Industry-Specific Discretionary Accruals

and Earnings Management

by

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ABSTRACT

In this dissertation, I examine the source of some of the anomalous capital market outcomes that have been documented for firms with high accruals. Chapter 2 develops and implements a methodology that decomposes a firm's discretionary accruals into a firm-specific and an industry-specific component. I use this decomposition to investigate which component drives the subsequent negative returns associated with firms with high discretionary accruals. My results suggest that these abnormal returns are driven by the firm-specific component of discretionary accruals. Moreover, although industry-specific discretionary accruals do not directly contribute towards this anomaly, I find that it is precisely when industry-specific discretionary accruals are high that firms with high firm-specific discretionary accruals subsequently earn these negative returns. While consistent with irrational mispricing or a rational risk premium associated with high discretionary accruals, these findings also support a transactions-cost based explanation for the accruals anomaly whereby search costs associated with distinguishing between value-relevant and manipulative discretionary accruals can induce investors to overlook potential earnings manipulation.

Chapter 3 extends the decomposition to examine the role of firm-specific and industry-specific discretionary accruals in explaining the subsequent market underperformance and negative analysts' forecast errors documented for firms issuing equity. I examine the post-issue market returns and analysts' forecast errors for a sample of seasoned equity issues between 1975 and 2004 and find that offering-year firm-specific discretionary accruals can partially explain these anomalous capital market outcomes. Nonetheless, I find this predictive power of firm-specific accruals to be more pronounced for issues that occur during 1975 - 1989 compared to issues taking place between 1990 and 2004. Additionally, I find no evidence that investors and analysts are more overoptimistic about the prospects of issuers that have both high firm-specific and industry-specific discretionary accruals (compared to firms with high discretionary accruals in general). The results indicate no role for industry-specific discretionary accruals in explaining overoptimistic expectations from seasoned equity issues and suggest the importance of firm-specific factors in inducing earnings manipulation surrounding equity issues.

DEDICATION

To my family and friends

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CHAPTER 1

INTRODUCTION

The information content and potential manipulation of accruals continues to attract the attention of academics and the investing community. Accruals stem from the mismatch in timing of cash and economic transactions and can help managers convey value-relevant information about the firm (Dechow, 1994). At the same time, given the discretion allowed in accounting for accruals, managers can also use accruals to manipulate reported earnings (Jones, 1991; Bergstresser and Phillipon, 2006; Bhojraj, Hribar and Picconi, 2009). Such discretion and potential for manipulation imply that it is likely to be difficult for investors to extract the information content (if any) embedded in reported accruals.

Accordingly, a number of researchers have explored the relationship between reported accruals and capital market outcomes. Several results are considered to be anomalous. For instance Sloan (1996) finds that firms with high (low) accruals subsequently earn negative (positive) abnormal returns. Xie (2001) uses the cross-sectional Jones (1991) model to decompose accruals into a 'normal' and a 'discretionary' component and finds that investors appear to misprice the discretionary component of accruals. Rangan (1998) and Teoh, Welch and Wong (1998a,b) show that firms with high discretionary accruals prior to issuing equity experience lower post-issue returns compared to other issuing firms. Bradshaw, Richardson and Sloan (2001) show that analysts' earnings forecasts do not incorporate the predictable future earnings declines associated with high accruals, while Teoh and Wong (2002) find that equity issuing firms with high discretionary accruals tend to have larger negative analyst forecast errors than those whose issuing-year accruals are low. These findings suggest that even sophisticated agents like analysts do not fully understand the information content of accruals.

In this dissertation I develop and implement a methodology that decomposes discretionary accruals into a firm-specific and an industry-specific component. I use this accruals decomposition to incisively examine the source of some of the documented accrual anomalies. Chapter 2 motivates the decomposition and examines the role and interaction of firm-specific and industry-specific discretionary accruals in explaining the original accruals anomaly documented by Sloan (1996). The results from this exercise indicate that Sloan's accruals anomaly is primarily driven by the firm-specific component of discretionary accruals which suggests that industry-specific discretionary accruals, on average, convey value-relevant information to investors that is not subsequently reversed. More importantly, I also find that investors tend to overprice firms with high discretionary accruals specifically when industry-specific discretionary accruals are high as well. While this evidence is consistent with irrational mispricing or a rational risk premium associated with high discretionary accruals, it also supports a transactions-cost based explanation for the anomaly in which high search costs associated with distinguishing between value-relevant and manipulative discretionary accruals can induce investors to overlook potential earnings manipulation.

Chapter 3 extends the decomposition to investigate the role of firm-specific and industry-specific discretionary accruals in explaining the post-issue market underperformance and the negative analysts' forecast errors documented for firms that issue equity. Using a sample of seasoned equity issues between 1975 and 2004, I find that investors' and analysts' overoptimism about equity issuing firms can partially be explained by the level of firm-specific discretionary accruals surrounding the issue. Though consistent with Teoh et al. (1998a,b) and Teoh and Wong (2002), the evidence is much stronger for seasoned equity issues that take place between 1975 and 1989 compared to those taking place between 1990 and 2004. Moreover, contrary to the results observed for the general accruals anomaly, I do not find any additional explanatory power for industry-specific discretionary accruals in this setting. This evidence undermines the role of industry-specific factors in creating overoptimistic earnings expectations from equity issuing firms.

Overall, the results from this research suggest that industry-specific discretionary accruals can partially help explain some of the anomalous capital market outcomes associated with firms with high accruals.

CHAPTER 2

INDUSTRY-SPECIFIC DISCRETIONARY ACCRUALS AND THE ACCRUALS ANOMALY

1. Introduction and Literature Review

The information content and potential manipulation of accruals continues to attract the attention of academics and the investing community. Accruals stem from the mismatch in timing of cash and economic transactions and can help managers convey value-relevant information about the firm (Dechow, 1994). At the same time, given the discretion allowed in accounting for accruals, managers can also use accruals to manipulate reported earnings (Jones, 1991; Bergstresser and Phillipon, 2006; Bhojraj, Hribar and Picconi, 2009). Such discretion and potential for manipulation imply that it is likely to be difficult for investors to extract the information content (if any) embedded in reported accruals.

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In this paper I decompose discretionary accruals into a firm-specific and an industry-specific component. The motivation is to see whether investors comprehend the information content (if any) embedded in industry-specific discretionary accruals. Where studies employing variants of cross-sectional Jones (1991) model to calculate discretionary accruals assume that industry-specific discretionary accruals reflect changing business condition and are value-relevant, other studies suggest that there can be a systematic component to accrual manipulation. For instance, Jeter and Shivakumar (1999) argue that discretionary accruals can be correlated across firms when the industry is enjoying favorable economic conditions and all firms are trying to 'smooth' reported earnings. Similarly, industry overvaluation can systematically induce firms to sustain their overvaluation by manipulating earnings upwards (Jensen, 2005; Kothari, Loutskina and Nikolaev, 2006). Whether or not investors misprice the industry-specific component of discretionary accruals remains an empirical question.

A second motivation is to see whether industry-specific discretionary accruals have a differential impact on the information content (and mispricing) of a firm's discretionary accruals. There are reasons to suggest why accrual generating behavior of other firms in the industry may influence a firm's incentive to manipulate its own accruals. For instance, Bagnoli and Watts (2000) show that firms may have an incentive to exaggerate earnings when they expect other firms to do the same. Cheng (2010) suggests that earnings manipulation at some firms can 'spillover' to other firms in the industry. Since accruals have a direct impact on earnings, industry-wide use of high discretionary accruals can also provide some firms the incentive to manipulate accruals upwards due to relative performance evaluation (RPE) concerns (Bagnoli and Watts, 2000; Cohen and Zarowin, 2007) and/or to meet inflated analyst expectations (Burghstaler and Eames, 2003; Graham, Harvey and Rajgopal, 2005). Similarly a decrease in industry-wide discretionary accruals can motivate some firms to take "big baths" or to build "cookie-jar reserves" (Levitt, 1998). Decomposing discretionary accruals in the manner proposed would allow for a more incisive examination of the information content and manipulability of accruals, their role in price discovery, and the source of the documented accrual anomalies. For the purpose of this paper, I focus the lens of my accrual decomposition on the original anomaly documented by Sloan (1996).

The decomposition approach I use in this paper is analogous to the one employed by Rhodes-Kropf, Robinson and Viswanathan (2005, hereafter RKRV). I take the past ten-year average of the parameter estimates obtained from estimating the modified Jones (1991) model to calculate a firm's 'long-run' non-discretionary accruals in the industry and then calculate industry-specific discretionary accruals (ISDA) as the difference between a firm's 'expected'/short-run non-discretionary accruals (estimated using contemporaneous Jones model parameter estimates) and its long-run non-discretionary accruals. I estimate firm-specific discretionary accruals (FSDA) as the difference between a firm's reported accruals and its 'expected' accruals.[1] A firm's total discretionary accruals (TDA) are hence defined as the sum of its firm-specific and industry-specific discretionary accrual components.

Using a sample of COMPUSTAT firms from 1976 – 2007, I find that Sloan's (1996) accrual anomaly is driven by the firm-specific component of discretionary accruals. When I sort firms into decile portfolios based on their yearly level of TDA, FSDA and ISDA rankings, I find that the portfolio of firms with the highest FSDA subsequently earns an annualized abnormal return of -4.8% (-0.40% x 12). The highest-TDA portfolio also earns an annualized abnormal return of -6.36% (-0.53% x 12). On the other hand, none of the ISDA decile portfolios earn any significant abnormal returns subsequent to portfolio formation. The results suggest that compared to firm-specific discretionary accruals, industry-specific discretionary accruals provide information that is not subsequently reversed. Consistent with recent evidence on the accruals anomaly (Beneish and Vargus, 2002; Kothari et al., 2006), I do not find evidence that firms with abnormally low FSDA (and TDA) are mispriced by investors. Specifically, I find that both the lowest-FSDA and the lowest-TDA decile portfolios do not earn any abnormal returns subsequent to portfolio formation.

Moreover, although industry-specific discretionary accruals do not directly contribute to the accruals anomaly, I find that it is precisely when industry-specific discretionary accruals are high that firms with high discretionary accruals subsequently earn negative abnormal returns. In particular, I find that the portfolio of firms with the highest FSDA *and* the highest ISDA subsequently earns an annualized alpha of -11.28% (-0.94% x 12), whereas the portfolio with the highest FSDA and the *lowest* ISDA does not earn any subsequent abnormal returns. The portfolio with the highest TDA and the highest ISDA also earns an annualized abnormal return of -11.16%

[1] This is how a firm's discretionary accruals are typically defined in the earnings management literature employing variants of cross-sectional Jones (1991) model.

(-0.93% x 12) whereas the highest-TDA/lowest-ISDA portfolio does not earn any such abnormal returns. Firms with the *lowest* firm-specific or total discretionary accruals do not earn any subsequent abnormal returns regardless of whether their ISDA are high or low at the time.

The results suggest that investors fail to understand the information content of a firm's discretionary accruals specifically when industry-wide use of discretionary accruals is high as well. One possible explanation for this finding is that an industry-wide increase in discretionary accruals, though value-relevant, increases the search costs that investors have to incur in order to detect firms whose high discretionary accruals are manipulative. When most firms in the industry are incurring high value-relevant discretionary accruals, they are likely to camouflage those firms whose high discretionary accruals are manipulative in nature. This can make it difficult for investors to distinguish between these two types of firms. Making such a distinction can be time-consuming and is also likely to be associated with greater information gathering costs. As long as these search costs are reasonably high, investors may have an incentive to price all high discretionary accruals as value-relevant, including those that are manipulative.[2]

It is also possible that in addition to increasing search costs of detecting manipulation, a systematic increase in discretionary accruals lowers the subjective probability that investors assign to high discretionary accruals being manipulative. Since discretionary accruals are positively related to contemporaneous/lagged performance (Healy, 1996; Kothari, Leone and Wasley, 2005), the systematic nature of the increase can 'fool' investors into believing that *all* firms have high discretionary accruals because of value-relevant factors. As a result, investors can end up overpricing firms whose high accruals, though manipulative, are within 'reasonable' bounds given the existing high-accruals norm in the industry.

A popular explanation for the accruals anomaly is that investors are irrational and naively fixate on earnings (Sloan, 1996; Xie, 2001). According to this line of argument, investors overestimate the persistence of accruals when forming earnings expectations and are subsequently

[2] Since firms that have high discretionary accruals at a time when industry-specific discretionary accruals are high earn more negative abnormal returns than firms with high discretionary accruals in general, the benefit of detecting manipulation is also higher when industry-specific discretionary accruals are high. Hence the argument assumes that the increased search costs of detecting manipulation outweigh the increased benefit of detecting manipulation during such times.

‘surprised’ when these accruals reverse. My results suggest that investors’ tendency to be naïve in forming earnings expectations is specific to those periods when industry-specific discretionary accruals are high. The implication is consistent with the idea that industry-wide use of high discretionary accruals can increase the upper bound beyond which investors scrutinize a given firm’s discretionary accruals, thereby giving them *reason* to fixate on earnings.

The pricing of discretionary accruals is (of course) a joint test of the appropriateness of the asset-pricing model and of the nature of discretionary accruals (Subramanyam, 1996). Hence an equally plausible explanation for my findings is that there is a rational risk premium associated with firms that have high firm-specific and industry-specific discretionary accruals.[3] Regardless of all these potential explanations, my findings suggest a role for industry-specific discretionary accruals in explaining the subsequent abnormal returns documented for firms with high discretionary accruals.

The paper makes several contributions to the literature. First, it advances our understanding of what causes the anomalous negative returns observed for firms with high accruals (Sloan, 1996). Specifically, the paper suggests that high industry-specific discretionary accruals have a differential impact on the mispricing of firms’ discretionary accruals. The finding is consistent with the idea that industry-wide use of discretionary accruals can give investors reason to overprice a given firm’s discretionary accruals by increasing search costs, lowering the subjective probability of potential manipulation, and/or inducing optimism about the persistence of discretionary accruals. This probably explains why even sophisticated agents like analysts, auditors and institutions (Bradshaw et al., 2001; Ali et al., 2001) end up overpricing discretionary accruals.

Second, the paper sheds light on the earnings management literature that uses residuals from variants of the cross-sectional Jones (1991) model to proxy for earnings manipulation (Defond and Jiambalvo, 1994; Dechow, Sloan and Sweeney, 1996; Subramanyam, 1996; Defond and Subramanyam, 1998; Teoh et al., 1998 a,b; Xie, 2001; Gao and Shrieves, 2002; Teoh and Wong, 2002; Kothari et al., 2005, 2006; Bergstresser and Phillipon 2006; Cornett, Marcus and

[3] I use the Fama-French (1993) Three-Factor Model (market-premium, size and book-to-market) to price discretionary accrual portfolios.

Tehranian, 2008; Yu, 2008; Chi and Gupta, 2009; Cohen and Zarowin, 2010). Such a technique, by design, filters out industry-wide changes in discretionary accruals and hence does not allow one to assess the differential impact of these changes on the information content of a firm's discretionary accruals. My results suggest that the accrual anomaly is primarily caused by the mispricing of those firm-specific discretionary accruals that are accompanied by high industry-specific discretionary accruals. In so doing, the paper highlights the importance of viewing a firm's total discretionary accruals as the sum of these two components.

Third, since accruals are positively related with performance, the paper also helps us understand why incidences of accrual mispricing are typically associated with events that are also positively correlated with high industry-wide performance such as M&As (Zach, 2003) and market-timing (Teoh et al., 1998 a,b). In particular, the subsequent negative returns observed for the highest-FSDA/highest-ISDA portfolio (i.e. the portfolio with the highest FSDA *and* the highest ISDA) are also consistent with the anecdotal evidence that earnings manipulation typically remains undiscovered when industry is 'hot', and is only discovered later as the industry 'cools down' (as was the case with companies like Enron, WorldCom and Global Crossing during the tech bubble of late 90s in the US).

Finally, by highlighting the importance of industry conditions in causing accrual mispricing the paper also adds to the growing body of literature that has found industry and market conditions to be particularly important in studying earnings management and accrual anomalies (Park, 1999; Jiao, Mertens and Roosenboom, 2007; Cohen and Zarowin, 2007).

The remainder of the paper is organized as follows: Section 2 describes the research methodology used to calculate and decompose discretionary accruals. Section 3 describes the data, sample selection and variable description. Section 4 gives the main results of the paper, and finally Section 5 concludes with a summary and discussion of the main findings.

2. Research Methodology

In an important paper, RKRV decompose a firm's market-to-book ratio to assess the impact of firm-specific misvaluation and industry-specific misvaluation on merger activity. The authors rationalize industry-specific misvaluation on the grounds that firms can be systematically overvalued when, say, the market is 'overheated' or if the industry is 'hot' relative to other industries. [4] To estimate firm-specific and sector-specific market-to-book errors, RKRV estimate yearly sector-level cross-sectional regressions of firm-level market equities on firm fundamentals to obtain time-varying 'valuation multiples' over their sample period. The authors measure firm-specific misvaluation as the difference between the firm's market value and its value suggested by contemporaneous valuation multiples, and they measure sector-specific misvaluation as the difference between time-specific *predicted* firm value and the value suggested by 'long-run' valuation multiples. The authors calculate these long-run valuation multiples by taking an equally-weighted average of a firm's valuation multiples over the sample period.

Analogous to RKRV, I view a firm's total discretionary accruals (TDA) as the sum of its firm-specific and industry-specific components (FSDA and ISDA, respectively). I define TDA as the difference between a firm's reported accruals (TAC_t) and its 'long-run non-discretionary accruals' (LRNDA, denoted as $\overline{TAC_t}$) i.e. the 'normal' level of accruals the firm can expect to incur in the industry over the long-run. I measure the systematic discretionary accruals component (ISDA) by calculating the difference between accruals expected of the firm given the *prevalent* industry conditions and those expected of the firm over the long-run, i.e. as the difference between its 'short-run non-discretionary accruals' (SRNDA, denoted as $\widehat{TAC_t}$) and its long-run non-discretionary accruals[5]. I measure a firm's FSDA as the difference between its reported accruals (TAC_t) and its SRNDA ($\widehat{TAC_t}$). Mathematically, a firm's total accruals can hence be expressed as:

$$
\begin{aligned}
TAC_t &= TDA_t + LRNDA_t \\
&= FSDA_t + ISDA_t + LRNDA_t
\end{aligned}
$$

[4] RKRV decompose a firm's market-to-book ratio into *three* distinct components: *a firm-specific component* which measures the extent to which firm is misvalued relative to its industry, a *sector-component* which measures how much the industry is misvalued compared to its long-run value, and a *long-run value-to-book component* that captures how long-run value of the firm compares with its book-value.

[5] In the earnings management literature, it is standard practice to refer to accruals estimated from the Jones (1991) model as non-discretionary (Xie, 2001). This term is misleading in the context of my paper since these predicted values contain some fraction of industry-specific discretionary accruals. Therefore I refer to these predicted values as a firm's short-run non-discretionary accruals.

$$= \underbrace{\left(TAC_t - \widehat{TAC_t}\right)}_{FSDA} + \underbrace{\left(\widehat{TAC_t} - \overline{TAC_t}\right)}_{ISDA} + \overline{TAC_t} \qquad (1)$$

My calculation (and definition) of FSDA corresponds to the way discretionary accruals have typically been calculated (and defined) in the earnings management literature using some variant of the cross-sectional Jones (1991) model (Teoh et al., 1998 a,b; Xie, 2001). In this paper, I use the *modified* cross-sectional Jones (1991) model to calculate FSDA (Subramanyam, 1996; Kothari et al., 2005)[6] :

$$\frac{Accruals_{j,t}}{Assets_{j,t-1}} = \alpha_0\left(\frac{1}{Assets_{j,t-1}}\right) + \alpha_1\left(\frac{\Delta Sales_{j,t} - \Delta Receivables_{j,t}}{Assets_{j,t-1}}\right) + \alpha_2\left(\frac{Gross\ PPE_{j,t}}{Assets_{j,t-1}}\right) + \alpha_3\left(ROA_{j,t-1}\right) + \epsilon_{j,t} \qquad (2)$$

In the above model the dependent variable is the firm's actual accruals scaled by lagged assets (TAC_t). The right-hand side shows the independent variables used to estimate a firm's expected accruals at a specific point in time (change in revenue, change in receivables and gross property plant and equipment, all scaled by lagged assets). To control for the effect of performance on a firm's operating accruals (Kothari et al., 2005; Ronen and Yarri, 2008), I also include lagged return on assets (ROA_{t-1}) as an additional regressor in the model. I estimate the above model for each year and industry and use the parameter estimates ("accrual multiples") to calculate a firm's $SRNDA_t$, $\widehat{TAC_t}$:

$$\widehat{TAC}_{j,t} = \hat{\alpha}_{0,t}\left(\frac{1}{Assets_{j,t-1}}\right) + \hat{\alpha}_{1,t}\left(\frac{\Delta Sales_{j,t} - \Delta Receivables_{j,t}}{Assets_{j,t-1}}\right) + \hat{\alpha}_{2,t}\left(\frac{Gross\ PPE_{j,t}}{Assets_{j,t-1}}\right) + \hat{\alpha}_{3,t}\left(ROA_{j,t-1}\right) \qquad (3)$$

[6] Coles et al. (2006) point out that the modified Jones model is likely to overstate discretionary accruals for firms with high sales growth, and understate them for firms with poor performance. This is because the specification assumes that all changes in accounts receivable are discretionary. While controlling for lagged ROA is likely to resolve some of these issues, I also estimate the standard Jones (1991) model for robustness and obtain qualitatively similar results as those obtained from modified version of the model.

In equation (3), the 'hats' on the parameters denote their predicted values. As suggested by equation (1), I calculate FSDA as the residuals obtained from the model (i.e. $FSDA_t = TAC_t - \widehat{TAC_t}$).

