RESEARCH SUPPORT
SCHOOL OF BUSINESS ADMINISTRATION

APRIL 1995

EARNINGS MANAGEMENT AND THE POST-ISSUE UNDERPERFORMANCE OF SEASONED EQUITY OFFERINGS

WORKING PAPER #9501-07

SIEW HONG TEOH
UNIVERSITY OF MICHIGAN

IVO WELCH
ANDERSON SCHOOL OF MANAGEMENT
UCLA

T.J. WONG
COLLEGE OF BUSINESS
UNIVERSITY OF MARYLAND
HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Contents

First Draft, January 1995

Revised April 8, 1995

Earnings Management and The Post-Issue Underperformance of Seasoned Equity Offerings

Siew Hong Teoh*

Ivo Welch**

T.J. Wong***

Topics: Corporate Finance, Seasoned Equity Offerings (and IPOs)

Secondary Topics: Anomalies, Earnings Manipulation

* School of Business Administration, University of Michigan, Ann Arbor, MI 48109-1234, (313) 763-1264, siew.teoh@ccmail.bus.umich.edu

** Anderson Graduate School of Management, UCLA, 405 Hilgard Ave., LA CA 90095-1481, ivo.welch@anderson.ucla.edu

*** College of Business, University of Maryland, and Hong Kong University of Science and Technology, actjwong@uxmail.ust.hk

We thank Brad Barber, K.C. Chan, Kent Daniel, Jonathan Karpoff, Charles Lee, Tim Opler, Jay Ritter, Doug Skinner, Sheridan Titman, participants at the University of California Finance and Accounting Conference at Davis, California, March 1995, and workshop participants at the University of Michigan for helpful discussions.

Earnings Management and The Post-Issue Underperformance in Seasoned Equity Offerings

Abstract

Loughran and Ritter (1995) document that firms issuing seasoned equity offerings (SEOs) severely underperform the stock market for three to five years after the offering. Our paper examines the hypothesis that SEO investors are too optimistic because they naively extrapolate earnings trends without fully adjusting for observable discretionary managerial reporting choices. We find that aggressive firms, which report high pre-SEO earnings at the expense of post-SEO earnings by taking high discretionary pre-issue accruals, subsequently performed worse (abnormal stock returns and industry-adjusted net income). Aggressive quartile firms earned a highly significant –50% four-year cumulative abnormal return; conservative quartile firms earned an insignificant –7% four-year cumulative abnormal return. In contrast with discretionary accruals, pre-issue non-discretionary accruals did not predict post-SEO returns.

1 Introduction

Loughran and Ritter (1995a) document that firms offering seasoned equity between 1970 and 1990 underperformed the stock market for three to five years subsequent to the offering. In a sample of 3,702 SEOs, they find that investors received average returns of only 7% per year. Comparable non-issuing firm with similar market capitalization averaged 15% per year. Predictable return differentials of this magnitude are not only statistically but economically so significant that it raises the question why investors were so foolish as to have bought shares in issuing firms.

Our paper examines the hypothesis that some managers actively manage their financial reports to obtain higher prices at the offering, and it is mostly firms following aggressive reporting strategies that subsequently significantly underperform. We find that the quartile of SEO firms in which managers report aggressively by shifting earnings from post-SEO years to the pre-SEO year earns a substantially lower mean abnormal return of approximately *9%* per year for each of the four years after the offering than the quartile of SEO firms which reports pre-SEO earnings conservatively. Thus, the evidence is consistent with the hypothesis that investors accepted earnings reported prior to the issue at face value and failed to properly adjust for predictable subsequent earnings downturns. The difference in subsequent stock return performance between the two quartiles is remarkable considering that the earnings management measure we used to partition firms is based on information that is publicly available by as much as four to sixteen months prior to the period over which returns are measured.[1] Measuring earnings management is a difficult task, however, and to the extent that the measures we use are imperfect, investors may have been able to do even better than the 9% per year difference reported here.

[1]The earnings management measure is calculated for the fiscal year before the SEO whereas the post-SEO returns are measured after the issue date, but at least four months after the previous fiscal-year end.

Our measure of earnings management concerns one of two earnings components. Reported earnings consist of the cash flow from operations plus accruals. The latter are adjustments to operating cash flows for transactions which affect future cash flows even when cash has not currently changed hands.[2] Thus, reported earnings attempt to reflect the underlying business conditions about revenues and expenses, independent of the timing of cash receipts and payments. By taking positive accruals now, managers effectively can raise reported earnings today at the expense of lowering future earnings. Accounting rules and regulations (such as the requirement of an independent audit), however, limit the manager's discretion over when and how much accruals can be reported.

Although investors can observe total accruals, they cannot infer perfectly how much of the accruals are *discretionary* ("managed"). To measure the discretionary component, we determine the extent to which the firm's accruals are explained by its sales growth in an intra-industry regression (after adjusting sales growth to exclude components that potentially could be manipulated, e.g. credit sales). The predicted accruals are viewed as required to support the level of sales growth (on par with its industry), and thus considered not to be under the control of the manager (*non-discretionary*). The unexplained residual accruals are deemed unusual and thus termed *discretionary*.[3]

To measure abnormal stock return performance, we use simple raw, market-adjusted, and Fama-French (1994) factor-adjusted returns. The results are consistent with the earnings management hypothesis and robust to the return adjustment used. We find that pre-SEO *non-discretionary* accruals do not reliably predict post-SEO returns, while pre-SEO *discretionary* accruals do. Using the Fama-French factor adjustment, the most conservative quartile firms produced a four year statistically insignificant cumulative abnormal return of −7% (about −1.5% per year). In contrast, the most aggressive quartile

[2]See Section 2.2 for more details about the nature of these accruals.

[3]We do not consider fraudulent reporting behavior specifically, because the accrual measures comply with generally accepted accounting principles. However, it is possible that firms with high discretionary accruals may later be found to have reported fraudulently.

firms produced a four year statistically significant cumulative abnormal return of -50% (about -12% per year). We also document that non-discretionary accruals (highly correlated with sales growth and less subject to manipulation) had no predictive power for subsequent returns.

Thus, our evidence indicates that investors failed to use all information contained in discretionary accruals, and instead behaved as if they naively extrapolated pre-issue earnings performance to the future. Under this interpretation, the failure to discount appropriately for pre-SEO accounting accrual component of earnings led investors to be overoptimistic. Subsequent revelation about the appropriateness of the accruals in post-issue financial statements caused a subsequent downward correction in stock prices.

Cheng (1994) provides evidence suggesting that SEO issuers underperform the market only if they raise funds without real investment objectives. Firms which invested the proceeds in real operations performed as well as comparable non-SEO firms. His interpretation is that some managers—those without good ideas about what to do with the funds—"time" offerings solely to exploit unusually high market prices. To examine if our effect is the same as Cheng's (1994) capital expenditure effect, we control with a variable closely related to his. The evidence confirms Cheng's findings. More importantly, we find that the discretionary accruals retain their explanatory power when placed in competition with Cheng's variable, despite the two year timing advantage given to Cheng's variable over our accrual variables. Because the accrual measures predict future returns using information available at the time of the SEO, the results in our paper may present a more serious challenge to the efficient markets theory.[4]

Our results have policy as well as investment implications. If investors' perceptions can be managed by discretionary accounting choices, managers should consider how such decisions impact the firm's cost of equity capital. Further, the existence of a relation

[4]See Lakonishok, Shleifer and Vishny (1994) for evidence that the market may be less efficient at valuing firms whose value derives substantially from growth opportunities.

between earnings management and subsequent return performance has implications for the effectiveness of current accounting rules and standards, and in particular about the desirability of allowing discretion in the accounting rules when there is high asymmetry of information between investors and the firms' managers.

The rest of the paper is structured as follows. Section 2 describes the data, sample selection, and accrual component extraction techniques. Section 3 examines the predictability of future net income with our accrual measures. Section 4 presents the predictability of post-SEO stock price performance. Section 5 concludes and compares the results to related findings in IPOs.

2 Data and Test Methods

2.1 Sample Characteristics

We obtained an initial sample of 6,386 SEOs between January 1970 and September 1989 from Securities Data Corporation. Of these, 3,032 SEOs were available on the CRSP 1993 tapes and on the PST, full coverage, and research Compustat 1993 tapes. For inclusion in the final sample, we required available stock returns data and sufficient industry and firm accounting accruals data to compute discretionary accounting accruals (see page 5). Thus, we did not eliminate firms based on lack of post-SEO data availability. We also eliminated firms in the banking and utilities industries because disclosure requirements are significantly different for these industries. If a firm had multiple issues, we included only the earliest issue to avoid contamination of returns by subsequent issues.[5] The final sample consisted of 1,265 SEOs.[6]

[5]Diagnostic checks indicate that the predictability of returns by discretionary accruals does not differ between firms with multiple issues and firms with single issues in the sample period.

[6]Some minor discrepancies in reported numbers in our tables, usually on the fourth significant digit, are the result of truncation of digits in the transmission of data over the Internet among co-authors.

Insert Table 1 *Characteristics of Sample of Firms Conducting Seasoned Equity Offerings from period 1976 to 1989*

Table 1 reports the summary statistics for our sample. The mean (median) firm size in the fiscal year prior to issue as measured by total assets is \$625M (\$40M) and the mean (median) market capitalization in the fiscal year end prior to the issue is \$284M (\$52M). There also is a large variation in firm size as evidenced by the large standard deviation in the size measures. Consistent with the findings in Loughran and Ritter (1995b), SEO firms experience large sales growth in the year preceding the issue, with mean (median) sales growth of 54% (28%).

