Investment Horizon and Stock Performance Subsequent to Seasoned Equity Offerings

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Abstract

This paper documents that the short-run and the long-run stock performance after seasoned equity offerings (SEOs) is positively related to the pre-issue demand from short-term and long-term institutional investors, respectively. This suggests that institutional investors acquire information that is most relevant to their investment horizons. Moreover, institutional investors' information advantage is more pronounced in cold issue markets than in hot issue markets, confirming firms' tendency to issue equity in periods of reduced information asymmetry. In addition, this paper documents that firms issue seasoned equity at a greater discount when the pre-issue demand from short-term institutional investors is low.

Key words: Institutional Ownership; Investment Horizon; Seasoned Equity Offerings; Information Advantage

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Institutional investors devote a large amount of resources each year to equity research. Whether institutional investors have an information advantage over individual investors is still an open question in the literature (see for example, Carhart (1997), Grinblatt and Titman (1989), Grinblatt and Titman (1993), Wermers (2000), and Sias, Starks and Titman (2006)). In this literature, institutional investors generally are considered to be a homogeneous body. However, in practice institutional investors differ in their investment horizons, which is likely to affect the type of information that they acquire as well as the type of investment opportunities they exploit.[1] For instance, short-term institutional investors may base their trading decisions on information that has a short-run price impact (e.g., Froot, Scharfstein and Stein (1992)). In contrast, long-term institutional investors are more likely to focus on firms' long-term value and trade on this information.

In this paper, we test this hypothesis by building on the existing studies of seasoned equity offerings (SEOs) (e.g. Gibson, Safieddine and Sonti (2004)). In particular, we explore the information implications of the pre-issue demand of institutional investors with different investment horizons, and examine the relation between the pre-issue demand and the stock performance subsequent to the offering. First, we classify institutional investors according to their investment horizons, and study the changes in their holdings around SEOs. We find that while all institutional investors (long, medium and short-term horizon) increase their holdings in

[1] Massa, Patgiri, Gaspar, Pinto Matos and Rehman (2005) discuss several reasons for the differences in the investment horizon of institutional investors: (i) the demographics and liquidity needs of the final owners may affect investment horizon, for example, pension funds vs. open-ended mutual funds, (ii) the evaluation of the ability of a fund manager based on near-term portfolio performance may provide incentives for managers to implement short-term strategies.

SEO firms prior to the offering, only short-term institutional investors significantly divest the shares soon after the offering. This is consistent with the idea that short-term institutional investors sell the shares of issuing firms soon after the offering to realize a short-run profit and to avoid long-run underperformance.[2] Unlike short-term institutional investors, long-term institutional investors steadily increase their holdings after the offering.

Next, we examine institutional investors' performance around SEOs. We find that the stocks that have the highest pre-issue demand from short-term institutional investors have the best performance in the first six months after the offering. We also find that the stocks that have the highest pre-issue demand from long-term institutional investors have the best performance in the three-year period after the offering. Overall, the evidence is consistent with the idea that institutional investors acquire and trade on information that is most relevant to their investment horizons. This finding contributes to the literature by directly linking institutions' trading activities and their performance. Moreover, it has implications on corporate governance. For instance, short-term institutional investors may induce managers to make corporate decisions that deviate from long-term value maximization.[3]

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[2] Extensive empirical research has documented a long-run underperformance subsequent to SEOs (e.g. Spiess and Affleck-Graves (1995), Lee (1997) and Jegadeesh (2000)). Consistent with Ritter (2003), we find that SEO firms outperform comparable firms in the first six month after offerings, despite the long-run underperformance.

[3] According to a report by Commission of Economic Development (CED), trading for short-term profit by asset managers is believed to be one of the reasons for the increasing short-termism of corporate strategies. (*Built to Last: Focusing Corporations on Long-Term Performance*, CED report, June 27, 2007, retrieved on August 26, 2009, from http://www.issuelab.org/research/built_to_last_focusing_corporations_on_long_term_performance

We also examine the difference in the relative performance of institutional investors between hot and cold issue markets. This analysis allows us to evaluate the two competing explanations proposed in the literature for the observation that seasoned offerings are clustered in time. One explanation suggests that firms tend to issue equity when information asymmetry is low, which implies a *lower* information advantage for institutional investors in hot issue markets (e.g., Bayless and Chaplinsky (1996) and Korajczyk, Lucas and McDonald (1991)). An alternative explanation suggests that firms issue equity at times of high "market sentiment" to take advantage of the market misvaluation (e.g., Baker, Ruback and Wurgler (2006)). Since institutional investors are supposed to be more sophisticated and less influenced by biases than individual investors, this alternative explanation could imply a *higher* information advantage for institutional investors in hot issue markets. Following Alti (2006), we define "hot" issue markets as time periods with clustered seasoned offerings. We find that the predictive power of the pre-issue demand over post-issue stock performance is more pronounced in cold issue markets than in hot issue markets. This finding is consistent with the idea that periods of clustered offerings are the result of a reduced level of market-wide information asymmetry, rather than the result of high "market sentiment."

Finally, we show that the pre-issue demand of institutional investors not only predicts the post-issue stock performance, but also affects the offer price of seasoned equity. In particular, we observe that SEO firms offer seasoned equity at a greater discount when the pre-issue demand from short-term institutional investors is low, rather than when the pre-issue demand from long-term institutional investors is low. Our findings suggest that issuing seasoned equity at a lower

price is more effective to induce demand from short-term institutional investors than from long-term institutional investors.

This paper is related to two streams of the literature. It contributes to the literature on the information of institutional investors (e.g., Grinblatt and Titman (1989), Grinblatt and Titman (1993), Wermers (2000), and Sias, Starks and Titman (2006)) by placing an emphasis on their investment horizons. Within this literature, this paper is particularly related to Yan and Zhang (2009). They document that the trading of short-term institutional investors is positively related to the stock returns over the next quarter and the next year but they do not find such a positive relation for long-term institutional investors. They conclude that short-term institutional investors are better informed than long-term institutional investors. Our paper, instead of focusing on the cross-sectional stock returns, examines institutional investors' performance around SEOs. SEOs are corporate events in which a substantial amount of information is released and hence, are particularly useful in investigating the information acquisition and trading activities of institutional investors. By analyzing stock performance in the short run (6 months) and the long run (three years) after SEOs, this paper provides evidence that not only short-term but also long-term institutional investors have an information advantage which corresponds to their investment horizon.

In addition, this paper also contributes to the literature on SEOs by documenting the trading behaviors of institutional investors around SEOs and their implications on post-issue stock performance (e.g. Spiess and Affleck-Graves (1995), Lee (1997) and Jegadeesh (2000)). In this respect, this paper is related to Gibson, Safieddine and Sonti (2004), who find that firms

experiencing the highest increase in institutional ownership around SEOs outperform those experiencing the greatest decrease in institutional ownership in the year following the offering.[4] However, this paper differs from their paper in that it investigates the information advantage of institutional investors according to their investment horizons. This paper also contributes to the literature by disentangling the competing explanations for the clustering of seasoned offerings, and investigating how issuing firms price their seasoned equity in response to the pre-issue demand from institutions with different investment horizons.

The remainder of the paper is organized as follows. Section I describes the data used in the analysis. Section II presents and discusses the empirical examination of the relation between the pre-issue demand of institutional investors and post-issue stock performance. Section III tests the information advantage of institutional investors in hot and cold issue markets. Section IV analyzes the relation between the pre-issue demand of institutional investors and SEO underpricing. Section V presents the conclusion.

I. Data

Our sample consists of SEOs issued between January 1990 and December 2004. We obtain the SEO data from the SDC database, and from the sample, we exclude secondary offerings (selling by existing shareholders), private placements of equity, withdrawn issues, unit

[4] In another study, Field (1995) observes that the IPOs with the most first day flipping by institutional investors perform the worst in the following year.

offerings, and shelf offerings. We retain the issuing firms that are listed on the NYSE, AMEX, or NASDAQ exchanges, and for which stock information is available on CRSP in the issue month. We exclude utility and financial firms (SIC code between 4900 and 4999 and between 6000 and 6999) from the sample. We remove issues if the same firm had another public offering within one year before the issue day.[5] The sample is combined with stock information from CRSP and financial information from COMPUSTAT. We obtain the holdings of institutional investors from Thomson Reuters (CDA/Spectrum), which collects data from institutions' quarterly 13F filings with the U.S. Securities and Exchange Commission (SEC).

A. Long-term versus short-term institutional investors

We classify institutional investors according to their investment horizons by assessing how frequently they turn over their portfolios. In particular, following Gaspar, Massa and Matos (2005) and Yan and Zhang (2009), for each SEO issue, we first calculate the churn rate for each institution in each of the four quarters starting from the sixth quarter to the third quarter before the offering. The churn rate is defined as:

$$CR_{i,t} = \frac{\sum_{j \in Q} \left| N_{j,i,t} P_{j,t} - N_{j,i,t-1} P_{j,t-1} - N_{j,i,t-1} \Delta P_{j,t} \right|}{\sum_{j \in Q} \frac{N_{j,i,t} P_{j,t} + N_{j,i,t-1} P_{j,t-1}}{2}}, \qquad (1)$$

[5] Multiple issues in a short period of time can result in strong correlation between observations and overrepresentation of certain firms in the sample.

where $P_{j;t}$ represents the price of firm j in quarter t, and $N_{j;i;t}$ represents the number of shares of firm j held by the institutional investor i in quarter t. Next, we sort all institutions into quartiles according to their churn rates in each of the four quarters and define institutions as short-term institutional investors if they belong to the top quartile in each of the four quarters, and institutions as long-term institutional investors if they belong to the bottom quartile in each of the four quarters. The remaining unclassified institutions are identified as medium-term institutional investors. It should be noted that all institutions with stock holding data available during this time period are involved at this stage.