To calculate ISDA I first calculate long-run non-discretionary accruals ($\widehat{TAC_t}$) using the past ten years' average of the parameter estimates obtained from estimating the modified Jones model (above). In other words, I calculate a firm's LRNDA ($\overline{TAC_t}$) as:

$$\overline{TAC}_{j,t} = \bar{\alpha}_{0,t}\left(\frac{1}{Assets_{j,t-1}}\right) + \bar{\alpha}_{1,t}\left(\frac{\Delta Sales_{j,t} - \Delta Receivables_{j,t}}{Assets_{j,t-1}}\right) + \bar{\alpha}_{2,t}\left(\frac{Gross\ PPE_{j,t}}{Assets_{j,t-1}}\right) + \bar{\alpha}_{3,t}\left(ROA_{j,t-1}\right) \qquad (4)$$

In equation (4), the 'bars' on parameter estimates denote the past ten years' average of the parameter estimates obtained from estimating the modified Jones (1991) model. The rationale of using these averages is analogous to RKRV, i.e. to construct an accrual-benchmark which smoothes out the effect of time-specific industry conditions on a firm's expected level of accruals. The difference between SRNDA and LRNDA measures the industry-specific component of discretionary accruals (i.e. $ISDA_t = \widehat{TAC_t} - \overline{TAC_t}$).

3. Data

I select all firms on COMPUSTAT Fundamentals Annual and CRSP Monthly Stock Return files from 1976 – 2007. I define each firm's industry based on the Fama-French 48 industry classification. I drop financials ("Banks", "Trading", "Insurance", and "Real Estate") from my sample because of the differential nature of their financial statements and also drop utilities because of their regulatory nature.[7] I also drop firms that changed their fiscal year-end any time during the sample period, and further confine analysis to firms based in the US (FIC = "USA"). To remove the effect of small firms, I restrict my attention to firms that have at least $1

[7] For robustness I also use 2-digit SIC codes to classify industries in which case I drop all firms with SIC codes between 6000 and 6999 (financials) and SIC codes between 4900 and 4999 (utilities). I also delete firms belonging to "Non-classified Establishments" (when using 2 digit SIC-code industry classifications) and firms not placed in any industry (when using Fama French 48 industry classification).

million in sales and assets, and whose (contemporaneous) accruals-to-assets ratio is less than one in absolute terms (Kothari et al. 2005; Ronen and Yaari, 2008). I also restrict my sample to firms that are traded on the NASDAQ, NYSE and AMEX (CRSP exchange codes = "1", "2", and "3") and whose securities correspond to common equity (CRSP share code between 10 and 19). Finally, I delete all firm-years with inadequate data to calculate accruals (as defined below) or any of the variables needed to estimate the cross-sectional modified Jones model (as defined above). This set of filters yields 97,417 firm-year observations.

I calculate each firm's total accruals using the balance-sheet approach as the difference between change in non-cash current assets (COMPUSTAT data item *ACT* less COMPUSTAT data item *CHE*) and change in current operating liabilities (COMPUSTAT data item *LCT* less COMPUSTAT data item *DLC* less COMPUSTAT data item *TXP*), less depreciation (COMPUSTAT data item *DEP*).[8] Where necessary, I define earnings as operating income after depreciation (COMPUSTAT data item *OIADP*), cash flows as the difference between earnings and accruals, and return on assets as net income divided by total assets. To calculate each firm's FSDA, I estimate the modified Jones model for each fiscal year and FF-48 industry. I obtain data on assets, sales, receivables, PP&E and net income from COMPUSTAT (COMPUSTAT data items *AT*, *SALE*, *RECT*, *PPEGT* and *NI* respectively). All continuous variables are Winsorized at 1% and 99%.

I require at least ten firms in an industry to estimate the modified Jones model.[9] Since I use past ten years' average of Jones model parameter estimates to calculate a firm's long-run non-discretionary accruals, I further confine myself to only those industries which have at least 10 firms in *each* year of the sample period. I do this to ensure that I have non-missing values for parameter estimates while computing the ten-year averages of these parameters. By construction, I

[8] In some cases (see Chapter 2), I differentiate between *current* accruals and *total* accruals. Current accruals are calculated the same way as total accruals are (using the balance sheet approach) except that they are not adjusted for depreciation expense. Since depreciation is recorded for long-term assets, current accruals give an accruals figure more susceptible to manipulation.

[9] A minimum number of observations are required to obtain 'reasonable' parameter estimates from the cross-sectional Jones (1991) model. According to Ronen and Yaari (2008), the customary minimum (median) cutoff number is eight (ten).

obtain the first set of observations for ISDA and TDA from 1986 onwards. TDA and ISDA are calculated as explained above. Finally, for each year from 1986 – 2007, I rank firms according to their magnitude of TAC, TDA, FSDA and ISDA to construct accrual decile portfolios. The sample from 1986 onwards consists of 70,233 firm-year observations.

Following Kothari et al. (2006), I calculate abnormal portfolio returns using annualized monthly alphas from the Fama-French three factor model. The approach assumes that each firm is aligned in calendar time. Hence I calculate abnormal returns for only those set of firms which have fiscal year ending in December (FYR = 12). As is convention, return measurement begins four months after the fiscal year-end (Sloan, 1996; Kothari et al., 2006). The portfolio alphas are calculated by regressing monthly equally-weighted portfolio returns on the three Fama-French factors (market, size and book-to-market respectively). In the event a firm delists, I replace its returns its delisting return in the month of delisting and reinvest the liquidating proceeds in the market portfolio (S&P 500) for the remainder of the year (Xie, 2001).

4. Results

4.1 Descriptive Statistics

Table 1 presents the summary statistics of accrual components and key firm characteristics for my sample of firms from 1976 - 2007. As in Sloan (1996), I report summary statistics across decile portfolios constructed on the basis of firms' firm-specific discretionary accrual rankings. Such an exposition helps highlight the differential nature of firms in extreme accrual portfolios and also serves to confirm the results reported in Sloan (1996).

Table 1 shows that the mean (median) total accruals in the lowest FSDA portfolio decile are -22% (-22%) of lagged total assets compared to the mean (median) total accruals of 41% (27%) in the highest FSDA decile portfolio. These percentages are significantly different from the mean (median) level of accruals in the second-lowest (second-highest) accrual decile -11% (-12%) and 7% (6%) respectively and reflect the differential nature of extreme FSDA portfolios. Interestingly, FSDA form a far greater percentage of total accruals in extreme accrual deciles compared to middle-accrual deciles. Moreover, consistent with Xie's (2001) findings, the statistics

Table 1. Summary Statistics of Accrual Components and Firm Characteristics Across Accrual Decile Portfolios

The table presents the summary statistics of accrual components and other firm characteristics for my sample of firms. Firms are sorted into decile portfolios based on their fiscal year-end ranking of firm-specific discretionary accruals (FSDA). Total accruals (TAC) are calculated using the balance sheet approach as change in non-cash current assets, less change in current liabilities (exclusive of short-term debt and taxes payable), less depreciation expense, all divided by lagged assets. Short-run nondiscretionary accruals (SRNDA) are calculated using the fitted values from the cross-sectional modified Jones model after controlling for lagged return on assets. FSDA are calculated as the residuals from the cross-sectional estimation. Earnings are operating income after depreciation, divided by lagged assets. Cash flow is the difference between earnings and total accruals. Market-to-book ratio is calculated as the sum of assets and fiscal year-end market capitalizations, less common equity and deferred taxes, divided by assets. The sample consists of all firms from 1976 - 2007 that are present on the COMPUSTAT and CRSP monthly returns file and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares (CRSP share code between 11 and 19) , (c) have assets and sales greater than $1m, (d) correspond to US firms (FIC = "USA"), (e) have non-missing values for variables used to estimate the modified cross-sectional Jones Model, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry. All continuous variables are Winsorized at 1% and 99%.

	Firm-Specific Discretionary Accrual (FSDA) Decile Portfolios									
	Lowest	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Highest**
TAC	-0.22	-0.11	-0.08	-0.06	-0.04	-0.03	-0.01	0.01	0.07	0.41
	(-0.22)	(-0.12)	(-0.08)	(-0.06)	(-0.04)	(-0.03)	(-0.02)	(0.01)	(0.06)	(0.27)
FSDA	-0.29	-0.13	-0.08	-0.05	-0.02	-0.00	0.02	0.05	0.09	0.37
	(-0.25)	(-0.13)	(-0.08)	(-0.05)	(-0.02)	(-0.00)	(0.02)	(0.05)	(0.09)	(0.27)
SRNDA	0.06	0.02	0.00	-0.01	-0.02	-0.03	-0.03	-0.03	-0.03	0.04
	(0.02)	(0.00)	(0.00)	(-0.01)	(-0.02)	(-0.03)	(-0.03)	(-0.04)	(-0.03)	(0.01)
Earnings	-0.10	0.02	0.06	0.07	0.08	0.09	0.09	0.08	0.08	0.03
	(-0.02)	(0.05)	(0.08)	(0.09)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)	(0.11)
Cash Flow	0.12	0.13	0.13	0.13	0.12	0.11	0.10	0.07	0.00	-0.39
	(0.19)	(0.16)	(0.16)	(0.15)	(0.14)	(0.13)	(0.11)	(0.09)	(0.04)	(-0.17)
Assets	229.95	478.97	754.19	964.58	1301.59	1475.78	1431.15	1140.23	641.33	265.42
	(27.37)	(49.66)	(85.19)	(117.61)	(155.77)	(177.80)	(166.17)	(120.16)	(73.35)	(47.09)
M-B Ratio	2.43	1.91	1.76	1.65	1.60	1.57	1.58	1.65	1.88	2.67
	(1.66)	(1.37)	(1.31)	(1.27)	(1.24)	(1.23)	(1.24)	(1.25)	(1.36)	(1.88)

suggest that short-run non-discretionary accruals are a far more stable component of accruals compared to firm-specific discretionary accruals: the mean (median) level of SRNDA varies from -4% (-4%) in the lowest accrual decile to 6% (2%) in the highest total accrual decile. This is in sharp contrast to the mean (median) of -29% (-25%) and 37% (27%) respectively for FSDA. Table 1 also suggests that firms with extreme accruals tend to be smaller compared to firms in the middle-accrual deciles (as measured by their total assets) and have higher market-to-book ratios. This is consistent with Sloan (1996) who finds that extreme accrual decile portfolios have higher betas compared to firms in the middle accrual deciles. Finally, Table I also suggests that while median earnings tend to increase monotonically with FSDA, the cash flow component of earnings tends to decrease. Qualitatively similar results are also reported by Kothari et al. (2006).

In Table 2 I provide the descriptive statistics of the parameter estimates obtained by estimating the cross-sectional modified Jones model for my sample of firms from 1976 – 2007.[10] The signs of these parameter estimates are consistent with expectations. For instance the mean and median coefficient on gross property, plant and equipment (PP&E) is negative for all industries since PP&E captures the magnitude of the depreciation expense. Similarly, the average coefficient on change in sales (less change in receivables) is positive for all industries (with the exception of Personal Services industry), as is the coefficient on lagged net income. This positive coefficient on change in sales (less change in receivables) is consistent with the notion that net working capital accruals are positive for firms whose sales exceed their expenses.[11] The positive coefficient on lagged net income is also consistent with the idea that operating accruals tend to increase with performance (Healy, 1996; Kothari et al, 2005). The statistics also suggest substantial heterogeneity across industries in terms of sensitivity to each of the modified Jones model variables. For instance, the median coefficient on change in sales (less change in receivables) is high for the Computers and Medical Equipment industry (0.221 and 0.237 respectively), but quite

[10] Table 2 does not report the summary statistics on inverse-assets ($1/A_{t-a}$) which appears as one of the regressors in the cross-sectional modified Jones model. Inverse-assets are included in the model because the original Jones (1991) model does not include an intercept term. The division by lagged assets is meant to control for hetroscedasticity across firms within the same industry.

[11] Nonetheless, net working capital accruals can be negative. For further discussion of this issue, see Chapter 10 of Ronen and Yaari (2008).

Table 2. Descriptive Statistics of Jones (1991) Model Parameter Estimates Across Industries
The table presents the mean (*Mean*), median (*Med*) and standard deviation (*Std*) of parameter estimates obtained from estimating the cross-sectional modified Jones (1991) model (Equation 2) across Fama French-48 industries (after controlling for lagged performance) for the sample of firms between 1986 and 2007. The regression is estimated yearly for all US firms that are present on COMPUSTAT and CRSP Monthly Returns Files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values for variables used to estimate the model, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All variables are scaled by lagged assets and Winsorized at 1% and 99%.

	Change in Sales - Change in Receivables			**Gross PP&E**			**Lagged Net Income**		
Industry	**Mean**	**Med**	**Std**	**Mean**	**Med**	**Std**	**Mean**	**Med**	**Std**
Aero	0.10	0.11	0.17	-0.05	-0.06	0.09	0.15	0.20	0.55
Apparel	0.24	0.24	0.41	-0.11	-0.09	0.11	0.27	0.29	0.28
Autos	0.13	0.09	0.10	-0.06	-0.05	0.03	0.18	0.19	0.25
Building Materials	0.12	0.11	0.08	-0.05	-0.06	0.03	0.11	0.13	0.34
Business Services	0.13	0.13	0.11	-0.08	-0.08	0.05	0.11	0.08	0.18
Chemicals	0.15	0.14	0.13	-0.05	-0.06	0.02	0.07	0.13	0.23
Chips	0.24	0.22	0.09	-0.07	-0.08	0.05	0.20	0.20	0.22
Computers	0.25	0.22	0.13	-0.08	-0.11	0.09	0.14	0.10	0.27
Construction	0.09	0.09	0.15	-0.07	-0.07	0.07	0.25	0.21	0.49
Consumer Goods	0.21	0.21	0.11	-0.08	-0.08	0.03	0.18	0.12	0.23
Elect. Equipment	0.15	0.16	0.13	-0.06	-0.06	0.04	0.16	0.22	0.24
Entertainment	0.01	0.02	0.14	-0.07	-0.07	0.03	0.12	0.05	0.46
Food Products	0.09	0.09	0.09	-0.06	-0.06	0.04	0.10	0.11	0.42
Health	0.16	0.13	0.30	-0.05	-0.07	0.06	0.16	0.08	0.56
Machinery	0.18	0.20	0.08	-0.05	-0.06	0.03	0.16	0.16	0.21
Meals	0.02	0.02	0.08	-0.07	-0.08	0.02	0.09	0.09	0.21
Medical Equip.	0.25	0.24	0.12	-0.05	-0.05	0.04	0.18	0.13	0.30
Oil	0.02	-0.02	0.13	-0.07	-0.07	0.02	0.03	0.06	0.19
Paper	0.10	0.11	0.12	-0.06	-0.07	0.03	0.07	0.14	0.37
Personal Services	-0.02	-0.04	0.16	-0.08	-0.07	0.03	0.15	0.14	0.30
Pharmaceuticals	0.16	0.13	0.12	-0.02	-0.02	0.08	0.06	-0.03	0.38
Printing	0.11	0.10	0.18	-0.11	-0.10	0.06	0.21	0.12	0.35
Recreation	0.26	0.23	0.15	-0.13	-0.11	0.09	0.25	0.25	0.32
Retail	0.10	0.10	0.05	-0.09	-0.09	0.03	0.20	0.16	0.21
Rubber	0.16	0.16	0.11	-0.07	-0.07	0.03	0.12	0.11	0.25
Steel	0.12	0.12	0.10	-0.04	-0.04	0.02	0.11	0.11	0.21
Telecomm.	0.03	0.03	0.15	-0.08	-0.07	0.04	0.11	0.09	0.24
Transport	0.02	0.01	0.11	-0.07	-0.07	0.02	0.10	0.12	0.27
Wholesale	0.14	0.13	0.07	-0.07	-0.07	0.04	0.20	0.18	0.19

Table 3. Descriptive Statistics and Correlations Among Accrual Components

The table presents the summary statistics and correlations between total accruals (TAC), short-run non-discretionary accruals (SRNDA), total discretionary accruals (TDA), firm-specific discretionary accruals (FSDA) and industry-specific discretionary accruals (ISDA). TAC is change in non-cash current assets, less change in current liabilities (exclusive of short-term debt and taxes payable), less depreciation expense, all divided by lagged assets. SRNDA is calculated using the fitted values from the within (FF-48) industry, cross-sectional modified Jones model after controlling for lagged return on assets). TDA is calculated as the difference between total accruals and long-run non-discretionary accruals (LRNDA). LRNDA is estimated using the past 10-year average of the modified Jones model's parameter estimates. FSDA is calculated as the residuals from the cross-sectional estimation. ISDA is the difference between SRNDA and LRNDA. The sample consists of all firms from 1986 – 2007 which meet the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) correspond to US firms (COMPUSTAT FIC = "USA"), (e) have non-missing values for variables used to estimate the modified cross-sectional Jones Model, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All variables are scaled by lagged assets and Winsorized at 1% and 99%.

	Panel A: Descriptive Statistics				
	Mean	**Std. Dev**	**Median**	**Min**	**Max**
TAC	-0.008	0.254	-0.041	-0.708	3.026
SRNDA	-0.002	0.121	-0.018	-0.703	2.045
TDA	-0.003	0. 24	-0.017	-1.525	3.484
FSDA	-0.006	0.224	-0.015	-2.347	3.034
ISDA	0.003	0.084	-0.002	-0.871	1.809

	Panel B: Pearson (above Diagonal) and Spearman (below Diagonal)Correlations				
	TAC	**SRNDA**	**TDA**	**FSDA**	**ISDA**
TAC	-	0.47	0.92	0.88	0.28
SRNDA	0.39	-	0.21	-0.00	0.60
TDA	0.78	-0.02	-	0.88	0.35
FSDA	0.75	-0.18	0.94	-	0.00
ISDA	0.10	0.40	0.21	0.16	-

low for the Transportation and Meals industry (0.005 and 0.015 respectively), and even negative for Personal Services and Oil industry. Similar inter-industry differences are observed for PP&E and lagged income thereby justifying the use of cross-sectional estimation in controlling for industry-specific differences in accrual generation.

More importantly, Table 2 suggests that industries go through systematic changes in accrual usage. In particular, the standard deviation of accrual multiples suggests that firms' sensitivity to Jones (1991) model variables changes overtime, with some industries exhibiting greater volatility in industry-wide use of accruals (for example Apparel industry with standard deviation of change in sales [less change in receivables] of 0.41) than others (for example the 'Wholesale' industry with a standard deviation of 0.07 for the same coefficient). Overall, Table 2 suggests that a firm's total discretionary accruals include a component that is common across all firms in the industry.

Panel of Table 3 shows the basic summary statistics of accrual components for the sample of firms between 1986 and 2007. Consistent with prior literature (Xie, 2001), Panel A shows that the average total accruals, SRNDA and FSDA are all negative. The median TDA and ISDA are also negative at -1.7% and -0.2% as a percentage of lagged assets respectively. Moreover, TDA and FSDA exhibit much more volatility than ISDA: the standard deviation of TDA (FSDA) is 0.24 (0.224) compared to 0.084 for ISDA.

Panel B of Table 3 presents the correlation between these different accrual components. The upper diagonal of the correlation matrix shows the Pearson correlation coefficients while the lower diagonal gives the Spearman Rank correlation coefficients. Consistent with prior literature (Xie, 2001), the results suggest a high, positive correlation between total accruals and FSDA (Pearson correlation of 0.88) and a low negative correlation between short-run non-discretionary accruals and FSDA. Moreover, the results also suggest a positive correlation between TDA and ISDA (Pearson correlation of 0.35). Since both TDA and ISDA are measured net of the long-run non-discretionary accruals, this positive correlation implies that a firm's use of discretionary accruals increases with an industry-wide increase in discretionary accruals.

Table 4. Descriptive Statistics of Discretionary Accrual Components Across ISDA Decile Portfolios

The table presents the descriptive statistics of total discretionary accruals (TDA), firm-specific discretionary accruals (FSDA) and industry-specific discretionary accruals (ISDA) across decile portfolios formed on the basis of ISDA rankings. TDA is calculated as the difference between total accruals and long-run non-discretionary accruals (LRNDA). LRNDA is estimated using the past 10-year average of the parameter estimates obtained from estimating the cross-sectional modified Jones (1991) model (Equation 2). FSDA is calculated as the residuals from the cross-sectional modified Jones model after controlling for lagged performance. ISDA is estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The regression is estimated yearly for all US firms from 1986 – 2007 that are present on the COMPUSTAT and CRSP Monthly returns file and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All variables are scaled by lagged assets and Winsorized at 1% and 99%.

ISDA Deciles	Obs.	TDA					FSDA					ISDA				
		Mean	Median	Min	Max	Std	Mean	Median	Min	Max	Std	Mean	Median	Min	Max	Std
Lowest	7012	-0.10	-0.08	-1.48	2.96	0.24	0.02	0.02	-1.01	3.03	0.23	-0.12	-0.09	-0.87	-0.03	0.08
2	7025	-0.04	-0.04	-0.98	2.59	0.18	0.01	0.01	-0.95	2.62	0.17	-0.04	-0.04	-0.11	-0.01	0.02
3	7029	-0.03	-0.03	-0.91	1.47	0.15	0.00	0.00	-0.90	1.49	0.15	-0.03	-0.02	-0.08	0.00	0.02
4	7022	-0.02	-0.02	-0.75	2.98	0.14	0.00	-0.01	-0.73	2.99	0.14	-0.02	-0.01	-0.06	0.01	0.01
5	7022	-0.01	-0.02	-0.70	2.64	0.15	-0.01	-0.01	-0.69	2.63	0.15	-0.01	-0.01	-0.05	0.02	0.01
6	7030	-0.01	-0.02	-0.78	2.95	0.16	-0.01	-0.02	-0.79	2.94	0.16	0.00	0.00	-0.03	0.03	0.01
7	7024	0.00	-0.01	-0.99	2.39	0.17	-0.01	-0.02	-1.02	2.38	0.17	0.01	0.01	-0.02	0.05	0.01
8	7027	0.00	-0.01	-0.96	2.97	0.20	-0.02	-0.03	-1.01	2.91	0.20	0.02	0.02	-0.01	0.08	0.02
9	7027	0.02	0.00	-1.05	2.95	0.27	-0.03	-0.04	-1.15	2.84	0.27	0.05	0.04	0.00	0.17	0.03
Highest	7014	0.14	0.03	-1.53	3.48	0.47	-0.01	-0.06	-2.35	2.92	0.44	0.15	0.10	0.02	1.81	0.15

Table 5. Distribution of Firms Across FSDA and TDA Ranks Within First Five ISDA Decile Portfolios

The table shows the distribution of firms across firm-specific discretionary accruals (FSDA) and total discretionary accruals (TDA) within the *first five* industry-specific discretionary accrual (ISDA) decile portfolios. Each year, firms are individually ranked according to their level of TDA, FSDA and ISDA. TDA is calculated as the difference between total accruals (TAC) and long-run non-discretionary accruals (LRNDA). LRNDA is estimated using the past 10-year average of the parameter estimates obtained from the cross-sectional modified Jones model (with lagged return on assets as an additional regressor). FSDA is calculated as the residuals from the cross-sectional modified Jones model after controlling for lagged performance. ISDA is estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. TDA, FSDA and ISDA are all Winsorized at 1% and 99%.

