Accruals and the performance of stock returns following external financing activities*

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Abstract: In this paper we find that the close relation of the anomalies on external financing activities with the accrual anomaly is mainly attributable to investing capital accruals. However, the predictive power of external financing activities for future stock returns is found unrelated to that of working capital accruals. Working capital accruals play an important role only on the predictability of stock returns, following short term debt financing activities. Overall, our evidence is more likely to be consistent with investor's failure to recognise opportunistic earnings management and/or agency related overinvestment associated with invested capital.

Keywords: External financing activities, accruals, stock returns

JEL classification: G10, M4

1. Introduction

An extensive body of research documents a negative relation between net external financing activities and future stock returns. Activities raising new capital are associated with lower future stock returns, while activities distributing capital are associated with higher future stock returns (Ritter 1991, Loughran and Ritter 1995, Loughran and Ritter 1997, Spiess and Affleck-Graves 1999, Billet et al. 2001, Ikenberry et al. 1995, Michaely et al. 1995, Affleck-Graves and Miller 2006, Daniel and Titman 2006, Pontiff and Woodgate 2008, Fama and French 2008). However, the economic rationale of the subsequent drift in returns remains a controversial issue. Under a behavioral interpretation, Rangan (1998), Teoh et al. (1998) and Heron and Lie (2004) offer the hypothesis that managers are engaged in opportunistic earnings management around equity offerings by exploiting (discretionary) accruals, in order to increase the offering proceeds. Investors fail to recognize earnings management and naively extrapolate transitory earnings increases, resulting in an overvaluation of issuing firms.[1] Under a rational interpretation, Shivakumar (2000) offers the managerial response hypothesis: earnings management through (discretionary) accruals by equity issuers reflects a rational response to anticipated market behavior at offering announcements. Since issuers cannot credibly signal the absence of earnings management, investors treat them uniformly as having inflated prior earnings and rational discount their stock prices.[2]

A more recent, but growing, literature focus on the external financing effect by using measures from the statement of cash flows. In particular, Bradshaw et al. (2006) have constructed a parsimonious measure of the net amount of cash generated by corporate financing (equity and debt) activities and show that this measure is negatively related with future stock returns. They also show a negative (positive) relation between net external financing and future earnings performance (over-optimism in analysts' forecasts). As stated by Bradshaw et al. (2006), market timing and opportunistic earnings management are two competing explanations for their findings. As a third explanation, managers could invest the proceeds from their external financing activities in value-destroying projects to serve their own interests (agency related overinvestment). When investors learn out that such expenditures dissipate firm value, stock prices adjust downward.

Nevertheless, the above evidence on the external financing anomaly could be closely related to the accrual anomaly. The accrual anomaly, first documented by Sloan (1996) refers to the empirical regularity that low-accruals firms experience higher future stock returns than

[1]An alternative behavioral interpretation is based on the market timing hypothesis of Loughran and Ritter (1995): Firms tend to issue (repurchase) securities when they are overvalued (undervalued).

[2]An alternative rational interpretation is offered by Eckbo et al. (2000): equity issuers have lower default risk, and thus are priced to yield lower expected return.

high-accruals firms. Accounting accruals represent the difference between a firms' accounting earnings and its underlying cash flows. Accruals improve earnings ability to reflect firm performance in that they minimize timing and matching problems inherent to cash flows.[3] Accruals also allow for timely recognition of gain and losses due to unanticipated revisions of expected future cash flows[4], albeit in an asymmetrical fashion.[5] Nevertheless, as observed by both theoretical and practical texts the beneficial role of accruals is reduced to the extent that managers manipulate earnings through accruals. In this line, issuers that are engaged in earnings manipulation are more likely to have high accruals and earn low returns. Further, accounting accruals represent growth in net operating assets on a firms' balance sheet. Firms' balance sheet constraint implies that the sources of funds must be equal to the uses of funds. Therefore, even if managers do not manipulate earnings, firms raising capital are likely to have high accruals and earn low future stock returns, and firms distributing capital are likely to have low accruals and earn high future stock returns. As a result, accruals may have an important role in interpreting external financing anomaly. This issue has been first tackled by Cohen and Lys (2006) who show that after controlling for total accruals, the negative relation between external financing activities and future stock returns is attenuated and not statistical significant. As argued by Cohen and Lys (2006), their findings are more consistent with agency related over-investment rather than market timing by managers. In follow up research, Dechow et al. (2008) offered a similar interpretation for the external financing anomaly.[6]

It is obvious from the above findings that accruals could be a key in understanding the external financing anomaly. Based on Richardson et al. (2005) accruals can be divided to working capital accruals and investing capital accruals. Working capital accruals are related to operating activities and may arise from discretion over accounting rules with respect to the nature, timing and magnitude of revenues and expenses recognition (e.g. premature booking of sales, allocation of more overhead expenses to inventory than to cost of goods sold). Thus, one cannot rule out the possibility that managers can inflate earnings by recording (discretionary) working capital accruals during periods in which they raise external financing. In this line, if earnings management is driven by opportunism or hubris to mislead investors, the external financing anomaly could arise as the stock market temporarily overvalues issuing firms and is subsequently dissappointed by unexpected declines in earnings. On the other hand, if earnings management is a response to anticipated market behavior, the external financing anomaly could arise as investors lower their assessments of prior earnings surprises of issuing firms and rationally discount their stock prices.

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[3] See Dechow (1994), Guay, Kothari and Watts (1996), Dechow, Kothari and Watts (1998).

[4] See Basu (1997), Ball, Kothari and Robin (2000), Ball, Robin and Wu (2000, 2003).

[5] The asymmetry arises from the conservative nature of GAAP, where losses are recognized immediately and the recognition of gains is deferred to the future until realized.

[6] A similar explanation has been also offered by Richardson and Sloan (2003).

Investing capital accruals are related with investment activities and could be derived from discretion over accounting rules (e.g. capitalization of operating expenses as fixed assets, subjective estimation of long term receivables). Thus, there is a possibility of earnings management by executives of issuing firms through (discretionary) investing capital accruals. In this line, the external financing anomaly could be again consistent with investor's failure to recognise opportunistic earnings management or investor's rational correction for lower earnings quality. At the same time, firms could have investing capital accruals if their managers (with empire building incentives) engage in wasteful spending by using the net proceeds from external financing activities. Thus, the external financing anomaly could be a consequence of market undereaction to the information contained in possible overinvestment. On the other hand, Anderson and Garcia-Feijoo (2006) argue that capital investment may capture risk in growth options. Hence, the external financing anomaly could be also compensation for higher risk associated with low capital investment. From the above analysis, it is clear that economic rationale of the negative drift in stock returns following net external financing activities could differ, whether these activities are associated with working or investing capital accruals. Previous research, has not generally distinguished between the implications of accruals from distinct business activities on the external financing anomaly.

The above issue motivates what we do in this paper. Our work is organized along two dimensions. First, we investigate the properties of portfolios and hedge strategies based on the magnitude of the net amount of cash generated by entire and individual external financing activities. This let us assess the economic significance of the information in external financing activities for the cross sectional variation in stock returns. Second, we investigate whether the anomalies on external financing activities capture the same underlying pattern in stock returns with the anomalies on total accruals, working capital accruals and investing capital accruals. In this way, we can offer to the existing literature a deeper understanding on the role of accruals on the predictability of stock returns following external financing activities.

The remainder of the paper is organized as follows: Section 2 provides a detailed description of our research design. In section 3 we present data, sample formation, variables measurement, while in section 4 we provide our empirical results. Section 5 summarizes and concludes the paper.