After classifying institutions by their investment horizons, we divide institutional holdings based on this classification. For each issuer, the institutional ownership is split into holdings by long-term, medium-term, and short-term institutional investors, respectively. Then, we measure the pre-issue demand from each type of investors as the change in the holdings of each group over the two quarters before the offering. Notice that, unlike Gibson, Safieddine and Sonti (2004), we do not include the issuing quarter and the following quarter to measure the demand of institutional investors. Measuring the pre-issue demand of institutional investors and post-issue performance in separate periods could limit the possible endogenous relations in contemporary time periods. For example, stock price run-ups can be driven by the trading of

institutional investors (Grinblatt, Titman and Wermers (1995)), rather than the results of superior information. [6]

B. Post-issue performance

In our analysis, we measure short-run stock performance as the buy-and-hold return (BHR) in the six months after the issue day, and similarly, long-run stock performance as the buy-and-hold return in the three years after the issue day. The buy-and-hold abnormal return (ABHR) is computed by subtracting the buy-and-hold return of a matching firm from the buy-and-hold return of the issuer over the same time period. By following the procedure used in Lee (1997), Barber and Lyon (1997) and Lyon, Barber and Tsai (1999), we identify a matching firm for each issue as a non-issuing firm with a comparable market capitalization, market-to-book ratio, and a prior three-month stock return to the sample firm. Specifically, we perform the following procedures. First, in each month, we sort the CRSP firms into deciles by their market capitalizations with NYSE breakpoints. We further sort the firms in the lowest decile (smallest in market capitalization) into quintiles. Second, we sort the firms in each of the 14 size groups into quintiles according to their market-to-book ratio. Third, in the month prior to each seasoned offering, we identify the matching group for the issuing firm from the 70 size and market-to-book matching groups. Within that matching group, we choose the non-issuing firm with the

[6] The significant change in the number of shares outstanding also makes the ownership less comparable before and after the offering. Further, the supply side effects, such as share allocation and underpricing at the time of the offering, would complicate the situation and make the demand measures questionable.

closest three-month stock return to the issuer as the matching firm. We exclude as matching firms those that file for public offering within one year before or three years after the issue.

[Insert Figure 1 here]

Figure 1 illustrates how we define and measure the variables of interest over the time of SEOs. We classify institutions from the sixth to the third quarter prior to each seasoned offering. At this stage, all institutions with stock holding data available on CDA/Spectrum are involved. Then, we measure the pre-issue demand from each of the three types of institutional investors as the change in the holding over the two quarters before the offering.[7] Firm performance is measured over the short run (six months) and the long run (three years) after the issue day.

[Insert Table I here]

Table I presents summary statistics of our sample. The final sample consists of 3,431 seasoned equity offerings issued by 2,581 firms.[8] Among all the issues, 2,352 are offered by firms listed on the NASDAQ, and only 1,079 are offered by firms listed on the NYSE or AMEX. In our analysis, all the variables are winsorized at the 1st and 99th percentiles to eliminate the influences of extreme values. The issuing firms in our sample have an average (median) asset value of $1,127 million (130 million), average (median) sales of $189 million (36 million), and an average (median) market capitalization of $1,019 million (320 million). The issuing firms are

[7] Lee (1997) also uses a 6-month window to measure the insider trading before the SEOs issue. Due to the quarterly availability of institutional holding data, our demand variables could incorporate trading information as early as nine months before the SEO issue.

[8] Over the sample period, among all the issuers, 1,932 firms have 1 issue, 492 firms have 2 issues, 121 firms have 3 issues, 28 firms have 4 issues, and 8 firms have 5 issues. A total of 3,338 independent issues do not overlap the three-year post-issue window for repeat issuers. We repeated our analysis using this subsample of 3,338 independent observations. These results (available on request) are essentially identical to those presented in the present study for the full sample.

mostly growth firms with an average (median) market-to-book ratio of 3.96 (2.49). They have an average (median) book leverage of 24.33% (20.40%) and a mean (median) dividend yield of 0.17% (0).[9] Thus, a typical SEO issuer is a small, growth firm with low leverage, which does not pay dividends.

The SEO firms in our sample obtain average proceeds of $91 million, which represents about 23% of their market capitalization before the offering. Consistent with the existing literature, seasoned equity is typically offered at discount. The average underpricing (calculated as negative 1 times the close-to-offer return) is 4%. In addition, significant price run-ups occur before the offering, since the average six-month pre-issue buy-and-hold return equals 56%.

II. Pre-issue Demand of Institutional Investors and Post-issue Performance

In this section, we examine the relation between the pre-issue demand of institutional investors and post-issue stock performance. Unlike the existing literature, we place an emphasis on the investment horizon of institutional investors. First, we document the overall stock performance after the offering and the changes of institutional holdings around the offering. Then, we analyze how the pre-issue demands from short-term and long-term institutional investors are related to post-issue stock performance. In the end, we check the robustness of our results.

[9] Among 3431 observations, 2737 observations have dividend yield equal to 0.

A. Stock performance and institutional holdings after SEOs

[Insert Table II here]

Table II presents the overall stock performance after SEOs and the average holdings by each of the three types of institutional investors around SEOs. Panel A summarizes the average stock performance over different horizons subsequent to seasoned offerings. As documented in the literature, the issuing firms significantly underperform their comparable firms in the long run after the offering, with an average buy-and-hold abnormal return of -16.2% (e.g. Spiess and Affleck-Graves (1995), Lee (1997) and Jegadeesh (2000)). However, SEO firms do not underperform in the first six months after the offering, which is consistent with the findings of Ritter (2003). According to Table II, issuing firms outperform their matching firms by 4.43% in the first six months after the offering. The outperformance is statistically significant at 1%. Nevertheless, for the next six months (from the 7^{th} month to the 12^{th} month after the offerings), they underperform their comparable firms by 2.34%. Thus, SEO firms do not immediately start underperforming after the seasoned offering, and they actually outperform in the short run following the offering.

[Insert Figure 2 here]

Panel B in Table II reports the average holdings of long-term, medium-term, and short-term institutional investors across the time of the offering. The holdings of long- and short-term institutional investors are low (about 4%) compared to the holdings of medium-term institutional investors (about 50%). This difference in magnitude can be explained by the relatively restrictive definition of long- and short-term institutional investors. Institutional investors should report in

every of the four quarters and demonstrate a persistent trading style to be classified as long-term or short-term institutional investors. Prior to the seasoned offering, the holdings of all the three groups increase by a significant amount. After the offering, long-term institutional investors continue to steadily increase their holdings. The change in the holding following the offering is positive but statistically insignificant for medium-term institutional investors. The increases in holdings of long-term and medium-term institutional investors are consistent with the trend of growing institutional holdings over the past few decades (Gibson, Safieddine and Sonti (2004)). Nevertheless, the holdings by short-term institutional investors increase significantly before the offering, peak in the issuing quarter, and drop quickly afterwards. Figure 2 demonstrates the distinctive trends of the holdings by long-term and short-term institutional investors over time around SEOs. The pre-issue increase and post-issue decrease in the holdings of short-term institutional investors are highly significant in both economic and statistical terms: the average holding increases from 2.5% three quarters before the issuing quarter to 4.6% in the issuing quarter, and then drops to 3.4% three quarters after the issuing quarter. The reverse trading of short-term institutional investors soon after SEOs is consistent with the idea that short-term institutional investors tend to buy and sell quickly to take advantage of the short-run investment opportunities around SEOs.

B. Pre-issue demand of institutional investors and post-issue stock performance

Univariate analysis

[Insert Table III here]

After documenting the average stock performance after SEOs, we examine the information implication of the pre-issue demand from institutional investors over the stock performance following SEOs. Table III presents a univariate analysis of the relation between the pre-issue demand of institutional investors and the post-issue stock performance. We sort SEO issues into quartiles according to their pre-issue demand from short-term institutional investors or long-term institutional investors, respectively. We examine stock performance and changes of holdings subsequent to the offering based on the sorting. Panel A in Table III reports the results according to the sorting of pre-issue demand from short-term institutional investors. On the one hand, SEO issues with the highest demand from short-term institutional investors have the best performance in the first six months after the offering. In particular, the average buy-and-hold (abnormal) return for issues in the 4^{th} quartile (that is, with the greatest demand from short-term institutional investors) is 10.7% (8.5%), whereas that in the 1^{st} quartile (that is, with the lowest demand from short-term institutional investors) is 5.2% (3.5%). The difference in six-month buy-and-hold returns between the two quartiles is statistically significant at 5% and the difference in six-month buy-and-hold abnormal returns is significant at 10%. On the other hand, the pre-issue demand from short-term institutional investors does not have a similar predictive power for long-run performance. The difference between issues in the 1^{st} and the 4^{th} quartiles is not statistically significant for either three-year buy-and-hold returns or buy-and-hold abnormal returns. Thus, the evidence is consistent with our prediction that short-term institutional investors

have an information advantage that enables them to pick the best-performing stocks in the short run, but they do not seem to have an information advantage in the long run.

In addition, short-term institutional investors tend to reduce their holdings in the two quarters subsequent to the offering, and this reduction is the highest for the issues with the greatest pre-issue demand from short-term institutional investors. The difference in the change of holdings between issues in the 4th quartile and those in the 1st quartile is statistically significant at 1% in both quarters. This implies that short-term institutional investors temporarily increase their holdings of the shares that have the best post-issue short-run performance, possibly guided by their private information.

Panel B in Table III presents the results for the pre-issue demand from long-term institutional investors. Similarly, we sort SEO issues into quartiles according to their pre-issue demand from long-term institutional investors and examine the change of holdings and post-issue performance accordingly. Unlike short-term institutional investors, long-term institutional investors do not seem to have an information advantage in short-run stock performance. In the first six months, issues in the 4th quartile (with the greatest demand from long-term institutional investors) slightly outperform issues in the 1st quartile (with the lowest demand from long-term institutional investors), and the difference is not statistically significant. However, long-term institutional investors seem to have an information advantage in predicting long-run performance. Specifically, issues in the 4th quartile have an average three-year buy-and-hold abnormal return of -2.54%, which is not significantly different from zero. In contrast, issues in the 1st quartile have an average abnormal return of -17.7%, which is statistically significant at 1%. The

difference in the three-year abnormal return between the issues in the two quartiles is statistically significant at 10%. Thus, the information advantage of long-term institutional investors seems to enable them to pick the stocks that perform better in the long run. While on average SEO firms underperform in the long run, the issues with the greatest pre-issue demand from long-term institutional investors do not demonstrate significant underperformance relative to their comparable firms.

In addition, long-term institutional investors tend to increase their holdings after the offering. Unlike short-term institutional investors, the difference in the change of holdings by long-term institutional investors between issues in the 1st quartile and the 4th quartile is insignificant and inconsistent in sign for the two quarters after the offering. This indicates that long-term institutional investors do not engage in short-term speculative trading as do short-term institutional investors.