There is mild clustering of SEOs in industries and time periods. The hot issue years are in 1980, 1982, 1983 and 1986, with each of these years containing more than 10% of the sample. 1986 is the hottest year with approximately 22% of our sample. SEOs occur most often in high technology (computer and electronics) with approximately 30.5% of the sample. Because accounting measurement is difficult in such new industries, the information asymmetry between investors and insiders could be especially high.

2.2 Accrual Decomposition

This subsection explains the accrual measures and the estimation procedure using an industry benchmark of the discretionary and non-discretionary components of accruals. Total accruals (TAC) are decomposed into *working capital accruals* (WKA) and *non-working capital accruals* ($NWKA$), and are calculated as:

$$TAC = WKA + NWKA = Net\ Income - Cash\ Flow\ from\ Operations \quad (1)$$

Net income is Compustat item 172. After 1987, cash flow from operations is available as Compustat item 308. Prior to 1987, it is calculated as the difference between working capital from operations (item 110) and WKAwhich is calculated as explained below.

We test our hypothesis on the traditional working capital and non-working capital classifications for accruals because managers may have greater discretion over some accounts than others. If, as has been argued by Guenther (1994), managers have greater discretion over working capital accruals than non-working capital accruals, tests using working capital accruals may have greater statistical power than non-working capital accruals.

Working capital accruals are adjustments involving current accounts (i.e. short-term assets and liabilities) which support the day to day operations of the firm. Managers can increase WKA, for example, by advancing recognition of revenues (e.g., credit sales) or delaying recognition of expenses (e.g., low provision of bad debts). Working capital accruals are computed as the change in non-cash current assets minus the change in operating current liabilities:

$$\begin{aligned} WKA &= \Delta[current\ assets\ (item\ 4) - cash\ (item\ 1)] \\ &\quad -\Delta[current\ liabilities\ (item\ 5) - current\ maturity\ of\ long-termdebt\ (item\ 44)] \end{aligned} \quad (2)$$

Non-working capital accruals are adjustments involving long-term net assets, and can be increased by decelerating depreciation, decreasing deferred taxes (the difference between tax expense recognized for financial reporting and actual tax obligations), and realizing unusual gains. $(NWKA)$ are computed as:

$$NWKA = TAC - WKA. \quad (3)$$

Our first critical choice is the use of a specific technique to extract the *discretionary* (or unexpected) component of accruals as a proxy for earnings management. We use a cross-sectional adaptation of the Jones (1991) model, following a recent convention in the accounting literature.[7] The discretionary accrual is extracted from a sales-growth-adjusted comparison of the firm to its industry peers. Thus, the expected working

[7]See DeFond and Jiambalvo (1994), Perry and Williams (1995), and Teoh, Wong, and Rao (1994a, b).

capital accrual for the SEO in a given year is estimated from a cross-sectional regression of accruals on the change in sales using an estimation sample of all Compustat-available firms with the same 2-digit SIC code and for the same fiscal year as the issuing firm, excluding the SEO firm from the regression. Consistent with the use of the model in the accounting literature, all variables in the cross-sectional regression are deflated by lagged total assets to reduce heteroscedasticity. The expected working capital accrual regression is thus

$$\frac{WKA_{jt}}{TA_{j,t-1}} = a_0 \frac{1}{TA_{j,t-1}} + a_1 \frac{\Delta SALES_{jt}}{TA_{j,t-1}} + \epsilon_{jt}, \qquad j \in \text{estimation sample}, \tag{4}$$

where TA are total assets, and ΔSALES is the change in sales.

Using the estimated regression equation, we predict the SEO firm's (deflated) working capital accruals. To allow for the possibility that SEO firm sales growth have been manipulated, as for example by allowing generous credit policies in order to report high sales prior to the offering, the fitted value is obtained by adjusting the SEO firm's sales growth net of its growth in trade receivables.[8] Thus, the *non-discretionary working capital accrual (NDWKA)*, in effect a proxy for (industry-adjusted) sales growth, for the SEO firm is calculated as:

$$NDWKA_{it} = \hat{a}_0 \frac{1}{TA_{i,t-1}} + \hat{a}_1 \frac{\Delta SALES_{it} - \Delta A/R_{it}}{TA_{i,t-1}}, \tag{5}$$

where $\Delta A/R_{it}$ is the change in trade receivables in year t for SEO firm i. The *discretionary working capital accruals (DWKA)* is the unexplained portion of working capital accruals, i.e. the difference between deflated WKA and $NDWKA$.

To obtain discretionary non-working capital accruals, we first estimate total accruals in a similar regression as in (4). The dependent variable is total accruals and property,

[8] If management can accelerate sales revenue recognition by its sales credit policies, non-discretionary accruals would be misestimated using the standard Jones model. By subtracting the change in trade receivables from sales growth, we are assuming that the growth in trade receivables resulted from managers manipulating sales by extending generous credit to customers. This second-step only modification has been used in the accounting literature, e.g. Dechow, Sloan, and Sweeney (1993). Our results are robust to omitting this adjustment.

plant, and equipment is included as an additional regressor because long-term accruals (e.g. depreciation levels) are affected by the size of long-term assets.

$$\frac{TAC_{jt}}{TA_{j,t-1}} = b_0\frac{1}{TA_{j,t-1}} + b_1\frac{\Delta SALES_{jt}}{TA_{j,t-1}} + b_2\frac{PPE_{jt}}{TA_{j,t-1}} + \epsilon_{jt}, \quad j \in \text{estimation sample} \quad (6)$$

where TAC are total accruals, and PPE is the gross property, plant and equipment. Non-discretionary total accruals are computed using the estimated coefficients and adjusting sales growth for the increase in trade receivables as before. The difference between the non-discretionary total accruals and non-discretionary working capital accruals ($NDWKA$from equation 5) is the non-discretionary non-working capital accruals($NDNWKA$).. The discretionary non-working capital accruals ($DNWKA$) is the difference between non-working capital accruals and $NDNWKA$.

Our cross-sectional approach automatically adjusts for the effects of changing industry-wide economic conditions which influence accruals independently of any earnings management. The common practice of underwriters pricing equity issues by comparing market prices and accounting variables of similar firms in setting the offer price suggests the importance of using an industry benchmark for measuring discretionary accruals.

Our timing convention is as follows. The issue fiscal year is year 0 with all other fiscal years coded relative to year 0. Thus, fiscal year -1 ends before the issue date of the SEO and fiscal year 0 includes the issue date. Fiscal year 0, therefore, includes both pre- and post-issue information.

2.3 Capital Expenditures

Cheng (1994) argues that some firms issue only because they feel their stock is overpriced, lacking the opportunity to find profitable capital expenditures for the SEO funds. He finds that firms that increase subsequent capital expenditures indeed perform no worse than comparable non-SEO firms. To determine if our earnings management effect is related or independent of his hypothesis, we therefore include a variable similar to his,

replacing his denominator (issue size) with total assets to maintain consistency with the deflator for all the other variables of the study:

$$\text{DCAPEXP}_{+1} \equiv \frac{(\text{CAPEXP}_0 + \text{CAPEXP}_1) - (\text{CAPEXP}_{-1} + \text{CAPEXP}_{-2})}{2\,\text{TA}_{-1}} \quad (7)$$

where CAPEXP are the firm's capital expenditures (Compustat item 128), and TA are the firm's total assets. Year 0 data is from the statement following the issue (which includes the SEO). Consequently, DCAPEXP_{+1} "peeks" at two numbers not available at the time of the seasoned offering.

2.4 Time-Series Characteristics of Accruals

Insert Table 2 *Time Series Profile of Accruals from year -3 to +3 relative to the fiscal year of the SEO*

Insert Figure 1 *Time Series of* $DWKA_{-1}$

The time series profiles of the four accrual series are documented in Table 2. We find the following patterns:

DWKA Panel A and Figure 1 show that the discretionary working capital accruals are large (with a mean of up to 5% of total assets in the offering year) and significantly different from zero in all years before the issue. Both average and median discretionary working capital accruals are positive and monotonically increasing in the years before the SEO and are monotonically decreasing in the years subsequent to the issue. In year +3, the mean $DWKA$ even turns negative and the median is no longer statistically significantly different from zero. Panel B presents year to year changes in accruals. Firms display discretionary working capital accrual increases each year before the SEO, and negative accrual changes each year thereafter. The post-SEO declines in year +2 and +3 are highly statistically significant.

The evidence suggests that the typical manager may indeed have accelerated accruals to inflate earnings in the years before the SEO. Interestingly, these accruals do not turn negative immediately after the SEO, suggesting that managers avoid immediate accrual reversals.[9]

NDWKA Panel A shows that non-discretionary working capital accrual means and medians display a pattern similar to that observed in discretionary working capital accruals, indicating a possible industry timing ability of SEO firms. Because non-discretionary working capital accruals are essentially a linear function of sales growth (with a highly statistically significant correlation in excess of 60%), this pattern suggests that firms timed their SEOs to coincide with high industry-adjusted sales. However, Panel B shows that, although a statistically significant decline is observed right after the SEO year, both positive and negative $NDWKA$ changes are observed in years before and after the SEO.

