ACCRUALS AND AGGREGATE STOCK MARKET RETURNS[⋆]

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Past research has shown that the level of operating accruals is a negative cross-sectional predictor of future stock returns. This paper examines whether the accruals anomaly extends to the aggregate stock market. In contrast with cross-sectional findings, there is no indication that aggregate operating accruals is a negative predictor of stock market returns; the relation is strongly *positive* for both equal- and value-weighted market portfolios. Contemporaneously, innovations in accruals are negatively associated with market returns, suggesting that changes in accruals contain information about changes in discount rates. Our findings are also potentially consistent with earnings management in response to market undervaluation.

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Past research has shown that the level of operating accruals is a negative cross-sectional predictor of future stock returns. This paper examines whether the accruals anomaly extends to the aggregate stock market. In contrast with cross-sectional findings, there is no indication that aggregate operating accruals is a negative predictor of stock market returns; the relation is strongly *positive* for both equal- and value-weighted market portfolios. Contemporaneously, innovations in accruals are negatively associated with market returns, suggesting that changes in accruals contain information about changes in discount rates. Our findings are also potentially consistent with earnings management in response to market undervaluation.

1. Introduction

There is strong and robust evidence that the level of accruals is a negative cross-sectional predictor of abnormal stock returns (Sloan 1996). The accrual anomaly has been extended and applied in numerous papers in financial economics and accounting. In this paper, we test whether the accrual anomaly extends to time series predictability of aggregate stock returns. In addition to testing whether aggregate accruals predict aggregate stock market returns, we test whether changes in aggregate accruals are contemporaneously associated with aggregate stock returns, as would be implied if accruals changes are correlated with shifts in discount rates.

A behavioral explanation that has been offered for the accrual anomaly is that high operating accruals, defined as the deviations between accounting earnings and cash flows, incite over-optimism about future earnings among naïve investors because they fail to attend separately to the cash flow and accruals components of earnings.[1] As a result, Sloan (1996) suggests that if the level of accruals is a less favorable forecaster of future earnings than the level of cash flow, then investors will be too optimistic when accruals are high. This over-optimism causes the firm to become overvalued, and subsequently it earns abnormally low stock returns. Similarly, low accruals induce excessive pessimism, and therefore tend to be followed by high returns.

But does a high level of aggregate accruals induce optimism in the entire stock market? Some commentators allege that during some periods, such as the market boom of the late 1990's, managers managed earnings aggressively, and that auditors and

[1] Earnings management is a possible reason for the less favorable forecasting power of accruals than cash flows for future earnings, but is not the only one. Thus, the accrual anomaly is compatible with, but does not require, earnings management.

regulators were compliant, thereby allowing firms to increase their earnings relative to underlying cash flows. Alternatively, it could be that earnings management is primarily firm-specific, with an aim at achieving managerial goals such as smoothing the firm-specific deviations of earnings performance from that of industry peers.

Even in the absence of aggregate fluctuations in earnings management, we expect to see aggregate variations in accruals, because macroeconomic fluctuations affect firms' operating and reporting outcomes. For example, business cycle increases in aggregate demand could lead to increased purchases from firms, which would be manifested in part by an increase in receivables.[2] Furthermore, when consumer confidence is high or when macroeconomic conditions make credit easy, consumers may buy more on credit, increasing aggregate receivables. Alternatively, if firms expect a future rise in aggregate demand, they may accumulate inventories in anticipation, which are accounted for as positive accruals.[3]

Just as accruals and cash flow have different implications for future earnings at the firm level, aggregate accruals and aggregate cash flows may differ in their implications for future aggregate earnings. If so, and if investors neglect the distinction between cash flows and accruals, the level of aggregate accruals will be a predictor of future returns. Thus, a natural behavioral hypothesis to test is whether high aggregate accruals are associated with overvaluation of the aggregate stock market, and therefore low subsequent returns.

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[2] One firm's receivables can be another firm's payables, which can lead to some cancellation at the aggregate level. But since firms transact with individuals as well as other firms, this cancellation is not complete.

[3] Thomas and Zhang (2002) document that the cross-sectional accrual anomaly is in part related to levels of inventories.

An alternative possibility is that at the aggregate level accruals are correlated with rational variations in discount rates. Since accruals are related to shifts in demand, inventories, and investment activity, a natural hypothesis is that accruals are associated with business cycle shifts in risk premia. It is therefore interesting to control for variables that are associated with business cycle fluctuations and possible shifts in discount rates.

We examine the ability of accruals to predict one-year-ahead market returns in both univariate tests, and in multivariate tests that control for several business cycle variables that have been proposed as return predictors in the past literature. In testing the ability of accruals to predict aggregate stock returns, we employ both the equal-weighted and the value-weighted market portfolios. We also define aggregate accruals using both weighting methods.

In predictive regressions, ordinary least squares estimates can suffer from small-sample biases (Stambaugh 1986, 2000; Mankiw and Shapiro 1986). Though we do not expect this bias to be especially strong for aggregate accruals, we nonetheless employ statistical methods to derive test statistics that adjust for the small sample bias (Kendall 1954, Nelson and Kim 1993, Stambaugh 2000), recognizing that under some circumstances such methods may understate a variable's predictive power (Lewellen 2004).

In sharp contrast with the well-known cross-sectional anomaly, we find that over the period 1963-2001 high aggregate accruals do not predict low stock market returns. Under both equal and value weighting, the level of aggregate accruals is a strong *positive* predictor of future returns. There is also substantial and significant, albeit slightly weaker, cross-portfolio predictability: the level of value-weighted accruals is a significant positive predictor of equal-weighted market returns, and the level of equal-weighted accruals is a significant positive predictor of value-weighted market returns.

Our multivariate tests of predictability of aggregate stock returns control for several forecasting variables suggested in past literature: the aggregate dividend yield, the aggregate book-to-market ratio, the default spread on corporate bonds, the term spread on Treasuries, and the equity share in aggregate new issues.[4] To the extent that these variables are return predictors, they can be viewed as possible proxies for shifts in discount rates. These variables also capture shifts in aggregate business conditions. For example, default spreads reflect expectations of risk of defaults; term spreads reflect (among other things) expectations about inflation; and aggregate dividend yield and aggregate book-to-market ratio reflect (among other things) market expectations about corporate growth prospects. In the multivariate tests, the levels of aggregate accruals remain highly significant positive predictors of stock market returns.