Overall, the results presented in Table III provide evidence that institutional investors have an information advantage that corresponds to their investment horizons. That is, the issues with the greatest pre-issue demand from short-term institutional investors have the best performance in the short run after the offering. Likewise, the issues with the greatest pre-issue demand from long-term institutional investors have the best performance in the long run after the offering.

Multivariate analysis

Next, we perform a multivariate analysis with controls for factors such as size and growth opportunities that could affect stock returns. Specifically, we regress post-issue returns (for both buy-and-hold returns [BHR] or abnormal returns [ABHR]) on the pre-issue demand from long-term, medium-term, and short-term institutional investors, together with the determinants of post-issue performance documented in the literature (see for example, Lee (1997) and Clarke, Dunbar and Kahle (2001)). In particular, the control variables include *Firm Size* (natural logarithm of market capitalization), *Market-to-Book Ratio*, *Stock Return* (six-month pre-issue stock return), *Market Return* (six-month pre-issue market return), *Bid-ask Spread* (monthly bid-ask spread averaged over the 12 months before the offering) and *NASDAQ Dummy*. To control for risk in the regressions, we include *Stock Return Volatility* (natural logarithm of monthly stock return variance) and *Book Leverage*. We measure all control variables except the *NASDAQ Dummy* in the month (the quarter or the year) before the offering. To control for the influence of the pre-existing institutional ownership, we also include in the regressions the level holdings of the three types of institutional investors at the end of the third quarter before the offering. We present regressions both without and with year and industry fixed effects. In all the regressions, we use heteroskedasticity-robust standard errors.

[Insert Table IV here]

Panel A in Table IV reports the regression results for the six-month stock performance after SEOs. There is evidence that short-term institutional investors have an information advantage in the short run. In particular, in the buy-and-hold return regressions (column 1 and 2), the coefficient of the pre-issue demand from short-term institutional investors is positive and

statistically significant at least at 5%. The results are robust with controls for year and industry fixed effects. The effects of the pre-issue demand from short-term institutional investors are also economically significant. According to column 2, an increase of one standard deviation in the pre-issue demand from short-term institutional investors is associated with an increase of 3.37% buy-and-hold return in the first six months after the offering. In the buy-and-hold abnormal return regressions, however, the pre-issue demand from short-term institutional investors does not have significant effects. Notice also that in all the regressions, medium-term and long-term institutional investors do not demonstrate any information advantage in the short run.

Panel B of Table IV presents the regression results for long-run stock performance after SEOs. The results confirm that a positive relation exists between the pre-issue demand from long-term institutional investors and the long-run stock performance following the seasoned offering, after controlling for other influential factors. The coefficient of the pre-issue demand from long-term institutional investors is positive and statistically significant at least at 5% in all regressions. Controlling for industry and year fixed effects does not have significant impact on the coefficient. The effects of the pre-issue demand from long-term institutional investors are not only statistically significant but also economically significant. According to column 2 and 4, an increase of one standard deviation in the pre-issue demand from long-term institutional investors is associated with an increase of 7.06% buy-and-hold return (BHR) and an increase of 8.76% in the abnormal return (ABHR) in the three years after the offering. Thus, long-term institutional investors could substantially benefit from the information advantage in the long run. In contrast, short-term institutional investors do not have such an information advantage in predicting long-

run stock performance. The coefficient for the pre-issue demand from short-term institutional investors is not statistically significant in any of the regressions.

In the abnormal return regressions (column 3 and 4), the coefficient of the pre-issue demand from medium-term institutional investors is consistently negative and statistically significant at a 5% level. This can be explained by the price bubbles generated by the trading of less informed institutional investors. In our analysis, medium-term institutional investors do not have a consistent investment style and their trading is less likely to be based on superior information than the other two types. These institutional investors are more likely to engage in positive feedback trading and/or herding. As a group, they are influential and can push up stock prices away from the fundamentals when they are buying stocks that have recently performed well. The subsequent reversals of stock prices would lead to significant underperformance (see DeLong, Shleifer, Summers, and Waldmann (1990), Chen, Jegadeesh and Wermers (2000), and Grinblatt, Titman and Wermers (1995)).

Froot, Scharfstein and Stein (1992) develop a model showing that short-term speculators try to exploit information to predict short-run asset price movements. The relevant information may have a short-term price impact but can be completely unrelated to fundamentals. Thus, given that information asymmetry is present and that institutional investors can decide what information to acquire, their information acquisition should reflect their investment horizon. Overall, in this section, we document evidence that shows that institutional investors have an information advantage that corresponds to their investment horizon and they make their trading decisions accordingly. In particular, long-term institutional investors are more likely to be

informed about firm performance in the long run, whereas short-term institutional investors are more likely to be informed about stock price movement in the short run.

C. Robustness checks

In this subsection, we perform the following robustness checks on our results. First, we redefine the pre-issue demand from the three types of institutional investors as the change in their holdings over the last quarter before the offering. Second, we run regressions with additional controls for the trading by the three types of institutional investors around SEOs. Third, we test the information advantage of short-term institutional investors by using cumulative abnormal returns (CAR) over alternative horizons.

Measures of pre-issue demand

[Insert Table V here]

To test if our results are robust to an alternative definition of the pre-issue demand of institutional investors, we measure the pre-issue demand as the change of holdings by each of the three types of institutional investors over the last quarter prior to the offering. Table V presents the regression results with these redefined measures of pre-issue demand from the three types of institutional investors. With these newly defined demand variables, the regression results are similar to the preceding analysis in which the pre-issue demand is measured over two quarters before the offering. The signs of the coefficients for the pre-issue demand from institutional

investors are basically consistent with previous analysis, except that the t-statistics of the coefficients are reduced. Thus, our results are robust to the window length chosen to measure the pre-issue demand from institutional investors.

Trading around SEOs

Gibson, Safieddine and Sonti (2004) document that one-year post-issue stock performance is positively related to the change in the institutional ownership around the issuing quarter. To test whether the post-issue performance is driven by subsequent trading in the same stock by certain groups of investors around the time of the offering and the pre-issue demand is only a proxy of the trading in this later period, we include changes in the holding of institutional investors around the issuing quarter as additional controls.

[Insert Table VI here]

Table VI presents the regression results using these additional controls. The results are robust to the inclusion of the change in holdings around SEOs. Panel A in Table VI shows that the effects of the pre-issue demand from short-term institutional investors are not reduced by the inclusion of the changes in the holdings around the offering. In fact, the relationship is even strengthened. The coefficient of the pre-issue demand from short-term institutional investors is significant at least at 10% in three of the four regressions. Thus, the relationship between the pre-issue demand from short-term institutional investors and the post-issue short-run performance does not result from investors' continuous and active trading in the same stocks over time.

For the long-run performance in Panel B, the coefficient of the pre-issue demand of long-term institutional investors is significant at least at 5% in all regressions. The change in the holdings by long-term institutional investors around the issuing quarter is not significantly related to the long-run performance subsequent to the offering. However, the change in the holdings by short-term institutional investors around the issuing quarter is significantly related to the post-issue long-run stock performance. This observation is consistent with Yan and Zhang (2009) that short-term institutional investors tend to be more "active" and that they react more quickly than long-term institutional investors on the new information accompanying the equity issues.

CAR over short horizons

Finally, we test the sensitivity of our results to the window length chosen to measure short-term performance (that is, six months). We perform an analysis of the cumulative abnormal returns (CAR) and use an alternative window length for the short horizon.[10] To calculate CAR, we first identify an industry-and-size matched firm for each issuer in the month before the offering. Specifically, in the group of non-issuing firms with the same 3-digit SIC code as the issuer, we match the firm that has the closest market capitalization to that of the issuer. Next, we calculate the daily abnormal return after the offering as the difference in the daily returns of the sample firm and the matching firm. The sum of the daily abnormal return over a certain period of

[10] Barber and Lyon (1997) argue that CAR has a measurement bias for long-run performance. Therefore, we apply this approach only to short-run performance only.

time is the CAR for that period. We perform the analysis for a three-month window and a six-month window, respectively.

[Insert Table VII here]

Table VII presents the regression results for the two different short horizons. The coefficient of the pre-issue demand from short-term institutional investors is consistently positive in all the regressions, and is statistically significant at 5% in the regressions of three-month CAR. This observation is consistent with our prediction that short-term institutional investors have an information advantage for predicting stock performance in the short run. It could also indicate that that short-term institutional investors may have a shorter investment horizon. Moreover, the marginally negative coefficient of the pre-issue demand from long-term institutional investors may suggest that the stocks chosen by long-term institutional investors before the offering do not perform well in the short run.

III. Information of Institutional Investors in Hot/Cold Issue Markets

Previous studies have documented that the volume of equity issues varies greatly over time, with clustering of equity offerings in certain time periods - hot issue markets (e.g., Choe, Masulis and Nanda (1993)). Two competing explanations have been provided to explain the clustering of equity issues. One explanation suggests that firms choose to issue equity in periods of a low level of information asymmetry (Bayless and Chaplinsky (1996) and Korajczyk, Lucas and McDonald (1991)). If clustering of seasoned offerings is the result of reduced information

asymmetry, the information advantage of institutional investors could be weakened in hot issue markets. An alternative explanation suggests that firms issue equity at times of high "market sentiment" to take advantage of market-wide mispricing (e.g., Baker, Ruback and Wurgler (2006) and Baker and Wurgler (2000)). In this case, the information advantage of institutional investors could be enhanced in hot issue markets, since institutional investors are supposed to be more sophisticated and less influenced by biases than individual investors. In this section, we investigate these two explanations by examining the information advantage of institutional investors in hot and cold issue markets.

Following Alti (2006), we define hot and cold issue markets. Specifically, we obtain the number of SEO issues for each month from 1990 to 2004 from Ritter's Website.[11] The SEO volume for each month is calculated as the three-month centered moving average of the number of issues. The quarterly volume of SEO issues is the sum of the calculated monthly SEO volume in each quarter. Then, we classify the quarters with an above-median volume of SEO issues as hot issue markets, and the remainder as cold issue markets.