2. Research Design

In this paper, we investigate the role of accruals in interpreting the subsequent drift in stock returns following external financing activities. Following Bradshaw et al. (2006), we use the parsimonious measure of the net amount of cash generated by corporate financing activities (ΔXFIN, hereafter) that allows us to focus on individual and entire corporate financing transactions. This measure is defined as the difference between cash flows received from issuance of new equity and debt financing (stock issues plus debt issues) and cash flows used for the retirement of existing equity and debt financing (stock repurchases plus dividend payments minus debt repayments). We then, decompose it across balance sheet categories based on the nature of the underlying securities that are being issued and retired. In particular, ΔXFIN will be decomposed into net cash flows generated from equity financing activities (ΔEQUITY, hereafter) and debt financing activities (ΔDEBT, hereafter).

$$\Delta XFIN_t = \Delta EQUITY_t + \Delta DEBT_t \tag{1}$$

ΔEQUITY is defined as the difference between cash flows received from stock issues and cash flows distributed for stock repurchases and dividends payments. ΔDEBT is defined as the difference between cash flows received from debt issues and cash flows distributed for debt repayments.

However, we also distinguish between net short and long term debt financing activities since their predictive power for future stock returns could differ. Previous work has not generally distinguished between different forms of debt financing activities and their effects on stock prices. In particular, ΔDEBT will be also decomposed into net cash flows generated from short term debt financing activities (ΔSDEBT, hereafter) and long term debt financing activities (ΔLDEBT, hereafter)

$$\Delta DEBT_t = \Delta SDEBT_t + \Delta LDEBT_t \tag{2}$$

ΔSDEBT (ΔLDEBT) is defined as the difference between cash flows received from short (long) term debt issues and cash flows distributed for short (long) term debt repayments. To our knowledge, this is the first paper in the literature that focuses on the relation between short and long term debt financing activities with future stock returns.

Our work is organized along two dimensions. First, we investigate financial and return characteristics of portfolios and hedge strategies based on the magnitude of the net amount of cash generated by entire and individual external financing transactions. Of course, we recognize that one cannot ignore risk in examining stock returns. For this purpose, we follow other studies in the accounting literature on the external financing anomaly (Bradshaw et al. (2006), Cohen and Lys (2006) and Dechow et al. (2008)) and consider in our analysis size-adjusted returns. Note, that we also investigate the robustness of our stock returns tests by applying the statistical arbitrage test designed by Hogan et al. (2004) to hedge strategies on all external financing measures. This test circumvents the “bad model” problem of stock return tests in the anomalies literature since its definition is not contingent upon a specific model of market returns. In particular, we test two implications of statistical arbitrage for each strategy: whether its mean annual incremental profit is positive and whether its time-averaged variance decreases over time. To our knowledge, this is the first paper that examines whether strategies on external financing measures constitute statistical arbitrage opportunities. Our work on the properties of external financing activities let us assess the economic significance of their information for the cross sectional variation in stock returns

Second, we investigate whether the anomalies on external financing activities capture the same underlying pattern in stock returns with the anomalies on total accruals, working capital accruals and investing capital accruals. The anomaly on working capital accruals has been first documented by Sloan (1996), while on investing capital accruals and total accruals by Richardson et al. (2005). Working capital (current operating) accruals $CACC_t$ are defined as growth in net working capital (net current operating assets), investing (non current operating) accruals $NCACC_t$ as growth in net invested capital (net non current operating assets) and total accruals $TACC_t$ as growth in net operating assets:

$$TACC_t = CACC_t + NCACC_t \tag{3}$$

In our analysis on the relation of the anomalies on external financing activities with the anomalies on accruals, we consider control hedge and joint hedge portfolio strategies. Then, following Fama-MacBeth (1973), we also estimate separate cross sectional return regressions on external financing and accrual measures, after controlling size and book to market ratio.[7]

3. Data, Sample Formation and Variable Measurement.

Our sample covers all firms with available data on Compustat and CRSP for the period 1963-2003. Moreover, we exclude all firm year observations with SIC codes in the range 6000-6999 (financial companies) because the discrimination between operating and financing activities is not clear for these firms. Furthermore, we require as in Vuolteenaho (2002) all firms to have a December fiscal year end, in order to align accounting variables across firms and obtain tradable investment strategies for our subsequent portfolio assignments. Finally, we eliminate firm year observations with insufficient data on Compustat to compute the primary financial statement variables used in our tests. [8] These criteria yield final sample sizes of 105,119 firm year observations with non missing financial statement and stock return data. Following Dechow et al. (2008), we use the indirect method (balance sheet)

[7] As suggested by Fama and French (1993) among other, firm characteristics such as size and book to market ratio may help explain the cross-sectional variation of stock returns since they could proxy for time-varying systematic risk.
[8] In particular, we eliminate firm year observations if Compustat data items 1, 4, 5, 6, 18 and 181 are missing. If data items 9, 34, are missing, we set them equal to zero rather than eliminating the observation. The results are qualitatively similar if we instead eliminate these observations.

method to measure external financing and accrual measures as follows[9]:

$$\Delta EQUITY_t = \Delta(TA_t - TL_t) - NI_t$$

where:

- NI_t : Net income (data item 18).
- TA_t : Total assets (data item 6).
- TL_t : Total liabilities (data item 181).

$$\Delta SDEBT_t = \Delta(STD_t)$$

where:

- STD_t : Short term debt (data item 34).

$$\Delta LDEBT_t = \Delta(LTD_t)$$

where:

- LTD_t : Long term debt (data item 9).

$$\Delta DEBT_t = \Delta SDEBT_t + \Delta LDEBT_t$$

$$\Delta XFIN_t = \Delta EQUITY_t + \Delta DEBT_t$$

$$CACC_t = \Delta(CA_t - C_t) - \Delta(CL_t - STD_t)$$

where:

- CA_t : Current assets (data item 4).
- C_t : Cash and cash equivalents (data item 1).
- CL_t : Current liabilities (data item 5).

$$NCACC_t = \Delta(TA_t - CA_t) - \Delta(TL_t - CL_t - LTD_t)$$

$$TACC_t = CACC_t + NCACC_t$$

Similar to prior studies, ΔXFIN, ΔEQUITY, ΔDEBT, TACC, CACC and NCACC are deflated by contemporaneous average total assets and then winsorized at +1 and –1 in order to eliminate the influence of outliers. As mentioned in the previous section, in our analysis, we also consider market capitalization (MV) and book to market ratio (BV/MV) Market capitalization is measured as price per share (item 199) times shares outstanding (item 25) at the beginning of the portfolio formation month. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have

[9] As documented by Dechow et al. (2008) the balance sheet method requires clean surplus assumptions and that all interest expense is paid in cash. To check for robustness, we replicate all our empirical tests by using measures of corporate financing activities extracted from the cash flows statement and find qualitatively similar results. However, data from the cash flow statement limit our sample size since they are available from 1988.

financial statement data prior to forming portfolios.[10] Book to market ratio is defined as the ratio of the fiscal year end book value of equity (item 60) to the market capitalization.

The annual one-year ahead raw stock returns RET are measured using compounded 12-month buy-hold returns inclusive of dividends and other distributions from the CRSP monthly files. Then, size-adjusted returns $SRET$ are calculated by deducting the value weighted average return for all firms in the same size-matched decile, where size is measured as the market capitalization at the beginning of the return cumulation period. The size portfolios are formed by CRSP and are based on size deciles of NYSE and AMEX firms. If a firm is delisted during our future return window, then the CRSP's delisting return is considered for the calculation of the one-year ahead raw stock return, and any remaining proceeds are re-invested in the CRSP value-weighted market index. This mitigates concerns with potential survivorship biases. If a firm is delisted during our future return window as a result of poor performance and the delisting return is coded as missing by CRSP, then a delisting return of -100% is assumed.