Taking the univariate and multivariate forecasting tests together, the evidence indicates that in both a portfolio dominated by small firms (the equal-weighted market portfolio) and a portfolio dominated by large firms (the value-weighted market portfolio), accruals is a *positive* time series predictor of future returns. These effects are very different from the cross-sectional accrual anomaly in which the relation is strongly

[4] Several papers examine long-term yield spread (Keim and Stambaugh 1986, Fama and French 1989, Pontiff and Schall 1998, and Hou and Robinson 2005) as a predictor of aggregate stock returns. Keim and Stambaugh (1986) and Fama and French (1989) study the ability of the default premium on corporate bonds to predict aggregate stock returns. Papers examining the ability of aggregate dividend yield to predict aggregate returns include Shiller (1984), Fama and French (1988), Campbell and Shiller (1988), Kothari and Shanken (1997), and Lewellen (2004). Kothari and Shanken (1997) and Pontiff and Schall (1998) find that aggregate book-to-market is a positive predictor of aggregate returns. Baker and Wurgler (2000) find that the equity share in new issues is a negative predictor of one-year-ahead stock market returns.

negative.

A possible explanation for the positive aggregate return predictability is that high aggregate accruals are associated with high levels of risk (implying a high expected excess return over the riskfree rate), above and beyond any risks captured by our controls. To evaluate this explanation for our return-forecasting findings, in a similar spirit to Kothari, Lewellen and Warner (2005), we test the contemporaneous relation between change in accruals and market returns. Contemporaneously, the returns on the market portfolios are significantly negatively related to the change in aggregate accruals. This suggests that changes in accruals may be positively correlated with discount rate changes, where heavier discounting leads to a decline in the stock market. Specifically, it suggests that accruals may capture discount rate shifts above and beyond the ability of the standard asset pricing controls included in our tests.

Since accruals is a component of earnings, this finding is consistent with Kothari, Lewellen, and Warner's finding that aggregate earnings surprises are negatively contemporaneously correlated with aggregate market returns. Our evidence suggests that the negative correlation of the aggregate earnings surprise with aggregate returns comes at least in part from the accruals component of the surprise, rather than solely from the surprise in cash flow.

The multivariate tests again provide similar results to the univariate tests. The change in aggregate accruals is significantly negatively related to contemporaneous market returns, even after controlling for changes in other discount rate or misvaluation proxies. This evidence is again consistent with the hypothesis that changes in aggregate accruals contain information about changes in discount rates above and beyond standard discount rate proxies.

Our findings also have a possible behavioral explanation (discussed in more detail in the conclusion), based on what we call the 'leaning against the wind' effect. If firms increase accruals in response to aggregate undervaluation, then high accruals will tend to be correlated with low contemporaneous returns, and high subsequent returns. For example, firms that are undervalued may be especially eager to report higher earnings. To reconcile this explanation with the cross-sectional accrual anomaly, however, would require an explanation for why firms are more prone to lean against aggregate undervaluation (i.e., undervalued factors) than firm-specific undervaluation.

There are other papers which test whether cross-sectional return predictors also predict returns in time series regressions. For example, Kothari and Shanken (1977), Pontiff and Schall (1998), and Lewellen (1999) provide evidence that book-to-market predicts the returns on the market portfolio and portfolios sorted by size and book-to-market.

The most closely related paper to ours is that of Kothari, Lewellen, and Warner (2005), or KLW. KLW test whether the post-earnings announcement drift anomaly (Bernard and Thomas 1990), in which firm level earnings surprises are on average followed by continuation of stock returns over the next nine months[5], extends to the aggregate level. KLW find little evidence of drift in the stock market as a whole in response to aggregate earnings surprises, in contrast with the firm-level evidence. KLW also provide evidence of a negative contemporaneous relation between aggregate

[5] Furthermore, Chan, Jegadeesh, and Lakonishok (1996) and Hou, Peng, and Xiong (2006) find that the ability of earnings surprises to predict returns is not subsumed by the return momentum anomaly of Jegadeesh and Titman (1993).

earnings surprises and stock returns, consistent with aggregate earnings being correlated with shifts in discount rates.

The behavioral hypothesis for the post-earnings announcement drift anomaly is that investors neglect the information contained in earnings, or do not understand the time series properties of earnings. The behavioral hypothesis for the accrual anomaly is that some investors focus on earnings while neglecting the information contained in different components of earnings (cash flows versus accruals). Thus, our paper and KLW's provide complementary examinations of whether firm level effects that have been attributed to investor psychology extend to the aggregate level.

KLW suggest that although their study does not provide a conclusive test as to whether post-earnings announcement drift is due to risk or to psychological effects, their examination of aggregate evidence does provide useful out-of-sample information about the extent to which the behavioral theory used to explain the cross-sectional evidence explains a broad range of stylized facts. Similarly, our analysis of the accrual anomaly at a minimum suggests a limit to the scope of the basic behavioral explanation for the accrual anomaly. In the conclusion of the paper we suggest an extended behavioral hypothesis which may help reconcile the cross-sectional and aggregate findings.

The remainder of this paper is structured as follows. Section 2 describes the data and methodology. Section 3 provides evidence about aggregate accruals as predictors of stock market returns. Section 4 examines the contemporaneous correlations of accruals with stock returns, and with other return predictors from past literature. Section 5 concludes.

2. Data and Empirical Methods

2.1 Data

Our empirical analyses employ annual returns (including distributions) on the Center for Research in Security Prices (CRSP) value-weighted and equal-weighted indices, and value-weighted and equal-weighted portfolios of the sub-sample of CRSP firms that have sufficient accounting information to calculate operating accruals (ACCRUAL), over the sample period 1963 through 2002. Annual excess returns are computed by compounding monthly returns in excess of 30-day T-Bill rates from April of year t to March of year $t+1$.

Firm-level accruals are measured at fiscal year end in year t–1 and are obtained from COMPUSTAT. It is calculated using the indirect balance sheet method as the change in non-cash current assets less the change in current liabilities excluding the change in short-term debt and the change in taxes payable, minus depreciation and amortization expense, deflated by lagged total assets.