[Insert Table VIII here]

The regressions in Table VIII include a hot-issue-market dummy (*HOT*) and its interactions with the pre-issue demand from institutional investors. Panel A in Table VIII presents the results for short-run stock performance. The pre-issue demand from short-term institutional investors is still positively related to short-run stock performance in cold issue

[11] The address for Jay Ritter's Website is http://bear.cba.ufl.edu/ritter/ipodata.htm

markets. The interaction of the pre-issue demand from short-term institutional investors and the hot-issue-market dummy is consistently negative and is significant at 10% in column 2. According to column 2, an increase of one standard deviation of pre-issue demand from short-term institutional investors is associated with an increase of 3.25% in the buy-and-hold abnormal return in the six months after the offering in cold issue markets, but is only associated with an increase of 0.88% in the buy-and-hold abnormal return in hot issue markets. Thus, the results indicate that the information advantage of short-term institutional investors is reduced in hot issue markets. Moreover, the coefficient of the hot-issue-market dummy is significantly negative in most regressions, which suggests that in general, issuing firms perform poorly in the short run in hot issue markets than in cold issue markets.

Panel B in Table VIII reports the results for long-run stock performance. The pre-issue demand from long-term institutional investors is still positive and statistically significant in cold issue markets. The interaction of the pre-issue demand from long-term institutional investors with the hot-issue-market dummy has a negative coefficient in all regressions, and the coefficient is statistically significant at 5% in regression 1 and 2. These results suggest that the information advantage of long-term institutional investors is reduced in hot issue markets when compared to cold issue markets. The difference is also economically significant. An increase of one standard deviation of the pre-issue demand from long-term institutional investors is associated with an increase of 13.1% in the abnormal returns in the three years after the offering in cold issue markets, but is only associated with an increase of 5.42% in the abnormal returns in hot issue markets. In addition, the information implication of the pre-issue demand from medium-term and

short-term institutional investors is not significantly different in hot and cold issue markets. The coefficient of the interaction of the pre-issue demand from medium-term institutional investors with the hot-issue-market dummy is consistently positive but not statistically significant. Moreover, neither the pre-issue demand from short-term institutional investors nor its interaction with the hot-issue-market dummy is significantly related to long-run stock performance.

In summary, the results in this section provide evidence consistent with the reduced information asymmetry explanation for the clustering of equity offerings. We find that the information advantage of institutional investors is more pronounced in cold issue markets than in hot issue markets, which could suggest that the information asymmetry is weaker in hot issue markets. When information asymmetry is high, issuing equity can be quite costly due to the adverse selection problem. Thus, firms tend to time their seasoned offerings for periods when market-wide information asymmetry is reduced. Furthermore, we observe that the difference in the information advantage of institutional investors between hot and cold issue markets is more pronounced in long-run performance. This could suggest that information asymmetry is a more important issue for long-term investment and for investors who make their trading decisions based on firms' fundamental information.

IV. Pre-issue Demand from Institutional Investors and SEO Underpricing

The pre-issue demand from institutional investors may not only predict post-issue stock performance, but can also affect investors' returns through influencing the offer price. A survey

by Graham, Harvey and Rajgopal (2005) with more than 400 CFOs reveals that CFOs view institutional investors as the most important marginal investors in their stocks, and they believe that institutional investors are more likely than retail investors to be the price-setter. Thus, the demand from institutional investors can be essential for the success of seasoned offerings and an important determinant for the offer price of the seasoned equity. In this section, we examine how the pre-issue demand from institutional investors affects the offer price.

Empirical studies have shown that seasoned equity is generally offered at discount – SEO underpricing (for example, see Corwin (2003) and Kim and Park (2005)). Prior to the offering of seasoned equity, underwriters typically engage in "bookbuilding" to discover the demand of potential investors. Then, they determine the offer price and offer volume based on the information they obtain from this process. The issuers may react to the pre-issue demand from institutional investors by adjusting the offer price of their seasoned equity. If the pre-issue demand is low and the demand for the shares is not perfectly inelastic, issuers could attract more investors to purchase the new shares by offering them at a lower price. As a result, we expect an inverse relationship between the pre-issue demand from institutional investors and SEO underpricing. When the perceived pre-issue demand is low (high), issuing firms may offer seasoned equity at a large (small) discount to induce enough demand to fulfill the issue.

Furthermore, we expect that SEO underpricing should be more negatively related to the pre-issue demand from short-term institutional investors than the pre-issue demand from long-term institutional investors. Short-term institutional investors buy and sell frequently to capture short-run stock price movements and greater underpricing could substantially enhance the

returns over a short holding horizon. In contrast, long-term institutional investors tend to hold on to the shares for a long time, and the incremental return can be negligible if the underpricing is spread over a long holding horizon. In addition, since the SEO firms tend to have substantial underperformance after the offering, decreasing the offer price by a small amount may not be great enough to induce more demand from long-term institutional investors. Thus, the demand from short-term institutional investors could be particularly sensitive to SEO underpricing, compared to the demand from longer-term institutional investors. Therefore, the issuers are more likely to induce demand by offering shares at a lower price when the pre-issue demand from short-term institutional investors is low.

In our analysis, we regress SEO underpricing on the pre-issue demand from institutional investors and on the other determinants of SEO underpricing identified by Corwin (2003). SEO underpricing is defined as negative one times the return from the previous day's close price to the offer price. The control variables include the following: *Offer Size* (issue proceeds relative to market capitalization before the offering or the number of new shares relative to the number of shares outstanding before the offering), *Firm Size* (natural logarithm of market capitalization), *Stock Price*, *Stock Return Volatility* (natural logarithm of monthly stock return variance), *Stock Return* (six-month pre-issue stock return), *Market Return* (six-month pre-issue market return), *Bid-Ask Spread*, *IPO underpricing* and the *NASDAQ Dummy*. We perform regressions with and without year and industry fixed effects.

[Insert Table IX here]

Table IX documents that SEO underpricing is more negatively related to the pre-issue demand from short-term institutional investors than the pre-issue demand from long-term institutional investors. In all regressions, the coefficient of the pre-issue demand from short-term institutional investors is statistically significant at 1%. The relation is also economically significant. A decrease of one standard deviation in the pre-issue demand from short-term institutional investors is associated with a reduction of 0.52% in offer price, which represents 13.13% of the average SEO underpricing and an average extra cost of $495,000 in lost proceeds. SEO underpricing is also negatively related to the pre-issue demand from medium-term institutional investors but the relationship is less significant. In contrast, the coefficient of the pre-issue demand from long-term institutional investors is positive and marginally significant. These findings suggest that when the pre-issue demand is low, SEO issuers are more likely to offer shares at a lower price to attract short-term institutional investors. The demand of the short-term institutional investor is more sensitive to underpricing, possibly because underpricing more effectively enhances the return of a short holding horizon.

Compared to short-term institutional investors, long-term institutional investors are more likely to hold on to the shares for a long time. Offering equity at a lower price is less effective to increase returns for long-term institutional investors. Furthermore, the observed positive relation between the pre-issue demand from long-term institutional investors and SEO underpricing can be explained by the information acquisition cost theory. Benveniste and Spindt (1989) argue that lead banks improve the offer price by using allocations of more deeply underpriced shares to pay for the information provided by better-informed investors. Long-term institutional investors are

more likely to be “informed” about firm long-term value in the conventional sense. Therefore, discount in seasoned equity could be higher, since more positive private information about the share price is released through the trading of long-term institutional investors before the offering.

V. Conclusions

In this paper, we investigate the relation between the pre-issue demand from institutional investors and the stock performance subsequent to SEOs. We document that the post-issue short-run stock performance is positively related to the pre-issue demand from short-term institutional investors, and that the post-issue long-run stock performance is positively related to the pre-issue demand from long-term institutional investors. Our findings are consistent with the idea that institutional investors acquire and trade on information most relevant to their investment horizons. Moreover, we find that the relation between the pre-issue demand and the post-issue stock performance is more pronounced in cold issue markets than in hot issue markets, which is consistent with the idea that firms tend to issue equity in periods of reduced information asymmetry. In addition, we observe that SEO underpricing is more negatively related to the pre-issue demand from short-term institutional investors than the demand from long-term institutional investors. This suggests that lowering offer price is more effective to induce demand from short-term institutional investors, since underpricing could more significantly enhance returns over a short investment horizon than returns over a long investment horizon.

The previous literature generally considers institutional investors as a homogeneous body in terms of investment horizon. Our findings suggest that institutional investors have different investment horizons that affect their information acquisition and trading decisions. This could have important implications on stock pricing and resource allocations. Institutional investors spend a large amount of resources each year on equity research. The existing literature claims that the more investors exploit and trade on firm information, the more efficient is the stock price. However, if more effort is allocated to investigating short-term information on stock price movements instead of long-run value, the stock price is more likely to reflect this short-term information rather than firm fundamentals.

Furthermore, in conventional finance theory, all investors invest in a firm to achieve the long-term value generated by firm fundamentals. The findings in this paper imply that short-term institutional investors may be more attracted to short-term returns rather than long-term value maximization. In the report from the Committee for Economic Development, trading for short-term profits by asset managers is believed to be one of the causes for the increasing short-term focus of corporations. [12] Managers with a short-term target may deviate from their primary responsibility to maximize long-term value. [13] How to direct the interest of investors and corporate managers back to building long-term value is an important issue facing the business world.

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[12] See footnote 5.

[13] The survey by Graham, Harvey and Rajgopal (2005) also reveals that 80% CFOs would reduce R&D expenses, advertising or maintenance to meet earning target.

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Table I: Summary Statistics

This table presents the summary statistics of the sample in our analysis. The sample consists of seasoned equity offerings from 1990 to 2004, which is obtained from SDC and is supplemented with information from the COMPUSTAT, CRSP and Thomson Reuters. We keep SEO issues with the issuers listed on the NYSE, AMEX or NASDAQ. Firm variables are measured before the offering. Stock volatility is the monthly stock return variance, calculated by using monthly stock returns over the five years ending the month before the offering. The six-month stock returns are the buy-and-hold returns in the six months before the issuing month. SEO underpricing is calculated as minus one times return from the close price of the day before the offering day to the offering (1-offer price/close price$_{-1}$).