DNWKA/NDNWKA Both Panels A and B do not show a systematic time-series pattern for non-working capital accruals, either discretionary or non-discretionary, that is consistent with earnings management. The means and medians fluctuate in a non-monotonic pattern, with positive and negative changes present both before and after the issue. A possible explanation for the lack of a pattern for $DNWKA$ is that non-discretionary accruals are subject to less manipulation by managers (as suggested by Kreutzfeldt and Wallace (1986), and Guenther (1994)).

In sum, the time-series profile hints that overall earnings management occurred mostly through discretionary working capital accruals. A better test for earnings management, however, is whether the accruals are systematically related to future performance. We consider the predictability of accruals for future accounting and stock price

[9]Interestingly, the observed decline in stock return performance also does not occur immediately, but only after a few months. See Loughran and Ritter (1995a).

performance in sections 3 and 4.

Insert Table 3 *Quartile Cutoffs by $DWKA_{-1}$ and $NDNWKA_{-1}$*

In later tests, we analyze differences in stock return and operating performance between portfolios of SEO firms classified by the size of the pre-SEO discretionary accruals. We thus rank firms by the discretionary accruals and divide them into four quartile portfolios. Quartile 1, with the smallest discretionary accruals, is referred to as the *conservative* quartile, and quartile 4, with the largest discretionary accruals, is the *aggressive* quartile. Table 3 presents the cutoffs, means, and standard deviations for the four quartiles formed on the basis of the cross-sectional variation in $DWKA_{-1}$ and in $DNWKA_{-1}$. The difference between the aggressive and conservative quartiles indicates considerable variation in the earnings management measure. Mean discretionary working capital accruals is -14.8% of total assets in the conservative quartile, and +29.7% in the aggressive quartile. Similarly, mean discretionary non-working capital accruals is -14.3% of total assets in the conservative quartile and +9.7% in the aggressive quartile.

3 Predicting Post-SEO Accounting Performance

3.1 Discretionary Accrual Mean Reversion

Insert Table 4 *Accrual Mean Reversion*

Table 4 reports the time-series pattern of discretionary accruals by quartile. The hypothesis we examine, that investors are subsequently disappointed by firms with high pre-issue accruals, is consistent with the unsustainability of high accruals over the post-SEO time period in which we measure stock returns. The discretionary accruals of the aggressive quartile (4) SEOs decline steadily through time in both Panels A and B. The reversion resulted in negative mean accruals for discretionary working capital by year

+3, whereas the mean accruals become negative for discretionary non-working capital as early as year 0. The median statistics reveal a similar pattern of reversion. Although we have no good model of investor-expected accruals, the fact that earnings are less "padded" each subsequent year could represent a negative surprise to investors.

In contrast, the conservative quartile (1) firms—those with negative $DWKA_{-1}$ accruals—experienced an immediate turnaround for discretionary working capital accruals. The mean and median accruals are statistically significantly positive in year 0, with a subsequent decline thereafter. The discretionary non-working capital accruals exhibit a more gradual turnaround. There is, thus, a hint at a positive post-SEO "surprise." Note that by the fourth post-SEO year, the mean discretionary working accruals in the conservative quartile is higher than it was in the aggressive quartile.

3.2 Time-Series Characteristics of Accounting Performance

Insert Table 5 *Time Series Profile of Measures of Accounting Performance from year -3 to +3 relative to the fiscal year of the SEO*

Before examining the predictive power of $DWKA_{-1}$ on net income, Table 5 describes basic statistics for net income (earnings), deflated by previous year total assets.[10] Barber and Lyon (1994) recommend the use of an industry-benchmark and an adjustment for prior performance when comparing operating performance over time. This is particularly important because they show that operating performance in some industries declined significantly during our sample period, especially in the 1980s. Thus, we report net income levels and year-to-year changes of SEO firms relative to the industry medians in Table 5.

The general trend indicates pre-issue industry-relative earnings growth, a peak in the issue year, and a post-issue deterioration. All pre-issue net income figures are positive;

[10]Results from using earnings before interest and taxes are qualitatively similar to the bottomline net income results, and hence are not reported.

post-issue net income means are negative. Further confirmation is found in the mean and median industry-adjusted year-to-year changes in net income. All the mean and median changes are positive in the years prior to the issue and including the issue, and all changes are negative subsequently.[11] Furthermore, the cumulative change using year -1 as the base year, shows a significant increase three years prior to the issue and a significant decrease three years after the issue. In summary, SEO firms exhibit improving relative industry performance pre-SEO but fail to sustain the same high growth rate post-SEO as pre-SEO. A similar pre- and post-issue pattern for operating performance is reported by Hansen and Crutchley (1990), and Loughran and Ritter (1995b).[12]

It is noteworthy that pre-issue earnings growth corresponds to the pre-issue stock price run-up documented in Korajczyk, Lucas, and McDonald (1990). The evidence of high pre-SEO discretionary accruals reported earlier and highly significant positive correlation between discretionary accruals and net income in the pre-issue period suggest that the earnings growth could partly be induced by discretionary choice. Thus, the pre-issue stock price run-up may result if investors did not fully discount for the pre-SEO earnings growth which resulted from the high discretionary accruals. If so, the high pre-SEO net income growth would not be sustained consistent with the evidence provided here.

[11] One exception is the mean change between year 2 and 3. It is important to note that COMPUSTAT may have ceased coverage of firms due to poor performance, and hence the latter year figures may be upward biased. Our CRSP return calculations in the next section, however, are not subject to COMPUSTAT data loss, and thus do not suffer from this survival bias.

[12] The numbers in Table 5 are not directly comparable with those reported by Loughran and Ritter. The differences stem from the following: (1) we use bottomline net income (Compustat item 172), (2) we industry-adjust and consider year-to-year changes, and (3) our operating performance measure is deflated by prior year total assets. As suggested by Barber and Lyon (1994), operating margins in the issue year may dip if issue year total assets are used as the denominator because cash raised from the offering may not yet have a chance to be utilized fruitfully in the firm's productive activities and instead may be parked temporarily in low-margin short-term securities.

3.3 Pre-SEO Accruals and Post-SEO Net Income

Insert Table 6 *Predicting at-issue and post-issue industry-adjusted Net Income with pre-SEO Accruals*

Can earnings management (pre-SEO discretionary working capital accruals) predict at-issue and post-issue reported net income (earnings)? There are two ways in which accruals can predict future net income: they can either revert (if GAAP accounting adjustments are appropriate, then any revenues recognized in advance of cash receipts or expenses deferred after cash payments must result in net cash inflows into the firm in subsequent years), or firms with high accruals may later experience a deterioration in sales or decline in other real operating performance.[13] Thus, we predict that firms with aggressive pre-issue accruals behavior have a decline in subsequent operating performance. Consistent with the prediction, the evidence generally indicates a greater post-SEO earnings disappointment for aggressive firms.

Panel A of Table 6 presents Spearman rank order correlation between our accrual measures and subsequent (industry-adjusted) net income and net income changes. In favor of our hypothesis, both discretionary working and discretionary non-working capital accruals are negatively associated with future net income levels. Remarkably, discretionary working capital accruals ($DWKA_{-1}$but not $DNWKA_{-1}$) have statistically significant predictive power even three years post-SEO. Net income changes are negatively associated negatively with discretionary working and non-working capital accruals, with significance only for the $DWKA_{-1}$. Thus, aggressive users of pre-issue discretionary accruals perform worse and show greater deterioration than their peers after the issue.

For contrast, we report the correlations of non-discretionary accruals with subsequent industry-adjusted net income levels and changes. We have no prediction either for increases or decreases, and the observed correlation pattern is less clear. High non-

[13]Evidence not presented shows that subsequent lower cash flow operating performance occurs.

discretionary working capital accrual firms have subsequent higher net income levels (positive correlation with income levels) but lower income growths (negative correlation with net income changes) relative to the industry. Because firms with high non-discretionary working capital accruals also have high pre-issue sales growth, the observed pattern may have been induced by the mean reversion in sales growth after the issue. While high pre-issue sales growth firms have high future net income levels and so continue to outperform their industry peers,[14] the higher growth firms are less likely to sustain the growth rate post-issue. The correlations of non-discretionary non-working capital accruals with net income levels are less remarkable. With net income changes, however, the correlation is significantly positive, suggesting that high pre-issue sales growth backed by both sales and high fixed assets continues to be sustained post-issue.

Panel B examines the post-issue performance by quartiles sorted by discretionary accruals. In terms of means, the most aggressive working capital accrual quartile ($DWKA_{-1}$) turns in negative earnings in fiscal year +1 after the SEO, representing a reversal from the SEO year. The conservative quartile also deteriorates for 2 years after the SEO. However, conservative firms do not show a "reversal of fortune" right after the SEO, and they turn around (positively) by the post-SEO year +3. In terms of medians, the outstanding industry performance in the aggressive quartile is wiped out by the third post-SEO year (from 6.10 to 0.15), whereas over a third of the outstanding industry performance in the conservative quartile remains by the third post-SEO year (from 5.50 to 1.90). In addition, as early as year +1, the conservative quartile advantage over industry peers exceeds the advantage exhibited by the aggressive quartile over its peers. Looking at discretionary *non-working* capital accruals, we find no consistent mean pattern, and similar though weaker median patterns as for discretionary *working* capital accruals.

[14]Correlations between pre-issue sales growth and future net income are 37%, 16%, 9%, and 8% during years 0 to 3.

In sum, our evidence suggests possibly greater post-SEO earnings disappointment for more aggressive firms.[15] We move next to demonstrating the key findings of post-SEO stock return predictability with discretionary accruals.