FSDA/TDA Portfolio Ranks	ISDA Decile 1 (Highest)		ISDA Decile 2		ISDA Decile 3		ISDA Decile 4		ISDA Decile 5	
	TDA (%)	FSDA (%)	TDA (%)	FSDA (%)	TDA (%)	FSDA (%)	TDA (%)	FSDA (%)	TDA (%)	FSDA (%)
Highest	29.67	18.76	12.55	9.69	8.34	7.2	7.77	7.18	6.49	6.39
2	13.36	6.52	13.26	6.79	11.53	7.24	9.55	7.84	9.33	8.52
3	9.27	4.49	12.35	6.63	11.57	8.41	11.15	8.41	11.71	10.5
4	6.72	4.01	9.92	7.47	11.68	8.65	12.74	10.76	11.64	11.48
5	5.93	4.53	8.97	8.2	10.86	10.33	12.56	12.49	11.54	12.12
6	5.06	5.26	8.04	9.48	10.46	12.1	11.76	13.1	12.62	12.76
7	5.87	7.1	8.25	10.8	9.82	12.77	10.58	12.76	12.02	12.89
8	6.14	13.08	8.87	13.22	9.86	12.74	9.23	11.13	9.76	10.26
9	7.51	15.31	9.26	15.07	8.77	12	8.49	9.62	8.39	8.35
Lowest	10.46	23.94	8.52	12.65	7.12	8.57	6.18	6.71	6.51	6.74

Table 6. Distribution of Firms Across FSDA and TDA Ranks Within Last Five ISDA Decile Portfolios

The table shows the distribution of firms across firm-specific discretionary accruals (FSDA) and total discretionary accruals (TDA) within the *last five* industry-specific discretionary accrual (ISDA) decile portfolio. Each year, firms are individually ranked according to their level of TDA, FSDA and ISDA. TDA is calculated as the difference between total accruals (TAC) and long-run non-discretionary accruals (LRNDA). LRNDA is estimated using the past 10-year average of the parameter estimates obtained from the cross-sectional modified Jones model (with lagged return on assets as an additional regressor). FSDA is calculated as the residuals from the cross-sectional modified Jones model after controlling for lagged performance. ISDA is estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. TDA, FSDA and ISDA are all Winsorized at 1% and 99%.

FSDA/TDA Portfolio Ranks	ISDA Decile 6		ISDA Decile 7		ISDA Decile 8		ISDA Decile 9		ISDA Decile 10 (Lowest)	
	TDA (%)	**FSDA (%)**	**TDA (%)**	**FSDA (%)**	**TDA (%)**	**FSDA (%)**	**TDA (%)**	**FSDA (%)**	**TDA (%)**	**FSDA (%)**
Highest	6.42	6.78	6.55	7.36	6.59	8.29	7.06	10.42	8.43	17.8
2	9.7	9.87	9.19	10.62	8.83	11.71	8.48	14.11	6.79	16.81
3	10.32	10.75	10.05	12.29	9.18	13.23	8.57	14.01	5.9	11.35
4	11.98	12.99	10.85	13.03	10.3	12.96	8.91	11.73	5.23	6.89
5	12.52	13.27	12.2	12.89	10.4	11.05	9.27	9.1	5.73	5.99
6	12.23	11.61	12.48	11.81	11.82	9.75	9.45	8.84	6.16	5.39
7	10.98	10.95	12.15	9.56	11.54	9.3	11.16	7.81	7.63	6.06
8	10.45	9.73	10.77	9.04	11.74	8.81	12.8	7.86	10.44	7.19
9	8.86	7.53	9.19	7.43	11.05	7.84	12.93	8	15.62	8.9
Lowest	6.54	6.52	6.58	5.97	8.55	7.06	11.37	8.13	28.07	13.62

To better assess this differential impact of ISDA on discretionary accruals, in Table 4 I examine the summary statistics of discretionary accrual components across ISDA decile portfolios. The idea is to see how the magnitude of FSDA and TDA changes, on average, as the use of discretionary accruals changes systematically across firms in the industry.

Table 4 shows that the mean (median) level of industry-specific discretionary accruals in the lowest ISDA decile is -11.5% (-9.3%) whereas the mean (median) level of industry-specific discretionary accruals in the highest ISDA decile is 14.9% (10.4%). The mean (median) level of TDA increases with ISDA, ranging from -9.5% (-9.4%) in the lowest ISDA decile to 14.3% (3.1%) in the highest ISDA decile. The substantial difference between the mean and median total discretionary accruals in the highest-ISDA decile suggests that some firms increase their discretionary accruals substantially when industry-wide discretionary accruals are high.[12] This is also suggested by the substantial difference between the mean and median FSDA in the highest-ISDA decile (-0.60% and -5.80% respectively) and stands in contrast to the mean and median FSDA observed in the lowest-ISDA decile (2.0% and 1.70% respectively). These figures suggest that high industry-wide discretionary accruals may have a differential impact on the information content of a firm's discretionary accruals. For the same reason, TDA and FSDA exhibit far more volatility in the highest-ISDA decile: the standard deviation of TDA (FSDA) in the highest-ISDA decile is 0.472 (0.436) compared to 0.244 (0.231) in the lowest-ISDA decile.

In Tables 5 and 6 I further investigate the relationship between discretionary accrual components across ISDA decile portfolios formed in Table 4. Table 5 shows the distribution of firms across different TDA and FSDA rankings within the first five ISDA portfolio deciles, while Table 6 shows this distribution across the last five ISDA portfolio deciles. The top-left segment of Table 5 labeled "ISDA Decile 0 (Highest), for instance, shows that 29.67% (18.67%) of the firms have the highest TDA (FSDA) in the highest ISDA decile. Similarly, the bottom-right segment of Table 6 labeled 'ISDA Decile 10 (Lowest) shows that there are 8.43% (17.80%) firms ranked as having the highest TDA (FSDA) in the lowest-ISDA decile.

[12] High industry-wide discretionary accruals, on the other hand, are not caused by high accrual usage of *some* firms. To see this, note that the difference between mean and median ISDA is not as great as the difference between mean and median TDA in the highest-ISDA portfolio decile.

What is particularly interesting to note in Tables 5 and 6 is that the percentage of firms with the highest FSDA is the greatest in *both* the lowest and the highest-ISDA deciles (18.76% and 17.80% respectively). Moreover, this percentage is almost the same in both these deciles. These figures highlight the significance of decomposing a firm's total discretionary accruals into a firm-specific and an industry-specific component. When industry-wide discretionary accruals are low, a firm may have high FSDA simply because all other firms in the industry have abnormally low accruals. This is made evident by the fact that only 8.43% of firms have the highest TDA in the lowest ISDA decile but the percentage of firms with the highest FSDA is much greater at 18.76%. A standard application of the cross-sectional Jones (1991) model would classify all these highest-FSDA firms as potential manipulators, despite the fact that some of these firms may have high FSDA because of firm-specific, value-relevant reasons and not necessarily because of manipulation.

In contrast, when ISDA are high, a significant fraction of firms systematically deviates from its long-run non-discretionary accruals. Among these firms are also likely to be those that are potentially manipulating their accruals above their long-run accruals average and still don't have the highest FSDA. This explains why even though almost one-third of the firms (29.76%) have significantly higher accruals than their long-run accruals average (i.e. have the highest TDA), only 17.80% have the highest FSDA in the highest-ISDA decile.

Put simply, classifying a firm as a potential manipulator by looking at the magnitude of its FSDA can be misleading: a firm may have high FSDA due to value-relevant factors at a time when industry-specific discretionary accruals are low, and a firm may not have the highest FSDA and yet be manipulating when usage of discretionary accruals is high industry-wide. The standard cross-sectional Jones (1991) fails to recognize this potential differential impact of industry conditions on the information content of discretionary accruals.

In summary, the descriptive statistics presented in this section show that industries go through systematic changes in the use of discretionary accrual and that these changes can have a differential impact on the information content of a firm's discretionary accruals. In doing so, the statistics highlight the importance of viewing a firm's total discretionary accruals as a composition of its firm-specific and industry-specific components. In the next subsection, I examine the relationship between discretionary accrual components and subsequent returns in order to gain insight into Sloan's (1996) accruals anomaly.

4.2 The Accruals Anomaly

In Table 7 I provide evidence consistent with the documented evidence on mispricing of discretionary accruals. The table shows decile portfolios of firms sorted on the basis of their TDA ranking and their monthly alphas three years before and after portfolio formation.

Table 7. Monthly Alphas from Fama-French Three Factor Model for Firms Sorted on TDA
The table presents the monthly alphas for portfolios deciles constructed by ranking firms on the basis of their total discretionary accruals (TDA). The alphas are estimated from calendar time regression based on Fama-French's three factor model using monthly returns: $R_{pt} - R_{ft} = \alpha + \beta_m (R_{mt} - R_{ft}) + \beta_S SMB_t + \beta_H HML_t + \varepsilon_t$ where R_{pt} is the return on the accrual portfolio in month t; R_{mt} is the return on the CRSP value-weighted index in month t; R_{ft} is the 3-month T-bill yield in month t; SMB_t is the return on small firms minus the return on large firms in month t; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month t. For companies in each accrual decile in year t, I include monthly returns earned three years prior and three years subsequent to portfolio formation. Return calculation begins 4 months after portfolio formation. TDA is the difference between total accruals and accruals estimated using the past 10-year average of the parameter estimates obtained from the cross-sectional modified Jones model (controlling for past performance). The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All continuous variables are Winsorized at 1% and 99%.

Total Discretionary Accrual (TDA) Deciles	**Year With Respect to Accrual Portfolio Formation**						
	t = -3	**t = -2**	**t = -1**	**t = 0**	**t = 1**	**t = 2**	**t = 3**
Lowest	1.04***	1.13***	0.79***	0.52*	0.19	0.36	0.20
2	0.93***	0.67***	0.22	0.36	0.39*	0.19	0.26
3	0.63***	0.42**	0.15	0.18	0.31*	0.18	0.42***
4	0.26**	0.22	0.13	0.17	0.24*	0.11	0.28*
5	0.08	-0.00	0.00	-0.14	0.14	0.11	0.06
6	0.17	0.15	0.05	0.12	0.10	0.20*	-0.04
7	0.13	0.15	-0.05	0.09	0.16	0.05	0.09
8	0.24	0.21	0.31**	0.08	-0.06	0.01	-0.00
9	0.55***	0.59***	0.71***	0.36**	-0.14	0.18	0.14
Highest	0.78***	1.54***	2.58***	1.02***	-0.53***	-0.25	0.49*
10^{th} - 1^{st}	-0.26**	0.41***	1.79***	0.50***	-0.72***	-0.61**	0.29**
10^{th} - 5^{th}	0.70***	1.54***	2.58***	1.16***	-0.67***	-0.36*	0.43***

The results in Table 7 show that the portfolio with the highest TDA subsequently earns a negative annualized abnormal return of -6.35% (-0.53% x 12). On the other hand, the portfolio with the lowest TDA does not earn significant abnormal returns one year subsequent to portfolio formation. A hedge portfolio short in the highest-TDA portfolio and long in the lowest-TDA portfolio earns a positive annualized return of 8.64% (0.72% x 12). Overall, the table suggests that investors do not fully understand the information content of (abnormally high) discretionary accruals. This finding is consistent with the recent evidence that accrual anomaly is primarily caused by the mispricing of income-*increasing* (rather than income-*decreasing*) discretionary accruals (Beneish and Vargus, 2002; Kothari et al., 2006).

To see whether this mispricing is driven by the firm-specific or the industry-specific component of discretionary accruals, I next sort firms into portfolio deciles based on their yearly FSDA and ISDA ranking and look at their abnormal returns three years before and after portfolio formation. The results are shown in Table 8 above. Panel A shows the monthly abnormal returns for FSDA decile portfolios while Panel B shows the monthly abnormal returns for ISDA decile portfolios.

Results in Panel A of Table 8 show that the portfolio of firms with the highest FSDA subsequently experience an annualized abnormal return of -4.80% (-0.40% x 12). The abnormal returns two years after portfolio formation are also negative, though not statistically significant. On the other hand, firms with the lowest FSDA do not experience any abnormal returns one year subsequent to portfolio formation. A hedge portfolio short in the highest FSDA portfolio and long in the lowest FSDA portfolio subsequently earns an annualized abnormal return of 7.08% (0.59% x 12). Moreover, results in Panel B suggest that ISDA portfolios do not earn any abnormal returns subsequent to portfolio formation. Specifically, both the lowest- and highest-ISDA decile portfolios are associated with insignificant returns one year after portfolio formation.

Overall, the results in Table 8 suggest that Sloan's (1996) accrual anomaly is primarily driven by the firm-specific component of discretionary accruals. The results are consistent with

Kothari et al. (2006) who measure discretionary accruals as residuals from the cross-sectional Jones (1991) model and find that investors misprice income-increasing discretionary accruals.[13]

Table 8. Monthly Alphas from the Fama-French Three Factor Model for Firms Sorted on FSDA and ISDA

The table presents the annualized alphas for portfolios deciles constructed by ranking firms on the basis of their firm-specific discretionary accruals (FSDA) and industry-specific discretionary accruals (ISDA). The portfolios are constructed in year *t*. The alphas are estimated from calendar time regression based on Fama-French's three factor model using monthly returns: $R_{pt} - R_{ft} = \alpha + \beta_m (R_{mt} - R_{ft}) + \beta_S SMB_t + \beta_H HML_t + \varepsilon_t$ where R_{pt} is the return on the accrual portfolio in month *t*; R_{mt} is the return on the CRSP value-weighted index in month *t*; R_{ft} is the 3-month T-bill yield in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t*. Return calculation begins 4 months after portfolio formation. FSDA is the residuals from the cross-sectional modified Jones model after controlling for lagged performance. ISDA is estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All continuous variables are Winsorized at 1% and 99% to remove the effect of outliers.

Firm-Specific Discretionary Accrual (FSDA) Deciles	**Year With Respect to Accrual Portfolio Formation**						
	t = -3	t = -2	t = -1	t = 0	t = 1	t = 2	t = 3
Panel A: Annualized Alphas for FSDA Portfolios							
Lowest	0.10***	0.10***	0.64**	0.57*	0.19	0.30	0.45*
2	0.56***	0.55**	0.17	0.19	0.19	0.17	0.15
3	0.61***	0.16	0.26	0.28	0.20	0.29*	0.39**
4	0.26*	0.18	0.01	0.13	0.33**	0.35**	0.08
5	0.11	0.07	0.01	0.00	0.12	0.11	0.05
6	0.17	0.07	-0.06	0.04	0.09	0.02	0.05
7	0.13	0.28**	0.07	0.05	0.10	0.08	0.15
8	0.24	0.37***	0.40***	0.18	0.09	0.10	0.03
9	0.70***	0.74***	0.67***	0.31**	-0.07	0.00	0.09
Highest	1.02***	1.5***	2.54***	0.95***	-0.40**	-0.315	0.445*
10th - 1st	0.92***	1.40***	1.90***	0.38***	-0.59***	-0.62***	-0.01
10th - 5th	0.91***	0.43***	2.53***	0.95***	-0.52***	-0.43***	0.40**

[13] Since Kothari et al. (2006) uses the cross-sectional Jones (1991) model, their definition of discretionary accruals corresponds to my definition of firm-specific discretionary accruals.

Table 8 - *Continued*

Industry-Specific Discretionary Accrual (ISDA) Deciles	Year With Respect to Accrual Portfolio Formation						
	t = -3	**t = -2**	**t = -1**	**t = 0**	**t = 1**	**t = 2**	**t = 3**
Panel B: Annualized Alphas for ISDA Portfolios							
Lowest	1.21***	1.24***	1.32***	0.78***	0.39*	-0.28	0.09
2	0.94***	0.73***	0.42**	0.43**	0.18	0.13	0.11
3	0.35**	0.70***	0.40**	0.21	0.18	0.16	0.11
4	0.43***	0.36**	0.19	0.07	0.15	0.23	0.21
5	0.56***	0.19	0.09	0.07	0.07	0.00	0.23
6	0.24	0.20	-0.06	-0.14	0.24*	0.26*	0.25
7	0.03	0.13	-0.06	0.02	0.11	0.17	0.08
8	0.15	0.16	0.95***	0.33	-0.00	0.05	0.38*
9	0.27	0.46**	0.67***	0.34*	-0.20	0.20	0.30
Highest	0.35	0.42	1.17***	0.97***	-0.41	0.05	0.06
10th - 1st	-0.86***	-0.82***	-0.15***	0.19***	-0.80***	0.33***	-0.03
10th - 5th	-0.21***	0.23**	1.08***	0.90***	-0.48***	0.05	-0.17**

The insignificant subsequent abnormal returns observed for ISDA portfolio deciles also help shed some light on the issue of potential industry-wide earnings manipulation. As mentioned earlier, some researchers have argued that certain industry conditions can lead to systematic earnings manipulation across all firms in the industry.[14] The results in Panel B do not support this view. Specifically, if abnormally high (low) industry-specific discretionary accruals were a result of most firms simultaneously manipulating their accruals upwards (downwards), the highest- (lowest-) ISDA portfolios would subsequently earn negative (positive) abnormal returns. The results in Panel B suggest that this is not the case. In particular, the panel shows that the highest-ISDA portfolio does not experience negative abnormal returns in any of the three years following portfolio formation. None of the other ISDA portfolios earn any significant abnormal returns subsequent to portfolio formation as well. This implies that the industry-specific discretionary

[14] For instance Ronen and Yaari (2008) quote Jeter and Shivakumar (1999): "[C]onsider an industry that is enjoying favorable economic conditions. If firms smooth reported earnings, then the 'actual' abnormal accruals for the firms in this industry will be negative. Cross-sectional models are unlikely to capture all the negative abnormal accruals, however, since the earnings management is contemporaneously correlated across firms in the sample. Thus only those firms whose accruals are negative relative to the industry benchmark will be identified as earnings managers. This introduces a potential limitation of the cross-sectional approach, or a bias against finding evidence of earnings management in some cases". (p. 301)

accruals primarily result due to fundamental, value-relevant reasons as opposed to systematic earnings manipulation. In other words, the information content embedded in ISDA is not subsequently reversed.[15]

4.3 The Differential Impact of Industry-Specific Discretionary Accruals

The summary statistics described earlier suggested that ISDA, high ISDA in particular, may have a differential impact on the information content of firm-specific discretionary accruals. If this is the case, then one should expect the magnitude of anomalous returns following high FSDA to vary with ISDA. To that end, I sort firms on the basis of their ISDA ranking *within* each FSDA decile and examine the subsequent abnormal returns of the resulting portfolios. The results are shown in Table 9 which shows the monthly abnormal returns one year after portfolio formation.

The results in Table 9 show that the highest-FSDA/highest-ISDA portfolio (bottom-right cell) subsequently experiences an annualized abnormal return of -11.28% (-0.94% x 12), whereas the highest-FSDA/lowest-ISDA portfolio (bottom-left cell) experiences no such abnormal returns. Interestingly, even the portfolio of firms with the second-highest ISDA in the highest-FSDA decile subsequently experiences an annualized abnormal return of -12.48 (-1.04% x 12); no significant abnormal returns are observed for any of the remaining highest-FSDA portfolios. Overall, Table 9 suggests that industry-wide use of discretionary accruals has a differential impact on the information content and pricing of firm-specific discretionary accruals. Specifically, investors tend to misprice firm-specific discretionary accruals only when industry-specific discretionary accruals are high.

A potential explanation for this observed relationship between ISDA and FSDA is that investors have to incur positive search costs in order to distinguish between value-relevant and manipulative discretionary accruals. As long as these search costs are reasonably high, industry-wide use of high discretionary accruals can give investors less reason to suspect manipulation and

[15] Another possibility is that investors are able to see through industry-wide earnings manipulation and price it accordingly. This, however, seems unlikely. Give the evidence that investors are unable to see through potential manipulation at the firm level, it is hard to imagine that they are able to see through such manipulation at the industry level.

Table 9. One Year-Ahead Monthly Alphas from the Fama-French Three Factor Model for Firms Double-Sorted on FSDA and ISDA

The table presents the one year ahead monthly alphas for portfolios deciles constructed by double-sorting firms on the basis of their firm-specific discretionary accruals (FSDA) and industry-specific discretionary accruals (ISDA). The portfolios are constructed in year *t*. The alphas are estimated from calendar time regression based on Fama-French's three factor model using monthly returns: $R_{pt} - R_{ft} = \alpha + \beta_m (R_{mt} - R_{ft}) + \beta_S SMB_t + \beta_H HML_t + \varepsilon_t$ where R_{pt} is the return on the accrual portfolio in month *t*; R_{mt} is the return on the CRSP value-weighted index in month *t*; R_{ft} is the 3-month T-bill yield in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t*. Panel A shows the returns one year prior to portfolio formation, while Panel B shows the returns one month subsequent to portfolio formation. Monthly returns are included starting 4 months after the beginning and 4 months after the end of each year. FSDA are calculated as the residuals from the cross-sectional modified Jones model after controlling for lagged performance. ISDA are estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than \$1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All continuous variables are Winsorized at 1% and 99%.