Panel A: Number of SEOs	
Number of SEOs	**3,431**
NASDAQ	**2,352**
Non-NASDAQ	**1,079**
Number of firms	**2,581**

Panel B: Financial Data

	# Obs.	**Mean**	**Std dev**	**25th**	**Median**	**75th**
Assets ($mil)	3005	1,127.352	12,907.45	46.511	129.735	466.277
Sales ($mil)	2952	189.289	511.0211	10.9435	35.5885	121.633
Market capitalization ($mil)	2954	1,019.233	2,432.435	127.5907	319.5539	792.0364
M/B	2944	3.9623	3.6860	1.5790	2.4896	4.7064
Book leverage	2884	0.2433	0.2279	0.0255	0.2040	0.3993
Stock volatility	2064	0.0399	0.0408	0.0143	0.0264	0.0481
Dividend yield*	3134	0.0017	0.0258	0	0	0

Note: among 3431 observations, 2737 observations have dividend yield equal to 0.

Panel C: Equity Offering Information

	# Obs.	**Mean**	**Std. dev.**	**25th**	**Median**	**75th**
Proceeds ($mil)	3431	91.3532	115.2783	26.25	54	106.89
Percentage of existing market capital.	2954	0.2306	0.2681	0.1137	0.1833	0.2761
Number of new shares (thous)	3381	4,342.318	7,161.561	1,800	2,746	4,500
Percentage of existing shares outstanding	3031	0.2398	0.2647	0.1190	0.1913	0.2818
SEO underpricing	2456	0.0396	0.0559	0.0055	0.0273	0.0624
6-month stock return	2973	0.5613	0.7789	0.1014	0.3571	0.7551

Table II: Post-issue Performance and Institutional Holdings around SEOs

This table presents the post-issue stock performance in the short run (six months) and the long run (three years), and changes in institutional holdings around SEOs. BHR is issuers' buy-and-hold returns from the day after the offering and ABHR is abnormal buy-and-hold return computed by subtracting the buy-and-hold return of the matching firm from the buy-and-hold return of the issuer. The investment horizon of institutional investors is defined by following Gaspar, Massa and Matos (2005). Specifically, we calculated churn rate for each institutions in each quarter by following the formulae:

$$CR_{i,t} = \frac{\sum_{j \in Q} \left| N_{j,i,t} P_{j,t} - N_{j,i,t-1} P_{j,t-1} - N_{j,i,t-1} \Delta P_{j,t} \right|}{\sum_{j \in Q} \frac{N_{j,i,t} P_{j,t} + N_{j,i,t-1} P_{j,t-1}}{2}},$$

where *Pj;t* and *Nj;i;t* represent the price and the number of shares, respectively, of firm *j* held by institutional investor *i* at quarter t. For each SEO issue, we sort all institutions into quartiles according to their churn rates, in each quarter from the sixth to the third quarter before the issuing quarter. Institutions belonging to the top quartile in each of the four quarters are defined as short-term institutional investors and institutional investors belonging to the bottom quartile in each of the four quarters are long-term institutional investors. The remaining institutions are classified as medium-term institutions. We compute the average holdings and changes in holdings of the three types of investors, respectively. The p-values (in parenthesis) are estimates of the hypothesis that the concerning variables equal to 0.

Panel A: Stock Performance after SEOs

	1 to 6 month		7 to 12 month		1 to 36 month	
	# Obs.	Mean (p-value)	# Obs.	Mean (p-value)	# Obs.	Mean (p-value)
BHR	3431	0.0618*** (<0.001)	3411	0.0002 (0.9744)	3431	0.1820*** (<0.001)
ABHR	3431	0.0443*** (<0.001)	3411	-0.0234** (0.0108)	3431	-0.1619*** (<0.001)

Panel B: The Average Percentage Holding of Long-term, Medium-term and Short-term Institutional Investors around SEOs.

Quarter	Long	Medium	Short
-3	0.0313	0.3861	0.0254
-2	0.0323	0.4011	0.0281
-1	0.0321	0.4084	0.0311
0	0.0335	0.5359	0.0459
+1	0.0345	0.5414	0.0404
+2	0.0356	0.5400	0.0368
+3	0.0373	0.5393	0.0339
+4	0.0378	0.5410	0.0326
#Obs.	2759	2759	2759
Chg. (-3 to 0) (p-value)	0.0022 (<0.001)	0.1498 (<0.001)	0.0206 (<0.001)
Chg. (0 to +3) (p-value)	0.0038 (<0.001)	0.0034 (0.4640)	-0.0120 (<0.001)

Table III: Univariate Analysis - Pre-issue Demand and Post-issue Performance

This table presents the univariate analysis of the relation between the pre-issue demand of institutional investors with different investment horizons and post-issue performance. We sort changes in the holdings of short-term (long-term) institutional investors from Q(-3) to Q(-1) into quartiles, and present the changes in the holdings after the offering and post-issue stock performance according to the sorting in Panel A (Panel B). BHR is issuers' buy-and-hold returns from the day after the offering and ABHR is abnormal buy-and-hold return computed by subtracting the buy-and-hold return of the matching firm from the buy-and-hold return of the issuer. The matching firms are identified by matching size, market-to-book ratio and 3-month pre-issue stock return with issuing firms. The investment horizon of institutional investors is defined by following Gaspar, Massa and Matos (2005). P-value is in paranthesis.

Panel A: Pre-issue Demand of Short-term Institutional Investors

	Avg Chg. In short-term institutional investor holding		Return from 1 to 6 months after issue		Return from 7 to 12 months after issue		Return from 1 to 36 months after issue	
Quartile	**Quarter +1**	**Quarter +2**	**BHR**	**ABHR**	**BHR**	**ABHR**	**BHR**	**ABHR**
1st (lowest)	-0.0050***	-0.0031***	0.0521***	0.0350*	-0.0079	-0.0519***	0.2182***	-0.1584***
	(<0.001)	(0.0029)	(0.0019)	(0.0661)	(0.6000)	(0.0073)	(<0.001)	(0.0049)
2nd and 3rd	-0.0021***	-0.0005	0.0779***	0.0617***	0.0038	-0.0206	0.2111***	-0.1139***
	(<0.001)	(0.3575)	(<0.001)	(<0.001)	(0.7315)	(0.1392)	(<0.001)	(0.0041)
4th (highest)	-0.0107***	-0.0098***	0.1070***	0.0846***	-0.0046	-0.0231	0.2188***	-0.1142**
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.7868)	(0.2495)	(<0.001)	(0.0494)
Diff (1 and 4)	0.0057***	0.0066***	-0.0549**	-0.0496*	-0.0034	-0.0288	-0.0006	-0.0442
	(0.0011)	(<0.001)	(0.0285)	(0.0812)	(0.8821)	(0.3009)	(0.9917)	(0.5841)

Panel B: Pre-issue Demand of Long-term Institutional Investors

	Avg Chg. In long-term institutional investor holding		Return from 1 to 6 months after issue		Return from 7 to 12 months after issue		Return from 1 to 36 months after issue	
Quartile	**Quarter +1**	**Quarter +2**	**BHR**	**ABHR**	**BHR**	**ABHR**	**BHR**	**ABHR**
1st (lowest)	-0.0003	0.0013**	0.0747***	0.0444**	0.0244	-0.0101	0.2174***	-0.1769***
	(0.5664)	(0.0337)	(<0.001)	(0.0238)	(0.1131)	(0.5836)	(<0.001)	(<0.001)
2nd and 3rd	0.0020***	0.0012***	0.0817***	0.0707***	-0.0122	-0.0386***	0.1858***	-0.1491***
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.2719)	(0.0070)	(<0.001)	(<0.001)
4th (highest)	0.0004	0.0010	0.0769***	0.0572***	-0.0047	-0.0289	0.2701***	-0.0254
	(0.4980)	0.1367	(<0.001)	(0.0060)	(0.7754)	(0.1456)	(<0.001)	(0.6590)
Diff (1 and 4)	-0.0007	0.0003	-0.0022	-0.0127	0.0291	0.0188	-0.0527	-0.1516*
	(0.3768)	(0.7661)	(0.9306)	(0.6562)	(0.1977)	(0.4871)	(0.3809)	(0.0505)

Table IV: Multivariate Regressions - Pre-issue Demand and Post-issue Performance

This table presents the multivariate analysis of the relation between the pre-issue demand from institutional investors with different investment horizons and post-issue stock performance in the short run (six months) and in the long run (three years). Pre-issue demand of long (medium /short)-term investors is the change in the holding of long (medium /short)-term institutional investors from the end of the third quarter (Q(-3)) to the end of the last quarter (Q(-1)) before the offering. *Firm size* is the natural logarithm of the issuer's market capitalization in the month before offering. *Bid-ask spread* is the average bid-ask spread (calculated as 100*(1-bid/ask)) over 12 months before the offering. Other variables are defined in Table I. In all regression, heterogeneity-robust errors are used, with t-statistics in parentheses.

Panel A: Short-term Stock Performance (from 1 to 6 month after issue)

	BHR (6 months)		**ABHR (6 months)**	
	1	**2**	**3**	**4**
Long-term holding in Q(-3)	-0.1536	-0.1911	-0.5002	-0.7639*
	(-0.47)	(-0.54)	(-1.37)	(-1.75)
Chg. In long-term holdings from Q(-3) to Q(-1)	0.1275	-0.1075	-0.1652	-0.3841
	(0.16)	(-0.14)	(-0.19)	(-0.42)
Med-term holding in Q(-3)	-0.0327	-0.0318	-0.0447	-0.0549
	(-0.71)	(-0.69)	(-0.86)	(-1)
Chg. In med-term holdings from Q(-3) to Q(-1)	-0.0208	-0.0016	-0.0973	-0.1053
	(-0.2)	(-0.02)	(-0.88)	(-0.94)
Short-term holding in Q(-3)	0.276	0.3719	-0.0586	0.2225
	(0.91)	(1.3)	(-0.16)	(0.58)
Chg. In short-term holdings from Q(-3) to Q(-1)	1.0819**	1.0594***	0.3095	0.5525
	(2.56)	(2.62)	(0.63)	(1.07)
Firm Size	-0.0156	-0.0195	0.0004	-0.0029
	(-1.47)	(-1.64)	(0.04)	(-0.21)
Stock Return Volatility	-0.0597***	-0.0676***	-0.0409**	-0.0410*
	(-3.76)	(-3.52)	(-2.28)	(-1.78)
Bid-ask Spread	-0.0008	-0.0009	-0.0009	-0.0015
	(-0.5)	(-0.53)	(-0.47)	(-0.81)
Market-to-Book Ratio	-0.007	-0.0109**	0.0044	-0.003
	(-1.55)	(-2.35)	(0.78)	(-0.48)
Stock Return	0.0462**	0.0415**	0.0722***	0.0635***
	(2.3)	(2.07)	(3.41)	(2.89)
Market Return	0.0971	-0.9250***	0.0549	-0.1482
	(0.86)	(-4.98)	(0.4)	(-0.72)
NASDAQ Dummy	0.0014	-0.0134	-0.0079	-0.0177
	(0.05)	(-0.48)	(-0.25)	(-0.52)
Book Leverage	-0.0666	-0.0871	-0.1487**	-0.1696**
	(-1.16)	(-1.44)	(-2.21)	(-2.33)
Constant	-0.0147	-0.1829	-0.0398	0.186
	(-0.14)	(-1.17)	(-0.34)	(1.11)
Year fixed effect	No	Yes	No	Yes
Industry fixed effect	No	Yes	No	Yes
Adj. R-squared	0.0171	0.11	0.0142	0.0158
N	1808	1808	1808	1808