4 Predicting Post-SEO Stock Returns with Pre-SEO Accruals

4.1 Return Computations

The key issue we examine is whether the discretionary accruals explain the observed post-SEO abnormal return performance. This requires an appropriate measure for expected long-run return, an issue that is debated in the asset pricing literature. We adopt an agnostic view, and consider three alternative measures: raw returns, returns net of the market, and returns net of the Fama and French (1994) three-factor model.[16] The abnormal return measure using the first two models is familiar, and so we describe only the abnormal return measure using the Fama-French factor model below.

Briefly, Fama and French (FF) suggest first running a regression of a firm's monthly excess return over the risk-free rate against three portfolios (market premium, equity size, book-to-market). We run this regression on monthly returns from -36 to -12 months before the SEO filing date to extract individual firm factor loadings, requiring a minimum of 12 available months. The expected return for each month from -11 to $+36$ is then computed, using the estimated coefficients from the factor regression and replacing the intercept with the risk-free rate. The abnormal return is the realized return

[15]Results are similar but stronger using $DWKA_0$ instead of $DWKA_{-1}$. However, because we cannot ascertain if market participants had access to all or some components of $DWKA_0$, we report only $DWKA_{-1}$ based results.

[16]There is some argument as to whether the Fama-French model has been demonstrated to explain systematic risk (covariance). However, it is known to explain average returns in the CRSP data set quite well. By including FF abnormal returns, we document that our effect is not simply a restatement of these other well-known anomalies. The same strategy has been followed by Loughran and Ritter (1995a).

minus the FF expected return.

Insert Table 7 *Fama-French Factor Coefficients by Quartiles*

Table 7 displays the Fama-French factor loadings of our four quartile $DWKA_{-1}$ and $DNWKA_{-1}$ portfolios. As can be seen, the two extreme $DWKA_{-1}$ quartiles are more sensitive to a firm-equity size portfolio, but overall coefficient differences across portfolios are minor. For the $DNWKA_{-1}$ extreme quartiles, differences in exposure are negligible.[17]

4.2 Post-SEO Returns by Pre-SEO Accrual Quartiles

Insert Figure 2 *Time-Series Graph of FF returns classified by $DWKA_{-1}$ Quartiles*

Figure 2 presents a simple time-series plot of the average cumulative time-series performance of four portfolios, classified by the discretionary working capital accrual ($DWKA_{-1}$) quartile and a fifth portfolio of 15 firms for which we were unable to calculate $DWKA_{-1}$. Each quartile portfolio contains about 200 firms. Month 0 is the month of the issue, or four months after the previous fiscal year ends, *whichever is later.* Cumulative returns for the quartile portfolios are computed as follows: We first aggregate abnormal Fama-French returns across months, and then cumulate these monthly average returns over time, to obtain the time series portfolio returns.[18]

[17]It is noteworthy that we lose about a fourth of our sample by using Fama-French returns (see Table 11 in the Appendix). However, by splicing in returns net of the market whenever Fama-French returns are not available, or by splicing in returns net of the three factors [implicitly assuming coefficients of 1], the sample size can be increased without affecting the qualitative results reported in subsequent sections.

[18]The standard abnormal performance index (API) method, for example in Copeland and Weston (1988), is misleading when some data is missing. For example, consider returns for two firms of −1 percent for six consecutive months. While the first firm has data for all months, the second has data beginning in the fourth month. The average cumulative API in month 3 is thus -3%. The average cumulative API in month 4 is the average of -4 percent and -1 percent, that is -2.5 percent. This would lead to the obviously incorrect conclusion that the marginal return in month -4 was a positive 0.5 percent.

The figure shows that the conservative quartile portfolio of managers underperformed post-SEO only marginally (-7%), whereas the aggressive quartile of managers portfolio underperformed dramatically (-50%). Unfortunately, to assess statistical significance, one cannot compute cross-sectional standard errors, because individual multi-year firm returns overlap, and are thus jointly exposed to some contemporaneous industry shocks. However, one can compute a mean and standard deviation across the time-series realizations of each quartile's portfolio.[19] The monthly mean (standard deviation) return on the four quartile portfolios are -0.165% (1.2%), -0.459% (0.9%), -0.582% (1.234%), and -1.346 (1.346%). Thus, the T-statistics against the null-hypothesis that multi-year excess returns are zero are -0.96, -3.57, -3.30, and -7.00, allowing us to conclude that conservative managers did not experience significantly negative post-SEO performance. The more aggressively managers manage accruals, the more poorly their firms subsequently perform. Thus, it appears that the overall poor post-SEO performance can at least partially be explained by the unusually frequent pre-SEO earnings management by SEO firms.

Insert Table 8 *Time-Series Table classified by* $DWKA_{-1}$ *and* $DNWKA_{-1}$ *Quartiles*

Table 8 presents the cumulative performance of the two extreme quartile portfolios (by $DWKA_{-1}$ and $DNWKA_{-1}$ and different equilibrium return methods), analogous to Figure 2. Panel A shows that the return differential between the conservative $DWKA_{-1}$ quartile 1 (low accruals) portfolio and the aggressive $DWKA_{-1}$ quartile 4 (high accruals) portfolio is 30% to 40% by any measure. In contrast, panel B shows that there is very little difference between the high and low-quartile portfolios. Indeed, using Fama-French abnormal returns, we find that the quartile 1 portfolio performed more poorly than the quartile 4 portfolio, contrary to our hypothesis. The intermediate

[19]This assumes that there is no cross-sectional predictability across time. In other words, the return realization of stock X in month t does not help predicting the stock return realization of stock Y in months $t+1$, $t+2$, etc..

quartiles, however, show that quartile 2 was the outstanding performer and did better than quartiles 3 and 4—in line with our hypothesis. In sum, our partitioned univariate evidence suggests that by choosing firms with negative or low discretionary working capital accruals ($DWKA_{-1}$), investors could have discriminated against those SEOs that underperformed their non-SEO peers. As to discretionary non-working capital accruals ($DNWKA_{-1}$), the evidence is mixed: by itself, it may or may not have allowed investors to pick the "better" SEOs.

4.3 Regressions of Post-SEO Returns on Accruals

Insert Table 9 *Predicting Post-SEO Returns with Pre-SEO Accruals*

Table 9 displays the results from OLS regressions of post-SEO firm stock price performance on pre-issue accounting accruals.[20] The dependent variable is the continuously compounded abnormal log stock return for the SEO sample, cumulated for four years from the SEO issue date or 4 months after the previous fiscal year, whichever comes later. We do not report, but include a set of control variables to demonstrate that our effect is new. Specifically, Ritter (1991) and Loughran and Ritter (1995a) describe how different industries produce different post-SEO performance. Consequently we include a complete set of industry dummies, as outlined in Table 1. Intercept dummy variables for the individuals years 1978 through 1989 are included to allow for macro effects such as business cycle trends affecting returns, and to capture some of the contemporaneous cross-sectional correlation between returns that transcends our four-year cumulative return computations.[21] Log equity-size and log book-market variables control for firm-

[20]For the regressions, to avoid influential eccentric observations, we winsorized accruals at the 1% and 99% levels.

[21]The timing of returns of different stocks overlap across firms. (We do not have duplicate returns.) After taking into account industry, year, market value, book to market value factors, and having subtracted market and Fama-French factor movements from the returns themselves, the residual cross covariances are likely to be small. (Indeed, any other systematic factors would be of great interest to asset pricing theory.) To the extent that abnormal stock returns still comove together, there would

characteristics in our regressions. We report only the coefficient estimates and statistics associated with the pre-SEO discretionary working capital accruals and Cheng's capital expenditure variable.

Our regression results indicate that both discretionary working capital accruals and discretionary non-working capital accruals are highly statistically significant, unlike non-discretionary accruals, which are insignificant. The coefficient (t-statistic) on $DWKA_{-1}$ is about -0.45 (-2 to -3); the coefficient (t-statistic) on $DNWKA_{-1}$ is about -0.65 (-2 to -3). This implies that aggressive firms performed significantly worse. To judge the economic significance of our results, note that a one-standard-deviation higher $DWKA_{-1}$ (30%) predicts an approximately 13.5% lower post-SEO cumulative return, and a one-standard-deviation higher $DNWKA_{-1}$ (25%) predicts an approximately 16.3% lower post-SEO cumulative return. The coefficients on non-discretionary accruals are insignificant, giving further credence to the earnings management hypothesis, intuitively implying that our regressions do not simply measure a size or residual return correlation effect.