	Industry-Specific Discretionary Accrual (ISDA) Portfolio Deciles									
Firm-Specific Discretionary Accrual (FSDA) Portfolio Deciles	**One-Year ahead Monthly Alphas from Fama-French Three Factor Model**									
	Lowest	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Highest**
Lowest	0.45	0.40	-0.34	0.31	0.21	0.96	0.31	0.62	0.25	0.28
2	0.13	0.30	-0.19	-0.18	0.76**	0.14	0.42	0.51	-0.10	-0.13
3	-0.15	0.22	0.61*	0.47	0.26	0.21	0.12	0.19	-0.07	0.18
4	1.09*	0.06	0.31	0.32	0.28	0.42*	0.43*	0.45*	-0.24	-0.00
5	0.83	-0.06	0.05	-0.03	0.28	0.12	-0.01	0.28	0.24	-0.95
6	0.7	0.11	0.40	0.23	-0.10	0.21	-0.01	-0.19	-0.16	-0.32
7	-0.38	0.30	0.59**	0.29	0.08	0.00	-0.09	0.09	-0.20	-0.91
8	0.54	0.04	0.21	0.09	-0.16	0.35	-0.05	0.10	-0.14	-0.10
9	0.25	0.37	-0.13	0.34	-0.68**	-0.19	-0.05	-0.29	-0.59	-0.21
Highest	0.08	-0.21	-0.26	-0.29	-0.33	0.39	-0.33	-0.68	-1.04***	-0.94**

Table 10. One Year-Ahead Monthly Alphas from the Fama-French Three Factor Model for Firms Double-Sorted on TDA and ISDA

The table presents the annualized alphas for portfolios deciles constructed by double-sorting firms on the basis of their total discretionary accruals (TDA) and industry-specific discretionary accruals (ISDA). The portfolios are constructed in year *t*. The alphas are estimated from calendar time regression based on Fama-French's three factor model using monthly returns: $R_{pt} - R_{ft} = \alpha + \beta_m (R_{mt} - R_{ft}) + \beta_S SMB_t + \beta_H HML_t + \varepsilon_t$ where R_{pt} is the return on the accrual portfolio in month *t*; R_{mt} is the return on the CRSP value-weighted index in month *t*; R_{ft} is the 3-month T-bill yield in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t*. Panel A shows the returns one year prior to portfolio formation, while Panel B shows the returns one month subsequent to portfolio formation. Monthly returns are included starting 4 months after the beginning and 4 months after the end of each year. TDA are calculated as the difference between total accruals and accruals estimated using the past 10-year average of the parameter estimates obtained from the cross-sectional modified Jones model (controlling for past performance). ISDA are estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All continuous variables are Winsorized at 1% and 99%.

	Industry-Specific Discretionary Accrual (ISDA) Portfolio Deciles									
Total Discretionary Accrual (TDA) Portfolio Deciles	**One-Year ahead Monthly Alphas from Fama-French Three Factor Model**									
	Lowest	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Highest**
Lowest	0.31	0.37	-0.18	0.33	0.38	1.16*	-0.09	0.32	-0.41	-0.17
2	0.61*	0.16	0.31	-0.14	0.74**	-0.17	0.95*	0.76	0.74	0.48
3	0.78*	0.46	0.38	0.61**	0.35	0.33	-0.25	-0.04	-0.18	-0.25
4	0.14	-0.00	-0.05	0.03	0.29	0.50**	0.42	0.72**	0.08	-0.59
5	0.22	0.17	0.34	0.03	0.18	0.11	0.39	0.15	-0.74**	-0.22
6	0.59	0.27	0.63***	0.01	-0.09	0.06	-0.09	0.32	-0.07	-0.89*
7	0.87	0.07	0.49*	0.25	0.02	0.20	-0.05	-0.31	0.06	0.19
8	-0.53	0.32	-0.06	0.10	-0.21	0.32	-0.11	0.17	-0.17	-0.47
9	-0.49	0.18	-0.50	0.18	-0.58**	-0.22	0.04	-0.04	-0.26	-0.35
Highest	0.41	-0.19	-0.02	-0.32	-0.39	0.31	-0.41	-0.74	-1.15***	-0.93**

price all high discretionary accruals as value-relevant. Alternatively, high industry-specific discretionary accruals can increase the search costs associated with detecting manipulation and, as long as these costs outweigh the potential benefit of detecting manipulation, investors may overprice such manipulative discretionary accruals.

One implication of this proposition is that firms with the highest TDA and ISDA should be overpriced as well. Since FSDA measure potential accruals manipulation with reference to a firm's short-run non-discretionary accruals, i.e. accruals expected of the firm based on *prevalent* industry conditions, they are likely to understate the incidence of manipulation when ISDA are abnormally high. Double sorting firms on TDA and ISDA resolves this issue because it even captures those firms whose firm-specific discretionary accruals are not necessarily very high and whose potential manipulation is camouflaged by the systematic rise in industry-wide discretionary accruals.

In Table 10 I show the one year-ahead monthly abnormal returns of firms double sorted on the basis of their fiscal year-end TDA and ISDA ranking. The table shows that the highest-TDA/highest-ISDA portfolio subsequently earns an annualized return of -11.16% (-0.93% x 12) one year subsequent to portfolio formation. Firms with the highest TDA in the second-highest-ISDA decile also earn an annualized abnormal return of -13.18% (-1.15% x 12). In all the remaining ISDA deciles the set of firms with the highest TDA do not experience any abnormal returns. Specifically, the highest-TDA/lowest-ISDA portfolio does not earn any abnormal returns one year after portfolio formation. These results are consistent with the idea that firms which deviate from their long-run accrual average the most during times when industry-wide discretionary accruals are high are composed of a fraction of firms who are able to camouflage their accrual manipulation amidst the high-accrual-wave in the industry.

4.4 Agency Costs of Overvalued Equity as an Explanation for the Accruals Anomaly

In a recent paper, Kothari et al. (2006) have argued that firms with high discretionary accruals subsequently experience negative abnormal returns because of prior overvaluation. The authors build on Jensen's (2005) argument that overvalued firms try to sustain their overvaluation by manipulating their earnings, and that the subsequent negative returns reflect the correction of this overvaluation. Using residuals from the cross-sectional modified Jones (1991) model to proxy for earnings manipulation, the authors predict that firms with the highest discretionary accruals should experience significantly positive abnormal returns *prior* to portfolio formation and find evidence consistent with this prediction.[16] They also use this line of argument to explain the asymmetric relationship between extreme discretionary accruals and subsequent returns.

I find similar signs of overvaluation for the portfolio of firms with high discretionary accruals. Specifically, Panel A in Table 8 shows that firms in the highest-FSDA decile have annualized alphas of 12.24% (1.02% x 12), 18.00% (1.5% x 12) and 30.48% (2.54% x 12) three years, two years and one year prior to portfolio formation (respectively). These positive abnormal returns are significantly higher than those observed for other FSDA decile portfolios. In particular, the lowest-FSDA portfolio experiences significantly lower positive annualized abnormal returns of 1.20% (0.10 x 12), 1.20% (0.10% x 12) and 7.68% (0.64% x 12) three years, two years, and one year prior to portfolio formation (respectively).

Using TDA as a measure of discretionary accruals paints a similar picture. Panel A in Table 7 show that the highest-TDA decile portfolio earns an annualized alpha of 9.36% (0.78% x 12), 18.48% (1.54% x 12) and 30.96% (2.58% x 12) three years, two years and one year prior to portfolio formation (respectively). Again, these positive abnormal returns are significantly higher than those observed for other TDA portfolios. Overall, both Table 6 and Table 7 seem to lend credence to Kothari et al.'s (2006) argument that the negative returns following high discretionary accruals reflect the correction of prior overvaluation.

Nonetheless, evidence in favor of this explanation weakens once the role of industry-specific discretionary accruals is taken into account. Table 11 shows the one-year *prior* monthly alphas for firms double sorted on their level of FSDA and ISDA. The results indicate that *all* firms in the highest-FSDA portfolio experience significantly positive abnormal returns one year prior to portfolio formation. Specifically, the highest-FSDA/highest-ISDA portfolio earns a positive annualized abnormal return of 36.72% (3.06% x 12) whereas the highest-FSDA/lowest-ISDA

[16] The authors use Fama-French Three Factor Model to calculate monthly annualized alphas for discretionary accrual decile portfolios.

Table 11. One Year-Prior Monthly Alphas from the Fama-French Three Factor Model for Firms Double-Sorted on FSDA and ISDA

The table presents the one year-prior monthly alphas for decile portfolios constructed by double-sorting firms on the basis of their firm-specific discretionary accruals (FSDA) and industry-specific discretionary accruals (ISDA). The portfolios are constructed in year *t*. The alphas are estimated from calendar time regression based on Fama-French's three factor model using monthly returns: $R_{pt} - R_{ft} = \alpha + \beta_m (R_{mt} - R_{ft}) + \beta_S SMB_t + \beta_H HML_t + \varepsilon_t$ where R_{pt} is the return on the accrual portfolio in month *t*; R_{mt} is the return on the CRSP value-weighted index in month *t*; R_{ft} is the 3-month T-bill yield in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t*. Panel A shows the returns one year prior to portfolio formation, while Panel B shows the returns one month subsequent to portfolio formation. Monthly returns are included starting 4 months after the beginning and 4 months after the end of each year. FSDA are calculated as the residuals from the cross-sectional modified Jones model after controlling for lagged performance. ISDA are estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All continuous variables are Winsorized at 1% and 99%.

Panel A: One-Year Prior Monthly Alphas From Fama-French Three Factor Model

Firm-Specific Discretionary Accrual (FSDA) Deciles	**Industry-Specific Discretionary Accrual (ISDA) Deciles**									
	Lowest	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Highest**
Lowest	1.67***	0.05	0.43	0.16	0.41	-0.33	0.15	-0.20	0.70	0.76
2	0.91*	-0.30	0.24	0.45	0.13	-0.29	-0.07	0.07	0.38	-0.22
3	0.10*	0.09	0.62	0.09	-0.16	-0.45	0.13	-0.16	0.38	1.86***
4	0.1	0.30	0.37	0.07	-0.21	-0.08	-0.82***	0.35	0.20	0.23
5	1.78**	0.82*	0.30	0.04	-0.44	-0.40*	-0.24	0.35	0.27	2.33
6	1.29**	0.07	-0.01	0.04	-0.33	-0.14	-0.12	0.50*	0.50	0.21
7	0.89	0.13	0.68**	-0.10	0.07	-0.13	-0.01	0.18	0.54	0.15
8	1.47***	0.41	0.53**	-0.03	0.19	0.09	0.27	0.84**	1.55***	1.40*
9	1.40***	1.08***	0.25	0.82***	0.82**	0.84**	0.21	0.55	0.34	1.86*
Highest	2.16***	1.85***	2.61***	1.17**	2.11***	2.62***	2.17***	3.53***	3.11***	3.06***

Table 12. One Year-Prior Monthly Alphas from the Fama-French Three Factor Model for Firms Double-Sorted on TDA and ISDA

The table presents the annualized alphas for portfolios deciles constructed by double-sorting firms on the basis of their total discretionary accruals (TDA) and industry-specific discretionary accruals (ISDA). The portfolios are constructed in year *t*. The alphas are estimated from calendar time regression based on Fama-French's three factor model using monthly returns: $R_{pt} - R_{ft} = \alpha + \beta_m (R_{mt} - R_{ft}) + \beta_S SMB_t + \beta_H HML_t + \varepsilon_t$ where R_{pt} is the return on the accrual portfolio in month *t*; R_{mt} is the return on the CRSP value-weighted index in month *t*; R_{ft} is the 3-month T-bill yield in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; and HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t*. Panel A shows the returns one year prior to portfolio formation, while Panel B shows the returns one month subsequent to portfolio formation. Monthly returns are included starting 4 months after the beginning and 4 months after the end of each year. TDA are calculated as the difference between total accruals and accruals estimated using the past 10-year average of the parameter estimates obtained from the cross-sectional modified Jones model (controlling for past performance). ISDA are estimated as the difference between accruals estimated using contemporaneous parameter estimates and accruals estimated using the past 10-year average of parameter estimates obtained from the modified Jones model. The sample includes all US firms from 1986 – 2007 which are listed on COMPUSTAT and CRSP Monthly Return files and satisfy the following criteria: (a) are traded on NASDAQ, NYSE or AMEX, (b) have securities corresponding to common shares, (c) have assets and sales greater than $1m, (d) have non-missing values cross-sectional Jones Model variables, (e) have an accrual-to-asset ratio of less than 1 (in absolute terms), and (f) have at least 10 firms in their respective industry for all 32 years from 1976 - 2007. All continuous variables are Winsorized at 1% and 99%.

Panel A: One-Year Prior Monthly Alphas From Fama-French Three Factor Model

Total Discretionary Accrual (TDA) Deciles	**Industry-Specific Discretionary Accrual (ISDA) Deciles**									
	Lowest	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Highest**
Lowest	1.34***	-0.20	0.39	0.10	0.38	-0.31	0.61	0.08	0.15	2.74***
2	1.27***	0.03	-0.03	0.25	0.11	-0.08	-0.20	0.02	0.86*	-0.36
3	0.76	0.63*	0.54*	0.15	-0.23	-0.70**	-0.17	-0.25	0.36	-0.04
4	1.34***	0.05	0.39	0.00	-0.10	0.07	-0.89**	0.09	0.14	1.01*
5	0.64	0.26	0.22	0.23	-0.45*	-0.44**	-0.48**	0.38	0.81*	1.12
6	1.41**	0.46	0.69**	-0.06	-0.25	-0.03	-0.31	0.57**	0.03	0.52
7	0.29	-0.12	0.20	-0.23	-0.09	-0.20	-0.09	0.08	0.05	0.99
8	1.28**	0.17***	0.37	0.11	0.35	0.04	0.08	0.46*	0.59*	0.67
9	2.46***	0.10**	0.94*	0.89***	1.00***	0.94***	0.36	0.63*	0.83**	0.40
Highest	2.74***	2.76***	2.87***	1.69***	2.14***	2.29***	2.00***	3.16***	2.44***	2.58***

portfolio experiences a positive annualized abnormal return of 25.92% (2.16% x 12) one-year prior to portfolio formation. Despite these positive abnormal returns however, the subsequent negative returns are only experienced by the highest-FSDA/highest-ISDA portfolio (as shown in Panel B).

Table 12 shows similar results when firms double-sorted on TDA and ISDA. In particular, both the highest-TDA/highest-ISDA portfolio and the highest-TDA/lowest ISDA portfolio experience significantly positive annualized abnormal returns of 30.96% (2.58% x 12) and 30.48% (2.54% x 12) one year prior to portfolio formation; nonetheless, only the highest-TDA/highest-ISDA portfolio experiences the subsequent negative abnormal returns (as shown in Panel B). These results are hard to reconcile with Kothari et al.'s (2006) explanation (which would predict subsequent negative returns for *all* highest-FSDA firms since all of them are 'overvalued' prior to portfolio formation).

4.5 Robustness Checks

The findings of this paper are robust to alternative specifications, including (a) using the standard (rather than modified) cross-sectional Jones model to calculate discretionary accrual components, (b) using the past 7-year average of Jones model parameter estimates to calculate long-run non-discretionary accruals, and (c) using 2-digit SIC codes to classify firms into industries. Tests that require double-sorts are also robust to quintile (rather than decile) rankings of discretionary accrual components.[17] The results obtained from these different specifications are qualitatively similar to those reported in this paper and are omitted for the sake of brevity.

5. Conclusion

In this paper, I decompose discretionary accruals into a firm-specific and an industry-specific component. The rationale for doing so is that there are industry trends beyond those captured by variants of the cross-sectional Jones (1991) model that can affect the use (and nature)

[17] When I rank firms into TDA, FSDA and ISDA quintiles, I find statistically significant negative abnormal returns only observed for the highest-TDA/highest-ISDA and the highest-FSDA/highest-ISDA quintile portfolios.

of discretionary accruals broadly across all firms in the industry. Decomposing discretionary accruals in the manner proposed allows me to gain insight into the information content and manipulability of accruals, their role in price discovery, and the source of Sloan's (1996) accrual anomaly. My decomposition approach is analogous to the one employed by RKRV in decomposing market-to-book ratio into a firm-specific and a sector-specific component.

My results suggest that Sloan's (1996) accrual anomaly is driven by the firm-specific component of discretionary accruals. Specifically, I find that firms with the highest firm-specific discretionary accruals subsequently earn negative abnormal returns. On the other hand, firms with the highest industry-specific discretionary accruals do not earn any abnormal returns, suggesting that high industry-wide discretionary accruals contain information that is not subsequently reversed.

Moreover, although I find that industry-specific discretionary accruals do not directly contribute towards the accrual anomaly, it is precisely when industry-specific discretionary accruals are high that firms with high discretionary accruals are mispriced. The finding suggests that industry-specific discretionary accruals play an important role in influencing the information content and interpretability of a firm's discretionary accruals.

The results of this paper are consistent with several possible explanations. One possibility is that the systematic increase in the proportion of firms with high value-relevant discretionary accruals increases the search costs that investors have to incur in order to detect potential accrual manipulation. It is also possible that the industry-wide nature of the increase lower the subjective probability that investors attach to high discretionary accruals as being manipulative. Alternatively, the results are also consistent with Sloan's (1996) earnings fixation hypothesis and suggest that investors tend to overestimate the persistence of discretionary accruals when industry-specific discretionary accruals are high.

Pricing of discretionary accruals is of course a joint test of the appropriateness of the asset-pricing model and the nature of discretionary accruals. Hence another potential explanation for my findings is that there is a rational risk-premium associated with firms that have high firm-specific and industry-specific discretionary accruals. While plausible, recent evidence casts doubt on this rational risk explanation (Hirshleifer, Hou and Teoh, 2010).

Regardless of all these potential explanations, the paper highlights the importance of industry-specific discretionary accruals in explaining the well-documented accrual anomaly (Sloan, 1996; Xie, 2001). In so doing, the paper also sheds light on the earnings management literature that uses residuals from variants of the cross-sectional Jones (1991) model as a proxy for earnings manipulation.

CHAPTER 3

SEASONED EQUITY ISSUES AND INDUSTRY-SPECIFIC DISCRETIONARY ACCRUALS

1. Introduction and Literature Review

Literature documents that firms which issue equity tend to underperform in the years following the equity issuance (Ritter, 1991; Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995). In an attempt to explain these anomalous post-issue returns, Rangan (1998) and Teoh, Welch and Wong (1998a,b) find that equity-issuing firms, on average, tend to have large positive accruals in the years surrounding the issue and that these accruals can partially explain the post-issue underperformance. To the extent that managers have discretion in accounting for accruals and can potentially use this discretion to manipulate earnings, the authors cite this as evidence that aggressive earnings management through income-increasing accounting adjustments leads investors to be overoptimistic about issuers' prospects. In a related paper, Teoh and Wong (2002) find that analyst forecast errors tend to be more negative for those equity-issuing firms that have large discretionary accruals in the year of issuing equity. Their evidence suggests that even sophisticated investors like analysts are 'credulous' and are unable to fully understand the information content embedded in accruals.

In this paper, I decompose the discretionary accruals of seasoned equity issuers into a firm-specific and an industry-specific component and examine which component drives their subsequent underperformance and negative analysts' forecast errors. One main motivation behind decomposing accruals in the proposed manner is to see whether industry-specific discretionary accruals tend to be high, on average, in the years surrounding the equity issue and whether they help predict the post-issue negative abnormal returns and analysts' forecast errors. As mentioned earlier in Chapter 2, a firm's industry-specific discretionary accruals can be high both due to value-relevant and manipulative factors. Industry-specific discretionary accruals are likely to be manipulative, for instance, when an industry is enjoying favorable economic conditions and all firms are trying to 'smooth' reported earnings (Jeter and Shivakumar, 1999). Industry-specific discretionary accruals are also likely to be manipulative when the industry is systematically overvalued and firms are attempting to sustain their overvaluation by manipulating earnings upwards (Jensen, 2005; Kothari, Loutskina and Nikolaev, 2006). The fact that such periods are accompanied by high stock prices, combined with the fact that managers attempt to 'time the market' when issuing equity (Loughran and Ritter, 1995, 1997; Baker and Wurgler, 2002), warrants investigating whether market participants understand the information content of issuers' industry-specific discretionary accruals.

A related motivation is to investigate the differential impact (if any) of industry-specific discretionary accruals on investors' and analysts' overoptimistic earnings expectations from equity issuing firms with high discretionary accruals. Results from Chapter 2 suggest that industry-specific discretionary accruals can partially help explain Sloan's (1996) accrual anomaly. In particular, these results suggest that investors tend to overprice firms with high firm-specific discretionary accruals specifically during times when their industry-specific discretionary accruals are high as well. Whether this interaction between firm-specific and industry-specific discretionary accruals helps explain the anomalous capital market outcomes documented for equity issuers with large issuing-year accruals is an empirical question and one I attempt to address in this chapter.

Using a sample of firms that made seasoned equity offerings between 1975 and 2004, I find that investors' and analysts' overoptimistic earnings expectations from firms issuing equity are largely driven by the firm-specific component of discretionary accruals. I separately examine the post-issue returns and analysts' forecast errors of seasoned equity issuers from 1975 – 1989 (which is roughly the time period considered by Teoh et al., (1998 a,b) and Teoh and Wong (2002)) and for the sample of firms issuing equity between 1990 and 2004. I find that equity-issuing firms with high firm-specific discretionary accruals between 1975 and 1989 experience significantly negative abnormal in the three years following equity issuance. For the 1990 – 2004 sample of issuers, however, I find that issuing-year firm-specific discretionary accruals only help explain the one year-ahead abnormal returns. These results suggest that the explanatory power of firm-specific discretionary accruals in predicting *long-run* post-issue abnormal returns is more pronounced for the 1975 – 1989 sample of issuers than for a more general sample of equity issues.

My results also indicate that industry-specific discretionary accruals do not explain post-issue abnormal returns for either subsample of equity issuers. In particular, when I sort firms into quartiles based on their issuing-year industry-specific discretionary accruals I find no significant difference in the average post-issue abnormal returns of issuers with the highest and lowest industry-specific discretionary accruals. Basic summary statistics also suggest no clear relationship between firm-specific and industry-specific discretionary accruals in the years surrounding equity issuance. I also do not find any evidence that investors' overoptimistic expectations about the prospects of equity issuers are differentially influenced by the level of issuing-year industry-specific discretionary accruals. Specifically, I find that those equity-issuers which have the highest firm-specific *and* industry-specific discretionary accruals do not earn significantly lower returns than those firms which have the highest firm-specific but *lowest* industry-specific discretionary accruals at the time of issuing equity.