4. Results

4.1 Characteristics from External Financing Portfolios

Table 1 reports time series averages of annual mean values of external financing and accrual characteristics of portfolios formed on the magnitude of net external financing activities and their components. For this purpose, each year we rank firms independently on net external financing activities and their components, allocate them into ten equal-sized portfolios (deciles) based on these ranks and then compute their external financing and accrual characteristics. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. We also report the time series averages of spreads in characteristics across the lowest and the highest decile, along with the associated t-statistic. At the lowest decile firms are distributing capital, while at the highest decile firms are raising capital. In Panel A of Table 1, we provide characteristics of portfolios formed on the magnitude of net external financing activities. From the first row we see that the time series averages of ΔXFIN for net repurchasers and net issuers are 0.175 and -0.389, respectively, while the spread is 0.564 (t=22.79). Turning, to the second and the third row, we see that net repurchasers are more likely to repay debt, while net issuers are more likely to issue debt. The spread of ΔEQUITY and ΔDEBT between net

[10] Alford et al. (1994) argue that four months after the fiscal year end, all firm's financial statement data are publicly available.

repurchasers and net issuers is 0.26 (t=11.38) and 0.304 (t=42.33), respectively. This finding, consistent with pecking order theory, indicates that firms are more likely to engage in debt than equity financing activities. Results on the fourth and the fifth row reveal that firms are more likely to engage in long term than short term debt financing activities. The spread of ΔSDEBT and ΔLDEBT is 0.087 (t=32.56) and 0.217 (t=31.36), respectively. Furthermore, we see an increasing trend in total accruals, working capital accruals and investing capital accruals across deciles. The time series averages of TACC for net repurchasers and net issuers are -0.103 and 0.308, respectively, while the spread is -0.411 (t=-41.15). From the last two rows, we see that net repurchasers have similar in absolute value time series averages of CACC and NCACC. However, net issuers have higher in absolute value time series averages of NCACC than CACC. In particular, the time series averages of CACC and NCACC for net repurchasers are -0.046 and -0.057, respectively, while for net issuers are 0.081 and 0.227, respectively. The spread of CACC and NCACC is -0.127 (t=-28.69) and -0.284 (t=-27.36), respectively. Overall, results from the last two rows reveal that firms with high values of net external financing are more likely to have high investing capital accruals rather than working capital accruals.

Panel B of Table 1, reports characteristics of portfolios formed on the magnitude of net equity financing activities. The time series average of ΔEQUITY for equity repurchasers and dividend paying firms is 0.123, for equity issuers -0.243, while the spread is 0.366 (t=13.94). Note also, that equity repurchasers and dividend paying firms are debt issuers, a finding indicative of possible refinancing activity whereby the proceeds from debt issues could be used to repurchase equity and pay dividends. Time series averages of ΔSDEBT and ΔLDEBT for those firms are -0.005 and -0.012 respectively, suggesting that firms are more likely to issue long term than short term debt. Turning to equity issuers, we see that that the time series average of ΔLDEBT is -0.031, while for ΔSDEBT is not statistically significant. This finding, suggests that equity issuers are more likely to issue long term debt. Furthermore, we see an increasing trend in total accruals. The time series average of TACC for net repurchasers is not statistically significant, for net issuers is 0.184, respectively, while the spread is -0.191 (t=-18.98). From the last two rows, we also see time series averages of CACC than of NCACC for equity repurchasers and dividend paying firms are not statistically significant, while for equity issuers are 0.05 and 0.134, respectively. The spread of CACC and NCACC is -0.052 (t=-11.62) and -0.139 (t=-17.64), respectively. Overall, results from the last two rows reveal that firms with high values of net equity financing are more likely to have high investing capital accruals rather than working capital accruals.

In Panel C of Table 1, we provide characteristics of portfolios formed on the magnitude of net debt financing activities. The time series averages of ΔDEBT for firms that repay and issue debt are 0.145 and -0.265, respectively, while the spread is 0.41 (t=33.87). Note also, that firms in the extreme deciles issue equity, while in other deciles are not engaged in equity financing activities. This finding, suggests possible refinancing activity whereby the proceeds from equity issuers could be used to repay debt. Results also reveal that firms are more likely to engage in long term than short term debt financing activities. The spread of ΔSDEBT and ΔLDEBT is 0.121 (t=37.51) and 0.289 (t=25.48), respectively. Furthermore, we see an increasing trend in total accruals, working capital accruals and investing capital accruals. The time series averages of TACC for firms that repay and issue debt are -0.092 and 0.302, respectively, while the spread is -0.394 (t=-35.09). From the last two rows, we also see similar in absolute value time series averages of CACC than of NCACC for firms that repay debt. On the other hand, the time series averages of CACC and NCACC for debt issuers are 0.081 and 0.221, respectively. The spread of CACC and NCACC is -0.125 (t=-34.21) and -0.269 (t=--22.75), respectively. Overall, results from the last two rows reveal that firms with high values of net debt financing are more likely to have high investing capital accruals rather than working capital accruals.

In Panel D of Table 1, we provide characteristics of portfolios formed on the magnitude of net short term debt financing activities. The time series averages of ΔLDEBT for firms that repay and issue debt are 0.105 and -0.122, respectively, while the spread is 0.227 (t=42.21). Note also, that firms in extreme deciles are both equity and long term debt issuers. This finding, suggest possible refinancing activity whereby the proceeds from equity and long term debt issuers could be used to repay short term debt. On the other hand, firms in other deciles are not engaged in equity financing activities. Furthermore, we see an increasing trend in total accruals, working capital accruals and investing capital accruals. The time series averages of TACC for firms that repay and issue short term debt are -0.03 and 0.162, respectively, while the spread is -0.192 (t=-32.96). From the last two rows, we also see that the time series averages of CACC than of NCACC for short term debt issuers are 0.076 and 0.086, respectively. On the other hand, for firms that repay short term debt the time series average of CACC is -0.028, while of NCACC is not statistically significant. The spread of CACC and NCACC is -0.104 (t=-31.81) and -0.088 (t=-16.07), respectively. As such, results from the last two rows that working capital accruals are more likely to be associated with short term debt repayment.

Panel E of Table 1, reports characteristics of portfolios formed on the magnitude of net long term debt financing activities. The time series averages of ΔSDEBT for firms that repay and issue debt are 0.119 and -0.238, respectively, while the spread is 0.357 (t=30.52). Note also that firms in extreme deciles are both equity issuers, a finding that is indicative of possible refinancing activity whereby the proceeds from equity issues could be used to repay long term debt. Similarly, we find short term debt repayment for long term debt issuers and short term debt issues for firms that repay long term debt. Furthermore, we see an increasing trend in total accruals, working capital accruals and investing capital accruals. The time series averages of TACC for firms that repay and issue debt are -0.06 and 0.264, respectively, while the spread is -0.324 (t=-27.9). From the last two rows, we also see higher in absolute value time series averages of NCACC than of CACC for firms that both issue and repay long term debt. In particular, the time series averages of CACC and NCACC for firms that repay long term debt are -0.018 and -0.042, respectively, while for firms that issue long term debt are 0.054 and 0.21, respectively. The spread of CACC and NCACC is -0.072 (t=-22.24) and -0.252 (t=-23.2), respectively. Overall, results from the last two rows reveal that firms with high values of net long term debt financing are more likely to have high investing capital accruals rather than working capital accruals.

Additionally with portfolio characteristics, cross sectional correlations between external financing and accrual measures are computed each year. Mean correlation over years are reported in Panel F of Table 1. From the first row ΔXFIN is highly correlated with both ΔEQUITY and ΔDEBT. As such, both ΔEQUITY and ΔDEBT represent significant sources of variation in ΔXFIN. Note, that ΔXFIN and ΔDEBT are more highly correlated with ΔLDEBT than with ΔSDEBT, suggesting that firms are more likely to be engaged in long term debt than short term debt financing activities. Furthermore, the correlation of ΔXFIN, ΔDEBT and ΔLDEBT with TACC is high and similar with NCACC. On the other hand, ΔXFIN, ΔDEBT and ΔLDEBT are less correlated with CACC. Note also, that ΔEQUITY is similarly correlated with TACC and NCACC and less with CACC. This finding indicates that the close relation of the external financing anomaly and the accrual anomaly may be attribuTable to investing capital accruals. However, ΔSDEBT is similarly correlated with TACC and CACC and less with NCACC.