Insert Table 10 *Predicting Post-SEO Returns with Pre-SEO Accruals By Firm Size*

Table 10 presents the results of a similar regression, but performed on two samples classified as large or small based on market capitalization. If the earnings management hypothesis holds, we would expect to see the predictable performance differences to be more pronounced in the regression for small firms than in regression for large firms regressions, because investors can more easily take advantage of and eliminate the return anomaly for large than small firms. We indeed find stronger results in the small firm regressions. Although significant in both small and large firm regressions, *discretionary* accruals (both working capital and non-working capital) are more pronounced predictors

be some residual correlation. This does not bias coefficient estimates, but could bias coefficient standard errors—but only if the induced non-zero off-diagonal covariances correlate with our measure of discretionary working capital accruals. Thus, we ignore estimation of cross-firm residual covariances.

of future returns in the small firm regressions. (Significant results obtain only in the raw and market-adjusted return regressions. Sample size loss induces insignificance in the Fama-French regressions.) *Non-discretionary* accruals (both working capital and non-working capital), hypothesized to have little predictive power, are highly insignificant for small firms. Surprisingly, non-discretionary non-working capital accruals exhibit significance only among large firms, suggesting a possible induced relation from the correlation of returns with pre-issue sales growth. Finally, Cheng's capital expenditure measure is significant only among small firms. The predicted positive relation is not observed in large firms, again confirming that pricing anomalies persist in situations only among firms where investors cannot easily arbitrage away abnormal profit opportunities.[22]

In sum, we have found evidence that is consistent with what one might expect if managers manipulated a component of accruals (discretionary accruals), and that only this managed component of earnings (explaining "transitory" increases) predicts subsequent poor performance. These results are all the more remarkable because the discretionary accrual measure is based on an imperfect measure of earnings management obtained from information available 4-14 months before the SEO, and because they are stronger where investors can least arbitrage away abnormal profits.

[22]A capital expenditure variable that leads by an additional year (i.e. "peeking" not only at the financial statements following the SEO and the subsequent year, but also a further third year post-SEO) has high significance even in the overall regressions. However, due to lack of data availability, this variable also significantly reduces the number of firms in our sample. Nevertheless, because we use Cheng's measure primarily as a control, we report that our accrual variables are similarly significant even in a regression including the lead Cheng variable. One possible interpretation of our results for Cheng's hypothesis is that our discretionary accrual variables are superior proxies for the exante likelihood that cash raised with the offering will be utilized in productive investments. One support for this interpretation is that the discretionary accruals are statistically significantly negatively correlated with post-SEO capital expenditures.

5 Summary and Conclusion

This paper has examined whether pre-SEO earnings management, measured by discretionary accruals, can explain the long-term post-issue stock return underperformance of SEOs documented in Loughran and Ritter (1995a). We find that discretionary accounting accruals are high on average before the issue and declined post-issue. Pre-issue discretionary accruals, unlike non-discretionary accruals, are negatively correlated with post-issue industry-adjusted net income levels. Most importantly, we find that [1] discretionary working capital accruals are good predictors of the post-SEO stock return underperformance; [2] both discretionary working capital and discretionary non-working capital accruals can reliably predict post-SEO underperformance in a multiple regression; and [3] non-discretionary "industry-standard" accruals fail to reliably predict post-SEO stock return underperformance. In addition, our results are not due either to the Fama and French effect, or the capital expenditure effect documented in seasoned equity offerings by Cheng (1994).

Our evidence is consistent with the hypothesis that investors behave as if they naively extrapolate pre-issue earnings performance and ignore information contained in discretionary accruals to predict future stock price performance. In this interpretation, high discretionary accounting accruals lead to initial overoptimism of investors, and subsequent revelation about the appropriateness of the accruals causes a subsequent downward correction in stock prices. Our study, therefore, suggests that investors may want to use information contained in the pre-issue accounting accruals to discriminate amongst issuers and avoid the previously observed systematic over-optimism about issuers at the time of the offering.

These results are analogous to recent findings for initial public offering (IPO) firms. Jain and Kini (1995) reported deteriorating post-issue operating performance for IPOs. Mikkelson and Shah (1994) demonstrated that the unusual pre-IPO operating perfor-

mance could not be sustained post-issue, and that the decline in operating performance is positively related to the post-issue underperformance in the stock market. Teoh, Wong, and Rao (1994a, b) examined accrual management at the time of the IPO. In the absence of readily available pre-IPO data, they relied on accrual measures of the IPO issue year (which includes both pre- and post-IPO information). They find that a trading strategy of a short position in IPO firms in the highest quartile of discretionary accruals and a long position in IPOs in the lowest quartile of discretionary accruals produces mean (median) excess return of 102% (83.5%) in the 36-month period beginning after the first fiscal year end of the IPO. Because SEOs are already followed by analysts, offer more public and audited information, have more market capitalization, are easier to short, and hence more difficult to manipulate, our SEO results, though smaller in magnitude, pose an even stronger challenge to efficient markets theory.

References

Barber, Brad, and John Lyon, 1994, Detecting Abnormal Operating Performance: The Empirical Power and Specification of Test-Statistics, Working Paper (University of California-Davis).

Cheng, Li-Lan, 1995, Equity Issue Underperformance and the Timing of Security Issues, Working Paper (Massachusetts Institute of Technology).

Dechow, Patricia M., Richard G. Sloan and Amy P. Sweeney, 1995, Detecting Earnings Management, Working Paper (Accounting Review).70-2193-225

DeFond, Mark L., and James Jiambalvo, 1994, Debt Covenant Violation and Manipulation of Accruals, Journal of Accounting and Economics 18-2, 145–176.

Fama, Eugene F., and Kenneth R. French, 1994, Industry Costs of Equity, Working Paper (University of Chicago, #396).

Guenther, David A., 1994, Measuring Earnings Management in Response to Corporate Tax Rate Changes: Evidence from the 1986 Tax Reform Act, Accounting Review 69, 230-243.

Hansen, Robert, and Claire Crutchley, 1990, Corporate Earnings and Financing: An Empirical Analysis, Journal of Business 63, 349–371.

Jain, Bharat A., and Omesh Kini, 1994, The Post-issue operating performance of IPO firms, The Journal of Finance 49-2, 1699–1726.

Jones, Jennifer, 1991, Earnings Management during Import Relief Investigation, Journal of Accounting Research 29-2, 193-228.

Korajczyk, Robert, Deborah J. Lucas, and Robert L. McDonald, 1990, Understanding Stock Price Behavior Around the Time of Equity Issues, Asymmetric Information , Corporate Finance, and Investment, edited by R. Hubbard, University of Chicago Press, Chicago, ILL..

Kreutzfeldt, R., and Wanda Wallace, 1986, Error Characteristics in Audit Populations: Their Profile and Relationship to Environmental Factors, Auditing: A Journal of Practice and Theory 6, 20–43.

Lakonishok, Josef, Andrei Shleifer, and Robert Vishny, 1994, Contrarian Investment, Extrapolation, and Risk, Journal of Finance 49-5, 1541–1578.

Loughran, Tim, and Ritter, Jay R., 1995a, The New Issues Puzzle, Journal of Finance 50–1, 23-51.

Loughran, Tim, and Ritter, Jay R., 1995b, The Operating Performance of Firms Conducting Seasoned Equity Offerings, Working Paper (University of Iowa and University of Illinois/Urbana-Champaign).

Mikkelson, Wayne H., and Ken Shah, 1994, Performance of Companies Around Initial Public Offerings, Working Paper (University of Oregon).

Perry, Susan E., and Thomas H. Williams, 1994, Earnings Management Preceding Management Buyout Offers, Journal of Accounting and Economics 18, 157–179.

Ritter, Jay, 1991, The Long-Run Performance of Initial Public Offerings, Journal of Finance 66, 3–27.

Teoh, Siew Hong, T.J. Wong, and Gita Rao, 1994a, Incentive and Opportunities for Earnings Management in Initial Public Offerings, Working Paper (University of Michigan).

Teoh, Siew Hong, T.J. Wong, and Gita Rao, 1994b, Earnings Management and the Long-term Market Performance of Initial Public Offerings, Working Paper (University of Michigan).

A Tables and Figures

Table 1: Characteristics of Sample of Firms Conducting Seasoned Equity Offerings from period 1976 to 1989

Panel A: SIC distribution

Industry	Codes	Freq	%
Oil and Gas	13	62	4.9
Food Products	20	26	2.1
Paper and Paper Products	24,25,26,27	57	4.5
Chemical Products	28	75	5.9
Manufacturing	30-34	97	7.7
Computer Equipment and Services	35,73	245	19.4
Electronic Equipment	36	141	11.1
Transportation	37,39,40-42,44,45	98	7.7
Scientific Instruments	38	106	8.4
Communications	48	30	2.4
Durable Goods	50	33	2.6
Retail	53,54,56,57,59	59	4.7
Eating and Drinking Establishments	58	39	3.1
Financial Services	61,62,64,65	35	2.8
Entertainment services	70,78,79	33	2.6
Health	80	34	2.7
All Others	10,15,16,22,23,51,87,99	95	7.5

Panel B: Time distribution

Year	Freq	%	Cum Freq	%
1976	2	0.2	2	0.2
1977	35	2.8	37	2.9
1978	51	4.0	88	7.0
1979	48	3.8	136	10.8
1980	144	11.4	280	22.1
1981	100	7.9	380	30.0
1982	131	10.4	511	40.4
1983	276	21.8	787	62.2
1984	53	4.2	840	66.4
1985	101	8.0	941	74.4
1986	145	11.5	1,086	85.8
1987	101	8.0	1,187	93.8
1988	44	3.5	1,231	97.3
1989	34	2.7	1,265	100.0

Panel C: Size Characteristics

	Total Assets	Market Value	Book Value	Sales Growth
mean	625.2	284.2	207.2	0.537
median	40.4	51.8	18.0	0.283
std.dev.	2,653.9	971.6	884.8	1.107

Note: Total assets are measured at end of fiscal year -1; market values are the number of shares outstanding*stock price at end of fiscal year -1; Book value of equity is measured at end of fiscal year -1; and sales growth is the change in sales in fiscal year -1 deflated by total assets in year -2.