I obtain similar conclusions when I use the accruals decomposition to examine the post-issue analysts' forecast errors. Specifically, for the sample of issues between 1975 and 1989 I find that issuers with high pre-issue firm-specific discretionary accruals experience significantly more negative analyst forecast errors than issuers in other quartile portfolios. Sorting issuers into quartiles based on their issuing-year firm-specific discretionary accruals shows that firms in the highest quartile, on average, experience a 10 cent greater earnings forecast error (for each dollar invested in the stock) compared to firms in the lowest quartile for each of the three years following equity issuance. Nonetheless, I find that this predictive power of firm-specific discretionary accruals is less pronounced for the set of firms that issued equity during 1990 – 2004.

As with post-issue returns of equity issuers, I find little evidence that industry-specific discretionary accruals have power to explain the post-issue analyst forecast errors. When I sort equity issuers into quartiles based on their ranking of issuing-year industry-specific discretionary accruals, I find no significant difference in the average analyst forecast errors of firms in the highest and lowest quartile for each of the three years following equity issuance. Additionally, double-sorting on pre-issue firm-specific and industry-specific discretionary accruals also suggests that analyst's overoptimistic expectations about the prospects of equity issuers with high firm-specific discretionary accruals are not differentially influenced by their level of industry-specific discretionary accruals.

The findings of this chapter suggest that investors' and analysts' overoptimism about the prospects of equity issuers with high issuing-year discretionary accruals is more pronounced for the set of seasoned equity issues that took place during 1975 – 1989 than for those that took place between 1990 and 2004. One reason for this lower investor/analyst 'credulity' could be that market participants have learned (over time) to better interpret the information content of issuers' accruals. Additionally, contrary to the main finding in chapter 1, the results from this chapter suggest that industry-specific discretionary accruals in the years surrounding equity issuance do not play any role in explaining the post-issue negative abnormal returns and forecast errors of issuers with high accruals. Combined with little evidence of any meaningful relationship between issuing-year firm-specific and industry-specific discretionary accruals, this evidence highlights the importance of firm-specific factors in inducing overoptimistic earnings expectations by market participants.

The remainder of the chapter is organized as follows: Section 2 describes the sample selection procedure and provides details on the different variables considered and constructed for analyzing post-issue returns and analyst forecast errors. Section 3 provides the main results from implementing the accrual decomposition to the different sample of seasoned equity issuers between 1975 and 2004. Finally, section 4 concludes.

2. Sample Selection and Variable Description

In order to analyze post-issue market underperformance, I first obtain the initial sample of seasoned equity issues between 1970 and 2009 from Securities Data Corporation (SDC). The initial sample consists of 12,531 equity offers made by publicly traded US firms. From this sample, I exclude those issues that are accompanied by other financing transactions (such as spinoffs, privatizations etc.) and simultaneous offerings in other financial markets. In order to avoid overlapping relationship between accruals and returns, I also drop those equity issues from this sample that are preceded or followed by another equity issue in a five-year interval. Only 4,178 equity issues between 1975 and 2004 meet this criterion.

For inclusion in the final sample, I require equity issuers to have sufficient accounting and industry data to estimate the cross-sectional Jones (1991) model (described in Chapter 1).[18] Teoh et al (1998a) show that the negative relationship between accruals and returns is more pronounced for current accruals than for total accruals. Therefore I report most of my results on the relationship between issuing-year accruals and post-issue returns using the current accruals instead of total accruals.[19] As before, accounting data is obtained from Standard and Poor's COMPUSTAT Industrial Annual while data on month-end returns is obtained from the CRSP monthly return file. Issuers are further confined to include those that have valid returns in the month of issuing equity.

To obtain reliable parameter estimates from the cross-sectional Jones (1991) model, I confine my analysis to those equity issues which have at least 10 other non-equity-issuing firms in the industry. Specifically, for each fiscal year and industry I estimate the following regression across all non-equity-issuing firms:

$$\frac{Accruals_{j,t}}{Assets_{j,t-1}} = \alpha_{0t}\left(\frac{1}{Assets_{j,t-1}}\right) + \alpha_{1t}\left(\frac{\Delta Sales_{j,t}}{Assets_{j,t-1}}\right) + \alpha_{2t}\left(\frac{Gross\ PPE_{j,t}}{Assets_{j,t-1}}\right) + \epsilon_{j,t} \qquad (5)$$

where *j* denotes the non-equity-issuing firms belong in the same two-digit SIC code as the issuing firm. For the *i*th issuing firm, short-run non-discretionary accruals (SRNDA) are estimated as:

[18] I estimate different versions of the cross-sectional Jones (1991) model. Specifically, following Teoh et al. (1998 a,b) I estimate the model using current accruals as well as total accruals (the latter adjusted for depreciation). To control for the effect of performance on accruals, I also estimate the Jones (1991) model with lagged return-on-assets as an additional regressor. For consistency across these different versions, I require that data be available to estimate all these different versions.

[19] Current accruals are calculated the same way as total accruals (see chapter 1) except that they are not adjusted for depreciation expense. In other words, current accruals are calculated simply as the difference between change in non-cash current assets, less change in current liabilities (net of change in debt in current liabilities).

$$SRNDA_{i,t} = \widehat{\alpha_{0t}}\left(\frac{1}{Assets_{i,t-1}}\right) + \widehat{\alpha_{1t}}\left(\frac{\Delta Sales_{i,t} - \Delta A/R_{i,t}}{Assets_{i,t-1}}\right) + \widehat{\alpha_{2t}}\left(\frac{Gross\ PPE_{i,t}}{Assets_{i,t-1}}\right) \quad (6)$$

In the equation above, $A/R_{i,t}$ denotes the change in accounts receivable in fiscal-year t for issuer *i*.[20] Following Teoh et al. (1998a), I subtract the change in accounts receivable from the change in sales to allow for the possibility that equity issuers manipulate credit sales in the year of issuing equity.[21] Following convention in the literature (Teoh et al, 1998 a,b; Kothari et al., 2005) I drop financials (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) from the sample due to the differential nature of their reporting requirements. The final sample consists of 2,826 equity issues between 1975 and 2004 with 995 equity issues taking place prior to 1989.

Table 13 shows the distribution of seasoned equity issues from 1975 – 2004.[22] Consistent with Teoh et al. (1998a), the table shows clustering of issues in mid-1980s corresponding to the hot issue years. The table also suggests similar clustering of issues during 1993 – 1997 period which corresponds to high growth in the technology and telecommunications sector in the US.

Analysis of post-issue analyst forecast errors requires looking at equity issuers for which forecasts of annual earnings per share (EPS) are issued. Since firms with analyst following form a small subset of firms with available data on COMPUSTAT and CRSP, I adopt a slightly different data selection approach to analyze post-issue analysts' forecast errors in light of my accrual decomposition. I choose the initial sample of equity issuers from firms with available analysts' forecasts of annual EPS from Institutional Brokerage Estimate Systems (I/B/E/S) database and with available firm accounting data to estimate the cross-sectional Jones (1991) model. As before,

[20] When using current accruals instead of total accruals (as I do when examining post-issue market returns), I estimate equations (5) and (6) without gross property, plant and equipment.

[21] For robustness, I also estimate equations (5) and (6) using lagged ROA as an additional regressor to control for the effect of performance on accrual generation.

[22] In their study, Teoh et al. (1998a) consider the set of seasoned equity issues that take place between 1976 and 1990. I separately analyze equity issues from 1975 – 1989 and 1990 – 2004 to (a) roughly replicate the results in Teoh et al. (1998a), and (b) examine the relevance of their results for a broader sample of equity issues. The need to analyze equity issues that take place after 1990 is also warranted by my accrual decomposition methodology (which requires sufficient accounting and industry data to estimate the cross-sectional Jones (1991) model for the past five/ten years.

I delete financials and utilities from my sample due to different nature of their disclosure requirements. I also require each firm to have at least one analyst forecast error in the five years following equity issuance. Only the earliest issue is considered if a firm makes more than one issue within a five-year period.[23] The final dataset consists of 1,191 equity issues from 1975 – 1989 and 2,199 issue from 1990 to 2004 for a total of 3,390 seasoned equity offerings between 1975 and 2004. The distribution of equity issues between 1975 and 204 using this set of filters depicts a similar clustering pattern as shown in Table 1 below (and is hence not reported).

Table 13. Time Distribution of Seasoned Equity Offerings from 1975 to 2004
The table shows the time distribution of seasoned equity offerings between 1975 and 2004. Panel A shows the time distribution of equity issues between 1975 and 1989, while Panel B shows the distribution of seasoned equity issues between 1990 and 2004. Only those equity issues are considered which are not preceded or followed by another equity issue in a five-year interval and for which there is sufficient accounting and industry information available to estimate the cross-sectional Jones (1991) model. Additionally, all issuers are required to have non-missing returns at the end of the month in which equity is issued. Time distribution is based on calendar years.

Year	**Frequency**	**Percent**	**Year**	**Frequency**	**Percent**
1975	14	1.41	1990	42	2.29
1976	32	3.22	1991	125	6.83
1977	17	1.71	1992	120	6.55
1978	31	3.12	1993	165	9.01
1979	26	2.61	1994	111	6.06
1980	73	7.34	1995	167	9.12
1981	91	9.15	1996	225	12.29
1982	74	7.44	1997	188	10.27
1983	235	23.62	1998	93	5.08
1984	55	5.53	1999	83	4.53
1985	78	7.84	2000	91	4.97
1986	99	9.95	2001	53	2.89
1987	82	8.24	2002	83	4.53
1988	29	2.91	2003	111	6.06
1989	59	5.93	2004	174	9.50
Total	995	100.00		1831	100.00

[23] Unlike deleting issues which are preceded or followed by another issue in a five-year period (as I do when analyzing post-issue market performance in the light of my decomposition), here I consider the *earliest* issue if there are multiple issues within a five-year interval. This is primarily because deleting all firms with multiple issues within five years significantly reduces the sample of issues for the period 1975 – 1989 and does not allow a meaningful comparison of results with Teoh et al. (1998a).

I/B/E/S Summary Statistics file provides basic descriptive statistics (including mean, median and standard deviation) of analyst forecasts for each firm for each month in the annual forecast horizon. Following Teoh and Wong (2002), I report results on post-issue analyst forecast errors using the median analyst forecast of annual EPS, i.e. the average EPS forecast that is made six months prior to the fiscal year-end for which the forecast is made. For firms that do not have a forecast exactly six months prior to the fiscal year-end of the forecast I choose the earliest median analyst forecast that exists in the subsequent months following up to the fiscal year-end. This procedure ensures a minimum of six months lag between the forecast date and the fiscal year-end of the accruals in question and is used to ensure that analysts have information about lagged accruals when making their earnings forecasts for the upcoming year[24]

As in Teoh and Wong (2002), I calculate analysts' forecast errors (AFE) as the difference between actual earnings per share and the median analysts' forecast. A negative forecast error occurs when higher EPS is expected than is observed and hence suggests overoptimistic analysts' earnings expectations. Similarly, a positive error suggests pessimistic analysts' earnings expectations.[25] I look at the average analyst forecast errors for $n = 1, \ldots, 5$, where n represents the number of years following equity issuance. I use notation AFE*n* to distinguish between the forecast errors in each of these n post-issue years. All analysts' forecast errors are scaled by the stock price at the beginning of the month of forecast and Winsorized at 10% to remove the effects of outliers. Data on stock prices comes from CRSP and is adjusted for stock splits and dividends.

Accrual decomposition into firm-specific and industry-specific components follows the same procedure as outlined in chapter 1, except that in some instances past five-year (instead of past ten-year) Jones (1991) model parameter estimates are used to compute long-run non-discretionary accruals (LRNDA), industry-specific discretionary accruals (ISDA) and total discretionary accruals (TDA). Therefore, where necessary, I use suffixes _10 and _5 to differentiate between the estimates obtained using past ten-year and past five-year averages of these parameters estimates. With the exception of these suffixes, the same abbreviations are used

[24] Information on lagged accruals is released in firm's annual reports, and these reports are typically released three to four months after fiscal year end.

[25] Data on actual EPS is also obtained from the I/B/E/S Summary Statistics file.

as in chapter 1 to denote the various discretionary, non-discretionary, short-run and long-run components of accruals.[26]

3. Results

3.1 Descriptive Statistics

In this section, I provide the basic summary statistics of accruals and its different components in the years surrounding equity issuance. In order to draw meaningful comparisons with the studies conducted by Teoh et al. (1998a,b) and Teoh and Wong (2002), I separately report these statistics for the set of equity issues that take place between 1975 and 1989 (which is roughly the time period considered in the afore-mentioned studies) and those that take place between 1990 and 2004. Where appropriate, I also provide statistics for the overall sample of equity issues between 1975 and 2004.

Table 14 below shows the summary statistics of different components of (current) accruals and basic firm characteristics for the overall sample of issuers. The summary statistics are shown for the sample of 2,826 issues screened to analyze post-issue returns.[27] Panel A shows the descriptive statistics for the sub-sample of equity issues between 1975 and 1989, while Panel B shows the summary statistics of issues between 1990 and 2004. Descriptive statistics of issues over the entire sample period are shown in Panel C. To remove the effect of outliers, all accrual components are Winsorized at 1% and 99% respectively.

The results in Table 14 lend support the notion that firms manipulate accruals prior to issuing equity. Panel A shows that pre-issue FSDA averaged 3.8% of beginning total assets for firms that issued between 1975 and 1989. FSDA remain positive for these firms in the issuing year with a mean (median) of 6.4% (2.5%) as a percentage of beginning total assets. Consistent with prior evidence (Sloan, 1996; Xie, 2001) SRNDA form a relatively smaller fraction of current

[26] When abbreviating, I do not differentiate between current accruals and total accruals, i.e. abbreviation *TAC* is used to denote both total accruals and current accruals. This is merely to avoid confusion and does not impact the overall arguments presented in the paper.

[27] Similar descriptive statistics are obtained for the set of seasoned equity issuers that are screened to analyze post-issue analyst forecast errors and are hence not reported for the sake of brevity.

Table 14. Summary Statistics of Accrual Components and Firm Characteristics of Seasoned Equity Issues between 1975 and 2004

The table shows the summary statistics of current accruals and it components for the sample of firms making seasoned equity offerings. Descriptive statistics are given separately for the 1975 – 1989, 1990 – 2004 and 1975 – 2004 samples. Current accruals (*TAC*) are the difference between change in current assets and change in current liabilities Short-run non-discretionary current accruals (*SRNDA*) are estimated using the parameters obtained from estimating the cross-sectional modified Jones (1991) model. Firm-specific discretionary current accruals (*FSDA*) are the residuals obtained from estimating the Jones model. Long-run non-discretionary current accruals (*LRNDA*) are estimated using the past 5- and 10-year averages of the Jones model parameter estimates. Industry-specific discretionary current accruals are the difference between short-run and long-run non-discretionary current accruals. Total discretionary current accruals (*TDA*) equal the sum of firm-specific and industry-specific discretionary current accruals. Market capitalization is the product of fiscal year-end stock price and fiscal year-end shares outstanding. All accrual components are Winsorized at 1% and 99%.

	1975 – 1989			**1990 – 2004**			**1975 - 2004**		
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**
TAC	0.109	0.056	995	0.085	0.043	1831	0.093	0.047	2826
SRNDA	0.053	0.028	995	0.036	0.014	1831	0.042	0.018	2826
FSDA	0.064	0.025	995	0.050	0.020	1831	0.055	0.021	2826
Pre-Issue FSDA	0.038	0.013	916	0.023	0.005	1709	0.028	0.008	2625
10-year averages									
LRNDA_10	0.060	0.037	400	0.058	0.025	1821	0.058	0.027	2221
TDA_10	0.080	0.036	400	0.027	0.009	1821	0.036	0.014	2221
ISDA_10	0.004	-0.001	400	-0.023	-0.008	1821	-0.018	-0.006	2221
Pre-Issue ISDA_10	0.009	0.001	308	-0.040	-0.006	1698	-0.032	-0.004	2006
5-year averages									
LRNDA_5	0.049	0.026	898	0.047	0.021	1825	0.047	0.023	2723
TDA_5	0.068	0.025	898	0.038	0.015	1825	0.048	0.020	2723
ISDA_5	0.004	0.001	898	-0.011	-0.003	1825	-0.006	-0.001	2723
Pre-Issue ISDA_5	0.000	-0.000	797	-0.026	-0.003	1704	-0.017	-0.002	2501
Total Assets	589.100	65.514	995	732.975	130.827	1831	682.318	109.522	2826
Market Capitalization	399.875	85.800	992	912.568	251.010	1829	732.280	174.942	2821

Table 15. Correlation between Accrual Components for the Sample of Seasoned Equity Issues between 1975 and 2004

The table shows the Pearson's correlation between different components of current accruals for the sample of seasoned equity issues between 1975 and 2004. Total current accruals (*TAC*) are calculated as the difference between change in non-cash current assets and change in current liabilities (net of change in debt in current liabilities). Short-run non-discretionary current accruals (*SRNDA*) are estimated using the parameters obtained from estimating the cross-sectional Jones (1991) model. Firm-specific discretionary current accruals (*FSDA*) are the residuals obtained from estimating the Jones model. Long-run non-discretionary current accruals are estimated using the past 5- (*LRNDA_5*) and 10-year (*LRNDA_10*) averages of the Jones model parameter estimates. Industry-specific discretionary current accruals (*ISDA_5*, *ISDA_10*) are the difference between short-run and long-run non-discretionary current accruals. Total discretionary current accruals (*TDA_5*, *TDA_10*) equal the sum of firm-specific and industry-specific discretionary current accruals. All accrual components are Winsorized at 1% and 99% to remove the effect of outliers. *, ** and *** denote significance at 10%, 5% and 1% respectively.

	TAC	**SRNDA**	**FSDA**	**LRNDA_5**	**LRNDA_10**	**TDA_5**	**TDA_10**	**ISDA_5**	**ISDA_10**
TAC	-	0.263***	0.678***	0.359***	0.360***	0.780***	0.790***	0.021	0.001
SRNDA		-	-0.460***	0.305***	0.273***	0.149***	0.139***	0.768***	0.801***
FSDA			-	0.135***	0.149***	0.601***	0.579***	-0.543***	-0.610***
LRNDA_5				-	0.879***	-0.230***	-0.173***	-0.332***	-0.244***
LRNDA_10					-	-0.188***	-0.209***	-0.290***	-0.308***
TDA_5						-	0.953***	0.310***	0.240***
TDA_10							-	0.256***	0.257***
ISDA_5								-	0.954***
ISDA_10									-

accruals with a mean (median) of 5.3% (2.8%) as a percentage of beginning total assets. Panel B paints a similar picture for the subsample of equity-issuers between 1990 and 2004 with FSDA averaging 2.3% in the pre-issue year and 5.0% in the issuing year. The results are qualitatively similar to those reported by Teoh et al. (1998a).

As one would expect, long-run non-discretionary current accruals are a stable component of total current accruals. Table 14 shows that for both 1975 – 1989 and 1990 – 2004 sample of equity issuers, LRNDA averaged about 5-6% of beginning total assets. Nonetheless, total discretionary current accruals are slightly higher for firms issuing equity prior to 1990 than for firms issuing equity after 1990, with asset-scaled averages of approximately 7.0% and 3.8% respectively for the two sets of issuers. A contributing factor towards this observed difference is the level of industry-specific discretionary accruals. For instance Panel A shows that ISDA_10 (ISDA_5) averaged 0.4% (0.4%) for the 1975 – 1989 subsample of issuers compared to -2.3% (-1.1%) for the sample of firms that issued equity after 1990. Similarly, where pre-issue ISDA_10 (ISDA_5) averaged about zero for the 1975 – 1990 sample, they averaged -2.6% (-4.0%) of beginning total assets for the 1990 – 2004 sample of issuers. Thus the statistics seem to suggest no clear relationship between firm-specific and industry-specific discretionary accruals for the set of firms issuing equity between 1975 and 1989. On the other hand, there are some signs of a negative correlation between firm-specific and industry-specific discretionary accruals for the post-1990 issuers. Additionally, the statistics also suggest that pre-1990 equity issuers are smaller compared to firms that issued equity during 1990 – 2004. The mean (median) total assets in issuing year are about $589 million ($65 million) for the 1975 – 1989 subsample compared to $733 million ($131 million) for the 1990 – 2004 subsample.

To better illuminate the relationship between FSDA and ISDA, Table 15 provides the Pearson's correlations between different components of current accruals for the overall sample of issues between 1975 and 2004. The results suggest a strong positive correlation between the discretionary accrual measures that are estimated using 5- and 10-year parameter estimates. The correlation between ISDA_5 and ISDA_10, for instance, is 0.954, while the correlation between TDA_5 and TDA_10 is 0.953. LRNDA_5 and LRNDA_10 are also highly positively correlated with a correlation coefficient of approximately 90%. These figures suggest that long-run non-discretionary accruals are equally well-captured using 5- and 10-year averages of Jones (1991) model parameter estimates.

Table 16. Summary Statistics of Accrual Components and Firm Characteristics of Issuers with the Highest and Lowest Pre-Issue FSDA

The table shows the descriptive statistics of accrual components and basic firm characteristics for the sample of equity issuers with the highest and lowest pre-issue firm-specific discretionary current accruals (*FSDA*). Firms are categorized as having the 'lowest' and 'highest' pre-issue FSDA based on their pre-issue quartile ranking. Panels A, B and C report the summary statistics for time periods 1975 – 1989, 1990 – 2004 and 1975 – 2004 respectively. Current accruals (*TAC*) are calculated as the difference between change in non-cash current assets and change in current liabilities (net of change in debt in current liabilities). Short-run non-discretionary current accruals (*SRNDA*) are estimated using the parameters obtained from estimating the cross-sectional Jones (1991) model. FSDA are the residuals obtained from estimating the Jones (1991) model. Long-run non-discretionary current accruals (*LRNDA*) are estimated using the past 5- and 10-year averages of the Jones (1991) model parameter estimates. Industry-specific discretionary current accruals (*ISDA*) are the difference between SRNDA and LRNDA. Total discretionary current accruals (*TDA*) equal the sum of FSDA and ISDA. Market capitalization is the product of fiscal year-end stock price and fiscal year-end shares outstanding. All accrual components are Winsorized at 1% and 99% to remove the effect of outliers.