Panel B: Long-term Stock Performance (from 1 to 36 month after issue)				
	BHR (3 years)		**ABHR (3 years)**	
	1	**2**	**3**	**4**
Long-term holding in Q(-3)	1.2385	-0.2688	-0.0162	-0.4723
	(1.56)	(-0.31)	(-0.01)	(-0.38)
Chg. In long-term holdings from Q(-3) to Q(-1)	6.0099***	4.5676**	5.7169**	5.6617**
	(3.26)	(2.43)	(2.31)	(2.15)
Med-term holding in Q(-3)	-0.1817*	-0.1659*	-0.2214*	-0.3007**
	(-1.8)	(-1.69)	(-1.73)	(-2.34)
Chg. In med-term holdings from Q(-3) to Q(-1)	-0.2958	-0.329	-0.6459**	-0.7005**
	(-1.5)	(-1.64)	(-2.39)	(-2.51)
Short-term holding in Q(-3)	0.8941	0.5814	0.0973	0.7467
	(1.29)	(0.87)	(0.1)	(0.75)
Chg. In short-term holdings from Q(-3) to Q(-1)	0.6083	0.3049	0.1611	0.5292
	(0.64)	(0.33)	(0.14)	(0.44)
Firm Size	-0.0138	0.0045	-0.0117	-0.0264
	(-0.59)	(0.16)	(-0.4)	(-0.74)
Stock Return Volatility	-0.0823*	-0.1821***	0.0491	-0.0175
	(-1.9)	(-3.39)	(0.79)	(-0.23)
Bid-ask Spread	-0.0037	0.0007	-0.0132**	-0.0137**
	(-0.92)	(0.17)	(-1.98)	(-1.97)
Market-to-Book Ratio	-0.0461***	-0.0349***	0.0074	0.0009
	(-4.48)	(-3.15)	(0.63)	(0.06)
Stock Return	-0.0179	0.0001	0.0925**	0.0923*
	(-0.49)	(0)	(1.99)	(1.88)
Market Return	-0.2892	-1.0852***	0.069	-0.053
	(-1.06)	(-2.67)	(0.19)	(-0.09)
NASDAQ Dummy	-0.2382***	-0.2109***	-0.1693*	-0.2173**
	(-3.43)	(-2.92)	(-1.87)	(-2.21)
Book Leverage	-0.2594**	-0.2051*	-0.3258**	-0.2376
	(-2.15)	(-1.71)	(-2.07)	(-1.44)
Constant	0.5193**	-0.8792**	0.6555*	-0.1017
	(2.02)	(-2.22)	(1.69)	(-0.18)
Year fixed effect	No	Yes	No	Yes
Industry fixed effect	No	Yes	No	Yes
R-squared	0.046	0.0844	0.0075	0.0103
N	1808	1808	1808	1808
*** p<0.10, ** p<0.05, *** p<0.01**				

Table V: Multivariate Regressions with Redefined Pre-issue Demand

This table presents regression results of post-issue stock performance in the short run (six months) and the long run (three years) on re-defined measures of pre-issue demand from long-term, medium-term and short-term institutional investors. The pre-issue demand from long (medium /short)-term institutional investors is the change in the holdings of long (medium /short)-term institutional investors from the end of the second quarter (Q(-2)) to the end of the last quarter (Q(-1)) before the offering. *Firm size* is the natural logarithm of the issuer's market capitalization in the month before the offering. *Bid-ask spread* is the average bid-ask spread (calculated as 100*(1-bid/ask)) over 12 months before the offering. Other variables are defined in Table I. In all regression, heterogeneity-robust errors are used, with t-statistics in parentheses.

	Short-run performance (6 months)		**Long-run performance (3 years)**	
	BHR	**ABHR**	**BHR**	**ABHR**
	1	**2**	**3**	**4**
Long-term holding in Q(-3)	-0.0163	-0.3503	1.6957**	0.231
	(-0.05)	(-0.95)	(2.09)	(0.21)
Chg. In long-term holdings from Q(-2) to Q(-1)	-0.3418	-1.0165	5.8802**	5.9011
	(-0.33)	(-0.84)	(2.14)	(1.58)
Med-term holding in Q(-2)	-0.0145	-0.0536	-0.1681*	-0.2898**
	(-0.32)	(-1.07)	(-1.7)	(-2.18)
Chg. In med-term holdings from Q(-2) to Q(-1)	0.0069	0.0588	-0.1813	-0.4712
	(0.06)	(0.47)	(-0.68)	(-1.39)
Short-term holding in Q(-2)	0.3059	0.1069	0.9555	0.6247
	(1.03)	(0.31)	(1.44)	(0.69)
Chg. In short-term holdings from Q(-2) to Q(-1)	1.0828*	-0.1088	0.2635	-0.7052
	(1.96)	(-0.17)	(0.19)	(-0.4)
Firm Size	-0.0208**	-0.0038	-0.0235	-0.0116
	(-1.97)	(-0.32)	(-0.97)	(-0.39)
Stock Return Volatility	-0.0571***	-0.0382**	-0.0829*	0.0393
	(-3.68)	(-2.17)	(-1.92)	(0.64)
Bid-ask Spread	-0.001	-0.001	-0.0041	-0.0131**
	(-0.62)	(-0.58)	(-1.03)	(-2)
Market-to-Book Ratio	-0.0062	0.0049	-0.0445***	0.0084
	(-1.37)	(0.87)	(-4.35)	(0.71)
Stock Return	0.0519***	0.0750***	-0.0151	0.0918**
	(2.64)	(3.6)	(-0.42)	(1.97)
Market Return	0.0725	0.0592	-0.3397	0.041
	(0.65)	(0.44)	(-1.25)	(0.11)
NASDAQ Dummy	-0.0021	-0.0128	-0.2337***	-0.1681*
	(-0.08)	(-0.4)	(-3.36)	(-1.87)
Book Leverage	-0.0624	-0.1476**	-0.2745**	-0.3322**
	(-1.09)	(-2.2)	(-2.27)	(-2.11)
Constant	0.012	-0.0085	0.5561**	0.6283*
	(0.12)	(-0.07)	(2.16)	(1.66)
Adj.R-squared	0.0147	0.0135	0.0451	0.0076
N	1830	1830	1830	1830

*** p<0.10, ** p<0.05, *** p<0.01**

Table VI: Pre-issue Demand and Post-issue Performance with Changes in Institutional Holdings around SEOs

This table presents regression results of post-issue stock performance in the short run (six months) and the long run (three years) on pre-issue demand of institutional investors, with controls for the changes in institutional holding over the subsequent period around SEOs. The additional controls are the changes in the holdings from long (medium /short)-term institutional investors from the end of the quarter (Q(-1)) before the offering to the end of the quarter (Q(+1)) after the offering. Other variables are defined in Table I. In all regressions, heterogeneity-robust errors are used, with t-statistics in parentheses.

Panel A. Short-term Stock Performance (1 to 6 month after issuing month)				
	BHR (6 months)		**ABHR (6 months)**	
	1	**2**	**3**	**4**
Long-term holding in Q(-3)	-0.5141	-0.6164*	-0.7118*	-1.0707**
	(-1.51)	(-1.65)	(-1.93)	(-2.34)
Chg. In long-term holdings from Q(-3) to Q(-1)	-0.4305	-0.7457	-0.5544	-0.8994
	(-0.55)	(-0.94)	(-0.62)	(-0.95)
Chg. In long-term holdings from Q(-1) to Q(+1)	-1.0816*	-1.5044**	-0.4216	-0.8155
	(-1.71)	(-2.35)	(-0.55)	(-1.01)
Med-term holding in Q(-3)	0.0091	0.0046	0.0005	-0.0068
	(0.19)	(0.1)	(0.01)	(-0.11)
Chg. In med-term holdings from Q(-3) to Q(-1)	0.0418	0.049	-0.024	-0.0281
	(0.4)	(0.49)	(-0.21)	(-0.24)
Chg. In med-term holdings from Q(-1) to Q(+1)	0.1326**	0.1309*	0.1341*	0.1392
	(1.98)	(1.96)	(1.68)	(1.64)
High-term holding in Q(-3)	0.7816**	1.0133***	0.2146	0.5985
	(2.45)	(3.23)	(0.54)	(1.31)
Chg. In short-term holdings from Q(-3) to Q(-1)	1.7046***	1.7904***	0.6909	1.0257*
	(4.03)	(4.3)	(1.32)	(1.81)
Chg. In short-term holdings from Q(-1) to Q(+1)	2.1373***	2.2344***	1.3937***	1.5823***
	(6.49)	(6.57)	(3.41)	(3.56)
Firm Size	-0.0086	-0.015	0.0019	-0.0021
	(-0.81)	(-1.3)	(0.16)	(-0.16)
Stock Return Volatility	-0.0587***	-0.0652***	-0.0411**	-0.0398*
	(-3.8)	(-3.44)	(-2.33)	(-1.75)
Bid-ask Spread	-0.0003	-0.0008	-0.0004	-0.0014
	(-0.15)	(-0.47)	(-0.25)	(-0.74)
Market-to-Book Ratio	-0.0055	-0.0086*	0.0056	-0.0013
	(-1.22)	(-1.86)	(0.99)	(-0.21)
Stock Return	0.0314	0.024	0.0605***	0.0490**
	(1.53)	(1.17)	(2.77)	(2.16)
Market Return	0.1218	-0.8919***	0.0818	-0.1193
	(1.07)	(-4.78)	(0.58)	(-0.57)
NASDAQ Dummy	-0.0036	-0.0225	-0.0137	-0.025
	(-0.14)	(-0.84)	(-0.44)	(-0.74)
Book Leverage	-0.1023*	-0.1256**	-0.1724**	-0.1914***
	(-1.8)	(-2.09)	(-2.55)	(-2.62)
Constant	-0.1051	-0.2118	-0.0981	0.1646
	(-1.03)	(-1.36)	(-0.86)	(0.98)
Year fixed effect	No	Yes	No	Yes
Industry fixed effects	No	Yes	No	Yes
R-squared	0.0479	0.1431	0.0249	0.0264
N	1792	1792	1792	1792
*** p<0.10, ** p<0.05, *** p<0.01**				