We form aggregate ACCRUAL variables in two ways. We calculate $\text{ACCRUAL}^{\text{VW}}$ by taking a value-weighted average of scaled accruals across all firms in our sample using market capitalization at the end of December in year t–1 as weight. We also calculate $\text{ACCRUAL}^{\text{EW}}$ by taking an equal-weighted average of accruals across all firms in our sample.[6]

[6] Some firm-level studies (e.g., Teoh, Welch, and Wong 1998) use a cross-sectional regression model to decompose accruals into 'non-discretionary' (predicted, or normal) and 'discretionary' (residual) components, and provide evidence of return predictability in the discretionary component. However, owing to time-series dynamics of accruals (which mechanically must reverse out in the long-run), it is even harder in the time series than in the cross-section to estimate an appropriate benchmark for predicted or 'normal' accruals against which to measure discretionary accruals. In the interest of robustness, we

In addition, we also employ several variables that reflect aggregate business conditions, and which have been proposed in the literature as predictors of aggregate stock returns. As such, these variables are also possible proxies for shifts in market discount rates. These variables include the equal- and value-weighted book-to-market ratio (BE/ME) for year t–1, the equity share in total new equity and debt issues (ESHARE) for year t–1 (Baker and Wurgler (2000)), the dividend yields on the CRSP equal- and value-weighted indices (DIVYIELD) which equals total dividends accrued to the index from April of year t–1 to March of year t divided by the index level at the end of March of year t, the default spread (DEF) which is the difference between the Moody's Baa bond yield and Aaa bond yield, and the term spread (TERM) which is the difference between 10-year and 1-year Treasury constant maturity rates. The two interest rate spread variables are measured at the beginning of April of year t using data from the St. Louis Federal Reserve Economic Database (FRED).

2.2 Test Methods

Standard time series predictive regressions where returns of various holding periods are regressed on variables measured at the beginning of the period are typically subject to small-sample biases (see, e.g., Stambaugh 1986 and Mankiw and Shapiro 1986). This is especially true when the regressors are scaled-price variables such as dividend yield or book-to-market ratio. The bias arises because the innovations in these variables are negatively correlated with contemporaneous returns. For example, a large positive return is usually accompanied by a decrease in the level of a scaled-price predictor. As a result,

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therefore focus on a basic accruals variable, which at the firm level is a strong and reliable return predictor.

the regression error terms are negatively correlated with the innovations of the regressors, causing the regression coefficients to be upward biased. This bias is more pronounced when the sample size is small, the predictor is highly persistent, or when the correlation between the error terms is strong.

A priori, there is not as strong a reason to suspect that the regression coefficients on our aggregate ACCRUAL measures should be affected by the aforementioned small sample bias since it is not a scaled price variable and is not highly autocorrelated.[7] On the other hand, empirically we do find that changes in ACCRUAL are correlated with stock returns. We therefore follow Nelson and Kim (1993) and Pontiff and Schall (1997) in using a randomization procedure to generate empirical *p*-values ('randomization *p*-values') for the regression coefficients that are free from the potential biases.[8]

More specifically, we simulate artificial series of returns and the independent variable under the null of no predictability by randomly drawing without replacement of the residual pairs from the return predicting regression and a first-order autoregression for the independent variable, where the starting value of the simulation is randomly drawn from the unconditional distribution of the independent variable. This way, the simulated returns and independent variables preserve the time series properties of the original data series. Finally, the simulated returns are regressed on the simulated series of the independent variable to produce a slope estimate. This procedure is repeated 5000 times to create an empirical distribution of the slope coefficient under the null of zero

[7] In fact, the first-order autocorrelation of our aggregate ACCRUAL measures is weakly negative.

[8] We also report bias-adjusted coefficient estimates based on Kendall (1954) and Stambaugh (2000) in Tables 2 and 3.

predictability. The randomization p-value is then the fraction of the 5000 simulated slopes that are further away from zero than the historical slope estimate.[9]

Finally, to assess the economic significance of the return predictability associated with aggregate ACCRUAL, we also calculate the bias-adjusted regression coefficient following Stambaugh (2000) and Kendall (1954). Stambaugh (2000) show that in a general autoregressive framework

$$R_t = \alpha + \beta X_{t-1} + u_t; \qquad u \sim i.i.d.(0, \sigma_u^2) \qquad (1)$$
$$X_t = \mu + \phi X_{t-1} + v_t; \qquad v \sim i.i.d.(0, \sigma_v^2) \qquad (2)$$

the bias in the OLS estimate of β in the return predicting regression (1) is proportional to the bias in the OLS estimate of ϕ in the first order auto-regression (2) for the return predictor X_t (ACCRUAL in our case)

$$E(\hat{\beta} - \beta) = (\sigma_{uv} / \sigma_v^2) E(\hat{\phi} - \phi) \qquad (3)$$

where the hats denote the OLS estimates. Furthermore, Kendall (1954) proves that the bias in the OLS estimate of ϕ is

$$E(\hat{\phi} - \phi) = -(1 + 3\phi) / n + O(n^{-2}) \qquad (4)$$

where n is the sample size. Combining (3) and (4) allows us to calculate the bias-adjusted estimate of β in the return predicting regression using the following formula

$$\beta_{adj.} = \hat{\beta} + (\hat{\sigma}_{uv} / \hat{\sigma}_v^2)(1 + 3\phi_{adj.}) / n \qquad (5)$$

where $\hat{\sigma}_{uv}$ and $\hat{\sigma}_v^2$ are the sample covariance and variance of the OLS residuals from (1) and (2), and $\phi_{adj.} = (n\hat{\phi} + 1)/(n-3)$ is the bias-adjusted estimate for ϕ.

[9] Kothari and Shanken (1997) employ a slightly different bootstrapping procedure to estimate the empirical p-value. We have repeated our analyses following their approach and found the results are very similar. For brevity, they are not reported.

2.3 Descriptive Statistics

In Table 1, the excess returns using either CRSP or SAMPLE populations range between a mean of 4.5% and 7.6%, and a standard deviation between 15% and 20%, in line with findings from papers on the equity premium puzzle. The mean and standard deviation of equal-weighted returns are higher than those of value-weighted returns due to the relative importance of smaller firms in equal-weighting than value-weighting.

The median aggregate accruals are negative, reflecting the relative importance of depreciation over other items in accruals. Equal-weighted accruals have higher mean and standard deviation than value-weighted accruals, suggesting that small firms tend to have more positive and more variable accruals than large firms.

Regardless of the weighting scheme and the population sample, all simple correlations of one-year ahead aggregate returns with aggregate accruals are *positive* and large in magnitude, ranging from 33% to 54%. This is quite different from the negative cross-sectional correlations between future returns and accruals. Because aggregate accruals are also related to other variables such as the dividend yield, book-to-market ratio, and to a lesser extent with default premium and the term spread, we need to control for these other variables in later tests.

3. Accruals as Predictors of Stock Market Returns

We test the ability of ACCRUAL to predict aggregate stock returns in both univariate regressions (Subsection 3.1) and controlling for other return predictors from the literature (Subsection 3.2). All predictor variables in the time series regressions are standardized to have zero mean and unit variance to make their coefficients comparable.