4.2 Stock Returns Tests from External Financing Portfolios.

In this section, we investigate the performance of portfolios based on the magnitude of external financing measures. As in the previous section, we rank firms annually on each measure, allocate them into ten equal-sized portfolios (deciles) based on these ranks and then compute their future raw and size-adjusted returns. In Panel A of Table 2, we report the time series averages of raw returns for each portfolio based on external financing measure, along with their associated t-statistics (in parenthesis). We also report the time series averages of returns for hedge strategies consisting of a long (short) position in the lowest (highest) decile. Starting with ΔXFIN, we see that raw returns for net repurchasers and net issuers are 0.2 (t=5.36) and 0.09 (t=1.978), respectively. A trading strategy on ΔXFIN generates a raw return of about 0.11 (t=4.801). Turning to ΔEQUITY, the raw return for equity issuers and dividend paying firms is 0.187 (t=5.858), for equity issuers is 0.1 (t=2.013), while for the hedge strategy is 0.087 (t=3.001). Firms that repay debt have a raw return of about 0.201 (t=4.335), firms that issue debt 0.109 (t=2.501), while the hedge raw return for ΔDEBT is 0.092 (t=4.862), respectively. From a closer look to debt financing proxies, we see that ΔSDEBT and ΔLDEBT hedge strategies generate raw returns of about 0.045 (t=2.81) and 0.084 (t=5.521), respectively. Thus, both forms of net debt financing activities are negatively related with future stock returns. However, the relation is stronger for net long term financing activities.

Panel B of Table 2 presents time series averages of size-adjusted returns for portfolios and hedge strategies based on the magnitude of external financing measures. From the first column, we see that the size-adjusted return for net repurchasers is 0.049 (t=4.314), for net issuers is -0.055 (t=-3.339), while for the hedge strategy on ΔXFIN is 0.104 (t=4.8). Turning to ΔEQUITY, we see that size-adjusted returns for net repurchasers and net issuers are 0.044 (t=4.58) and -0.045 (t=-2.054), respectively, while for the hedge strategy is 0.089 (t=3.523). Further, firms that repay debt have a size-adjusted return of about 0.042 (t=2.982), firms that issue debt -0.038 (t=-2.685), while the hedge size-adjusted return for ΔDEBT is 0.08 (t=4.261), respectively. Note, that Bradshaw et al. (2006) report similar size-adjusted returns for ΔXFIN, ΔEQUITY and ΔDEBT. Turning to debt financing proxies, we see that hedge strategies on ΔSDEBT and ΔLDEBT generate returns of about 0.046 (t=3.016) and 0.068 (t=4.722), respectively. As such, the negative relation between stock returns and net long term financing activities is stronger than with net short term debt financing activities. Note that all strategies are found profiTable in the great majority of years of our sample period.

Results from our stock return tests in Panel A and B of Table 2 indicate positive raw and size-adjusted returns for hedge trading strategies on external financing measures. However, as argued by Fama (1998) a problem in these tests is that all models of expected returns are incomplete descriptions of the systematic patterns in average returns during any sample period. As a result, stock return tests are always contaminated by a “bad model” problem. In order to check the robustness of results from our stock return tests, we apply the statistical arbitrage test that is designed by Hogan et al. (2004) to hedge strategies on all external financing measures. This test circumvents the “bad model” problem of stock return tests since it is not contingent upon a specific model for market returns. By definition a trading strategy that constitutes statistical arbitrage opportunities must have a zero initial cost (self financing), positive expected discounted profits, a probability of a loss converging to zero and a time-averaged variance converging to zero if the probability of a loss does not become zero in finite time. In economics terms, the last condition associated with the time-averaged variance implies that a statistical arbitrage opportunity eventually produces riskless incremental profit, with an associated “Sharpe” ratio increasing monotonically through time.

The zero initial cost (self financing) condition in these tests is enforced by investing (borrowing) trading profits (losses) generated by each trading strategy at the risk free rate. Specifically, time series of annual hedge (raw) returns $RET\left(t_i\right)$ are first generated from accruals and value/growth strategies. Then, the trading profits $V\left(t_i\right)$ of each trading strategy accumulate at the risk free rate $r\left(t_i\right)$ to yield cumulative trading profits (with $V\left(t_0\right)=0$):

$$V\left(t_i\right)=RET\left(t_i\right)+e^{r\left(t_{i-1}\right)}\cdot V\left(t_{i-1}\right) \tag{4}$$

This cumulative trading profit is then discounted each period by $e^{\sum_{i=1}^{n}\Sigma r\left(t_i\right)}$ to construct discounted cumulative trading profits $v\left(t_i\right)$ for each trading strategy. Let $\Delta v_i=v\left(t_i\right)-v\left(t_{i-1}\right)$, denote the increments of the discounted cumulative profits with mean μ, growth rate of mean θ, standard deviation σ and growth rate of standard deviation λ. Assume also that the increments of the discounted cumulative profits Δv_i evolve according to the following stochastic process:

$$\Delta v_i=\mu\cdot i^{\theta}+\sigma\cdot i^{\lambda}\cdot z_i \tag{5}$$

where i=1,2,…..n, z_i are $i.i.d\ N(0,1)$ random variables with $z_0=0$, $v\left(t_0\right)$ and Δv_0 are equal to zero. Under the above assumed stochastic process, the discounted cumulative profits v_t are distributed as

$$v\left(t_n\right)=\sum_{i=1}^{n}\Delta v_i\sim N\left(\mu\sum_{i=1}^{n}i^{\theta},\sigma^2\sum_{i=1}^{n}i^{2\lambda}\right) \tag{6}$$

and have the following log likelihood function.

$$\log L\left(\mu,\sigma^2,\theta,\lambda\middle|\Delta v\right)=-\frac{1}{2}\sum_{i=1}^{n}\log\left(\sigma^2 i^{2\lambda}\right)-\frac{1}{2\sigma^2}\sum_{i=1}^{n}\frac{1}{i^{2\lambda}}\left(\Delta v_i-\mu\cdot i^{\theta}\right)^2 \tag{7}$$

The parameters μ, θ, σ, λ can be estimated through the maximum likelihood estimation method and the associated score equations are provided in the appendix. Then, assuming that $\theta=0$, one can conduct constraint mean tests of statistical arbitrage. In particular, under these tests a trading strategy generates statistical arbitrage with $1-\alpha$ percent confidence if the following conditions are satisfied[11]: H1: $\mu>0$ and H2: $\lambda<0$.

The first hypothesis tests whether the mean annual incremental profit of a trading strategy is positive (second condition for statistical arbitrage) and the second, whether its time-averaged variance decreases over time (fourth condition of statistical arbitrage). The two parameters are tested individually with the Bonferroni inequality accounting for the combined

[11] See in the appendix the appropriate conditions for statistical arbitrage under the unconstraint mean tests and in Hogan et al. (2004) for further details on their differences.

nature of the hypothesis test. Note, that standards errors for the above parameters may be extracted from the Hessian matrix to produce the required corresponding p-values.[12]

From the reported results on Panel C of Table 2 we see that hedge strategies on external financing and accrual measures constitute statistical arbitrage opportunities at the 1% level. Only, the strategy on net short term debt financing is found to survive the statistical arbitrage test only at the 5% level. Note, that if one agrees that the notion of statistical arbitrage is incompatible with market equilibrium, and by inference, market efficiency (Jarrow 1988, chapter 19), then our evidence supports existing behavioral explanations to interpret the role of accruals on the predictability of stock returns following external financing activities.

4.3 Stock Returns Tests from Interacted Portfolios on Net External Financing and Accrual Measures

So far, the external financing anomaly has been examined independently from the accrual anomaly. In this section, we investigate the role of accruals on the predictability of stock returns following external financing activities by considering control hedge and joint hedge strategies.[13] To implement these two-dimensional strategies, each year firms are sorted independently on external financing and accrual measures, and allocated into three group-portfolios: the bottom 20 percent (Portfolio 1), middle 60 percent (Portfolio 2), and top 20 percent (Portfolio 3). As in the previous sections, portfolios are held for one year and then rebalanced, while we require at least a four-month gap between the portfolio formation month and the fiscal year end. We then focus, on the resulted intersections[14] from the above mentioned sorts. Under a control hedge strategy we assess whether the external financing effect survives, after holding the accrual effect constant. Under a joint hedge strategy we assess whether the combination of these effects, generates an indicator that is significantly better than either one effect separately.

