSP VW Index Adjusted Return After Issue, by Pre-SEO *DWKA* and Predicted Use of Proceeds

Returns are mean 3-year total returns starting one month after issue effective date, adjusted by CRSP value-weighted index returns. Columns "Not Invest" and "Invest" indicate non-investing and investing firms, based on the use of SEO proceeds predicted using the second regression in Table 3.3. The row titled "Aggressive" includes firms whose *DWKA*, as defined in Section 3.2, are above median; "Conservative" includes those whose *DWKA* are below median. The row titled "Difference" includes differences in mean returns between aggressive and conservative firms for "Not Invest" and "Invest" types respectively as well as for both types combined (the column titled "Combined"). The column titled "Difference" includes differences between "Not Invest" and "Invest" types for aggressive and conservative firms respectively as well as for both types combined (the row titled "Combined"). Numbers in the last "N" column and row are larger than the sums of the other two columns and row, respectively, because they include issues that do not have use of proceeds data or accruals data available. T-statistics for one-sampled tests are based on the null hypothesis that the mean is zero. For two-sampled tests, the null hypothesis is that the two means are the same. Two-sampled tests assume that the two samples have unequal variances.

	Not Invest	N	Invest	N	Difference	Combined	N
Aggressive	-0.336	315	-0.250	355	-0.086	-0.290	670
t-stat.	-5.46		-4.57		-1.05	-7.10	
Conservative	-0.294	358	-0.091	313	-0.203	-0.199	671
t-stat.	-5.91		-1.46		-2.55	-5.05	
Difference	-0.042		-0.159			-0.091	
t-stat.	-0.54		-1.92			-1.61	
Combined	-0.321	721	-0.179	722	-0.142	-0.240	1637
t-stat.	-8.52		-4.45		-2.56	-8.78	

Figure 3.1
Change in Mean Value of Seasoned Equity Issuers Relative to CRSP VW Index, by Actual Use of Proceeds

This figure displays the wealth ratios between the mean values of the two types of seasoned equity issuers and the CRSP value-weighted index. The types are determined using the actual use of proceeds as defined in Section 2.2. Wealth ratios are calculated based on total buy-and-hold returns and take the value of one at issue time.

Table 3.6
Average Daily Excess Returns During and Between Earnings Announcement Periods, By Actual Use of SEO Proceeds

Returns are average daily excess returns adjusted by CRSP value-weighted index in earnings announcement periods (labeled "Surprise") and between earnings announcements (labeled "Drift") for the last year before SEO and the first one and two years after SEO. See Section 3.2 for detailed definitions of earnings announcement period and the calculation of average daily excess returns. Rows labeled "Diff." are difference in mean daily excess return between surprise and drift. The column labeled "Diff." is difference between "Not Invest" and "Invest", defined in Section 2.2 and based on actual use of proceeds. T-statistics are in parentheses and below the means.

Year	Return	Not Invest	N	Invest	N	Diff.	Combined	N
1 yr before	Surprise	0.00188	146	0.00378	178	-0.0019	0.00292	324
		(2.04)		(5.00)		(-1.59)	(4.97)	
	Drift	0.00035	143	0.00084	175	-0.0005	0.00062	318
		(2.26)		(6.75)		(-2.48)	(6.30)	
	Diff.	0.0015		0.0029			0.0023	
		(1.86)		(3.62)			(3.86)	
1 yr after	Surprise	-0.00112	277	0.00020	349	-0.0013	-0.00038	626
		(-1.90)		(0.39)		(-1.69)	(-0.99)	
	Drift	-0.00040	271	-0.00008	339	-0.0004	-0.00022	610
		(-3.96)		(-0.84)		(-2.31)	(-3.19)	
	Diff.	-0.0007		0.0002			-0.0001	
		(-1.24)		(0.66)			(-0.35)	
2 yrs after	Surprise	-0.00097	244	-0.00055	314	-0.0004	-0.00074	558
		(-2.34)		(-1.41)		(-0.73)	(-2.58)	
	Drift	-0.00029	238	-0.00008	305	-0.0002	-0.00017	543
		(-4.15)		(-1.18)		(-2.17)	(-3.54)	
	Diff.	-0.0007		-0.0005			-0.0006	
		(-1.39)		(-0.98)			(-1.64)	

Table 3.7
Average Total Earnings Announcement Surprises and Drifts and Their Shares of Total Excess Returns, By Actual Use of Proceeds

Returns are total excess returns adjusted by CRSP value-weighted index during earnings announcement periods (labeled "Surprise") and between earnings announcements (labeled "Drift") for the last year before SEO and the first one and two years after SEO. See Section 3.2 for detailed definitions of earnings announcement period and the calculation of average daily excess returns. The column labeled "Diff." is difference between Not Invest and Invest, as defined in Section 2.2 and based on actual use of SEO proceeds. Rows labeled "Total" are total excess returns for the period, including surprises and drifts. Shares are percents of total excess returns contributed by surprises and drifts, respectively.

Year	Return	Not Inv.	Share (%)	Inv.	Share (%)	Diff.	Share (%)	Combined	Share (%)
1 yr bef	Surprise	0.022	21.2	0.045	18.3	-0.023	16.1	0.035	19.1
	Drift	0.084	78.8	0.202	81.7	-0.118	83.9	0.149	80.9
	Total	0.106	100.0	0.247	100.0	-0.141	100.0	0.184	100.0
1 yr aft	Surprise	-0.013	12.4	0.002	N/A	-0.015	17.2	-0.005	8.0
	Drift	-0.095	87.6	-0.019	N/A	-0.076	82.8	-0.053	92.0
	Total	-0.108	100.0	-0.017	N/A	-0.091	100.0	-0.058	100.0
2 yrs aft	Surprise	-0.023	14.4	-0.013	26.0	-0.010	9.1	-0.018	17.7
	Drift	-0.139	85.6	-0.037	74.0	-0.102	90.9	-0.082	82.3
	Total	-0.162	100.0	-0.050	100.0	-0.112	100.0	-0.100	100.0

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