3.1 Univariate Return Forecasting Tests

Table 2 describes univariate one-year-ahead regressions of aggregate excess returns on ACCRUAL^{VW} (Panel A), and ACCRUAL^{EW} (Panel B) over the period 1963-2002. In each Panel, we employ returns on both the value-weighted and equal-weighted CRSP market portfolios and the value-weighted and equal-weighted portfolios of firms for which we are able to calculate accruals.

For the value-weighted portfolios, ACCRUAL^{VW} (Panel A) is a strong *positive* predictor of future excess market returns, with regression adjusted R^2 of 19% using the CRSP value-weighted market index, and 27% using a sample value-weighted portfolio. The OLS point estimates on ACCRUAL^{VW} are 0.069 ($t = 3.15$) for CRSP excess returns and 0.084 ($t = 3.92$) for sample excess returns. So a one standard deviation increase in ACCRUAL^{VW} (0.247) increases aggregate stock returns by about 7-8%.

To address the potential small sample bias in OLS test statistics in predictive regressions, we report *p*-values based on the bootstrapping randomization procedure of Nelson and Kim (1993). The randomization *p*-values are 0.6% (CRSP excess returns) and 0.5% (sample excess returns). Furthermore, the biased-adjusted regression coefficients calculated following Stambaugh (2000) and Kendall (1954) on ACCRUAL^{VW} are identical to the OLS estimates, 0.069 for CRSP excess returns and 0.084 for sample excess returns. Thus, our intuition that the small sample bias is likely to be very small for regressions on our ACCRUAL variables is confirmed.

There is also cross-predictability of returns, indicating that high accruals among large firms (which dominate the value-weighted portfolios) positively predict the returns of small firms (which dominate the equal-weighted portfolios). The coefficients and R^2s are all smaller, but the effect remains significant. From an efficient markets perspective, this suggests that the accruals of both small firms and large firms are correlated with variations in discount rates, and therefore with subsequent returns. From a behavioral perspective, this suggests that there is commonality in misvaluation associated with the accruals of both small and large firms.

Turning to Panel B, equal-weighted aggregate accruals also significantly positively predict aggregate returns, with regression adjusted R^2 of 11% using CRSP equal-weighted returns, and 21% using sample equal-weighted returns. The OLS point estimates on ACCRUAL^{EW} are 0.074 (t = 2.43, randomization p-value = 0.7%) for CRSP excess returns and 0.100 (t = 3.35, randomization p-value = 0.3%) for sample excess returns. As with the Panel A regressions, the bias-adjusted coefficients on the ACCRUAL variables are identical to the OLS estimates. So our findings indicate that a one standard deviation increase in ACCRUAL^{EW} increases aggregate stock returns by about 7 ½-10%.

There is again also significant evidence of cross-predictability of returns. High accruals among small firms, as reflected in equal-weighted accruals, predict the returns on large firms as reflected in the return on the value-weighted portfolios.

In summary, Table 2 indicates that the relation between aggregate accruals and subsequent returns is in sharp contrast with the strong negative cross-sectional relationship identified in past research. For both equal-weighted and value-weighted market portfolios, the level of accruals is a *positive*, economically important predictor of future returns.

As suggested in the introduction, much of the earnings management that firms do may be averaged away at the aggregate level. For example, firms may manage earnings in order to offset idiosyncratic specific shocks, or to avoid falling behind industry peers. If firm manages earnings upward at times of adverse firm-specific shocks, then they will later need to 'pay back' their incremental earnings through the reversal of accruals. If such firm-specific effects tend to average out in the aggregate, the behavioral effects operating at the firm-specific level may be washed out when averaging over large portfolios of firms. This argument can potentially explain a failure of aggregate accruals to predict market returns, but does not explain the positive relationship. In Section 4, we explore possible explanations for these differences from a rational discount rate perspective by examining the contemporaneous correlations between accruals innovations, aggregate stock returns, and discount rate proxies.

3.2 Other Return Predictors and Multivariate Tests

Multivariate tests are useful to evaluate whether the level of accruals has incremental power to predict market returns after controlling for other market return predictors. Most of the aggregate return predictors from past literature contain market prices, and are therefore potentially proxies either for misvaluation or for discount rates. Thus, these controls can confound tests between behavioral versus rational discount rate hypotheses. However, such tests do verify whether the ability of accruals to predict returns is incremental to the effects of variables identified in past literature. We now describe the ability in our sample period of other variables to predict returns in univariate tests (Subsection 3.2.2), and then perform multivariate tests of the predictive power of aggregate accruals after controlling for other return predictors (Subsection 3.2.2).

3.2.1 Other Return Predictors

Table 3 Panels A-G describes univariate predictive regressions for seven return predictors from past literature: book-to-market (equal and value-weighted), dividend yield (equal and value-weighted), equity share, default spread, and term spread. The univariate predictive power of these variables is generally weak. The main exception is that equal-weight dividend yield has an adjusted R^2 of 10% and a randomization *p*-value of 7.9%. The value-weighted dividend yield, however, has no predictive power (*p*-value above 10%). Equal-weighted book-to-market shows some marginal sign of predictive power, but value-weighted book-to-market has no predictive power (again *p*-value above 10%). Finally, for equity share, default spread, and term spread, the bias-adjusted regression coefficients are very similar to the OLS estimates. However, for equal- and value-weighted book-to-market and dividend yield, the bias adjustment reduces the sizes of the coefficients substantially, indicating that the OLS estimates overstate the predictive power these variables.

3.2.2 Multivariate Tests

We now report the incremental predictive power of our aggregate accruals measures relative to past literature. Table 4 describes multivariate regressions of one-year-ahead CRSP excess returns on ACCRUAL and on 5 other control variables (using value-weighted dividend yield and book-to-market for regressions on value-weighted accruals, and equal-weighted dividend yield and book-to-market for regressions on equal-weighted accruals).

For the value-weighted CRSP market portfolio, as in the univariate regressions and in sharp contrast with past cross-sectional findings, in Panel A, $ACCRUAL^{VW}$ is a strong positive predictor of future market excess returns (randomization $p = 0.5\%$). The adjusted-R^2 of 21% is not much higher than the corresponding univariate adjusted-R^2 of 19%, suggesting that the control variables do not add a great deal of predictive power to the regression. The coefficient on $ACCRUAL^{VW}$ suggests that even after controlling for other return predictors, the level of value-weighted accruals has an economically substantial relation with future market returns; a one standard deviation increase in accruals is associated with a 6.7% increase in next-year's market return.

For the equally-weighted CRSP market portfolio, Panel B shows that in a multivariate test, $ACCRUAL^{EW}$ is a strong positive predictor of future market returns (randomization $p = 0.5\%$). The adjusted-R^2 of 43% is substantial and higher than in the univariate regression, suggesting that the control variables are also contributing to the explanatory power of the regression. The coefficient on $ACCRUAL^{EW}$ indicates that after controlling for other return predictors, the level of equal-weighted accruals has an economically substantial relation with future market returns; a one standard deviation increase in equal-weighted accruals is associated with a 7.5% increase in next-year's market return.