Table 3 reports the size-adjusted returns for simple portfolios based on the magnitude of external financing measures and their intersections with portfolios based on the magnitude of total accruals, along with their associated t-statistics (in parenthesis). Note that the hedge size-adjusted returns for the unconditional strategies on ΔXFIN, ΔEQUITY and ΔDEBT are

[12] Note that these hypotheses are the economic hypotheses for the presence of statistical arbitrage. The statistical hypotheses under testing are $\mu = 0$ and $\lambda = 0$ that correspond to absence of arbitrage.

[13] Reinganum (1981), Jaffe et al. (1989), Greig (1992), Hong et al. (2000), Collins and Hribar (2002) and Desai et al. (2004) have used this approach to address related questions. In supplementary tests, we perform analysis by considering two-dimensional strategies from sequential sorts on external financing and accrual measures and find qualitative similar results.

[14] Using group analysis leads to lower standard errors in t-statistics for hedge returns across two-dimensional strategies than decile analysis. This approach has been also used by other studies in the accounting and the finance literature. However, the results are qualitatively similar with decile analysis.

0.09 (t=5.564), 0.056 (t=2.548) and 0.072 (t=7.389), respectively. From a closer look to debt financing proxies, we see that ΔSDEBT and ΔLDEBT hedge strategies generate returns of about 0.037 (t=4.221) and 0.057 (t=5.217), respectively. From Panel A, we see that the strategy on ΔXFIN is not profiTable across firms with low and high levels of TACC. Turning to Panel B, we see that the strategy on ΔEQUITY generates insignificant size-adjusted returns across firms with low and medium levels of TACC. Results on Panel C, reveal that the strategy on ΔDEBT is not profiTable across firms with low levels of TACC and earns negative size-adjusted returns across firms with high levels TACC. Furthermore, from Panels D and E we see that size-adjusted returns to strategy ΔSDEBT are completely subsumed by TACC, while the strategy on ΔLDEBT is not profiTable across firms with low and high levels of TACC. Note also, that the performance of hedge strategies that combine information on both external financing measures and total accruals is indistinguishable to that of an unconditional strategy on total accruals. As such, consistent with prior evidence in the accounting literature, our findings from Table 3 indicate that the anomalies on external financing activities are related with the anomaly on total accruals.

Table 4 reports the size-adjusted returns for simple portfolios based on the magnitude of external financing measures and their intersections with portfolios based on the magnitude of working capital accruals, along with their associated t-statistics (in parenthesis). From Panel A, we see that the strategy on ΔXFIN is profiTable across all firms regardless their exposure to CACC. Similar evidence is found from Panels B, C and E for the strategies on ΔEQUITY, ΔDEBT and ΔLDEBT, respectively (ΔEQUITY on the middle CACC portfolio is the only exception). However, results on Panel D show that the strategy on ΔSDEBT is not profiTable across firms with medium and high levels of CACC. Furthermore, findings from all panels reveal that the generated size-adjusted returns from hedge strategies that combine information on both external financing measures and working capital accruals are significantly higher than those obtained from each measure in isolation. Overall, our findings from Table 4 suggest that the anomalies on external financing activities are unrelated with the anomaly on working capital accruals, first documented by Sloan (1996). However, our evidence on Panel D is suggestive of a significant role for working capital accruals on the predictability of stock returns following short term debt financing activities.

Table 5 reports the size-adjusted returns for simple portfolios based on the magnitude of external financing measures and their intersections with portfolios based on the magnitude of investing capital accruals, along with their associated t-statistics (in parenthesis).From Panel A and C, we see that the strategies on ΔXFIN and ΔDEBT are not profiTable across firms with high levels of NCACC. Turning to Panel B, we see that the strategy on ΔEQUITY generates insignificant size-adjusted returns across firms with low levels of NCACC. Results on Panel D and E, reveal that the strategies on ΔSDEBT and ΔLDEBT are not profiTable across firms with low and high levels of NCACC. Furthermore, from all panels is found that that the generated size-adjusted from hedge strategies that combine information on both external financing measures and investing capital accruals are not significantly higher that those from an unconditional strategy on investing capital accruals. These findings imply the anomalies on external financing activities are related with the anomaly on investing capital accruals, first documented by Richardson et al. (2005). Overall, our evidence from Table 5 indicates that the relation of the anomalies on external financing activities and accruals is more likely to be driven from investing capital accruals.

4.4 Regressions on Net External Financing and Accrual Measures.

In this section, we estimate Fama - MacBeth (1973) regressions of raw stock returns on external financing measures and accrual measures[15], after controlling for size and book to market ratio, and report the time series averages of the resulting parameter coefficients. The reported t-statistics (in parenthesis) are based on the means and standard deviations of the parameter coefficients obtained in the annual cross sectional regressions. To ensure that results are not driven from extreme observations we repeat regressions for two subsamples. To form these subsamples, we first divide the entire sample across the accrual dimension so that one half contains predominantly low accrual firms and the other predominantly high accrual firms. Then, we identify issuers and repurchasers in each of these groups. Based on these partitions the first subsample (overlap subsample) contains low accrual firms that are also repurchasers (firms with lower than mean accrual and external financing measures) and high accrual firms that are also issuers (firms with higher than mean accrual and external financing measures). The second subsample (nonoverlap subsample) contains low accrual firms that are also issuers (firms with lower than mean accrual measures and higher than mean external financing measures) and high accrual firms that are also repurchasers (firms with higher than mean accrual measures and lower than mean external financing measures). In this way, we investigate the role of accruals on the predictability of stock returns following external financing activities. If accruals do not have an important role, then the external financing effect should be strong for the full sample and for both subsamples.

Before discussing our results, note that from unreported regressions we found negative and statistically significant coefficients on all external financing measures, unconditional on

[15]The regression approach imposes linear structure on the relation between returns and the variable under investigation, even though the relation may be non-linear. To control for potential non-linearities and ensure that results are not driven from extreme observations, we follow Desai et al. (2004) and express variables as portfolio decile ranking. In particular, each year we sort firms independently into nine deciles (0,9) based on external financing and accrual measures and divide the decile number by 9 so that each firm-year observation related to these variables takes a value ranging between 0 and 1.

accrual measures.[16] In Table 6, we report results from regressions of raw stock returns on each external financing measure after controlling for total accruals. From Panel A, it is found that when both external financing measures and total accruals are included in the regressions, the coefficients on ΔXFIN, ΔEQUITY, ΔDEBT, ΔSDEBT and ΔLDEBT are not statistically significant, while the coefficient on TACC is negative and statistically significant. Similar results are reported in Panels B and C for the overlap and nonoverlap subsample, respectively. As such, consistent with evidence in Cohen and Lys (2006), these findings indicate that the external financing anomaly no longer persists, once we control for total accruals.

Table 7, provides results from regressions of raw stock returns on each external financing measure after controlling for working capital accruals. From Panel A we see that when both external financing measures and working capital accruals are included in the regressions, the coefficients on all measures are negative and statistically significant. Turning to Panels B and C, we see similar results for ΔXFIN, ΔEQUITY, ΔDEBT, ΔLDEBT and CACC across the overlap and nonoverlap subsample, respectively. These findings imply that the predictive power of those external financing measures for future returns is unrelated to that of working capital accruals. However, for the overlap subsample the coefficient for ΔSDEBT is not found statistically significant, while for the nonoverlap subsample is found negative and statistically significant. This finding indicates that there is a relation between the anomalies on short term debt financing activities and working capital accruals.