Table 2: Time Series Profile of Accruals from year -3 to +3 relative to the fiscal year of the SEO

Panel A: Accruals (Levels)

Discretionary Working Capital Accruals ($DWKA$)							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
mean	2.21**	3.32**	5.37**	5.59**	4.18**	1.59	-0.24
median	0.90**	1.30**	2.05**	2.50**	2.20**	0.70**	0.10
StdDev	18.32	21.79	31.20	40.36	18.53	27.97	14.56
N	863	1,020	1,248	1,234	1,183	1,122	1,064
Discretionary Non-Working Capital Accruals ($DNWKA$)							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
mean	-1.31	-2.31**	-1.30*	-2.65**	-2.39**	-3.05**	-2.02**
median	-1.10**	-1.10**	-1.20**	-1.45**	-1.40**	-1.40**	-1.75**
StdDev	31.40	11.97	19.34	20.69	13.61	29.39	23.97
N	857	1,012	1,241	1,218	1,175	1,103	1,054
Non-discretionary working capital accruals ($NDWKA$)							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
mean	2.59**	3.80**	4.95**	5.98**	2.24**	1.76**	2.06**
median	0.90**	1.40**	1.50**	2.20**	1.20**	0.70**	0.80**
StdDev	8.59	16.03	17.32	35.76	9.72	7.10	7.88
N	863	1,020	1,248	1,234	1,183	1,122	1,064
Non-discretionary non-working capital accruals ($NDNWKA$)							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
mean	-4.49**	-5.15**	-6.80**	-6.32**	-5.54**	-4.52**	-5.23**
median	-3.70**	-4.20**	-4.70**	-4.60**	-4.30**	-4.20**	-4.10**
StdDev	7.89	10.78	19.39	16.08	6.87	12.75	10.31
N	857	1,012	1,241	1,218	1,175	1,103	1,054

Note: (Continues on Next Page.)

Table 2: Time Series Profile of Accruals from year -3 to +3 relative to the fiscal year of the SEO — continued

Panel B: Accruals (Changes)

Discretionary Working Capital Accruals ($DWKA$)						
Fiscal Year	-2	-1	0	+1	+2	+3
mean	0.89	0.62	0.30	-1.37	-2.62**	-1.98*
median	0.25	0.40	0.70	-0.45	-1.20**	-1.10**
StdDev	25.57	34.70	47.87	49.84	33.83	31.30
N	862	1,017	1,228	1,176	1,111	1,057
Discretionary Non-Working Capital Accruals ($DNWKA$)						
Fiscal Year	-2	-1	0	+1	+2	+3
mean	-0.80	1.36*	-1.39	0.02	-0.71	0.88
median	-0.20	0.20	0.10	-0.30	-0.20	0.00
StdDev	31.85	22.31	26.79	22.35	32.51	36.60
N	853	1,005	1,206	1,163	1,097	1,040
Non-discretionary working capital accruals ($NDWKA$)						
Fiscal Year	-2	-1	0	+1	+2	+3
mean	-0.08	-0.30	1.00	-3.85**	-0.50	0.14
median	0.15	-0.30*	0.20*	-0.60**	-0.50**	0.00
StdDev	9.78	20.32	36.92	42.33	11.90	9.14
N	862	1,017	1,228	1,176	1,111	1,057
Non-discretionary non-working capital accruals ($NDNWKA$)						
Fiscal Year	-2	-1	0	+1	+2	+3
mean	-0.47	-0.96	0.37	0.70	1.07**	-0.51
median	-0.20	-0.40*	-0.40*	0.30**	0.00*	-0.30
StdDev	9.81	22.56	24.23	16.43	13.84	15.37
N	853	1,005	1,206	1,163	1,097	1,040

Note: All variables are normalized to be a fraction of total assets of the pre-SEO fiscal year and reported in percent. Two (one) stars denote significance at the 1% (5%) level, using student-T tests for the mean and Wilcoxon p-values for the median.

Figure 1: Time Series Graph of Discretionary Working Capital Accruals

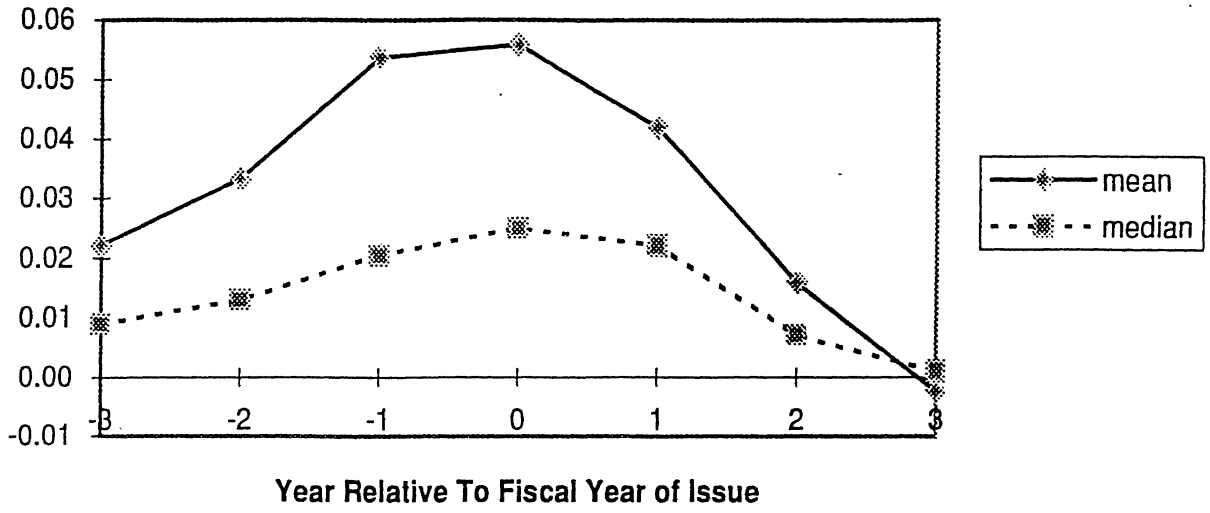


Table 3: Quartile Cutoffs

Panel A: $DWKA_{-1}$

	Set	Mean	Std.Dev.	N
Quartile 1	$-\infty < DWKA_{-1} \leq -3.3$	-14.8	13.5	310
Quartile 2	$-3.3 < DWKA_{-1} \leq 2.0$	-0.7	1.5	312
Quartile 3	$2.0 < DWKA_{-1} \leq 10.5$	5.8	2.4	313
Quartile 4	$10.5 < DWKA_{-1} < \infty$	29.7	22.7	314

Panel B: $DNWKA_{-1}$

	Set	Mean	Std.Dev.	N
Quartile 1	$-\infty < DNWKA_{-1} \leq -4.8$	-14.3	14.1	309
Quartile 2	$-4.8 < DNWKA_{-1} \leq -1.1$	-2.7	1.1	310
Quartile 3	$-1.1 < DNWKA_{-1} \leq 1.7$	0.1	0.8	312
Quartile 4	$1.7 < DNWKA_{-1} < \infty$	9.7	14.5	311

Note: This table presents the cutoffs and mean/standard deviations of the four quartile portfolios, formed by sorting on $DWKA_{-1}$ and on $DNWKA_{-1}$. $DWKA_{-1}$ are discretionary working capital accruals, $DNWKA_{-1}$ are discretionary non-working capital accruals. Quartile 1 is the most conservative portfolio with the lowest discretionary accruals, whereas quartile 4 is the most aggressive portfolio with the highest discretionary accruals.

Table 4: Accrual Mean Reversion

Panel A: $DWKA$ Accruals by $DWKA_{-1}$

	Quartile 1				Quartile 4			
Year	Mean	Median	Std.Dev.	N	Mean	Median	Std.Dev.	N
-1	-14.69**	-9.35**	13.52	314	29.81**	21.00**	22.74	312
0	4.17**	2.20**	21.44	311	11.46**	8.80**	23.44	303
+1	3.18**	1.20**	14.36	295	5.63**	5.20**	17.37	295
+2	0.63	0.70	13.95	273	2.30*	0.90*	17.73	280
+3	0.44	-0.30**	12.54	259	-0.85	0.45	15.16	270

Panel B: $DNWKA$ Accruals by $DNWKA_{-1}$

	Quartile 1				Quartile 4			
Year	Mean	Median	Std.Dev.	N	Mean	Median	Std.Dev.	N
-1	-14.13**	-9.30**	14.04	313	9.89**	5.15**	14.46	300
0	-5.93**	-4.60**	16.67	305	-0.67	0.00	16.64	285
+1	-3.70**	-2.80**	9.77	297	-0.34**	-0.50	12.97	264
+2	-3.87**	-2.50**	11.37	283	-2.42**	-0.70**	12.78	248
+3	-3.27**	-2.50**	12.66	267	-3.00**	-1.80**	11.30	239

Note: This table describes the time-series profile of discretionary accruals by quartile. $DWKA_{-1}$ are discretionary working capital accruals, $DNWKA_{-1}$ are discretionary non-working capital accruals. Quartile 1 is the most conservative portfolio with the lowest discretionary accruals, whereas quartile 4 is the most aggressive portfolio with the highest discretionary accruals. Year 0 is the fiscal year including the SEO, and consequently includes information from year 0 that may be unavailable to SEO purchasers. Two (one) stars denote significance at the 1% (5%) level, using student-T tests for the mean and Wilcoxon p-values for the median.