	Panel A: 1975 – 1989					
	Lowest Quartile			**Highest Quartile**		
	Mean	**Median**	**Std**	**Mean**	**Median**	**Std**
TAC	0.137	0.087	0.198	0.169	0.110	0.251
SRNDA	0.050	0.033	0.126	0.080	0.051	0.152
FSDA	0.088	0.048	0.216	0.114	0.061	0.270
Pre-Issue FSDA	-0.154	-0.110	0.142	0.262	0.178	0.237
10-year averages						
LRNDA_10	0.060	0.054	0.100	0.090	0.065	0.127
TDA_10	0.110	0.066	0.219	0.128	0.056	0.286
ISDA_10	-0.007	-0.003	0.121	0.013	-0.001	0.116
Pre-Issue ISDA_10	0.018	0.002	0.109	-0.002	-0.002	0.141
5-year averages						
LRNDA_5	0.050	0.033	0.095	0.072	0.052	0.115
TDA_5	0.092	0.051	0.198	0.111	0.063	0.254
ISDA_5	-0.002	0.000	0.103	0.010	0.000	0.093
Pre-Issue ISDA_5	0.014	0.003	0.127	-0.014	-0.004	0.142
Total Assets	209.826	60.503	512.833	199.086	39.127	708.723
Market Cap.	210.493	81.014	482.173	170.787	56.076	524.560

Table 16 – *Continued*

	Panel B: 1990 – 2004					
	Lowest Quartile			Highest Quartile		
	Mean	**Median**	**Std**	**Mean**	**Median**	**Std**
TAC	0.084	0.055	0.213	0.130	0.091	0.242
SRNDA	0.031	0.011	0.217	0.034	0.027	0.268
FSDA	0.058	0.038	0.304	0.102	0.050	0.348
Pre-Issue FSDA	-0.241	-0.137	0.285	0.324	0.207	0.309
10-year averages						
LRNDA	0.060	0.025	0.138	0.076	0.045	0.134
TDA	0.027	0.017	0.248	0.056	0.032	0.259
ISDA	-0.023	-0.011	0.265	-0.049	-0.015	0.330
Pre-Issue ISDA	0.038	0.008	0.321	-0.180	-0.045	0.395
5-year averages						
LRNDA	0.060	0.022	0.155	0.046	0.035	0.151
TDA	0.026	0.022	0.263	0.085	0.049	0.270
ISDA	-0.026	-0.008	0.277	-0.015	0.000	0.334
Pre-Issue ISDA	0.056	0.014	0.342	-0.150	-0.034	0.385
Total Assets	460.788	122.571	1138.450	433.534	100.260	2773.320
Market Cap.	664.064	239.148	1605.260	578.752	183.451	1661.880

	Panel C: 1975 - 2004					
	Lowest Quartile			Highest Quartile		
	Mean	**Median**	**Std**	**Mean**	**Median**	**Std**
TAC	0.101	0.064	0.210	0.143	0.099	0.246
SRNDA	0.037	0.017	0.194	0.050	0.037	0.236
FSDA	0.067	0.038	0.280	0.106	0.057	0.323
Pre-Issue FSDA	-0.215	-0.126	0.253	0.303	0.193	0.288
10-year averages						
LRNDA	0.060	0.028	0.133	0.079	0.050	0.133
TDA	0.041	0.024	0.245	0.070	0.035	0.265
ISDA	-0.020	-0.008	0.247	-0.038	-0.011	0.303
Pre-Issue ISDA	0.037	0.009	0.299	-0.151	-0.037	0.371
5-year averages						
LRNDA	0.057	0.026	0.141	0.055	0.041	0.140
TDA	0.045	0.029	0.247	0.094	0.051	0.265
ISDA	-0.019	-0.005	0.240	-0.007	0.000	0.279
Pre-Issue ISDA	0.045	0.011	0.295	-0.107	-0.022	0.334
Total Assets	384.658	98.113	997.561	353.836	77.917	2292.450
Market Cap.	526.472	160.203	1381.230	440.069	121.498	1397.220

Consistent with prior evidence (Sloan, 1996; Xie, 2001), Table 15 also suggests a strong negative correlation between FSDA and SRNDA. In particular, the table shows that the overall correlation between FSDA and SRNDA is significantly negative for the set of issuers at -0.46. Additionally, the table also suggests a statistically significant *negative* correlation between firm-specific and industry-specific discretionary accruals: the correlation between FSDA and ISDA_10 (ISDA_5) is -0.61 (-0.51). In contrast, firm-specific discretion increases with an increase in long-run non-discretionary accruals, as suggested by the statistically significant positive correlation of 0.149 (0.135) between FSDA and LRNDA_10 (LRNDA_5).

Since most implications for post-issue returns are drawn for firms with extreme accruals, in Table 16 I show the summary statistics of accrual components and other firm characteristics for the set of issuers with the lowest and highest pre-issue FSDA. Similar to the portfolio formation procedure adopted in chapter 1, I sort issuers into quartiles based on their ranking of pre-issue FSDA and then examine the descriptive statistics of accrual components for the resulting portfolios. The idea is to see whether there are any fundamental differences in the nature of (and relationship between) accrual components and other firm characteristics across 'aggressive' (highest pre-issue FSDA quartile) and 'conservative' (lowest pre-issue FSDA quartile) earnings manipulators.

Table 16 shows that the average firm-specific discretionary accruals tend to be positive in the issuing year for both aggressive and conservative accrual manipulators. For the 1975 – 1989 sample FSDA average 8.8% of beginning total assets in the issuing year for conservative manipulators and 11.4% for the aggressive manipulators. TDA in the issuing year are also highly positive for both sets of issuers at 9.2% and 11.1% respectively (when calculated using past five-year averages of Jones (1991) model parameter estimates). A similar pattern is observed for the set of equity issuers in 1990 – 2004. Consistent with the summary statistics in Table 14, Table 16 also suggests that the negative correlation observed between FSDA and ISDA is stronger during 1990 – 2004 than during 1975 – 1989. Panel A of Table 16 shows that pre-issue ISDA averaged about zero for both conservative and aggressive accrual manipulators, suggesting that there is no meaningful correlation between pre-issue FSDA and ISDA. On the other hand, Panel B shows that the mean (median) pre-issue ISDA for the conservative accruals manipulators were 4.5% (1.1%) of beginning total assets during 1990 – 2004 compared to -10.7% (-2.2%) for issuers classified as aggressive accrual manipulators. These figures suggest a negative (albeit weak) correlation between FSDA and ISDA, which stands in contrast with the positive relationship observed between the two variables when considering the general Sloan's (1991) accruals anomaly (in chapter 1)

In summary, the results suggest that firm-specific discretionary accruals go up in the years surrounding equity issue. This finding is consistent with Teoh et al. (1998a) and is more pronounced for their sample period than for the sample of issues occurring after 1990. I observe no such pattern for ISDA. Additionally, the summary statistics do not suggest any meaningful relationship between pre-issue FSDA and ISDA, especially when pre-issue FSDA are high. This provides preliminary evidence that pre-issue ISDA do not help explain post-issue investor optimism, especially for those with high pre-issue FSDA. In sections 3.2 and 3.3, I formally test the extent to which these discretionary accrual components predict post-issue returns.

3.2 Pre-issue Firm-Specific Discretionary Accruals and Post-Issue Returns

In this section, I test whether the firm-specific component of discretionary accruals predicts post-issue stock returns. Following Teoh et al. (1998a), I construct three different measures of returns for this purpose: raw returns, returns net of those on the value-weighted market index, and returns adjusted for Fama and French (1997) three factors.[28] I then examine the differences in return performance among the four quartile portfolios formed by grouping firms based on their pre-issue firm-specific discretionary current accruals. I do this exercise separately for the set of issues during 1975 – 1989 and during 1990 – 2004 and then repeat the exercise for the entire sample period. For each subsample I examine the three-year-ahead annual returns. As in Teoh et al. (1998a), I track each portfolio's return performance relative to month 0, which is either the month in which the firm issues equity or the month that occurs four months after the end of the previous fiscal year-end, *whichever occurs later*. This four-month lag between previous fiscal

[28] For robustness, I also calculate returns net of momentum factor (UMD) in addition to the three Fama and French (1997) factors. The tenor of the results remains unchanged.

year-end and return measurement ensures that investors have information about lagged accruals when making their investment decisions.[29]

The three return-performance measures are calculated as follows. I calculate annual raw returns for each firm by compounding the month-end returns each year. The average annual portfolio returns are calculated by using an equally-weighted average of the annual raw returns of all sample firms in the portfolio. To calculate each firm's market-adjusted returns, I subtract the month-end return on the value-weighted market portfolio from the month-end return for each firm and compound the difference.[30] To calculate Fama and French (1997) adjusted returns, I first estimate each firm's factor loadings on the three Fama-French factors (market-premium, SMB and HML) using returns from -18 to -42 months relative to the issuing date. I then use these factor loadings to estimate the expected returns for months 0 -35 following the issue and calculate monthly excess returns as the difference between actual and expected returns. I require a minimum of 12-months of available returns data for each issuer to obtain reliable estimates of the Fama-French factor loadings. When a sample firm disappears during the year, I replace its month-end returns by the month-end returns on the value-weighted market portfolio and drop the firm from portfolio in the following year.[31] The procedure essentially mimics a trading strategy that rebalances the portfolio annually and assigns equal weight to stocks still in existence.

Table 17 shows that for the 1975 – 1989 sample of issuers, firms in the lowest pre-issue FSDA quartile had an average one year-ahead annual raw return of 4.81% compared to -7.49% of firms in the highest quartile. The median one-year-ahead annual raw returns are also lower for firms in the highest quartile (-20.86%) compared to firms in the quartile with the lowest pre-issue FSDA (-12.64%).

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[29] Teoh et al. (1998a) note that the "… four-month lag represents a tradeoff: using accounting information with shorter lags might mean that financial statements are not yet available to investors, while longer lags might not capture the period when investors react to the report containing manipulated earnings". Following their methodology, I also check the robustness of my results using 6-month lags and obtain similar results.

[30] I also calculate market-adjusted returns for each firm by first compounding the month-end returns on the value-weighted market portfolio and then subtracting them from the (compounded) annual returns of the firm. The tenor of the results remains unchanged.

[31] For robustness I also substitute these missing returns with zero and obtain qualitatively similar results.

Table 17. Post-Issue Returns for the Highest and Lowest Pre-Issue FSDA Quartiles, 1975 - 1989

The table shows the post-issue returns for the sample of equity issuers with the highest and lowest pre-issue firm-specific discretionary current accruals (FSDA). Firms are categorized as having the 'lowest' and 'highest' pre-issue FSDA based on their quartile ranking of these accruals. For each portfolio, the table shows the raw, market-adjusted and Fama-French 3-Factor adjusted average annual returns three years subsequent to issuing equity. Only those equity issuers are included in the sample which have enough accounting and industry information to calculate FSDA using the Jones (1991) model and which do not have any other issue in a five-year interval. Additionally all firms are required to have non-missing returns in the month of the equity issue. For each firm in the portfolio, market-adjusted annual returns are obtained by compounding the month-end returns net of returns on the value-weighted index. Fama-French adjusted returns are calculated similarly. Factor loadings on the Fama-French factors are estimated using 36 months of returns data -18 to -42 months prior to month in which the issue is made (month 0). All accrual components and return variables are Winsorized at 1% and 99%. Statistical significance of means and medians is established based on t-tests and Wilcoxon signed rank sum tests respectively. *, ** and *** denote significance at 10%, 5% and 1% respectively.

Time Intervals	FSDA Quartiles	Mean Annual Returns			Median Annual Returns		
		Raw	Market- Adjusted	Fama-French Adjusted	Raw	Market- Adjusted	Fama-French Adjusted
0 - 11 months	Lowest Quartile	4.81	-4.75	-0.63	-12.64**	-13.03**	-10.30**
	Highest Quartile	-7.49*	-15.66***	-17.19***	-20.86***	-27.01***	-22.81***
	High - Low	***-12.30****	***-10.91****	***-16.56*****	***-8.22****	***-13.98****	***-12.51****
12 - 23 months	Lowest Quartile	8.52**	-7.98**	-1.83	-3.33	-9.28***	-5.04*
	Highest Quartile	-6.01*	-20.07***	-18.11***	-13.89***	-24.58***	-24.01***
	High - Low	***-14.53*****	***-12.09*****	***-16.28*****	***-10.56****	***-15.30*****	***-18.97*****
24 - 35 months	Lowest Quartile	15.90***	-4.50	2.22	6.37	-9.10**	-11.18***
	Highest Quartile	2.98	-13.17***	-18.08***	-4.47*	-16.92***	-23.22***
	High - Low	***-12.92*****	***-8.67****	***-20.30*****	***-10.84****	***-7.82****	***-12.04****

Table 18. Post-Issue Returns for the Highest and Lowest Pre-Issue FSDA Quartiles, 1990 - 2004

The table shows the post-issue returns for the sample of equity issuers with the highest and lowest pre-issue firm-specific discretionary current accruals (FSDA). Firms are categorized as having the 'lowest' and 'highest' pre-issue FSDA based on their quartile ranking of these accruals. For each portfolio, the table shows the average raw, market-adjusted and Fama-French 3-Factor adjusted annual returns three years subsequent to issuing equity. Only those equity issuers are included in the sample which have enough accounting and industry information to calculate FSDA using the Jones (1991) model and which do not have any other issue in a five-year interval. Additionally, all firms are required to have non-missing returns in the month of the equity issue. For each firm in the portfolio, market-adjusted annual returns are obtained by compounding the month-end returns net of returns on the value-weighted index. Fama-French adjusted returns are calculated similarly. Factor loadings on the Fama-French factors are estimated using 36 months of returns data -18 to -42 months prior to month in which the issue is made (month 0). All accrual components and return variables are Winsorized at 1% and 99%. Statistical significance of means and medians is established based on t-tests and Wilcoxon signed rank sum tests respectively. *, ** and *** denote significance at 10%, 5% and 1% respectively.

Time Intervals	FSDA Quartiles	Mean Annual Returns			Median Annual Returns		
		Raw	Market- Adjusted	Fama-French Adjusted	Raw	Market-Adjusted	Fama-French Adjusted
0 - 11 months	Lowest Quartile	-0.29	-12.26***	-6.48	-11.01**	-22.72***	-19.74***
	Highest Quartile	-8.65***	-19.16***	-13.76***	-20.77***	-28.83***	-28.44***
	High – Low	***-8.36****	***-6.9****	***-7.28***	***-9.76****	***-6.11****	***-8.70****
12 - 23 months	Lowest Quartile	6.86**	-9.73***	-3.8	-4.39	-18.76***	-17.20***
	Highest Quartile	2.84	-9.41***	0.07	-9.8**	-21.02***	-16.77***
	High – Low	***-4.02***	***0.32***	***3.87***	***-5.41***	***-2.26***	***0.43***
24 - 35 months	Lowest Quartile	5.08	-7.41**	-3.43	-6.17*	-13.81***	-13.26***
	Highest Quartile	3.70	-6.19**	-2.47	-5.26*	-16.23***	-14.91***
	High – Low	***-1.38***	***0.95***	***0.96***	***0.91***	***-2.42***	***-1.65***

After adjusting for returns on the market, issuers with the highest pre-issue FSDA average a one-year-ahead annual return of -15.66% compared to -4.75% by issuers in the lowest FSDA portfolio. For firms with sufficient pre-issue return data to estimate their exposure to Fama-French factors, those in the lowest FSDA quartile earn no significant abnormal returns while firms in the highest quartile earn a mean annual return of -17.19%. Overall these results suggest that firms with high pre-issue FSDA earn lower return than those with low pre-issue FSDA.

Two-year and three-year- ahead returns paint a similar picture. The portfolio of firms in the lowest FSDA quartile earns an average market adjusted return of -7.98% and -4.50% two years and three years subsequent to issuing date respectively. Firm in the highest quartile, on the other hand, earn significantly lower market adjusted returns of -20.07% and -13.17% respectively during the same time period. Fama-French adjusted returns for also significantly lower for aggressive accrual manipulators in the two and three years following equity issuance. Thus overall, the results in Table 17 are qualitatively similar to those reported by Teoh et al. (1998a) and seem to corroborate their finding that pre-issue (firm-specific) discretionary accruals can partially explain the subsequent underperformance experienced by seasoned equity issuers.

In Table 18 I examine these post-issue returns for the 1990-2004 subsample of issues. Interestingly, these results undermine the power of pre-issue firm-specific discretionary accruals in predicting post-issue returns of equity issuers. Specifically, Table 18 shows that there is a significant difference in post-issue returns of extreme FSDA portfolios only in the first year following equity issuance. The mean (median) one-year ahead market-adjusted return for the most highest FSDA quartile portfolio is approximately -20% (-28.33%) compared to about -12% (-22.72%) for the lowest-FSDA quartile portfolio. This difference in returns in not explained away by exposures to the Fama-French factors. The mean (median) Fama-French adjusted returns for the highest and lowest pre-issue firm-specific discretionary accrual quartiles are -13.76% (-28.44%) and -6.48% (-19.74%) respectively. In the second year that follows equity issuance however, the mean Fama-French adjusted returns for the highest and lowest quartile are 0.07% and -3.8% respectively. These returns are not statistically different from each other. The same is true of market-adjusted returns during this period, averaging -9.41% for portfolio of issuers in the highest quartile and -9.73% for firms in the lowest quartile. Post-issue returns in the third year following equity issuance also tell a similar story. The average market-adjusted returns and Fama-French adjusted returns for the aggressive and conservative accrual manipulators are roughly the same at about -7% and -3%, respectively.

Examining post-issue returns across aggressive and conservative accrual manipulators over the entire sample period yields results similar to those observed in Table 18. These results are shown in Table 19 and they suggest that, in general, pre-issue FSDA only predict subsequent returns in the first year that follows equity issuance. The mean (median) market-adjusted return for firms with the lowest pre-issue FSDA is approximately -10% compared to -18% for issuers in the highest quartile. There is no statistical difference in the average market-adjusted returns of these portfolios in subsequent years. Returns adjusted for Fama-French exposures yield similar results.

Overall, the post-issue returns exhibited in Tables 5 – 7 suggest that the ability of pre-issue firm-specific discretionary accruals to predict post-issue long-run underperformance is more pronounced for the 1975 – 1989 time period and does not hold for a more general sample of seasoned equity issues. It is worth noting that underperformance of seasoned equity issues in itself is not sample-specific. Specifically, these tables show that the average market-adjusted returns for issuers in all three years following equity issuance are significantly negative, *regardless* of the sample of issues being considered. Hence the inability of pre-issue firm-specific discretionary accruals to explain long-run market underperformance in a more general sample of equity issues is not because post-issue underperformance ceases to exist. This suggests that there is something intrinsically different about the set of firms issuing equity during 1975 – 1989 which allows pre-issue FSDA to explain some of the subsequent underperformance. Nonetheless, evidence does suggest that pre-issue firm-specific discretionary accruals do help predict *short-run* post-issue underperformance, as captured by one-year ahead annual adjusted returns.

3.3 Pre-issue Industry-Specific Discretionary Accruals and Post-Issue Market Returns

In this section, I examine the ability of pre-issue industry-specific discretionary accruals

Table 19. Post-Issue Returns for the Highest and Lowest Pre-Issue FSDA Quartiles, 1975 - 2004

The table shows the post-issue returns for the sample of equity issuers with the highest and lowest pre-issue firm-specific discretionary current accruals (FSDA). Firms are categorized as having the ‘lowest’ and ‘highest’ pre-issue FSDA based on their quartile rankings. For each portfolio, the table shows the raw, market-adjusted and Fama-French 3-Factor adjusted average annual returns three years subsequent to issuing equity. Only those equity issuers are included in the sample which have enough accounting and industry information to calculate FSDA using the Jones (1991) model and which do not have any other issue in a five-year interval. Additionally, all firms are required to have non-missing returns in the month of the equity issue. For each firm in the portfolio, market-adjusted annual returns are obtained by compounding the month-end returns net of returns on the value-weighted index. Fama-French adjusted returns are calculated similarly. Factor loadings on the Fama-French factors are estimated using 36 months of returns data -18 to -42 months prior to month in which the issue is made (month 0). All accrual components and return variables are Winsorized at 1% and 99%. Statistical significance of means and medians is established based on t-tests and Wilcoxon signed rank sum tests respectively. *, ** and *** denote significance at 10%, 5% and 1% respectively.

		Sample Period: 1975 - 2004					
		Mean Annual Returns			**Median Annual Returns**		
Time Intervals	**FSDA Quartiles**	**Raw**	**Market- Adjusted**	**Fama-French Adjusted**	**Raw**	**Market-Adjusted**	**Fama-French Adjusted**
0 - 11 months	Lowest Quartile	1.25	-9.98***	-4.34	-12.48***	-18.18***	-15.54***
	Highest Quartile	-8.26***	-17.97***	-15.04***	-20.86***	-28.62***	-25.92***
	High – Low	***-9.51****	***-7.99****	***-10.70****	***-8.36***	***-10.44****	***-10.38****
12 - 23 months	Lowest Quartile	7.36***	-9.19***	-3.07	-4.08*	-17.16***	-13.48***
	Highest Quartile	-0.20	-13.07***	-6.76**	-12.65***	-22.85***	-18.52***
	High – Low	***-7.56***	***-3.88***	***-3.69***	***-8.57***	***-5.69**	***-5.04**
24 - 35 months	Lowest Quartile	8.45***	-6.50***	-1.34	1.26	-3.54	-7.81**
	Highest Quartile	3.45	-8.54***	-6.87**	-5.26*	-16.60***	-18.82***
	High – Low	***-5.00***	***-2.04***	***-5.53***	***-6.52**	***-13.06***	***-11.01***

in predicting post-issue returns of seasoned equity issues. As before, I examine this relationship for the two different subsamples under consideration as well as for the entire sample. Table 20 reports the average annual raw, market-adjusted and Fama-French adjusted returns obtained after sorting firms into pre-issue ISDA quartiles. To have a reasonable number of firms in each quartile for the 1975 – 1989 sample of issuers, I use industry-specific discretionary that are calculated using the past five-year average of Jones (1991) model parameter estimates (i.e. ISDA_5) to classify firms into pre-issue industry-specific discretionary accrual quartiles.[32]

Generally, the results in Table 20 suggest that pre-issue ISDA do not have predictive power for post-issue returns. Panel A shows that issuers with the lowest pre-issue ISDA portfolio during 1975 – 1989 earned a significantly negative market-adjusted return of approximately -15% one year subsequent to equity issuance. While the average market-adjusted returns for firms with the highest pre-issue industry-specific discretionary accruals are less negative at about -7%, this difference between the two quartiles is statistically insignificant. Similarly, the one-year-ahead average Fama-French adjusted returns are also not significantly different for the two extreme ISDA portfolios. Additionally, the two-year ahead and three-year ahead average adjusted returns for firms with the highest and lowest pre-issue industry-specific discretionary accruals are also not statistically different from each other.