In Table 8, we report results from regressions of raw stock returns on each external financing measure after controlling for investing capital accruals. Results from Panel A reveal that when both external financing measures and investing capital accruals are included in the regressions, the coefficients on ΔXFIN, ΔDEBT, ΔSDEBT and NCACC are negative and statistically significant, while on ΔEQUITY and ΔLDEBT are statistically insignificant. However, from Panel B that provides results for the overlap subsample we see that the predictive power of all external financing measures for future stock returns is closely related and subsumed by that of investing capital accruals. Similar results are reported on Panel C for the nonoverlap subsample, except ΔXFIN. These findings suggest that there is a strong relation between the anomalies on external financing activities and investing capital accruals.

Overall, the results from regression analysis confirm prior evidence from portfolio level analysis that the strong relation of the anomalies on external financing activities and accruals is more likely to be driven from investing capital accruals. In other words, investing capital accruals is a key in understanding the external financing anomaly. Working capital accruals seem to play an important role only on the predictability of stock returns, following short term debt financing activities.

[16] Similar results are reported in Bradshaw et al. (2006) and Cohen and Lys (2006).

5. Conclusions

An extensive body of empirical work in finance and accounting studies documents a negative relation between net external financing activities and future stock returns. However, Cohen and Lys (2006) show that that the external financing anomaly no longer persists, after controlling for total accruals. Based on Richardson et al. (2005) accruals can be divided to working capital accruals that represent growth in net working capital and investing capital accruals that represent growth in net investing capital. The nature of different information in accrual components for the predictability of stock returns following external financing activities has not been thoroughly explored, however. This issue motivates what we do in this paper.

Our findings can be summarized in what follows. We show that firms with high values of net external financing are more likely to have high investing capital accruals rather than working capital accruals. We also show that hedge strategies on net changes in entire external financing, equity financing transactions and debt financing transactions generate positive raw and size-adjusted stock returns. The strategies are also found to constitute statistical arbitrage opportunities. Similar results are found when we distinguish between net short term and net long term debt financing activities. However, the effects are found stronger for net long term debt financing activities. We also show that the strong relation of the anomalies on external financing activities and accruals is more likely to be driven from investing capital accruals. Working capital accruals seem to have an important role only on the predictability of stock returns, following short term debt financing activities.

Overall, our evidence is more likely to be consistent with investor's failure to recognise opportunistic earnings management and/or agency related overinvestment associated with invested capital. However, our findings do not necessarily rule out a risk based explanation. It is possible that an omitted risk factor related to earnings quality and/or capital investment may be the underlying culprit for the strong relation between anomalies on external financing activities and accruals. It would be more interesting for future research to disentangle between the impact of earnings management and investment on the external financing effect.

Appendix

A. Parameters Estimates for the Statistical Arbitrages Tests

The parameters μ , θ , σ , λ are estimated from the following system of four equations with four unknowns:

$$\frac{\partial \log L\left(\mu,\sigma^2,\theta,\lambda \middle| \Delta v\right)}{\partial \mu}:\ \mu = \frac{\sum_{i=1}^{n} \Delta v_i i^{\theta-2\lambda}}{\sum_{i=1}^{n} i^{2(\theta-\lambda)}} \tag{1}$$

$$\frac{\partial \log L\left(\mu,\sigma^2,\theta,\lambda \middle| \Delta v\right)}{\partial \sigma^2}:\ \sigma^2 = \frac{1}{n}\sum_{i=1}^{n}\frac{1}{i^{2\lambda}}\left(\Delta v_i - \mu i^{\theta}\right)^2 \tag{2}$$

$$\frac{\partial \log L\left(\mu,\sigma^2,\theta,\lambda \middle| \Delta v\right)}{\partial \theta}:\ \sum_{i=1}^{n}\Delta v_i \log(i) i^{\theta-2\lambda} = \mu\sum_{i=1}^{n}\log(i) i^{2(\theta-\lambda)} \tag{3}$$

$$\frac{\partial \log L\left(\mu,\sigma^2,\theta,\lambda \middle| \Delta v\right)}{\partial \lambda}:\ \sigma^2\sum_{i=1}^{n}\log(i) = \sum_{i=1}^{n}\frac{\log(i)}{i^{2\lambda}}\left(\Delta v_i - \mu i^{\theta}\right)^2 \tag{4}$$

Note that by assuming, $\theta = 0$ and $\lambda = 0$ we get the standard MLE estimators of the mean and the variance of the incremental trading profits of each strategy:

$$\mu = \frac{1}{n}\sum_{i=1}^{n}\Delta v_i \text{ and } \sigma^2 = \frac{1}{n}\sum_{i=1}^{n}\left(\Delta v_i - \mu\right)^2$$

B. Unconstraint Mean Test of Statistical Arbitrage

Under the unconstraint mean test, a trading strategy generates statistical arbitrage with $1-\alpha$ percent confidence if the following conditions are satisfied:

H1: $\mu > 0$

H2: $\lambda < 0$

H3: $\theta > \max\left\{\lambda - \frac{1}{2}, -1\right\}$

with the sum of p values for the individual tests forming an upper bound for the type I error a.

Note that by assuming $\theta = 0$ the unconstraint mean test of statistical arbitrage is reduced to a constraint mean test, while by assuming $\theta = 0$ and $\lambda = 0$ it is reduced to a single t-test.

Finally, for the test of H2 to be well defined, we have to assume that the parameter space for λ is the whole real live, although for v_t to have a well defined distribution we need $\lambda \le 0$.

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Table 1
Characteristics of External Financing Portfolios

Panel A: Characteristics for Decile Portfolios sorted by Net External Financing ($\Delta XFIN$)

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Spread (1-10)	Spread (t-stat)
$\Delta XFIN$	**0.175**	**0.072**	**0.045**	**0.026**	**0.009**	**-0.009**	**-0.034**	**-0.073**	**-0.147**	**-0.389**	**0.564**	22.79
$\Delta EQUITY$	**0.079**	**0.038**	**0.027**	**0.018**	**0.011**	**0.004**	**-0.002**	**-0.014**	**-0.047**	**-0.181**	**0.26**	11.38
$\Delta DEBT$	**0.096**	**0.034**	**0.018**	**0.008**	**-0.002**	**-0.013**	**-0.032**	**-0.059**	**-0.1**	**-0.208**	**0.304**	42.33
$\Delta SDEBT$	**0.042**	**0.014**	**0.006**	0.001	**-0.002**	**-0.006**	**-0.011**	**-0.019**	**-0.028**	**-0.045**	**0.087**	32.56
$\Delta LDEBT$	**0.054**	**0.021**	**0.013**	**0.007**	-0.001	**-0.007**	**-0.021**	**-0.04**	**-0.072**	**-0.163**	**0.217**	31.46
$TACC$	**-0.103**	**-0.011**	**0.009**	**0.017**	**0.027**	**0.041**	**0.066**	**0.099**	**0.155**	**0.308**	**-0.411**	-41.15
$CACC$	**-0.046**	**-0.007**	0.002	**0.004**	**0.009**	**0.014**	**0.025**	**0.035**	**0.05**	**0.081**	**-0.127**	-28.69
$NCACC$	**-0.057**	-0.004	**0.007**	**0.013**	**0.018**	**0.027**	**0.041**	**0.064**	**0.105**	**0.227**	**-0.284**	-27.36

Notes: Panel A of Table 1 reports time series averages of annual mean values of external financing and accrual characteristics for portfolios formed on the magnitude of net external financing activities. Portfolios are constructed by ranking firms independently on net external financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the spreads in characteristics across the lowest and the highest decile along with the associated t-statistic (in parenthesis), are also reported. Bold numbers indicate significance at less than 5% level. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003.