Panels A and B also provide evidence of cross-predictability, even after controlling for other return predictors. Value-weighted accruals predict equally-weighted market returns ($p = 4.6\%$), and equally-weighted accruals predict value-weighted market returns ($p = 2.1\%$).

4. Contemporaneous Relations between Accruals, Stock Returns, Proxies for Discount Rates, and Proxies for Misvaluation

In an efficient stock market, a high market discount rate implies a high expected stock return. So a possible explanation for a positive relationship between aggregate accruals and future stock market returns is that contemporaneously the level of accruals is positively correlated with rational risk premia, and therefore with the market discount rate.

Ceteris paribus, a rise in the discount rate causes a decline in the stock market. This suggests that a way to test whether the level of accruals is indeed positively contemporaneously correlated with the level of discount rates is to examine whether accruals innovations are negatively correlated with market price changes (returns). However, accruals surprises contain news not just about discount rates, but about expected cash flows as well.[10]

Kothari, Lewellen, and Warner (2005) address a related issue in their examination of the contemporaneous relation between aggregate earnings surprises and market returns. The contemporaneous relationship between an earnings surprise and the stock market reflects either discount expected return news or cash flow news. However, since earnings provides favorable cash flow news, a negative contemporaneous relationship between earnings surprises and returns must derive from a positive relation between earnings surprises and expected return changes. KLW's empirical finding therefore suggests that earnings surprises are positively related to discount rate changes.

Similarly, there is reason to think that the change in aggregate accruals provides favorable cash flow news. If accruals at least to some extent serve their purpose of

[10] Unexpected returns are determined by cash flow news and expected return news (Campbell 1991). If the market is efficient, expected returns are equal to rational equilibrium discount rates.

reflecting the economic conditions of firms, then a positive accruals surprise should provide favorable information about a firm's expected cash flows (though not necessarily as favorable as an equal increase in cash flow); Wilson (1986) provides evidence that this is the case. If an increase in accruals is associated with favorable cash flow news but a decrease in the stock price, the increase must be associated with heavier discounting by the market (whether for rational reasons or otherwise).

We do not have an ideal expected accruals benchmark against which to measure surprises. It is standard to measure earnings surprises relative to one-year-ago earnings. Similarly, we use one-year-ago accruals as our benchmark, so that accruals surprises are measured as the one-year change in accruals.[11]

We first examine the univariate contemporaneous relations between market returns and proxies for accruals surprises. In Table 5, Panel A describes regressions on the change in value-weighted accruals. Contemporaneous excess aggregate returns are strongly negatively related to $\Delta ACCRUAL^{VW}$ (CRSP VW returns: $t = -2.80$; sample VW returns: $t = -3.35$). The adjusted-R^2's are 15% and 21% respectively.

Panel B describes regressions on the change in equal-weighted accruals. Again, contemporaneous excess market returns are negatively related to $\Delta ACCRUAL^{EW}$ (CRSP EW returns: $t = -2.65$; sample EW returns: $t = -3.52$), with adjusted-R^2's of 14% and 23% respectively. Panels A and B also indicate contemporaneous cross-portfolio effects: $\Delta ACCRUAL^{VW}$ is negatively contemporaneously related to equally-weighted aggregate returns; there is some hint that $\Delta ACCRUAL^{EW}$ is related to value-weighted returns, but

[11] A limitation of this approach to measuring surprises is that accruals tend to reverse over periods of several quarters, inducing short-lag negative autocorrelation. However, over the period of a year, much of this reversal has already taken place.

this effect is not significant.

This finding suggests that the negative contemporaneous relation between aggregate earnings surprises and aggregate stock market returns identified by KLW derives in part from the accruals component of the earnings surprises.

Table 6 describes the multivariate contemporaneous relation between accruals surprise proxies with aggregate returns, after controlling for changes in a set of variables that could be viewed as either risk or mispricing proxies. Under the rational risk interpretation for these controls, Table 6 examines the degree to which accruals surprises affect market returns after controlling for the relation of accruals surprises with discount rate changes.

Overall, the multivariate findings are very similar to the univariate findings. For the value-weighted CRSP market portfolio (Panel A), incrementally $\Delta ACCRUAL^{VW}$ has a strong negative contemporaneous relation with market returns ($t = -4.17$).[12] Similarly, for the equal-weighted CRSP market portfolio, Panel B indicates that incrementally $\Delta ACCRUAL^{EW}$ has a significant negative contemporaneous relation with market returns ($t = -2.81$). There is also evidence of cross-portfolio negative effects, with a significant negative relation between $\Delta ACCRUAL^{VW}$ and equally weighted market returns. This evidence is consistent with increases in accruals being associated with increases in discount rates.

In summary, the evidence from Tables 5 and 6 is consistent with an increase in aggregate accruals being associated with a higher market discount rate, causing a

[12] In the change regressions of Table 6, dividend yield by virtue of having price in the denominator will, for purely mechanical reasons, have a very high contribution to adjusted-R^2. We do not regard this as a problem, however, because despite this $\Delta ACCRUAL^{VW}$ remains highly significant.

contemporaneous negative price movement; it also leads to a high expected future return. However, heavier market discounting of future cash flows can occur for either rational or irrational reasons. As discussed in the conclusion, both rational and behavioral interpretations of our findings are possible.

5. Conclusion

Recent evidence on aggregate earnings surprises and stock market returns (Kothari, Lewellen, and Warner 2005) indicates that a firm-level anomaly, post-earnings announcement drift, does not extend to the aggregate stock market. This presents a challenge for existing behavioral theories of drift. KLW also provide evidence that earnings surprising are negatively correlated with contemporaneous stock returns, suggesting that earnings surprises are associated with increases in discount rates.

At the firm level, accruals (the non-cash component of earnings) negatively predict returns (Sloan 1996). The leading explanation for this cross-sectional effect is behavioral: that an extra dollar of cash flow is a more favorable predictor of future earnings than is a dollar of accruals, but that naiveté or limited attention causes some investors to neglect this distinction. In consequence, according to the behavioral explanation, accruals are associated with overvaluation and low subsequent returns.

We examine here whether this cross-sectional anomaly extends to the aggregate level. We test the ability of accruals to predict one-year-ahead aggregate stock market returns. Our first main finding is that, in sharp contrast with the cross-sectional accruals anomaly, there is no sign of negative return predictability; aggregate accruals is a strongly significant and economically important *positive* predictor of aggregate stock returns. This is true for both the value-weighted market and the equal-weighted market portfolios. A one standard deviation increase in aggregate accruals is associated with an increase in next-year's market returns on the order of 7-10%.