Panel B. Long-term Stock Performance (1 to 36 month after issue):				
	BHR (3 years)		**ABHR (3 years)**	
	1	**2**	**3**	**4**
Long-term holding in Q(-3)	1.4591*	-0.2951	0.0387	-0.6471
	(1.74)	(-0.31)	(0.03)	(-0.48)
Chg. In long-term holdings from Q(-3) to Q(-1)	6.1995***	4.4324**	5.8160**	5.4915**
	(3.3)	(2.29)	(2.29)	(1.97)
Chg. In long-term holdings from Q(-1) to Q(+1)	2.0201	0.2678	0.8074	-0.2518
	(1.24)	(0.16)	(0.35)	(-0.1)
Med-term holding in Q(-3)	-0.149	-0.1082	-0.1835	-0.2638*
	(-1.37)	(-1.02)	(-1.24)	(-1.73)
Chg. In med-term holdings from Q(-3) to Q(-1)	-0.2129	-0.228	-0.5831**	-0.6444**
	(-1.05)	(-1.11)	(-2.02)	(-2.15)
Chg. In med-term holdings from Q(-1) to Q(+1)	0.1381	0.2118	0.1567	0.1276
	(0.9)	(1.37)	(0.68)	(0.53)
Short-term holding in Q(-3)	1.7776**	1.3578*	0.4064	1.2273
	(2.41)	(1.82)	(0.38)	(1.08)
Chg. In short-term holdings from Q(-3) to Q(-1)	1.607	1.2434	0.5544	1.0958
	(1.53)	(1.21)	(0.42)	(0.82)
Chg. In short-term holdings from Q(-1) to Q(+1)	3.0646***	2.6860***	1.1915	1.6465
	(3.66)	(3.2)	(1.08)	(1.46)
Firm Size	-0.0113	0.0066	-0.0132	-0.0261
	(-0.47)	(0.23)	(-0.44)	(-0.72)
Stock Return Volatility	-0.0915**	-0.1826***	0.0435	-0.0208
	(-2.1)	(-3.39)	(0.7)	(-0.27)
Bid-ask Spread	-0.0026	0.0011	-0.0130*	-0.0137**
	(-0.66)	(0.26)	(-1.94)	(-1.98)
Market to Book Ratio	-0.0418***	-0.0311***	0.0098	0.0034
	(-4.03)	(-2.78)	(0.82)	(0.25)
Stock Return	-0.0404	-0.0219	0.0826*	0.078
	(-1.1)	(-0.58)	(1.77)	(1.57)
Market Return	-0.1742	-1.0025**	0.1302	-0.0192
	(-0.63)	(-2.42)	(0.35)	(-0.03)
NASDAQ Dummy	-0.2450***	-0.2214***	-0.1756*	-0.2245**
	(-3.53)	(-3.06)	(-1.92)	(-2.27)
Book Leverage	-0.2773**	-0.2222*	-0.3324**	-0.2449
	(-2.31)	(-1.85)	(-2.08)	(-1.46)
Constant	0.3491	-0.9475**	0.5736	-0.1399
	(1.34)	(-2.4)	(1.47)	(-0.24)
Year fixed effect	No	Yes	No	Yes
Industry fixed effects	No	Yes	No	Yes
Adj. R-squared	0.0597	0.0938	0.0078	0.0098
N	1792	1792	1792	1792
*** p<0.10, ** p<0.05, *** p<0.01**				

Table VII: Regressions of Cumulative Abnormal Returns (CAR) over Short Horizons

This table presents the regression results of cumulative abnormal returns (CAR) of SEO firms over different horizons after the offering. We first identify an industry-and-size matched firm for each issuer in the month before the offering. Daily abnormal return after the offering is the difference of the daily returns between the sample firm and the matching firm. The sum of the daily abnormal returns over a certain period of time is the CAR for that period. Other variables are defined in Table I and IV. In all regressions, heterogeneity-robust errors are used, with t-statistics in parentheses.

CAR over a Short Horizon				
	3 month		**6 month**	
	1	**2**	**1**	**2**
Long-term holding in Q(-3)	-0.2779	-0.3435	-0.4469	-0.2311
	(-1.08)	(-1.23)	(-1.29)	(-0.61)
Chg. In long-term holdings from Q(-3) to Q(-1)	-1.1194*	-1.2482*	-0.8538	-0.641
	(-1.77)	(-1.9)	(-1.02)	(-0.74)
Med-term holding in Q(-3)	-0.0182	-0.0191	0.0023	-0.0047
	(-0.57)	(-0.59)	(0.05)	(-0.09)
Chg. In med-term holdings from Q(-3) to Q(-1)	-0.0605	-0.0532	0.0204	0.0276
	(-0.84)	(-0.74)	(0.21)	(0.28)
Short-term holding in Q(-3)	0.1565	0.3353	0.372	0.5554
	(0.62)	(1.29)	(1.07)	(1.59)
Chg. In short-term holdings from Q(-3) to Q(-1)	0.5553**	0.6660**	0.5546	0.6532
	(1.99)	(2.34)	(1.39)	(1.64)
ln(Mkt Cap)	0.0066	0	0.002	-0.0065
	(0.84)	(0)	(0.17)	(-0.51)
Stock return volatility	-0.0051	-0.012	-0.0223	-0.0167
	(-0.37)	(-0.75)	(-1.22)	(-0.78)
Bid-ask Spread	0	-0.0005	-0.0026	-0.0036*
	(0.02)	(-0.37)	(-1.44)	(-1.9)
M/B	0.0002	-0.0002	-0.0003	-0.0028
	(0.04)	(-0.06)	(-0.06)	(-0.58)
Stock return	-0.0105	-0.017	0.0465**	0.0379*
	(-0.69)	(-1.12)	(2.2)	(1.8)
Market return	0.0734	0.1329	0.0574	0.0424
	(0.79)	(0.96)	(0.45)	(0.22)
NASD	0.0141	0.0134	0.0017	-0.0045
	(0.67)	(0.63)	(0.06)	(-0.16)
Book leverage	0.0047	0.0033	-0.0314	-0.0352
	(0.1)	(0.07)	(-0.5)	(-0.56)
Constant	-0.0241	-0.0332	-0.0389	0.0383
	(-0.28)	(-0.32)	(-0.34)	(0.27)
Year fixed effect	No	Yes	No	Yes
Adj.R-squared	-0.002	0.0023	0.0026	0.009
N	1808	1808	1808	1808
*** p<0.10, ** p<0.05, *** p<0.01**				

Table VIII: Pre-issue Demand and Post-issue Performance in Hot/Cold Issue Markets

This table presents regression results of post-issue stock performance in the short run (six months) and the long run (three years) on pre-issue demand of institutional investors, with additional controls for hot issue markets dummy and its interactions. The hot-issue-markets dummy equals to one if the issuing quarter has above median number of SEO issues over the sample time period and zero otherwise. The number of SEO issues in each quarter is calculated with the information retrieved from Ritter's website. The interactions of hot-issue-market dummy and pre-issue demand variables are also included in the regressions. Other variables are defined in Table I and IV. In all regression, heterogeneity-robust errors are used, with t-statistics in parentheses.

Panel A. Short-term Stock Performance (1 to 6 months after issue):				
	BHR (6 months)		**ABHR (6 months)**	
	1	**2**	**3**	**4**
HOT	-0.1834***	-0.1387***	-0.0761**	-0.075
	(-6.43)	(-3.44)	(-2.3)	(-1.54)
Long-term holding in Q(-3)	-0.2288	-0.2617	-0.5454	-0.8125*
	(-0.71)	(-0.74)	(-1.5)	(-1.87)
Chg. In long-term holdings from Q(-3) to Q(-1)	1.4214	1.7267	1.7596	1.4659
	(1.14)	(1.38)	(1.27)	(1.02)
Chg. In long-term holdings from Q(-3) to Q(-1)*HOT	-2.8712*	-3.3211**	-3.4656**	-3.2314*
	(-1.96)	(-2.31)	(-2.06)	(-1.85)
Med-term holding in Q(-3)	-0.0458	-0.0319	-0.0493	-0.0535
	(-1.02)	(-0.7)	(-0.95)	(-0.97)
Chg. In med-term holdings from Q(-3) to Q(-1)	-0.1273	-0.0844	-0.2950*	-0.2849
	(-0.66)	(-0.46)	(-1.7)	(-1.59)
Chg. In med-term holdings from Q(-3) to Q(-1)*HOT	0.2016	0.1602	0.3435*	0.3147
	(0.96)	(0.8)	(1.67)	(1.49)
Short-term holding in Q(-3)	0.5158*	0.3517	0.0387	0.2099
	(1.71)	(1.21)	(0.11)	(0.54)
Chg. In short-term holdings from Q(-3) to Q(-1)	2.1194***	1.9996***	0.8528	1.0211
	(2.97)	(2.9)	(1.02)	(1.17)
Chg. In short-term holdings from Q(-3) to Q(-1)*HOT	-1.3	-1.4113*	-0.7381	-0.7463
	(-1.57)	(-1.77)	(-0.78)	(-0.75)
Firm Size	-0.0241**	-0.0175	-0.003	-0.0015
	(-2.32)	(-1.49)	(-0.26)	(-0.11)
Stock Return Volatility	-0.0746***	-0.0647***	-0.0462**	-0.0391*
	(-4.73)	(-3.39)	(-2.56)	(-1.7)
Bid-ask Spread	-0.0012	-0.0011	-0.0011	-0.0016
	(-0.77)	(-0.67)	(-0.63)	(-0.87)
Market-to-Book Ratio	-0.0064	-0.0110**	0.0047	-0.003
	(-1.45)	(-2.36)	(0.82)	(-0.48)
Stock Return	0.0451**	0.0433**	0.0708***	0.0640***
	(2.33)	(2.2)	(3.35)	(2.92)
Market Return	0.6113***	-0.4532*	0.2665*	0.1069
	(4.62)	(-1.93)	(1.65)	(0.4)
NASDAQ Dummy	-0.0006	-0.0112	-0.009	-0.0167
	(-0.02)	(-0.41)	(-0.28)	(-0.49)
Book Leverage	-0.0761	-0.0899	-0.1547**	-0.1718**
	(-1.34)	(-1.5)	(-2.31)	(-2.37)
Constant	0.0616	-0.0594	-0.0026	0.1874
	(0.59)	(-0.38)	(-0.02)	(1.16)
Year fixed effect	No	Yes	No	Yes
Industry fixed effect	No	Yes	No	Yes
R-squared	0.0443	0.1207	0.0181	0.0177
N	1808	1809	1809	1809
*** p<0.10, ** p<0.05, *** p<0.01**				