$\Delta XFIN$ are net external financing activities, calculated as the sum of net equity financing activities $\Delta EQUITY$ and net debt financing activities $\Delta DEBT$. Net equity financing activities are defined as difference between the change in total equity and net income $\Delta(TA - TL) - NI$ where : TA are total assets (data item 6), TL are total liabilities (data item 181) and NI is net income (data item 18). $\Delta DEBT$ are net debt financing activities, calculated as the sum of net short term debt financing activities $\Delta SDEBT$ and net long term debt financing activities. $\Delta LDEBT$. Net short term debt financing activities are defined as change in short term debt $\Delta(STD)$ where STD is short term debt (data item 34). Net long term debt financing activities are defined as change in long term debt $\Delta(LTD)$ where LTD is long term debt (data item 9) $TACC$ are total accruals, calculated as the sum of working capital accruals $CACC$ and investing capital accruals $NCACC$. Working capital accruals are defined as change in net current operating assets (net working capital) $\Delta(CA - C) - \Delta(CL - STD)$ where CA are current assets (data item 4), C are cash and cash equivalents (data item 1) and CL are current liabilities (data item 5). Investing capital accruals are defined as change in net non current operating assets (net investing capital) $\Delta(TA - CA) - \Delta(TL - CL - LTD)$. All variables are deflated by average total assets.

Table 1 (continued)

Panel B: Characteristics for Decile Portfolios sorted by Net Equity Financing ($\Delta EQUITY$)

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Spread (1-10)	Spread (t-stat)
$\Delta XFIN$	**0.106**	**0.032**	**0.011**	-0.003	**-0.01**	**-0.018**	**-0.029**	**-0.045**	**-0.092**	**-0.276**	**0.382**	14.99
$\Delta EQUITY$	**0.123**	**0.047**	**0.031**	**0.021**	**0.013**	**0.007**	-0.001	**-0.014**	**-0.052**	**-0.243**	**0.366**	13.94
$\Delta DEBT$	**-0.017**	**-0.015**	**-0.02**	**-0.024**	**-0.023**	**-0.025**	**-0.028**	**-0.031**	**-0.04**	**-0.033**	**0.016**	3.102
$\Delta SDEBT$	**-0.005**	**-0.004**	**-0.004**	**-0.004**	**-0.004**	**-0.005**	**-0.006**	**-0.007**	**-0.006**	-0.002	-0.003	-1.434
$\Delta LDEBT$	**-0.012**	**-0.011**	**-0.016**	**-0.02**	**-0.019**	**-0.02**	**-0.022**	**-0.024**	**-0.034**	**-0.031**	**0.019**	5.665
$TACC$	-0.007	**0.036**	**0.045**	**0.049**	**0.047**	**0.043**	**0.048**	**0.061**	**0.102**	**0.184**	**-0.191**	-18.98
$CACC$	-0.002	**0.009**	**0.012**	**0.013**	**0.013**	**0.013**	**0.014**	**0.016**	**0.029**	**0.05**	**-0.052**	-11.62
$NCACC$	-0.005	**0.027**	**0.033**	**0.036**	**0.034**	**0.03**	**0.034**	**0.045**	**0.073**	**0.134**	**-0.139**	-17.64

Panel C: Characteristics for Decile Portfolios sorted by Net Debt Financing ($\Delta DEBT$)

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Spread (1-10)	Spread (t-stat)
$\Delta XFIN$	**0.102**	**0.042**	**0.024**	**0.012**	-0.001	**-0.008**	**-0.025**	**-0.058**	**-0.111**	**-0.302**	**0.404**	33.68
$\Delta EQUITY$	**-0.043**	-0.002	0.005	0.006	0.002	0.004	**0.005**	-0.001	**-0.007**	**-0.037**	-0.006	-1.369
$\Delta DEBT$	**0.145**	**0.044**	**0.019**	**0.006**	**-0.003**	**-0.012**	**-0.03**	**-0.057**	**-0.104**	**-0.265**	**0.41**	33.87
$\Delta SDEBT$	**0.061**	**0.016**	**0.006**	0.001	**-0.001**	**-0.006**	**-0.011**	**-0.02**	**-0.032**	**-0.06**	**0.121**	37.51
$\Delta LDEBT$	**0.084**	**0.028**	**0.013**	**0.005**	-0.001	**-0.006**	**-0.019**	**-0.037**	**-0.072**	**-0.205**	**0.289**	25.48
$TACC$	**-0.092**	**-0.015**	**0.011**	**0.03**	**0.04**	**0.044**	**0.061**	**0.089**	**0.138**	**0.302**	**-0.394**	-35.09
$CACC$	**-0.044**	**-0.008**	0.002	**0.011**	**0.013**	**0.014**	**0.02**	**0.031**	**0.046**	**0.081**	**-0.125**	-34.21
$NCACC$	**-0.048**	**-0.007**	**0.009**	**0.019**	**0.027**	**0.031**	**0.041**	**0.058**	**0.092**	**0.221**	**-0.269**	-22.75

Notes: Panel B of Table 1 reports time series averages of annual mean values of external financing and accrual characteristics for portfolios formed on the magnitude of net equity financing activities. Portfolios are constructed by ranking firms independently on net equity financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the spreads in characteristics across the lowest and the highest decile along with the associated t-statistic (in parenthesis), are also reported. Bold numbers indicate significance at less than 5% level. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. All variables are defined in Panel A of Table 1.

Notes: Panel C of Table 1 reports time series averages of annual mean values of external financing and accrual characteristics for portfolios formed on the magnitude of net debt financing activities. Portfolios are constructed by ranking firms independently on net debt financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the spreads in characteristics across the lowest and the highest decile along with the associated t-statistic (in parenthesis), are also reported. Bold numbers indicate significance at less than 5% level. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. All variables are defined in Panel A of Table 1.

Table 1 (continued)

Panel D: Characteristics for Decile Portfolios sorted by Net Short-term Debt Financing ($\Delta SDEBT$)

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Spread (1-10)	Spread (t-stat)
$\Delta XFIN$	**0.036**	0.002	-0.003	-0.009	**-0.012**	**-0.019**	**-0.038**	**-0.048**	**-0.077**	**-0.156**	**0.192**	38.03
$\Delta EQUITY$	**-0.028**	-0.003	0.001	-0.001	-0.001	0.001	-0.006	-0.003	**-0.005**	**-0.02**	-0.008	-2.324
$\Delta DEBT$	**0.064**	**0.005**	**-0.004**	**-0.008**	**-0.011**	**-0.02**	**-0.032**	**-0.045**	**-0.072**	**-0.136**	**0.2**	36.57
$\Delta SDEBT$	**0.105**	**0.024**	**0.008**	**0.002**	-0.001	**-0.002**	**-0.008**	**-0.018**	**-0.039**	**-0.122**	**0.227**	42.21
$\Delta LDEBT$	**-0.041**	**-0.019**	**-0.012**	**-0.01**	**-0.01**	**-0.018**	**-0.024**	**-0.027**	**-0.033**	**-0.014**	**-0.027**	-7.402
$TACC$	**-0.03**	**0.023**	**0.036**	**0.045**	**0.05**	**0.057**	**0.072**	**0.085**	**0.109**	**0.162**	**-0.192**	-32.96
$CACC$	**-0.028**	0.001	**0.006**	**0.01**	**0.013**	**0.013**	**0.017**	**0.025**	**0.035**	**0.076**	**-0.104**	-31.81
$NCACC$	-0.002	**0.022**	**0.03**	**0.035**	**0.037**	**0.044**	**0.055**	**0.06**	**0.074**	**0.086**	**-0.088**	-16.07

Panel E: Characteristics for Decile Portfolios sorted by Net Long-term Debt Financing ($\Delta LDEBT$)