Multivariate tests that control for other aggregate return predictors confirm that accruals forecast future aggregate returns positively, and that this effect is economically substantial. These controls are proxies for aggregate business fluctuations and for shifts in discount rates. Thus, if our findings are due to shifts in rational risk premia, it must be that accruals captures information about shifts in discount rates above and beyond the standard asset pricing variables we employ.

Our second main finding is that changes in aggregate accruals are negatively associated with contemporaneous market returns. This is consistent with changes in accruals being correlated with shifts in market discount rates. We suggest that accruals are likely to be associated with favorable cash flow news, so that the negative correlation of changes in accruals with returns suggests that future expected cash flows are discounted more heavily at times when accruals increase.

An efficient markets interpretation of this finding is that shifts in aggregate accruals are positively correlated with shifts in risk premia. This interpretation is consistent with both the negative contemporaneous relation between changes in aggregate accruals and market returns, and the positive forecasting power of aggregate accruals for future market returns. However, it does require that aggregate accruals be associated with shifts in risk premia even after controlling for the several business cycle proxies included in our tests.

Our findings are potentially also consistent with a behavioral scenario in which firms manage earnings in response to shifts in investor sentiment by "leaning against the wind."

If firms respond to market undervaluation shocks by managing earnings upward,[13] then aggregate accruals will be negatively contemporaneously correlated with aggregate returns. Furthermore, if this earnings management does not completely offset the effects of pessimistic sentiment shocks, then high accruals will be associated with positive subsequent aggregate returns.

If we further assume that firm-specific mispricing tends to be corrected more rapidly than aggregate mispricing, then the leaning against the wind hypothesis can also reconcile the evidence of positive aggregate return predictability with the evidence of negative firm-level predictability.[14, 15] If firm-specific misvaluation tends to correct relatively quickly, a manager can afford to view it with benign neglect. In contrast, in the face of market-wide undervaluation, a manager who is concerned with the short-run stock

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[13] The argument can accommodate, but does not require, earnings management in response to fundamental shocks. It does require management in response to sentiment shocks.

[14] The idea that firm-specific misvaluation corrects rapidly is consistent with the common argument that relative misvaluations between firms are easier for arbitrageurs to identify and correct than misvaluations in the market as a whole. For example, Samuelson (1998) argues that the stock market is "micro efficient" but "macro inefficient," i.e., that the relative pricing of individual stocks is more efficient than the pricing of the aggregate stock market. Jung and Shiller (2005) provide evidence in support of Samuelson's claim. Intuitively, when a relative pricing disparity occurs, analysts that use price/earnings comparables to value firms should help draw valuations back into line. Furthermore, firm-specific misvaluation can be arbitraged through long-short hedge strategies which can greatly reduce the risk of arbitrage.

[15] Other evidence also suggests that firm-specific misvaluation is more rapidly corrected than misvaluation of aggregate factors. In behavioral models, book-to-market ratios are proxies for market misvaluation (e.g., Daniel, Hirshleifer, and Subrahmanyam 2001, Barberis and Shleifer 2003). Cohen and Polk (1995) document that the deviation of a firm's book-to-market ratio from the book-to-market ratio of its industry is a much stronger predictor of the cross-section of future stock returns than the industry book-to-market ratio. Furthermore, the evidence that book-to-market ratio predicts firm-level returns in cross-sectional tests is far stronger than the evidence that book-to-market ratio predicts market- and industry-level returns in time series tests. For example, in our sample book-to-market is not a strong predictor of one-year-ahead aggregate market returns.

price has reason to manage earnings. Thus, the usual behavioral account (based on neglect of the distinction between different earnings components) can explain the cross-sectional accruals anomaly, whereas the learning-against-the-wind effect can dominate at the aggregate level.

Considering together the evidence provided in this paper and that of Kothari, Lewellen, and Warner (2005), the aggregate evidence on the ability of earnings surprises and the level of an earnings component (accruals) to predict returns differs unexpectedly from the corresponding cross-sectional findings. The case of accruals is particularly surprising, since the firm-level effect does not just disappear, but *reverses* at the aggregate level. Although our analysis does not directly test competing explanations for the accruals anomaly, it does at a minimum raise the question of why different effects should dominate in the cross-section versus in the time series. Our analysis therefore presents an intriguing challenge for both behavioral and efficient markets explanations for the accrual anomaly.

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Table 1: Summary Statistics

Panel A: Summary Statistics and Autocorrelations

		Standard				Auto-correlations				
Name	Mean	Deviations	Q1	Median	Q3	1	2	3	4	5
CRSP^{VW}	0.045	0.151	−0.028	0.068	0.122	−0.22	0.15	−0.10	0.07	−0.05
CRSP^{EW}	0.070	0.200	−0.023	0.090	0.231	−0.32	0.26	−0.05	−0.00	−0.13
SAMPLE^{VW}	0.045	0.155	−0.022	0.068	0.128	−0.24	0.12	−0.12	0.09	−0.05
SAMPLE^{EW}	0.076	0.206	−0.022	0.086	0.223	−0.42	0.28	−0.08	0.04	−0.12
ACCRUAL^{VW}	−0.069	0.247	−0.040	−0.034	−0.023	−0.08	0.01	−0.01	0.00	−0.01
ACCRUAL^{EW}	0.029	0.472	−0.022	−0.005	0.019	−0.39	−0.04	−0.00	0.02	−0.04
BE/ME^{VW}	0.685	0.204	0.517	0.647	0.832	0.81	0.65	0.60	0.51	0.36
BE/ME^{EW}	1.466	0.636	0.885	1.395	1.956	0.74	0.60	0.48	0.37	0.29
DIVYIELD^{VW}	0.032	0.010	0.027	0.031	0.038	0.83	0.74	0.60	0.48	0.36
DIVYIELD^{EW}	0.021	0.006	0.015	0.019	0.026	0.73	0.67	0.49	0.40	0.36
ESHARE	0.195	0.083	0.139	0.165	0.221	0.64	0.45	0.27	0.19	0.05
DEF	0.010	0.005	0.007	0.008	0.012	0.70	0.51	0.35	0.38	0.34
TERM	0.008	0.011	−0.001	0.008	0.015	0.58	0.10	−0.22	−0.18	−0.07