Table 5: Time Series Profile of Industry-adjusted Net Income from year -3 to +3 relative to the fiscal year of the SEO

Net Income (NI)							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
Mean	2.06	0.15	2.29**	2.42**	-0.57	-2.65**	-1.08
Median	1.40**	2.40**	3.70	5.10**	2.40**	1.80**	1.40*
Std.Dev.	36.12	30.63	32.41	28.06	22.88	29.10	26.37
N	867	1,026	1,248	1,230	1,183	1,118	1,056
Year-to-Year Change in Net Income							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
Mean	.	-0.62	2.13**	0.20	-3.53**	-2.24**	1.14
Median	.	0.50*	0.70**	0.50**	-1.80**	-0.80**	-0.50**
Std.Dev.	.	37.64	27.25	28.83	20.60	28.77	31.98
N	.	867	1,026	1,230	1,182	1,117	1,054
Cumulative Change in Net Income							
Fiscal Year	-3	-2	-1	0	+1	+2	+3
Mean	.	-0.82	-2.13**	0.20	-3.06**	-5.28**	-4.01**
Median	.	-1.00**	-0.70**	0.50**	-1.30**	-2.50**	-3.20**
Std.Dev.	.	36.28	27.25	28.83	26.59	36.22	39.74
N	.	867	1,026	1,230	1,183	1,118	1,056

Note: This table describes the time-series profile of industry-adjusted net income (deflated by prior year assets). Year 0 is the fiscal year including the SEO, and consequently includes information from year 0 that may be unavailable to SEO purchasers. Cumulative changes in net income are calculated using year -1 as the base year. Two (one) stars denote significance at the 1% (5%) level, using student-T tests for the mean and Wilcoxon p-values for the median.

Table 6: Predicting at-issue and post-issue industry-adjusted Net Income with pre-SEO Accruals

Panel A: Spearman Correlations With Accruals

	NI_0	NI_1	NI_2	NI_3	$\Delta_{-1,0}NI_0$	$\Delta_{-1,1}NI_1$	$\Delta_{-1,2}NI_2$	$\Delta_{-1,3}NI_3$
$DWKA_{-1}$	5.27	-3.14	-5.42	-8.18**	-15.03**	-20.08**	-19.61**	-20.02**
$DNWKA_{-1}$	-6.83*	-4.75	-3.21	-4.64	-3.02	-3.09	-0.32	-2.13
$NDWKA_{-1}$	21.32**	11.30**	3.88	4.58	-11.07**	-18.28**	-21.43**	-21.58**
$NDNWKA_{-1}$	-2.16	-1.07	-1.72	0.01	8.19**	7.53*	5.40	7.18*

Panel B: Net Income by $DWKA_{-1}$ and $DNWKA_{-1}$ Accrual Quartiles

	By $DWKA_{-1}$ Quartile									
	Quartile 1					Quartile 4				
Statistic	$DWKA_{-1}$	NI_0	NI_1	NI_2	NI_3	$DWKA_{-1}$	NI_0	NI_1	NI_2	NI_3
Mean	-17.07	-0.84	-1.59	-5.16	1.13	33.40	5.26	-3.10	-4.31	-4.58
Median	-9.35	5.50	2.90	2.20	1.90	21.00	6.10	1.80	0.25	0.15
Std.Dev.	26.34	36.14	27.92	44.10	43.71	43.19	22.94	29.41	22.03	19.53
N	314	311	296	276	260	312	304	295	282	272
	By $DNWKA_{-1}$ Quartile									
	Quartile 1					Quartile 4				
Statistic	$DNWKA_{-1}$	NI_0	NI_1	NI_2	NI_3	$DNWKA_{-1}$	NI_0	NI_1	NI_2	NI_3
Mean	-14.49	4.46	1.26	-3.33	-0.86	12.07	3.66	1.40	-0.90	1.14
Median	-9.40	6.70	3.35	2.50	2.10	5.10	4.40	2.30	1.80	0.80
Std.Dev.	15.14	26.99	18.09	40.69	15.73	29.09	21.63	13.35	14.86	43.03
N	318	314	304	292	276	303	296	279	262	247

Note: Panel A lists the Spearman rank correlation between accrual measures in the fiscal year prior to the SEO with accounting performance in the fiscal year of the SEO and thereafter. Panel B lists descriptive statistics by two extreme quartiles formed on discretionary accruals. NI Quartile 1 is the most conservative portfolio with the lowest discretionary accruals, whereas quartile 4 is the most aggressive portfolio with the highest discretionary accruals. NI is the industry-adjusted net income (normalized by prior year assets), $DWKA_{-1}$ are discretionary working capital accruals, $DNWKA_{-1}$ are discretionary non-working capital accruals, $NDWKA_{-1}$ are non-discretionary working capital accruals, $NDNWKA_{-1}$ are non-discretionary non-working capital accruals. Two (one) stars denote significance at the 1% (5%) level.

Table 7: Fama-French Factor Coefficients by Quartiles

Panel A: $DWKA_{-1}$ Quartiles

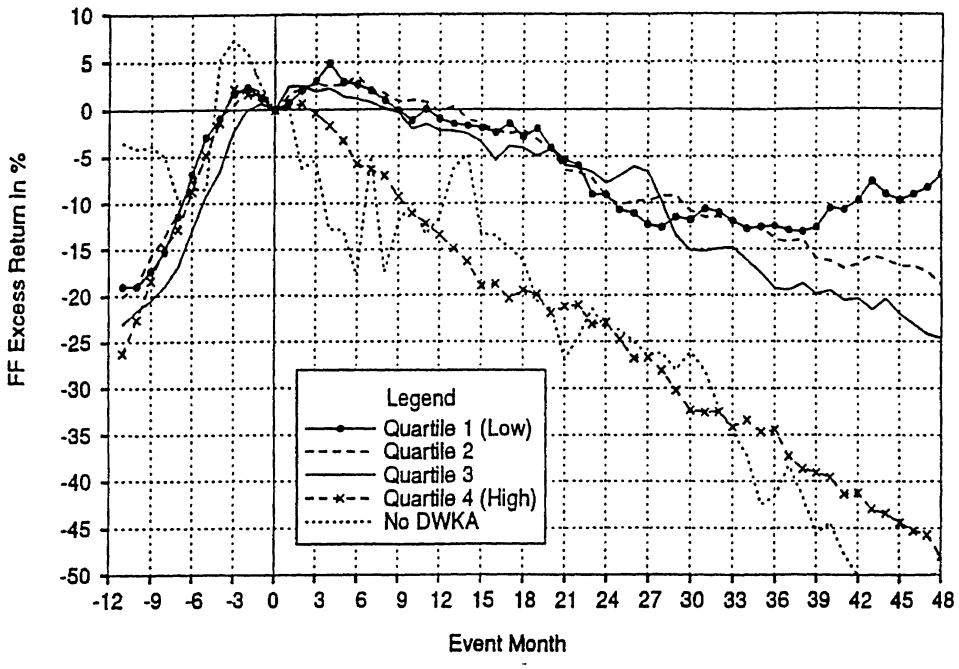
Quartile	N	Market Premium	Firm Equity-Size	Book-to-Market
Quartile 1	208	1.10 (1.27)	1.61 (2.36)	-0.07 (1.90)
Quartile 2	253	1.10 (0.92)	1.30 (2.23)	0.42 (1.49)
Quartile 3	241	1.14 (1.24)	1.35 (1.85)	0.16 (2.34)
Quartile 4	180	1.16 (1.22)	1.58 (2.44)	0.27 (2.29)
No $DWKA_{-1}$	14	1.53 (1.84)	0.55 (3.68)	-0.28 (2.28)

Panel B: $DNWKA_{-1}$ Quartiles

Quartile	N	Market Premium	Firm Equity-Size	Book-to-Market
Quartile 1	208	1.15 (1.31)	1.39 (2.24)	0.20 (2.11)
Quartile 2	226	0.96 (1.05)	1.53 (2.62)	0.03 (1.82)
Quartile 3	234	1.22 (1.03)	1.42 (2.01)	0.20 (1.76)
Quartile 4	208	1.16 (1.24)	1.39 (1.91)	0.38 (2.37)
No $DNWKA_{-1}$	20	1.42 (1.60)	1.22 (3.35)	0.02 (2.07)

Note: The table presents average factor loadings (exposures) of the quartile portfolios to the Fama-French factor portfolios. Quartile 1 is the most conservative portfolio with the lowest discretionary accruals, whereas quartile 4 is the most aggressive portfolio with the highest discretionary accruals. $DWKA_{-1}$ are discretionary working capital accruals, $DNWKA_{-1}$ are discretionary non-working capital accruals. Number in parentheses are standard deviations.

Figure 2: Time-Series Graph of FF returns classified by $DWKA_{-1}$ Quartiles



Note: $DWKA_{-1}$ is discretionary working capital accruals in the fiscal year prior to the seasoned equity offering. Firms are classified into four quartiles (1 being conservative, 4 being aggressive managers), and cumulative abnormal returns are plotted for each quartile. Returns are measured using the Fama-French adjustments. Time is measured from the date of the seasoned equity offering, or four months after the prior fiscal year end (where $DWKA_{-1}$ was reported), whichever comes later.