For issues taking place during 1990 – 2004, Panel B attributes some predictive power to pre-issue ISDA. Specifically, Panel B shows that the one-year ahead annual market-adjusted returns for firms with the lowest pre-issue ISDA are about 7% *lower* than those with the highest pre-issue ISDA.[33] These results are not corroborated by the one-year-ahead Fama-French adjusted returns which are not statistically different for the two portfolios of issuers. Two-year three-year ahead adjusted returns are also not statistically different for these two portfolios. Hence overall the results suggest that pre-issue ISDA do not explain the subsequent underperformance of equity

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[32] Since Table 3 suggests a high positive correlation between ISDA_5 and ISDA_10, I use ISDA_5 to classify firms into pre-issue industry-specific discretionary accrual quartiles. This increases the number of per-quartile firm-years for the 1975 – 1989 sample without influencing the results for other sample periods.

[33] Similar results are obtained for issues over the entire sample period of 1975 – 2004 are hence not reported.

Table 20: Post-Issue Returns for the Highest and Lowest Pre-Issue ISDA Quartiles, 1975 - 2004

The table shows the post-issue returns for the sample of equity issuers with the highest and lowest pre-issue industry-specific discretionary current accruals (*ISDA*). Firms are categorized as having the 'lowest' and 'highest' pre-issue ISDA based on their quartile ranking of pres-issue ISDA which are estimated using past five-year average of Jones (1991) model parameter estimates. Panels A and B report the mean and median annual returns for time periods 1975 – 1989 and 1990 – 2004 respectively. Each panel shows the raw, market-adjusted and Fama-French 3-Factor adjusted average annual returns three years subsequent to issuing equity. Only those equity issuers are included in the sample that have enough accounting and industry information to estimate the Jones (1991) model and which do not have any other issue in a five-year interval. Additionally, all firms are required to have non-missing returns in the month of the equity issue. For each firm in the portfolio, market-adjusted annual returns are obtained by compounding the month-end returns net of returns on the value-weighted index. Fama-French adjusted returns are calculated similarly. Factor loadings on the Fama-French factors are estimated using 36 months of returns -18 to -42 months prior to month in which the issue is made (month 0). All accrual components and return variables are Winsorized at 1% and 99% to remove the effect of outliers. Statistical significance of means and medians is established based on t-tests and Wilcoxon signed rank sum tests respectively. *, ** and *** denote significance at 10%, 5% and 1% respectively.

Panel A: 1975 – 1989							
Time Intervals	**Pre-Issue ISDA Quartiles**	**Mean Annual Returns**			**Median Annual Returns**		
		Raw	**Market- Adjusted**	**Fama-French Adjusted**	**Raw**	**Market- Adjusted**	**Fama-French Adjusted**
0 - 11 months	Lowest Quartile	-7.64	-15.25***	-15.19**	-21.35***	-28.88***	-23.93***
	Highest Quartile	5.19	-6.40	-3.43	-10.78**	-12.22***	-7.53*
	High – Low	***12.83****	***8.85***	***11.76***	***10.57***	***16.66****	***16.40****
12 - 23 months	Lowest Quartile	-1.50	-15.60***	-7.62	-12.44***	-22.44***	-15.06***
	Highest Quartile	-5.56	-18.35***	-11.03**	-18.38***	-22.57***	-14.82***
	High – Low	***-4.06***	***-2.75***	***-3.41***	***-5.85***	***-0.13***	***0.24***
24 - 35 months	Lowest Quartile	3.42	-13.38***	-20.72***	-6.83*	-19.14***	-23.32***
	Highest Quartile	6.28	-12.41***	-0.28	-1.13	-19.26***	-12.67***
	High - Low	***2.86***	***0.97***	***20.44*****	***-5.70***	***-0.12***	***10.65***

Table 20 - ***Continued***

		Panel B: 1990 – 2004					
Time Intervals	**ISDA Quartiles**	**Mean Annual Returns**			**Median Annual Returns**		
		Raw	**Market-Adjusted**	**Fama-French Adjusted**	**Raw**	**Market-Adjusted**	**Fama-French Adjusted**
0 - 11 months	Lowest Quartile	-6.81**	-18.55***	-9.54**	-17.31***	-27.32***	-23.36***
	Highest Quartile	0.43	-12.06***	-10.10***	-9.01**	-21.06***	-17.56***
	High - Low	***8.24****	***6.49***	***-0.56***	***-8.30***	***-6.26****	***-5.80***
12 - 23 months	Lowest Quartile	2.84	-11.64***	-2.66	-10.77	-22.76***	-19.17**
	Highest Quartile	7.11**	-9.10***	-4.87	-5.57**	-19.25***	-17.92***
	High - Low	***4.27***	***2.54***	***-2.21***	***5.20***	***-3.51***	***1.25***
24 - 35 months	Lowest Quartile	10.65***	-0.94	2.17	-1.36	-12.83***	-11.11***
	Highest Quartile	3.15	-10.26***	-4.58	-3.64	-14.65***	-15.18***
	High - Low	***-7.5****	***-9.32***	***-6.75***	***-2.28***	***-1.82***	***-4.07***

Table 21. Post-Issue Returns for Equity Issuers Double-Sorted Based on their Pre-Issue FSDA and ISDA

The table shows the average annual market-adjusted post-issue returns of equity issuers double-sorted according to their pre-issue firm-specific (*FSDA*) and industry-specific (*ISDA*) discretionary current accruals. FSDA are estimated using the cross-sectional Jones (1991) model. ISDA are estimated using the past five-year average of Jones (1991) model parameter estimates. Panels A and B report the mean annual returns for time periods 1975 – 1989 and 1990 – 2004 respectively. To be included in the final sample equity issuers are required to have enough accounting and industry information to estimate the Jones (1991) model and also not be preceded or followed by another equity issue in a five-year interval. Market-adjusted annual returns are obtained by compounding the month-end returns net of returns on the value-weighted index. All accrual components and return variables are Winsorized at 1% and 99%. *, ** and *** denote significance at 10%, 5% and 1% respectively.

Panel A: Market-Adjusted Returns 1975 - 1989

		0 - 11 months			**12 - 23 months**			**24 - 35 months**		
		Lowest Pre-Issue FSDA	**Highest Pre-Issue FSDA**	**High - Low**	**Lowest Pre-Issue FSDA**	**Highest Pre-Issue FSDA**	**High - Low**	**Lowest Pre-Issue FSDA**	**Highest Pre-Issue FSDA**	**High - Low**
Lowest Pre-Issue ISDA	**Mean**	-12.31	-17.25**	**-4.94**	-4.32	-20.26***	**-15.94***	8.37	-16.19***	**-24.56****
	N	35	61		35	61		32	56	
Highest Pre-Issue ISDA	**Mean**	-2.01	-15.78*	**-13.77**	-15.59***	-23.56***	**-7.97**	1.86	-28.64***	**-30.50*****
	N	65	45		65	45		60	41	

Panel B: Market Adjusted Returns 1990 – 2004

		0 - 11 months			**12 - 23 months**			**24 - 35 months**		
		Lowest Pre-Issue FSDA	**Highest Pre-Issue FSDA**	**High - Low**	**Lowest Pre-Issue FSDA**	**Highest Pre-Issue FSDA**	**High - Low**	**Lowest Pre-Issue FSDA**	**Highest Pre-Issue FSDA**	**High - Low**
Lowest Pre-Issue ISDA	**Mean**	-17.26***	-21.40***	**-4.14**	-17.66**	-10.38***	**7.28**	-1.61	-2.33	**-0.72**
	N	104	225		100	222		88	204	
Highest Pre-Issue ISDA	**Mean**	-13.19***	-21.59***	**-8.40**	-6.64*	-10.25*	**-3.61**	-6.84*	-18.45***	**-11.61**
	N	217	80		215	79		190	73	

issues. Additionally, given the relatively stronger negative correlation between firm-specific and industry-specific discretionary accruals during 1990 – 2004, it is likely that significantly greater negative returns for the lowest pre-issue ISDA quartile are driven by the presence of firms with high pre-issue FSDA. This further undermines the power of pre-issue industry-specific discretionary accruals in predicting post-issue underperformance.

3.4 Interaction between FSDA and ISDA in Predicting Post-Issue Market Returns

The results so far suggest that pre-issue FSDA can partially explain the subsequent underperformance experienced by seasoned equity offerings (especially in the short-run). On the other hand, evidence suggests that pre-issue ISDA have no such explanatory power. As a next step I examine whether the subsequent underperformance of issuers with high pre-issue FSDA is differentially influenced by their level of pre-issue ISDA. If investors are more credulous of potential earnings manipulation under situations where industry-wide use of discretionary accruals is high, then one should expect those firms with high pre-issue FSDA and high ISDA to underperform more than the general sample of firms with high FSDA.

To test this hypothesis, I double-sort my sample of issuers into quartiles based on their pre-issue FSDA and ISDA ranking. For each of the resulting portfolios, I examine the market-adjusted returns for the three years that follow the equity issue.[34] The results are summarized in Table 21. Panel A reports the results for issues taking place during 1975 – 1989 while Panel B shows the results for issues that took place between 1990 and 2004.

In general, the results reported in Table 21 do not provide strong evidence that high ISDA have a differential impact on investors' overoptimistic expectation from equity issuers with high pre-issue FSDA. For the 1975 – 1989 sample, Panel A shows that firms with high pre-issue FSDA and ISDA earned an average market-adjusted return of -15.78% one year subsequent to issuing equity. This return is not statistically different from the -17.25% earned by firms with high pre-issue FSDA but *low* pre-issue ISDA. The same is true of returns experienced two years subsequent

[34] For robustness, I also examine the Fama-French adjusted returns. The results obtained are qualitatively similar to those obtained using market-adjusted returns and are hence not reported for the sake of brevity.

to equity issuance. There is some evidence of difference in returns in the third year following equity issuance. In particular, the average market-adjusted returns for the set of firms with the highest pre-issue FSDA and ISDA are -28.64% compared to -16.19% for those with high FSDA but low ISDA. These results suggest that firms that have high pre-issue FSDA and ISDA tend to underperform more than those that have high FSDA but low ISDA, but do so in the long-run.[35]

Panel B reports similar results for the set of issuers during 1990 – 2004. One year subsequent to issuing equity, firms with high pre-issue FSDA and ISDA earn a market-adjusted return of approximately -20% which is about the same as that earned by firms with high pre-issue FSDA but low ISDA. Two years subsequent to the equity issue, the average market-adjusted returns for these two portfolios are roughly -10%. In the third year, however, firm with high pre-issue FSDA and ISDA earn a significantly lower return of -18.45% compared to only -2.0% by firms with high pre-issue FSDA but low ISDA.

Overall, the results in this section confirm Teoh et al.'s (1998a) finding that pre-issue discretionary accruals, in particular firm-specific discretionary accruals, partially explain post-issue underperformance. I find that this predictive power of pre-issue FSDA is less pronounced for seasoned issues taking place between 1990 and 2004. Moreover, the results also suggest that industry-specific discretionary accruals have little to no explanatory power when it comes to predicting post-issue underperformance. Finally, the evidence also indicates that investors' overoptimistic earnings expectations are by and large attributable to pre-issue FSDA, i.e. pre-issue ISDA have no differential impact on investors' overoptimistic expectation from equity-issuing firms with high discretionary accruals.

In the next few sections, I examine the explanatory of these accruals components in predicting the post- issue negative analyst forecast errors documented for seasoned equity issuers.

3.4 Descriptive Statistics of Post-Issue Analysts' Forecast Errors

Before examining the relationship between accrual components of issuers and their post-issue analyst forecast errors, I first corroborate Teoh and Wong's (2002) finding that post-issue

[35] Nonetheless, (in unreported results) I find no evidence of significantly different Fama-French adjusted returns for the two portfolios.

analyst forecast errors tend to be significantly negative. Table 22 reports the five-year ahead median analysts' forecast errors for the sample of equity issues between 1975 and 2004. As before, I separately examine the post-issue analyst forecast errors for the set of issues between 1975 and 1989 (Panel A), from 1990 – 2004 (Panel B) and for the overall sample from 1975 – 2004 (Panel C). All analyst forecast errors are Winsorized at 10% to remove the effect of outliers.

Consistent with Teoh and Wong (2002), Panel A shows significantly negative analysts' forecast errors for the five years following equity issuance for the sample of firms making a seasoned offering between 1975 and 1989. The results corroborate the authors' finding that analysts are, on average, overoptimistic about the earning prospects of equity issuing firms. For instance the mean one year-ahead analyst forecast error (AFE1) is -0.025 (-0.010), which suggests that actual earnings per share fell short of analysts' forecast by an average of 2.5 cents per dollar of investment in the stock.

Table 22 also shows that post-issue analyst forecast errors for the 1990 – 2004 sample of seasoned issues are also significantly negative in each of the subsequent five years. Nonetheless, it is worth noting that the magnitude of these errors is substantially less than those observed for firms issuing equity between 1975- 1989 for *each* of the five years following equity issuance. For instance the mean one year-ahead analyst forecast error (AFE1) for a firm issuing equity during 1990 – 2004 is -0.017, which means that analyst expectation fall short of actual earnings by an average of 1.7 cents per one dollar invested in the stock. These lower negative analyst forecast errors are consistent with the lower negative abnormal returns observed for the set of firms issuing equity after the 1990s and corroborate the earlier evidence that overoptimism about issuers' prospects is more pronounced during the 1975 – 1989 period.

To examine the relationship between discretionary accruals and post-issue analysts' forecast errors, Table 23 shows the Pearson's correlation coefficients between the various discretionary accrual components of equity issuers and their subsequent analyst forecast errors. The correlations are shown separately for equity issues from 1975 – 1989, 1990 – 2004 and for the overall 1975 – 2004 in Panels A, B and C respectively. For the sake of brevity, the correlations are only provided for the three years that follow equity issuance.

Table 22. Summary Statistics of Post-Issue Analysts' Forecast Errors (AFEs)

The table shows the descriptive statistics of post-issue analysts' forecast errors. Panels A, B and C report these descriptive statistics for the sample of equity issues from 1975 to 1989, 1990 to 2004, and from 1975 to 2004 respectively. All analysts' forecasts are one-year ahead forecasts of annual primary EPS. Only one analyst forecast is used per offering. AFE*n*, *n* = 1,…,5 of post-offering year, is the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) , scaled by price at the beginning of the month in which the forecast is made. All forecast errors are Winsorized at 10% and 90% respectively.

	Panel A: 1975 – 1989				**Panel B: 1990 - 2004**				**Panel C: 1975 - 2004**			
	Mean	**Median**	**St Dev**	**Obs.**	**Mean**	**Median**	**Std**	**Obs.**	**Mean**	**Median**	**Std**	**Obs.**
AFE1	-0.025	-0.010	0.038	1175	-0.017	-0.004	0.033	2198	-0.020	0.006	0.035	3338
AFE2	-0.027	-0.011	0.037	1088	-0.017	-0.004	0.034	2163	-0.021	-0.007	0.035	3054
AFE3	-0.025	-0.011	0.035	1007	-0.017	-0.004	0.032	1966	-0.020	-0.006	0.033	2740
AFE4	-0.021	-0.008	0.033	913	-0.014	-0.003	0.029	1733	-0.017	-0.005	0.031	2440
AFE5	-0.019	-0.006	0.030	833	-0.013	-0.002	0.028	1527	-0.016	-0.004	0.029	2209

Table 23. Spearman Rank Correlation between Offering-Year Accruals and Post-Issue Analysts' Forecast Errors (AFEs)

The table shows the Pearson's correlation coefficients between the different components of accruals and subsequent analyst forecast errors of equity-issuing firms. Current accruals (*TAC*) are calculated as the difference between change in non-cash current assets and change in current liabilities (net of change in debt in current liabilities). Short-run non-discretionary accruals (*SRNDA*) are estimated using the parameters obtained from estimating the cross-sectional Jones (1991) model. FSDA are the residuals obtained from estimating the modified Jones model. Long-run non-discretionary current accruals (*LRNDA*) are estimated using the past five-year averages of the Jones (1991) model parameter estimates. Industry-specific discretionary current accruals (*ISDA_5*) are the difference between SRNDA and LRNDA. All analysts' forecasts are one-year-ahead forecasts of annual primary EPS. Only one analyst forecast is used per offering. AFE*n*, *n* = 1,…, 3 of post-offering year is the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) , scaled by price at the beginning of the month in which the forecast is made. All forecast errors are Winsorized at 10% and 90% respectively.

	Panel A: 1975 - 1989			**Panel B: 1990 – 2004**			**Panel C: 1975 - 2004**		
	AFE1	**AFE2**	**AFE3**	**AFE1**	**AFE2**	**AFE3**	**AFE1**	**AFE2**	**AFE3**
TAC	-0.103***	-0.175***	-0.137***	-0.085***	-0.125***	-0.148***	-0.067***	-0.088***	-0.145***
	1175	1088	1007	3338	3054	2740	2163	1966	1733
FSDA	-0.136***	-0.171***	-0.127***	-0.087***	-0.115***	-0.111***	-0.061***	-0.085***	-0.100***
	1175	1088	1007	3338	3054	2740	2163	1966	1733
SRNDA	0.001	-0.065*	-0.042	-0.016	-0.036**	-0.075***	-0.012	-0.009	-0.081***
	1175	1088	1007	3338	3054	2740	2163	1966	1733
ISDA	0.037	0.046	0.023	0.013	0.020	0.014	0.009	0.014	0.013
	977	900	823	3090	2824	2519	2113	1924	1696
LRNDA	-0.001	-0.075*	-0.064*	-0.016	-0.047**	-0.096***	-0.015	-0.022	-0.100***
	977	900	823	3090	2824	2519	2113	1924	1696
TDA	-0.140***	-0.185***	-0.134***	-0.096***	-0.124***	-0.122***	-0.070***	-0.090***	-0.111***
	977	900	823	3090	2824	2519	2113	1924	1696

Consistent with Teoh and Wong (2002), Table 23 suggests a significantly negative correlation between accruals and post-issue analysts' forecast errors for all three sample periods. This negative correlation is particularly strong for equity issues between 1975 – 1989 than for equity issues between 1990 and 2004. For instance Panel A shows that the correlation between one-year ahead analysts' forecast error (AFE1) and total accruals (TAC) is – 0.103 for the sample of issues between 1975 and 1989. This correlation is slightly weaker at -0.085 for the sample of issues between 1990 – 2004. A similar correlation is observed between TAC and AFE2, and between TAC and AFE3. Moreover, Table 23 also shows that this negative correlation between accruals and subsequent analysts' forecast errors is primarily driven by issuing-year FSDA. In particular, FSDA and AFE*n* are significantly negatively correlated for *n* = 1,…,3. Again, this correlation is greater for 1975 – 1989 equity issues than for 1990 – 2004 set of issues. A similar pattern is observed for correlations between issuing-year TDA and post-issue analysts' forecast errors.

Panel A of Table 23 also corroborates Teoh and Wong's (2002) finding that there is no significant relationship between SRNDA and subsequent analysts' forecast errors. Interestingly, however, Panel B suggests a negative correlation between SRNDA and post-issue analysts' forecast errors for the set of issues between 1990 and 2004. In particular, Panel B shows a correlation of -0.036 between SRNDA and AFE2, and -0.075 between SRNDA and AFE3. Finally, Table 23 shows that issuing-year ISDA have no power in predicting post-issue analyst forecast errors: the correlation coefficients between ISDA and AFE*n*, *n* = 1,…, 3 are insignificant for all three sample periods being considered. This evidence is also consistent with ISDA having no power to explain the post-issue market underperformance.

3.5 Offering-Year FSDA and Post-Issue Analysts' Forecast Errors

In order to validate whether issuing-year firm-specific discretionary accruals have power to explain these observed post-issue analyst forecast errors, I next sort firms into quartiles based on their issuing-year FSDA and examine the average analyst forecast errors for each of the resulting portfolios for the three years following equity issuance.

Panel A of Table 24 reports results consistent with those reported by Teoh and Wong (2002). Specifically, the results suggest that the negative post-issue analyst forecast errors are significantly greater for the set of firms with the highest issuing-year FSDA compared to firms with the lowest issuing-year FSDA. Panel A shows that for the sample of firms issuing equity in 1975 – 1989, the average one-year ahead analyst forecast error for firms with the highest issuing-year FSDA is -0.034 compared to -0.024 for firms with the lowest issuing-year FSDA. The two-year and three-year-ahead analyst forecast errors are also 10 cents higher (on average) for the set of firms with highest issuing-year FSDA compared to firms with lowest issuing-year FSDA. Overall, the results in Panel A suggest that issuing-year FSDA have power to explain post-issue analyst forecast errors

For the set of equity issuers between 1990 and 2004, however, Panel B shows evidence consistent with weaker predictive power of FSDA. In particular, Panel B shows that firms in the lowest quartile of issuing-year FSDA experience a one-year ahead analyst forecast error of -17 cents compared to a forecast error of -22 cents per dollar invested in the stock of firms with the highest issuing-year FSDA. On average, the post-issue analyst forecast errors for each of the three years following equity issuance differ by an average of 5 cents per dollar invested for the set of firms in these extreme issuing-year FSDA portfolios. Overall, these results are consistent with weakened predictive power of issuing-year FSDA for seasoned equity issues during 1990 – 2004.