Panel B: Correlations

	CRSP^{EW}	SAMPLE^{VW}	SAMPLE^{EW}	ACCRUAL^{VW}	ACCRUAL^{EW}	BE/ME^{VW}	BE/ME^{EW}	DIVYIELD^{VW}	DIVYIELD^{EW}	ESHARE	DEF	TERM
CRSP^{VW}	0.79	0.99	0.77	0.46	0.34	0.25	0.13	0.19	0.11	-0.17	0.16	0.19
CRSP^{EW}		0.78	0.99	0.33	0.37	0.25	0.22	0.25	0.35	-0.20	0.20	0.10
SAMPLE^{VW}			0.77	0.54	0.38	0.27	0.10	0.22	0.13	-0.14	0.17	0.17
SAMPLE^{EW}				0.38	0.48	0.25	0.24	0.24	0.34	-0.20	0.20	0.08
ACCRUAL^{VW}					0.55	0.26	-0.14	0.32	0.24	0.11	0.09	0.11
ACCRUAL^{EW}						-0.09	0.05	-0.12	-0.06	-0.07	-0.02	0.03
BE/ME^{VW}							0.16	0.83	0.48	0.29	0.72	0.08
BE/ME^{EW}								-0.26	-0.31	-0.38	0.04	0.41
DIVYIELD^{VW}									0.75	0.46	0.64	-0.19
DIVYIELD^{EW}										0.37	0.39	-0.46
ESHARE											0.47	-0.16
DEF												-0.02

This table reports the summary statistics for stock market returns, aggregate accruals, and other predictors of stock market returns.
$CRSP^{VW}$ and $CRSP^{EW}$ are the annual returns (with dividends) on the CRSP value-weighted and equal-weighted indices in excess of the risk free rate from April of year *t* to March of year *t* + 1.
$SAMPLE^{VW}$ and $SAMPLE^{EW}$ are the annual excess returns on the value-weighted and equal-weighted portfolios of the sub-sample of CRSP firms that have sufficient accounting information to calculate accruals.
ACCRUAL = (ΔCA − ΔCash) − (ΔCL−ΔSTD−ΔTP)−Dep, where Δ refers to annual change, and

CA = Current Assets (Compustat #4)
Cash = Cash and Short Term Investment (Compustat #1)
CL = Current Liabilities (Compustat #5)
STD = Debt included in current liabilities (Compustat #34)
TP = Income Tax Payable (Compustat #71)
Dep = Depreciation and Amortization (Compustat #14)

Individual firm ACCRUALs are measured at the fiscal year end in year t−1, and then aggregated to the market level using value-weighting ($ACCRUAL^{VW}$) and equal-weighting ($ACCRUAL^{EW}$).
BE/ME^{VW} and BE/ME^{EW} are the value-weighted and equal-weighted aggregate book-to-market ratio for year t−1.
$DIVYIELD^{VW}$ and $DIVYIELD^{EW}$ are the annualized dividend yield on the CRSP value-weighted and equal-weighted indices from April of year t−1 to March of year t.
ESHARE is equity share of total equity and debt issues in year t−1, as in Baker and Wurgler (2000).
DEF is the difference between Moody's Baa yield and Aaa yield as of April of year t.
TERM is the difference between 10 years and 1 year treasury constant maturity rates as of April of year t.

Table 2: Univariate Regressions for Predicting One-Year-Ahead Aggregate Returns with Aggregate ACCRUAL

	Returns	β	*OLS-t(β)*	Randomization *p*-value	Adj-β	Adj-R^2
			Panel A : $R_t = \alpha + \beta ACCRUAL^{VW}{}_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.069	*3.15*	0.006	0.069	19%
	EW	0.065	*2.11*	0.022	0.064	8%
SAMPLE Excess	VW	0.084	*3.92*	0.005	0.084	27%
	EW	0.078	*2.50*	0.008	0.078	12%
			Panel B: $R_t = \alpha + \beta ACCRUAL^{EW}{}_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.051	*2.18*	0.013	0.051	9%
	EW	0.074	*2.43*	0.007	0.074	11%
SAMPLE Excess	VW	0.060	*2.53*	0.005	0.060	12%
	EW	0.100	*3.35*	0.003	0.100	21%

This table reports the time series regressions of one-year-ahead aggregate stock returns on value-weighted and equal-weighted aggregate accruals. R_t is the annual CRSP value-weighted/equal-weighted excess return or sample value-weighted/equal-weighted excess return with dividends from April of year *t* to March of t+1. $ACCRUAL^{VW}$ and $ACCRUAL^{EW}$ are defined in table 1, and are standardized to have zero mean and unit variance. Randomization *p*-values are calculated following Nelson and Kim (1993), and bias-adjusted betas are calculated following Stambaugh (2000) and Kendall (1954).

Table 3: Univariate Regressions for Predicting One-Year-Ahead Aggregate Returns with Other Financial Ratios

	Returns	β	*OLS-t(β)*	Randomization *p*-value	Adj-β	Adj-R^2
			Panel A : $R_t = \alpha + BE/ME^{VW}_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.038	*1.58*	0.191	0.022	4%
	EW	0.052	*1.63*	0.165	0.035	4%
			Panel B: $R_t = \alpha + \beta\, BE/ME^{EW}_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.013	*0.55*	0.346	0.006	−2%
	EW	0.044	*1.38*	0.094	0.034	2%
			Panel C: $R_t = \alpha + \beta\, DIVYIELD^{VW}_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.029	*1.17*	0.449	0.003	1%
	EW	0.051	*1.60*	0.171	0.025	4%
			Panel D: $R_t = \alpha + \beta\, DIVYIELD^{EW}_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.016	*0.65*	0.434	0.001	−2%
	EW	0.071	*2.29*	0.079	0.051	10%
			Panel E: $R_t = \alpha + \beta\, ESHARE_{t-1} + \upsilon_t$			
CRSP Excess	VW	−0.025	*−1.02*	0.148	-0.027	1%
	EW	−0.041	*−1.27*	0.101	-0.042	2%
			Panel F: $R_t = \alpha + \beta\, DEF_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.025	*1.02*	0.226	0.019	1%
	EW	0.040	*1.24*	0.163	0.033	1%
			Panel G: $R_t = \alpha + \beta\, TERM_{t-1} + \upsilon_t$			
CRSP Excess	VW	0.028	*1.17*	0.134	0.027	1%
	EW	0.020	*0.62*	0.269	0.021	−2%

This table reports the time series regressions of one-year-ahead aggregate stock returns on other aggregate stock return predictors. R_t is the annual CRSP value-weighted/equal-weighted excess return with dividends from April of year *t* to March of *t*+1. BE/ME^{VW}, BE/ME^{EW}, $DIVYIELD^{VW}$, $DIVYIELD^{EW}$, ESHARE, DEF and TERM are defined in table 1, and are standardized to have zero mean and unit variance. Randomization *p*-values are calculated following Nelson and Kim (1993), and bias-adjusted betas are calculated following Stambaugh (2000) and Kendall (1954).