Panel B. Long-term Stock Performance (1 to 36 months after issue):				
	BHR (3 years)		**ABHR (3 years)**	
	1	**2**	**3**	**4**
HOT	-0.0539	-0.2158**	-0.0663	-0.1235
	(-0.82)	(-2.48)	(-0.78)	(-1.1)
Long-term holding in Q(-3)	1.0738	-0.456	-0.0618	-0.5185
	(1.35)	(-0.52)	(-0.06)	(-0.42)
Chg. In long-term holdings from Q(-3) to Q(-1)	10.8099***	9.9101***	9.3450***	8.4716**
	(4.26)	(4)	(2.94)	(2.54)
Chg. In long-term holdings from Q(-3) to Q(-1)*HOT	-8.0870**	-9.3041***	-6.2111	-4.9672
	(-2.37)	(-2.76)	(-1.42)	(-1.1)
Med-term holding in Q(-3)	-0.1847*	-0.1646*	-0.2238*	-0.2965**
	(-1.84)	(-1.68)	(-1.76)	(-2.3)
Chg. In med-term holdings from Q(-3) to Q(-1)	-0.4647	-0.6059**	-1.0885***	-1.1503***
	(-1.58)	(-2.07)	(-2.86)	(-3.01)
Chg. In med-term holdings from Q(-3) to Q(-1)*HOT	0.2958	0.4948	0.7616	0.7776
	(0.77)	(1.27)	(1.52)	(1.51)
Short-term holding in Q(-3)	0.959	0.5515	0.1774	0.7261
	(1.38)	(0.81)	(0.19)	(0.73)
Chg. In short-term holdings from Q(-3) to Q(-1)	2.3948*	1.7521	1.0327	0.8898
	(1.79)	(1.32)	(0.67)	(0.56)
Chg. In short-term holdings from Q(-3) to Q(-1)*HOT	-2.5188	-2.1609	-1.311	-0.6969
	(-1.39)	(-1.21)	(-0.61)	(-0.32)
Firm Size	-0.0166	0.0079	-0.0149	-0.0232
	(-0.7)	(0.28)	(-0.5)	(-0.65)
Stock Return Volatility	-0.0855**	-0.1764***	0.0456	-0.0143
	(-1.97)	(-3.28)	(0.74)	(-0.19)
Bid-ask Spread	-0.004	0.0003	-0.0134**	-0.0140**
	(-1)	(0.07)	(-2.02)	(-2.03)
Market-to-Book Ratio	-0.0458***	-0.0349***	0.0076	0.0008
	(-4.45)	(-3.15)	(0.64)	(0.06)
Stock Return	-0.0207	0.0021	0.0887*	0.0937*
	(-0.57)	(0.06)	(1.92)	(1.91)
Market Return	-0.0901	-0.3417	0.2578	0.3419
	(-0.28)	(-0.73)	(0.61)	(0.51)
NASDAQ Dummy	-0.2415***	-0.2091***	-0.1714*	-0.2135**
	(-3.47)	(-2.89)	(-1.89)	(-2.17)
Book Leverage	-0.2646**	-0.2094*	-0.3336**	-0.2446
	(-2.19)	(-1.75)	(-2.11)	(-1.48)
Constant	0.5517**	-0.089	0.6947*	0.1562
	(2.13)	(-0.22)	(1.78)	(0.27)
Year fixed effect	No	Yes	No	Yes
Industry fixed effect	No	Yes	No	Yes
Adj.R-squared	0.0479	0.089	0.007	0.0101
N	1808	1808	1808	1809
*** p<0.10, ** p<0.05, *** p<0.01**				

Table IX: SEO Underpricing and Pre-issue Demand from Institutional Investors

This table presents regression results of SEO underpricing on the pre-issue demand of institutional investors. SEO underpricing (discount) is calculated as: Underpricing = (Close price $_{-1}$ – Offer price)/ Close price$_{-1}$. Pre-issue demand from long (medium /short)-term institutional investors is defined as the change in the holding of long (medium /short)-term institutional investors from the end of the third quarter (Q(-3)) to the end of the last quarter (Q(-1)) before the offering. Stock price is observed at the end of the month prior to the offering. *Bid-ask spread* is the average bid-ask spread (calculated as 100*(1-bid/ask)) over 12 months before the offering. Other variables are defined in Table I and IV. In all regressions, heterogeneity-robust errors are used, with t-statistics in parentheses.

	1	**2**	**3**	**4**
Long-term holdings in Q(-3)	0.0660*	0.1062**	0.0672*	0.1086**
	(1.67)	(2.21)	(1.66)	(2.2)
Chg. In long-term holdings from Q(-3) to Q(-1)	0.1448*	0.1598*	0.1625*	0.1819**
	(1.67)	(1.74)	(1.85)	(1.97)
Med-term holding in Q(-3)	-0.0165***	-0.0194***	-0.0169***	-0.0189***
	(-3.02)	(-3.27)	(-3.07)	(-3.18)
Chg. In med-turnover holdings from Q(-3) to Q(-1)	-0.0220**	-0.0224**	-0.0203*	-0.0195*
	(-2.04)	(-1.96)	(-1.87)	(-1.69)
Short-term holding in Q(-3)	-0.1397***	-0.1575***	-0.1350***	-0.1497***
	(-4.1)	(-4.11)	(-3.9)	(-3.79)
Chg. In short-term holdings from Q(-3) to Q(-1)	-0.1471***	-0.1636***	-0.1519***	-0.1681***
	(-3.65)	(-3.81)	(-3.75)	(-3.9)
Offer size (Issue proceeds/Mkt Cap)	-0.0109*	-0.0121*		
	(-1.8)	(-1.73)		
Offer size (#New shares/#Shares outstanding)			0.0138	0.0155
			(1.21)	(1.54)
Stock Return	-0.0036	-0.0038	-0.0025	-0.0027
	(-1.31)	(-1.34)	(-0.92)	(-0.96)
Market Return	-0.0062	-0.0271	-0.0086	-0.0283
	(-0.43)	(-1.29)	(-0.59)	(-1.32)
IPO Underpricing	-0.0062	-0.0169	-0.0063	-0.025
	(-0.76)	(-1.11)	(-0.73)	(-1.56)
Firm Size	-0.0059***	-0.0075***	-0.0040**	-0.0052***
	(-3.36)	(-4)	(-2.25)	(-2.77)
Stock Price	0.0001	0.0002	0.0001	0.0001
	(1.15)	(1.35)	(1.01)	(1.07)
Stock Return Volatility	0.0116***	0.0085***	0.0117***	0.0090***
	(5.35)	(3.18)	(5.19)	(3.24)
Bid-Ask Spread	0.0004**	0.0005**	0.0002	0.0003
	(1.98)	(2.1)	(1.17)	(1.13)
NASDAQ Dummy	0.0053*	0.0034	0.0060*	0.0041
	(1.7)	(1.01)	(1.92)	(1.22)
Constant	0.1168***	0.0734***	0.1036***	0.0617***
	(7.59)	(4.2)	(6.79)	(3.59)
Year fixed effect	No	Yes	No	Yes
Industry fixed effect	No	Yes	No	Yes
R-squared	0.119	0.1275	0.1183	0.1266
N	1511	1511	1481	1481

Figure 1: Timeline of the Variable Definition

This figure illustrates how the variables of interests are defined over the time of the seasoned equity offerings. Institutional investors are classified from the sixth to the third quarter before each SEO issue. In each quarter, all institutional investors are sorted into quartiles by churn rate. Institutional investors belonging to the top quartile in each of the four quarters are classified as short-term institutional investors. Similarly, institutional investors belonging to the bottom quartile in each of the four quarters are classified as long-term institutional investors. The rest institutional investors are medium-term institutional investors. The pre-issue demand from short(medium or long)-term institutional investors is the change of the holding by short(medium or long)-term institutional investors from the end of the third quarter to the end of the quarter before the offering. The short-run stock performance is defined as the six-month stock returns after the offering. The long-run stock performance is the three-year stock returns after the offering.

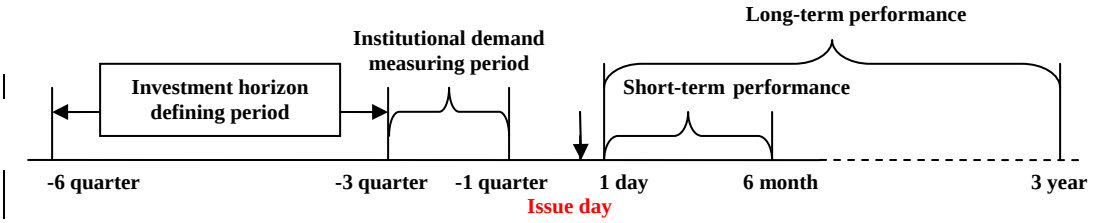

Figure 2: Long-term vs. Short-term Institutional Holdings around SEOs

This figure depicts the average quarterly holdings of long- and short-term institutional investors around seasoned equity offerings between 1990 and 2004. Time 0 is the quarter when seasoned equity is offered. The data have been winsorized at 1st and 99th percentiles.