3.6 Offering-Year ISDA and Post-Issue Analyst Forecast Errors

I next test whether issuing-year ISDA have power to explain the post-issue analysts' forecast errors. As in the previous section, I now sort firms into quartiles based on their issuing-year ISDA and look at the subsequent forecast errors for the 1975 – 1989 and 1990 – 2004 sample of seasoned equity issues. The average analysts' forecast errors for each of the three years following equity-issuance are shown in Table 25. As before, Panel A shows the average forecast errors for the sample of issues between 1975 – 1989, and Panel B shows the results for 1990 – 2004 sample of equity issues.

Table 24. Average Analysts' Forecast Errors of Equity Issuers Sorted into Quartiles based on Offering-Year FSDA Rankings

The table presents the mean and median analysts' forecast errors of annual EPS in post-issue years one through three for 1975 – 1989 and 1990 – 2004 samples of issues. The results are shown for quartiles formed on offering year firm-specific discretionary accruals (FSDA). FSDA are estimated from the cross-sectional Jones (1991) model and are Winsorized at 1% and 99% respectively. Analyst forecast errors are measured as the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) scaled by price at the beginning of the month of the forecast. All forecast errors are Winsorized at 10% and 90%; FSDA are Winsorized at 1% and 99% respectively.

FSDA Quartiles		**Panel A: 1975 – 1989**			**Panel B: 1990 - 2004**		
		AFE1	**AFE2**	**AFE3**	**AFE1**	**AFE2**	**AFE3**
Q1 (*Lowest*	*Mean*	-0.024***	-0.028***	-0.024***	-0.017***	-0.017***	-0.017***
	Median	-0.007	-0.012	-0.013	-0.003	-0.004	-0.004
	Obs.	270	244	224	564	508	445
Q2	*Mean*	-0.020***	-0.018***	-0.018***	-0.013***	-0.013***	-0.013***
	Median	-0.005	-0.007	-0.007	-0.002	-0.002	-0.002
	Obs.	316	300	282	517	473	425
Q3	*Mean*	-0.024***	-0.024***	-0.025***	-0.015***	-0.015***	-0.014***
	Median	-0.011	-0.010	-0.011	-0.003	-0.003	-0.004
	Obs.	303	282	258	533	491	440
Q4 (*Highest)*	*Mean*	-0.034***	-0.038***	-0.034***	-0.022***	-0.024***	-0.024***
	Median	-0.021	-0.024	-0.022	-0.006	-0.010	-0.009
	Obs.	286	-0.021	243	549	494	423

Table 25. Average Analysts' Forecast Errors of Equity Issuers Sorted into Quartiles based on Offering-Year ISDA Rankings

The table presents the mean and median analysts' forecast errors of annual EPS in post-issue years one through three for 1975 – 1989 and 1990 – 2004 samples of issues. The table shows the forecast errors for quartiles formed on offering year industry-specific discretionary accruals (ISDA). Industry-specific discretionary accruals are estimated using the past five-year averages of the Jones (1991) model parameter estimates and are Winsorized at 1% and 99% respectively. Analyst forecast errors are measured as the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) scaled by price at the beginning of the month of the forecast. All forecast errors are Winsorized at 10% and 90%; ISDA are Winsorized at 1% and 99% respectively.

ISDA Quartiles		**Panel A: 1975 – 1989**			**Panel B: 1990 - 2004**		
		AFE1	**AFE2**	**AFE3**	**AFE1**	**AFE2**	**AFE3**
Q1 (*Lowest*	*Mean*	-0.033***	-0.033***	-0.030***	-0.018***	-0.019***	-0.020***
	Median	-0.019	-0.018	-0.018	-0.004	-0.006	-0.005
	Obs	211	190	177	562	502	432
Q2	*Mean*	-0.025***	-0.027***	-0.021***	-0.015***	-0.016***	-0.015***
	Median	-0.010	-0.013	-0.010	-0.004	-0.004	-0.004
	Obs	260	240	212	514	478	436
Q3	*Mean*	-0.024***	-0.027***	-0.025***	-0.015***	-0.014***	-0.014***
	Median	0.007	-0.011	-0.011	-0.003	-0.003	-0.002
	Obs.	279	263	247	496	454	402
Q4 (*Highest)*	*Mean*	-0.030***	-0.032***	-0.029***	-0.019***	-0.019***	-0.019***
	Median	-0.015	-0.015	-0.017	-0.004	-0.005	-0.005
	Obs.	227	206	187	541	490	426

Results from both Panel A and Panel B of Table 25 corroborate the earlier presented evidence that ISDA have little power to explain post-issue analysts' forecast errors. In particular, both panels indicate little difference between the analysts' forecast errors observed for firms with the highest and lowest issuing-year ISDA. For instance, Panel A shows that for the sample of firms issuing equity between 1975 and 1989, AFE1 is -0.033 for lowest issuing-year ISDA portfolio which is similar to AFE1 of -0.030 observed for the highest-ISDA portfolio. Similarly, the two-year and three-year-ahead analysts' forecast errors are also not significantly different from each other for these extreme ISDA portfolios. Panel B shows similar results for the 1990 – 2004 set of issuers.

3.7 Interaction between FSDA and ISDA in Predicting Post-Issue Analysts' Forecast Errors

The results so far confirm that (at least in the short-run) analysts tend to have overoptimistic earnings expectations from firms with high issuing-year FSDA. I next check whether this analyst overoptimism is driven by those high-FSDA firms whose issuing-year ISDA are high as well. To formally conduct this test, I double sort my sample of equity issuers according to their issuing-year FSDA and ISDA and then examine the average three-year ahead analysts' forecast errors for the resulting portfolios. The results of this exercise are shown in Table 26. For the sake of brevity, the double-sort of issuing-year FSDA quartiles is shown only across the highest and lowest issuing-year ISDA quartiles.

For the set of equity issuers between 1975 and 1989, Panel A suggests that analysts are not more overoptimism about firms with high issuing-year FSDA and ISDA. In particular, Panel A shows the average one year-ahead analyst forecast error for firms with the highest FSDA and the ISDA is -0.041 which is not statistically different from the negative analyst forecast error of -0.037 observed for firms with high issuing-year FSDA but low issuing-year ISDA. For the two and three years following equity issuance, the average analyst forecast errors for these two portfolios differ only by 4 cents and 6 cents respectively. [36]

[36] Difference of means test reveals no statistical difference between the average returns observed across the two sets of portfolios.

Table 26. Post-Issue Analysts' Forecast Errors of Equity Issuers Double-Sorted into Quartiles Based on their Offering -Year FSDA and ISDA

The table presents the mean and median analysts' forecast errors of annual EPS three years subsequent to equity issuance. Panel A shows results for the sample of issues between 1975 and 1989 while Panel B shows results for the sample of issues between 1990 and 2004. Firms are first sorted into quartiles based on their offering-year FSDA rankings and then sorted again on their offering-year ISDA rankings. Firm-specific discretionary accruals (FSDA) are calculated as the residuals from the cross-sectional Jones (1991) model. Industry-specific discretionary accruals (ISDA) are estimated using the past five-year averages of the Jones (1991) model parameter estimates. Analyst forecast errors are measured as the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) scaled by price at the beginning of the month of the forecast. All forecast errors are Winsorized at 10% and 90%; FSDA and ISDA are Winsorized at 1% and 99% respectively.

		Panel A: 1975 - 1989					
		ISDA Q1 (Lowest Quartile)			**ISDA Q4 (Highest Quartile)**		
FSDA Quartiles		**AFE1**	**AFE2**	**AFE3**	**AFE1**	**AFE2**	**AFE3**
Q1 (*Lowest*)	***Mean***	-0.029***	-0.024***	-0.017***	-0.023***	-0.033***	-0.032***
	Median	-0.013	-0.012	-0.014	-0.010	-0.021	-0.021
	Obs	31	27	23	82	69	60
Q2	***Mean***	-0.022**	-0.019**	-0.012**	-0.031***	-0.020***	-0.021***
	Median	-0.019	-0.005	-0.004	-0.015	-0.010	-0.009
	Obs	20	18	18	59	59	57
Q3	***Mean***	-0.028***	-0.026***	-0.033***	-0.034***	-0.045***	-0.038***
	Median	-0.015	-0.011	-0.019	-0.019	-0.037	-0.021
	Obs	50	46	43	45	39	34
Q4 (*Highest*)	***Mean***	-0.037***	-0.042***	-0.035***	-0.041***	-0.034***	-0.031***
	Median	-0.028	-0.027	-0.023	-0.031	-0.009	-0.022
	Obs	110	99	93	41	39	36

Table 26 – ***Continued***

		Panel B: 1990 – 2004					
		ISDA Q1 (Lowest)			**ISDA Q4 (H)**		
FSDA Quartiles		**AFE1**	**AFE2**	**AFE3**	**AFE1**	**AFE2**	**AFE3**
Q1 (*Lowest)*	***Mean***	-0.016***	-0.013***	-0.015***	-0.021***	-0.022***	-0.020***
	Median	-0.001	-0.000	-0.005	-0.005	-0.009	-0.005
	Obs	110	97	80	227	204	174
Q2	***Mean***	-0.017***	-0.018***	-0.016***	-0.015***	-0.014***	-0.013***
	Median	-0.002	-0.006	-0.003	-0.002	-0.003	-0.001
	Obs	77	70	64	121	111	96
Q3	***Mean***	-0.015***	-0.015***	-0.017***	-0.014***	-0.014***	-0.016***
	Median	-0.003	-0.004	-0.003	-0.001	-0.001	-0.005
	Obs	130	120	105	91	82	72
Q4 (*Highest)*	***Mean***	-0.022***	-0.025***	-0.025***	-0.024***	-0.025***	-0.025***
	Median	-0.006	-0.010	-0.008	-0.006	-0.011	-0.006
	Obs	245	215	183	102	93	84

Panel B reports similar results similar results for the set of firms that make seasoned equity issues between 1990 and 2004. For the set of firms with the highest issuing-year FSDA and ISDA, Panel B shows that the average AFE1, AFE2 and AFE 3 are -0.024, -0.025 and -0.025 respectively. These analyst forecast errors are almost identical to the ones observed for equity issuers with the highest issuing-year FSDA but the lowest issuing-year ISDA. Thus Panel B also suggests no additional explanatory power for the post-issue negative analyst forecast errs documented for firms with high issuing-year FSDA.

3.8 Multivariate Analysis

Following Teoh and Wong (2002), I also use multivariate OLS regressions to further test the robustness of the results presented in the above sections. In particular, for each of the three years following equity-issuance I estimate the following regression specification separately for the set of firms issuing equity between 1975 and 1989 and from 1990 – 2004:

$$AFE_{i,j,t}^{n} = \alpha_0^n + \sum_t \alpha_{1,t}^n DY_t + \sum_j \alpha_{2,t}^n DI_j + \alpha_3^n Log(MV_i^{n-1}) + \alpha_4^n FSDA_i + \alpha_5^n SRNDA_i + \epsilon_i^n \quad (7)$$

where $AFE_{i,j,t}^{n}$ denote the post-issue analyst forecast errors for firm *i* in industry *j* at time *t*, and *n* denotes years after equity-issuance, DY_t and DI_j represent the full set of time and industry dummies (respectively), and MV_i^{n-1} denotes the market value of equity at the end of year *n-1* relative to the issue year. To check for the explanatory power of issuing-year ISDA, I also estimate the following sets of regressions:

$$AFE_{i,j,t}^{n} = \alpha_0^n + \sum_t \alpha_{1,t}^n DY_t + \sum_j \alpha_{2,t}^n DI_j + \alpha_3^n Log(MV_i^{n-1}) + \alpha_4^n FSDA_i + \alpha_5^n ISDA_i + \alpha_6^n LRNDA_i + \epsilon_i^n \quad (8)$$

$$AFE_{i,j,t}^{n} = \alpha_0^n + \sum_t \alpha_{1,t}^n DY_t + \sum_j \alpha_{2,t}^n DI_j +) + \alpha_3^n Log(MV_i^{n-1}) + \alpha_4^n FSDA_i + \alpha_5^n ISDA_i + \alpha_6^n FSDA_i * ISDA_i + \epsilon_i^n \quad (9)$$

In equation (8), issuing-year ISDA are added as a regressor in addition to issuing-year FSDA, whereas long-run non-discretionary accruals are added as the remaining component of total accruals. If industry-specific discretionary accruals have power to explain the post-issue analyst forecast errors, then one should expect a statistically significant coefficient on ISDA. In a similar spirit, equation (9) re-estimates equation (7) after adding an interaction term between FSDA and ISDA. The coefficient α_5^n on the interaction term captures the differential impact of (high) ISDA on the subsequent analyst forecast errors associated with (high) issuing-year FSDA. The results from the estimation of these equations are presented in Columns 1 through 9 in Tables 27 and 28. Table 27 reports the results the results for the set of equity issues between 1975and 1989 while Table 28 reports the results for the set of issues between 1990 and 2004. Columns 1, 4 and 7 report the regression estimates obtained from estimating equation (7) using AFE1, AFE2 and AFE3 as dependent variables respectively. Similarly, columns 2, 4 and 6 show the estimates from equation (8) while columns 3, 6 and 9 show the results obtained from estimating equation (9).

Consistent with previous results based on issuing-year FSDA portfolio, Table 27 suggests that for equity issues during 1975 – 1989, issuing-year FSDA have power to explain the subsequent post-issue analysts' forecast errors while SRNDA do not. For instance, the estimated coefficient on FSDA in Column 1 is -0.043 and is statistically significant at the 1% level of significance, while the coefficient on SRNDA is not statistically significant. Similar results are reported for AFE2 and AFE3 in columns 4 and 7 respectively. When discretionary accruals are further decomposed into a firm-specific and an industry-specific component (as in equation 8), no additional explanatory power for issuing-year ISDA is observed. Specifically, column 2, 4 and 6 show that the estimated coefficient on ISDA is statistically insignificant for all three post-issue analysts' forecast errors.

Table 27. Cross-Sectional Regression of Post-Issue Analysts' Forecast Errors on Issuing-Year Accruals and Its Components, 1975 - 1989

The table reports the cross-sectional regressions of post-issue analysts' forecast errors on different components of accruals and a set of control variables (including a full set of time and industry dummies). The results are reported for 1975 – 1989 sample of issuers. *TAC* is the total accruals in the year of issue and is measured using the balance sheet approach. *SRNDA* is the short-run non-discretionary accruals and is calculated using estimates from the cross-sectional Jones (1991) model. *FSDA* is the residuals obtained from the modified Jones (1991) model. *LRNDA* is the long-run non-discretionary accruals and is estimated using past five-year parameter averages from the modified Jones (1991) model. *ISDA* is industry-specific discretionary accruals and represents the difference between *SRNDA* and *LRNDA*. *TDA* is total discretionary accruals and is the sum of *FSDA* and *ISDA*. *MV* is the market value (in millions) of total common stock outstanding at the end of the new issue year. All accrual components are scaled by lagged assets and Winsorized at 1% and 99%. All analysts' forecasts are one-year ahead forecasts of annual primary EPS. Only one analyst forecast is used per offering. AFE*n*, *n* = 1,…,3 of post-offering year, is the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) , scaled by price at the beginning of the month of the forecast was made. All forecast errors are Winsorized at 10% and 90%, and all accrual components are Winsorized at 1% and 99% respectively. ***, **, and * denote significance at 1%, 5% and 10% levels.

	AFE1			**AFE2**			**AFE3**		
	Col1	**Col2**	**Col3**	**Col1**	**Col2**	**Col3**	**Col1**	**Col2**	**Col3**
Const.	-0.040***	-0.073***	-0.073***	-0.043***	-0.068***	-0.068***	-0.048***	-0.052***	-0.052***
FSDA	-0.026***	-0.029***	-0.029***	-0.031***	-0.036***	-0.031***	-0.013*	-0.016*	-0.007
ISDA		0.004			-0.007			-0.099	
SRNDA	0.004		0.004	-0.018		-0.019	0.005		0.005
LRNDA		0.011			-0.006			0.008	
FSDA*ISDA			0.013			0.137**			0.174***
log MV	0.006***	0.005***	0.006***	0.006***	0.006***	0.006***	0.007***	0.007***	0.007***
Obs.	1175	977	977	1088	900	900	1007	823	823
Adjusted R2	11.48%	10.29%	10.25%	13.27%	10.95%	11.50%	10.70%	9.57%	10.29%

Table 28. Cross-Sectional Regression of Post-Issue Analysts' Forecast Errors on Issuing-Year Accruals and Its Components, 1990 - 2004

The table reports the cross-sectional regressions of post-issue analysts' forecast errors on different components of accruals and a set of control variables (including a full set of time and industry dummies). The results are reported for 1990 – 2004 sample of issuers. TAC is the total accruals in the year of issue and is measured using the balance sheet approach. SRNDA is the short-run non-discretionary accruals and is calculated using estimates from the cross-sectional Jones (1991) model. FSDA is the residuals obtained from the modified Jones (1991) model. LRNDA is the long-run non-discretionary accruals and is estimated using past five-year parameter averages from the modified Jones (1991) model. ISDA is industry-specific discretionary accruals and represents the difference between SRNDA and LRNDA. TDA is total discretionary accruals and is the sum of FSDA and ISDA. MV is the market value (in millions) of total common stock outstanding at the end of the new issue year. All accrual components are scaled by lagged assets and Winsorized at 1% and 99%. All analysts' forecasts are one-year ahead forecasts of annual primary EPS. Only one analyst forecast is used per offering. AFE*n*, *n* = 1,…,3 of post-offering year, is the actual EPS minus the analysts' consensus forecast of EPS (made at least 6 months prior to fiscal year end of the forecast year) , scaled by price at the beginning of the month of the forecast was made. All forecast errors are Winsorized at 10% and 90%. ***, **, and * denote significance at 1%, 5% and 10% levels.

	AFE1			AFE2			AFE3		
	Col1	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**	**Col7**	**Col8**	**Col9**
Const.	-0.031*	-0.033*	-0.031*	-0.040**	-0.041**	-0.038**	-0.043**	-0.043***	-0.042**
FSDA	-0.008*	-0.009**	-0.007	-0.011**	-0.013***	-0.011**	-0.015***	-0.014***	-0.016***
ISDA		-0.006			-0.014			-0.017	
SRNDA	-0.001		-0.001	-0.04		-0.006	-0.023***		-0.025***
LRNDA		0.005			0.004			-0.027***	
FSDA*ISDA			0.031			0.038			-0.011
log MV	0.008**	0.008***	0.007***	0.007***	0.007***	0.007***	0.006***	0.006***	0.006***
Obs.	2162	2112	2112	1965	1923	1923	1731	1694	1694
Adjusted R2	10.15%	10.22%	10.24%	11.81%	11.88%	11.86%	10.02%	10.02%	10.06%

Nonetheless, the estimated coefficients on FSDA continue to retain their economic and statistical significance in all these columns. When I interact offering-year FSDA and ISDA with each other (as in equation 7), the coefficient on the interaction term turns out to be statistically insignificant for one year-ahead analyst forecast errors and economically insignificant for two and three-year ahead analyst forecast errors. In particular, columns 6 and 9 show a statistically significant *positive* coefficient on the interaction term for AFE2 and AFE3 respectively.

Table 28 reports similar results for the set of equity issues that take place between 1990 and 2004. Specifically, columns 1, 4 and 7 show that issuing-year FSDA are significantly negatively related with the three-year-ahead analyst forecast errors. The magnitude of these coefficients is less than that observed for the set of issues presented in Table 27, reconfirming the earlier result that the predictive power of issuing-year FSDA is more pronounced for issues during 1975 – 1989 than for issues during 1990 – 2004. For instance, the coefficient on FSDA is -0.026 in column 1 of Table 27 compared to -0.008 in column 1 of Table 28.

As in Table 27, results from estimation of equation 6 for the 1990 – 2004 set of issuers suggests that issuing-year ISDA have little to no power in explaining the subsequent analysts' forecast errors. The coefficient on ISDA in columns 2, 5 and 8 are all statistically insignificant. Even when FSDA and ISDA are interacted with each other, the coefficient on the interaction term does not turn out be significant for any of the three post-issue analysts' forecast errors. Results for the overall sample of issue between 1975 and 2004 show similar results (and are hence not reported).

Overall, the results from this section confirm the finding that analysts' overoptimistic earnings expectations from equity-issuing firms with high FSDA are not driven by high industry-specific discretionary accruals. The results are consistent with the lack of predictive power observed for industry-specific discretionary in explaining the post-issue underperformance of equity issuing firms.

4. Conclusion

In this paper I examine the implications of the accrual decomposition proposed in Chapter 2 for the anomalous capital market outcomes documented for seasoned equity issues. Specifically, I investigate whether the post-issue negative abnormal returns and analysts' forecast errors for issuers with high discretionary accruals are driven by the firm-specific or the industry-specific component of discretionary accruals.

Using a sample of equity issues between 1975 and 2004, I find that investors' and analysts' overoptimism about equity issuing firms is primarily driven by the firm-specific component of discretionary accruals. In particular, I find that industry-specific discretionary accruals have little to no power in explaining these post-issue negative abnormal returns and analysts' forecast errors. I also do not find any evidence which suggests any interaction between firm-specific and industry-specific discretionary accruals for the overall sample of seasoned equity issues.

Additionally, the findings of this chapter suggest that investors' and analysts' overoptimism about the prospects of equity issuers with high pre-issue discretionary accruals is more pronounced for the set of seasoned equity issues that took place during 1975 – 1989 than for those that took place between 1990 and 2004. One reason for this lower investor/analyst 'credulity' could be that market participants have learned (over time) to better interpret the information content of issuers' accruals. Moreover, contrary to the main finding in chapter 2, the results from this chapter suggest that industry-specific discretionary accruals in the years surrounding equity issuance do not play any role in explaining the post-issue negative abnormal returns and forecast errors of issuers with high accruals. Combined with little evidence of any meaningful relationship between issuing-year firm-specific and industry-specific discretionary accruals, this evidence highlights the importance of firm-specific factors in inducing overoptimistic earnings expectations by market participants from firms issuing equity.

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