Table 4: Multivariate Regressions for Predicting One-Year-Ahead Aggregate Returns with Aggregate ACCRUAL and Other Financial Ratios

Excess Returns		β_1	β_2	β_3	β_4	β_5	β_6	Adj-R^2
Panel A: $R_t = \alpha + \beta_1\ ACCRUAL^{VW}_{t-1} + \beta_2\ BE/ME^{VW}_{t-1} + \beta_3\ ESHARE_{t-1} + \beta_4\ DIVYIELD^{VW}_{t-1} + \beta_5\ DEF_{t-1} + \beta_6\ TERM_{t-1} + \upsilon_t$								
CRSP VW	Coefficients	0.067	−0.004	−0.052	0.012	0.039	0.016	21%
	OLS t-statistics	*2.80*	*−0.07*	*−1.94*	*0.24*	*1.13*	*0.62*	
	Randomization *p*-value	0.005	0.519	0.012	0.716	0.073	0.352	
CRSP EW	Coefficients	0.056	−0.050	−0.096	0.081	0.064	0.019	17%
	OLS t-statistics	*1.71*	*−0.73*	*−2.63*	*1.20*	*1.37*	*0.55*	
	Randomization *p*-value	0.046	0.198	0.001	0.191	0.039	0.300	
Panel B: $R_t = \alpha + \beta_1 ACCRUAL^{EW}_{t-1} + \beta_2 BE/ME^{EW}_{t-1} + \beta_3 ESHARE_{t-1} + \beta_4 DIVYIELD^{EW}_{t-1} + \beta_5 DEF_{t-1} + \beta_6 TERM_{t-1} + \upsilon_t$								
CRSP VW	Coefficients	0.050	−0.007	−0.048	0.042	0.031	0.041	14%
	OLS t-statistics	*2.17*	*−0.26*	*−1.63*	*1.46*	*1.15*	*1.53*	
	Randomization *p*-value	0.021	0.400	0.020	0.293	0.111	0.102	
CRSP EW	Coefficients	0.075	0.028	−0.073	0.121	0.035	0.054	43%
	OLS t-statistics	*3.07*	*0.96*	*−2.29*	*3.88*	*1.19*	*1.84*	
	Randomization *p*-value	0.005	0.114	0.002	0.012	0.126	0.048	

This table reports the time series regressions of one-year-ahead aggregate stock returns on value-weighted and equal-weighted aggregate accruals and other aggregate stock return predictors. R_t is the CRSP value-weighted/equal-weighted excess return with dividends from April of year *t* to March of t+1. Aggregate ACCRUAL and other financial ratios are defined in table 1, and are standardized to have zero mean and unit variance. Randomization *p*-values are calculated following Nelson and Kim (1993).

Table 5: Univariate Regressions of Contemporaneous Annual Aggregate Returns on Changes in Aggregate ACCRUAL

Excess Returns	β	*OLS-t(β)*	Adj-R^2
	Panel A: $R_t = \alpha + \beta\, \Delta ACCRUAL^{VW}{}_t + \upsilon_t$		
CRSP VW	−0.043	*−2.80*	15%
CRSP EW	−0.057	*−2.80*	15%
SAMPLE VW	−0.051	*−3.35*	21%
SAMPLE EW	−0.074	*−3.77*	26%
	Panel B: $R_t = \alpha + \beta\, \Delta ACCRUAL^{EW}{}_t + \upsilon_t$		
CRSP VW	−0.021	*−1.45*	3%
CRSP EW	−0.048	*−2.65*	14%
SAMPLE VW	−0.024	*−1.65*	4%
SAMPLE EW	−0.062	*−3.52*	23%

This table reports the time series regressions of contemporaneous aggregate stock returns on changes in value-weighted and equal-weighted aggregate accruals. R_t is the annual CRSP value-weighted/equal-weighted excess return or sample value-weighted/equal-weighted excess return with dividends from April of year *t* to March of t+1. $ACCRUAL^{VW}$ and $ACCRUAL^{EW}$ are defined in table 1, and are standardized to have zero mean and unit variance.

Table 6: Multivariate Regressions of Contemporaneous Annual Aggregate Returns on Changes in Aggregate ACCRUAL and Other Financial Ratios

Excess Returns		β_1	β_2	β_3	β_4	β_5	β_6	Adj-R^2
	Panel A: $R_t = \alpha + \beta_1 \Delta ACCRUAL^{VW}_t + \beta_2 \Delta BE/ME^{VW}_t + \beta_3 \Delta ESHARE_t + \beta_4 \Delta DIVYIELD^{VW}_t + \beta_5 \Delta DEF_t + \beta_6 \Delta TERM_t + \upsilon_t$							
CRSP VW	Coefficients	−0.028	−0.042	−0.023	−0.221	0.009	−0.024	85%
	OLS t-statistics	*−4.17*	*−1.63*	*−1.78*	*−7.71*	*0.65*	*−2.16*	
CRSP EW	Coefficients	−0.046	−0.051	−0.006	−0.201	−0.011	0.008	50%
	OLS t-statistics	*−2.83*	*−0.83*	*−0.19*	*−2.91*	*−0.31*	*0.31*	
	Panel B: $R_t = \alpha + \beta_1 \Delta ACCRUAL^{EW}_t + \beta_2 \Delta BE/ME^{EW}_t + \beta_3 \Delta ESHARE_t + \beta_4 \Delta DIVYIELD^{EW}_t + \beta_5 \Delta DEF_t + \beta_6 \Delta TERM_t + \upsilon_t$							
CRSP VW	Coefficients	−0.005	−0.006	−0.009	−0.179	0.018	−0.055	64%
	OLS t-statistics	*−0.55*	*−0.28*	*−0.47*	*−6.10*	*0.76*	*−2.95*	
CRSP EW	Coefficients	−0.030	−0.012	0.015	−0.237	0.034	−0.036	72%
	OLS t-statistics	*−2.81*	*−0.48*	*0.72*	*−6.94*	*1.24*	*−1.67*	

This table reports the time series regressions of contemporaneous aggregate stock returns on changes in value-weighted and equal-weighted aggregate accruals and changes in other aggregate stock return predictors. R_t is the CRSP value-weighted/equal-weighted return with dividends from April of year *t* to March of t+1. Aggregate ACCRUAL and other financial variables are defined in table 1, and are standardized to have zero mean and unit variance.