Table 8: Cumulative Returns

Panel A: By $DWKA_{-1}$

	Raw		Mkt		FF	
Month	Q1	Q4	Q1	Q4	Q1	Q4
-11	-44.673	-44.203	-32.982	-32.041	-19.014	-26.260
-6	-26.484	-24.955	-17.620	-15.707	-6.931	-8.734
0	0.000	0.000	0.000	0.000	0.000	0.000
6	8.161	6.661	2.054	0.078	2.670	-5.812
12	14.247	9.771	0.746	-4.495	-0.925	-13.433
18	11.799	2.354	-6.588	-14.998	-2.867	-19.454
24	18.476	8.862	-10.164	-18.786	-9.104	-22.914
30	29.447	11.089	-10.663	-24.107	-11.865	-32.311
36	39.925	18.428	-12.136	-26.202	-12.508	-34.463
42	44.249	12.629	-15.550	-34.302	-9.708	-41.182
48	59.934	13.998	-13.964	-39.659	-6.936	-48.038
60	83.153	25.570	-14.392	-42.476	-5.554	-49.225

Panel B: By $DNWKA_{-1}$

	Raw		Mkt		FF			
Month	Q1	Q4	Q1	Q4	Q1	Q2	Q3	Q4
-11	-43.521	-43.986	-31.373	-31.034	-21.297	-24.520	-21.897	-19.912
-6	-26.965	-26.750	-17.642	-16.821	-9.328	-12.527	-7.184	-8.364
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	9.874	4.341	3.553	-0.873	0.786	4.385	-2.042	0.297
12	17.278	8.947	3.133	-3.060	-1.548	0.815	-9.904	-2.954
18	13.414	7.136	-4.719	-9.889	-7.915	-2.220	-10.817	-5.605
24	22.046	10.749	-7.583	-16.170	-12.427	-5.641	-15.201	-14.134
30	30.808	15.161	-9.900	-20.242	-19.270	-11.267	-21.077	-17.382
36	41.085	23.710	-11.154	-22.934	-25.206	-14.248	-21.968	-18.043
42	37.811	24.032	-19.063	-27.988	-31.099	-10.921	-24.552	-20.825
48	41.052	32.880	-23.984	-29.594	-36.316	-13.210	-29.300	-21.141
60	53.323	41.873	-28.112	-33.949	-40.620	-3.472	-28.917	-26.760

Note: Returns are first adjusted, firm by firm, then averaged across month by quartile portfolio, and then cumulated over time. Cumulative returns are normalized so that the event-month cumulative return is zero. The tables show that firms increased dramatically in value before the SEO, and deteriorated in market-adjusted and Fama-French adjusted terms after the SEO.

Table 9: Predicting Post-SEO Returns with Pre-SEO Accruals

Independent Variable	Post-SEO Return Adjustment		
	Raw_{0-47}	Mkt_{0-47}	FF_{0-47}
$DWKA_{-1}$	-0.436	-0.448	-0.489
T/White-T	-3.86/-2.95	-3.96/-3.01	-2.22/-2.02
$NDWKA_{-1}$	-0.153	-0.160	0.046
T/White-T	-1.33/-1.25	-1.38/-1.26	0.24/0.34
$DNWKA_{-1}$	-0.648	-0.641	-0.766
T/White-T	-3.00/-3.23	-2.96/-3.17	-1.86/-2.15
$NDNWKA_{-1}$	-0.170	-0.154	0.014
T/White-T	-0.67/-0.58	-0.60/-0.52	0.03/0.03
DCAPEXP_{+1}	0.084	0.082	0.069
T/White-T	1.90/1.61	1.83/1.56	0.96/0.76
Industry Intercepts	Full Set - Not Reported		
Year Intercepts	Full Set - Not Reported		
Book/Market, MarketValue	Not Reported		
R^2	16.9%	14.8%	16.0%
$\overline{R}^2$	13.7%	11.5%	11.4%
N	1,035	1,035	766

Note: The dependent variable is a four-year aftermarket log return, beginning at the SEO issuing date, or four months after the previous year fiscal end, whichever comes later. Monthly returns for each firm are first adjusted (i.e., by subtracting the market for the Mkt series, and appropriately security-weighted Fama-French factors for the **FF** series), then cumulated for four years, and finally logged. The independent accrual variables are computed from regressions (described in section 1.2.2) and measured in the fiscal year *preceding* the SEO (subscript -1). $DWKA_{-1}$ ($NDWKA_{-1}$) are *discretionary (non-discretionary) working capital accruals*, $DNWKA_{-1}$ ($NDNWKA_{-1}$) are *discretionary (non-discretionary) non-working capital accruals.* DCAPEXP_{+1} is the sum of capital expenditures in the (post-SEO) event and following fiscal year minus the sum of capital expenditures in the two years prior to the event, divided by twice total assets in the year prior to the seasoned offering. Thus, $DCAPEXP_{+1}$ "peeks" at two financial statements not available to accruals/SEO-purchasers. (To adjust for some cross-sectional contemporaneous correlations between securities [components of the cumulated returns], we include but do not report a complete set of industry and year dummies [two year dummies for 1983], as well as firms' log book-market value and log equity size.)
Robustness: Results do not change when three-year windows instead of four-year windows are used. The decreased significance of $DWKA_{-1}$ in the third regression is known to be due to the loss of observations, not due to the FF adjustment.

Table 10: **Predicting Post-SEO Returns with Pre-SEO Accruals:**
Small Firms Vs. Large Firms

Firms:	Large	Small	Large	Small	Large	Small
Independent	Post-SEO Return Adjustment					
Variable	Raw_{0-47}	Raw_{0-47}	Mkt_{0-47}	Mkt_{0-47}	FF_{0-47}	FF_{0-47}
$DWKA_{-1}$	-0.319	-0.430	-0.338	-0.441	-0.407	-0.376
T	-1.89	-2.70	-2.02	-2.74	-1.23	-1.20
$NDWKA_{-1}$	-0.447	-0.058	-0.440	-0.072	-0.296	0.067
T	-2.32	-0.39	-2.31	-0.47	-0.65	0.26
$DNWKA_{-1}$	-0.601	-0.835	-0.56	-0.825	-0.46	-1.010
T	-2.25	-2.28	-2.22	-2.27	-0.98	-1.48
$NDNWKA_{-1}$	-0.374	-0.293	-0.349	-0.286	-0.236	-0.542
T	-0.95	-0.82	-0.90	-0.80	0.40	-0.67
DCAPEXP_{+1}	-0.081	0.225	-0.093	0.225	-0.052	0.204
T	-1.18	3.62	-1.36	3.59	-0.60	1.81
Industry Intercepts	Full Set - Not Reported					
Year Intercepts	Full Set - Not Reported					
Book/Market, MarketValue	Not Reported					
R^2	22.8%	20.4%	19.6%	19.2%	17.7%	19.2%
$\overline{R}^2$	16.2%	14.8%	12.8%	13.5%	8.5%	11.0%
N	473	562	473	562	359	407

Note: The dependent variable is a four-year aftermarket return, beginning at the SEO issuing date, or four months after the previous year fiscal end, whichever comes later. Monthly returns for each firm are first adjusted (i.e., by subtracting the market for the **Mkt** series, and appropriately security-weighted Fama-French factors for the **FF** series), then cumulated for four years, and finally logged. The independent accrual variables are computed from regressions (described in section 1.2.2) and measured in the fiscal year *preceding* the SEO (subscript -1). $DWKA_{-1}$ ($NDWKA_{-1}$) are *discretionary (non-discretionary) working capital accruals*, $DNWKA_{-1}$ ($NDNWKA_{-1}$) are *discretionary (non-discretionary) non-working capital accruals*. DCAPEXP_{+1} is the sum of capital expenditures in the (post-SEO) event and following fiscal year minus the sum of capital expenditures in the two years prior to the event, divided by twice total assets in the year prior to the seasoned offering. Thus, $DCAPEXP_{+1}$ "peeks" at two financial statements not available to accruals/SEO-purchasers. (To adjust for some cross-sectional contemporaneous correlations between securities [components of the cumulated returns], we include but do not report a complete set of industry and year dummies [two year dummies for 1983], as well as firms' book-market value and equity size.) Firm size is partitioned on log of equity size below or above mean (4.13).

Table 11: Appendix Bonus Table: CRSP Data Availability and Delistings

Panel A: Available Market-Adjusted Returns

Month	-11	0	12	24	36	48
Quartile 1	268	302	303	285	259	241
Quartile 2	284	305	300	284	267	246
Quartile 3	289	306	303	291	274	250
Quartile 4	275	306	302	288	272	257
No $DWKA_{-1}$	15	16	17	17	16	16
No Returns	135	31	41	101	178	256

Panel B: Available Fama-French Returns

Month	-11	0	12	24	36	48
Quartile 1	204	206	204	191	174	165
Quartile 2	252	252	246	232	216	197
Quartile 3	241	240	238	227	215	199
Quartile 4	178	179	176	168	162	155
No $DWKA_{-1}$	14	14	14	14	13	13
No Returns	377	375	388	434	486	537

Panel C: CRSP Delistings Within 48 months of the SEO issue date

	Merger (200-299)	Exchg (300-399)	Liquidation (400-499)	Delisting (500-699)	Total Delistings
Quartile 1	24	5	0	14	43
Quartile 2	38	8	0	8	54
Quartile 3	28	5	0	7	40
Quartile 4	10	2	1	9	22
No $DWKA_{-1}$	1	0	0	0	1

Note: Some discrepancies between the numbers in this table from those reported previously are due to differences in the reporting periods for returns, and truncation of fourth significant digits in the transmission of data among co-authors. Quartile 1 is the most conservative portfolio with the lowest discretionary accruals, whereas quartile 4 is the most aggressive portfolio with the highest discretionary accruals.