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Spread (1-10)	Spread (t-stat)
$\Delta XFIN$	**0.068**	**0.027**	**0.012**	**0.004**	-0.001	-0.007	**-0.023**	**-0.047**	**-0.094**	**-0.262**	**0.33**	27.01
$\Delta EQUITY$	**-0.034**	0.001	0.004	0.003	0.001	0.001	-0.001	-0.002	**-0.008**	**-0.032**	-0.002	-0.583
$\Delta DEBT$	**0.102**	**0.026**	**0.008**	0.001	-0.002	**-0.008**	**-0.022**	**-0.045**	**-0.086**	**-0.23**	**0.332**	28.49
$\Delta SDEBT$	**-0.017**	**-0.007**	**-0.007**	**-0.004**	**-0.003**	**-0.006**	**-0.006**	**-0.004**	-0.001	**0.008**	**-0.025**	-7.418
$\Delta LDEBT$	**0.119**	**0.033**	**0.015**	**0.005**	**0.001**	**-0.002**	**-0.016**	**-0.041**	**-0.085**	**-0.238**	**0.357**	30.52
$TACC$	**-0.06**	-0.001	**0.02**	**0.034**	**0.042**	**0.046**	**0.058**	**0.08**	**0.123**	**0.264**	**-0.324**	-27.9
$CACC$	**-0.018**	0.002	**0.01**	**0.014**	**0.016**	**0.016**	**0.018**	**0.023**	**0.032**	**0.054**	**-0.072**	-22.24
$NCACC$	**-0.042**	-0.003	**0.01**	**0.02**	**0.026**	**0.03**	**0.04**	**0.057**	**0.091**	**0.21**	**-0.252**	-23.2

Notes: Panel D of Table 1 reports time series averages of annual mean values of external financing and accrual characteristics for portfolios formed on the magnitude of net short term debt financing activities. Portfolios are constructed by ranking firms independently on net short term debt financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the spreads in characteristics across the lowest and the highest decile along with the associated t-statistic (in parenthesis), are also reported. Bold numbers indicate significance at less than 5% level. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. All variables are defined in Panel A of Table 1.

Notes: Panel E of Table 1 reports time series averages of annual mean values of external financing and accrual characteristics for portfolios formed on the magnitude of net long term debt financing activities. Portfolios are constructed by ranking firms independently on net long term debt financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the spreads in characteristics across the lowest and the highest decile along with the associated t-statistic (in parenthesis), are also reported. Bold numbers indicate significance at less than 5% level. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. All variables are defined in Panel A of Table 1.

Table 1 (continued)

Panel F: Average Correlations between External Financing and Accrual Measures

Parameter	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$TACC$	$CACC$	$NCACC$
$\Delta XFIN$	**1**	**0.653**	**0.752**	**0.35**	**0.621**	**0.737**	**0.395**	**0.669**
$\Delta EQUITY$		**1**	0.019	-0.017	**0.036**	**0.333**	**0.168**	**0.311**
$\Delta DEBT$			**1**	**0.485**	**0.811**	**0.698**	**0.38**	**0.628**
$\Delta SDEBT$				**1**	**-0.112**	**0.331**	**0.334**	**0.187**
$\Delta LDEBT$					**1**	**0.574**	**0.212**	**0.591**
$TACC$						**1**	**0.639**	**0.833**
$CACC$							**1**	**0.114**
$NCACC$								**1**

Notes: Panel F reports time series averages of cross sectional correlations between external financing and accrual measures. Bold numbers indicate significance at less than 5% level. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. All variables are defined in Panel A of Table 1.

Table 2
Returns and Statistical Arbitrage Opportunities of External Financing Portfolios

Panel A: RET for Decile Portfolios sorted by External Financing Measures

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Hedge (1-10)
$\Delta XFIN$	0.2 (5.36)	0.199 (5.788)	0.183 (5.582)	0.192 (5.423)	0.194 (4.872)	0.173 (4.412)	0.16 (4.376)	0.148 (3.802)	0.121 (2.935)	0.09 (1.978)	0.11 (4.801)
$\Delta EQUITY$	0.187 (5.858)	0.159 (5.304)	0.159 (5.666)	0.162 (4.58)	0.188 (4.822)	0.197 (4.737)	0.179 (4.499)	0.181 (3.89)	0.148 (3.19)	0.1 (2.013)	0.087 (3.001)
$\Delta DEBT$	0.201 (4.335)	0.207 (5.259)	0.177 (4.903)	0.188 (4.268)	0.179 (4.848)	0.168 (4.484)	0.156 (4.862)	0.143 (4.124)	0.132 (3.713)	0.109 (2.501)	0.092 (4.862)
$\Delta SDEBT$	0.192 (4.429)	0.174 (4.869)	0.172 (4.734)	0.176 (4.38)	0.17 (4.214)	0.18 (4.665)	0.151 (4.57)	0.148 (4.261)	0.147 (4.041)	0.147 (3.428)	0.045 (2.81)
$\Delta LDEBT$	0.196 (4.476)	0.194 (5.09)	0.182 (4.804)	0.19 (4.544)	0.172 (4.233)	0.18 (4.535)	0.149 (4.602)	0.148 (4.653)	0.138 (3.757)	0.112 (2.712)	0.084 (5.521)

Notes: Panel A of Table 2 reports time series averages of annual mean values of one-year ahead raw stock returns RET of portfolios formed on the magnitude of net entire and individual external financing activities, along with their associated t-statistics (in parenthesis). Portfolios are constructed by ranking firms independently on net entire and individual external financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the hedge return to a strategy consisting of a long position in the lowest decile and a short position in the highest decile with the associated t-statistic (in parenthesis), are also reported. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. The annual one-year ahead raw stock returns RET are measured using compounded 12-month buy-hold returns inclusive of dividends and other distributions from the CRSP monthly files. All variables are defined in Panel A of Table 1.

Table 2 (Continued)

Panel B: $SRET$ **for Decile Portfolios sorted by External Financing Measures**

Parameter	1 (Low)	2	3	4	5	6	7	8	9	10 (High)	Hedge (1-10)
$\Delta XFIN$	0.049 (4.314)	0.053 (6.905)	0.038 (4.542)	0.048 (5.346)	0.049 (4.607)	0.03 (2.673)	0.015 (1.199)	0.006 (0.646)	-0.023 (-2.161)	-0.055 (-3.339)	0.104 (4.8)
$\Delta EQUITY$	0.044 (4.58)	0.021 (2.407)	0.018 (1.484)	0.024 (2.122)	0.039 (4.348)	0.049 (4.071)	0.034 (3.319)	0.025 (1.896)	-0.001 (-0.019)	-0.045 (-2.054)	0.089 (3.523)
$\Delta DEBT$	0.042 (2.982)	0.056 (6.224)	0.037 (4.653)	0.043 (1.946)	0.039 (2.95)	0.023 (2.015)	0.013 (1.331)	0.002 (0.241)	-0.01 (-0.85)	-0.038 (-2.685)	0.08 (4.261)
$\Delta SDEBT$	0.039 (3.089)	0.029 (3.365)	0.032 (3.219)	0.03 (1.894)	0.023 (1.488)	0.04 (4.071)	0.013 (1.762)	0.007 (0.689)	0.002 (0.26)	-0.007 (-0.638)	0.046 (3.016)
$\Delta LDEBT$	0.036 (3.748)	0.043 (4.384)	0.041 (4.643)	0.044 (2.551)	0.026 (1.909)	0.037 (2.722)	0.005 (0.505)	0.01 (1.277)	-0.001 (-0.122)	-0.032 (-2.445)	0.068 (4.722)

Panel C: Statistical Arbitrage Opportunities for Hedge Portfolio Strategies on Net External Financing Measures

Strategy	μ (mean)	λ (growth rate	H1 (μ>0)	H2 (λ<0)	Sum (H1+H2)	Statistical
$\Delta XFIN$	0.031	-0.599	0.000	0.000	0.000	Yes
$\Delta EQUITY$	0.024	-0.587	0.000	0.000	0.000	Yes
$\Delta DEBT$	0.026	-0.667	0.000	0.000	0.000	Yes
$\Delta SDEBT$	0.012	-0.597	0.022	0.000	0.022	Yes
$\Delta LDEBT$	0.022	-0.870	0.000	0.000	0.000	Yes

Notes: Panel B of Table 2 reports time series averages of annual mean values of one-year ahead size-adjusted stock returns $SRET$ for portfolios formed on the magnitude of net entire and individual external financing activities, along with their associated t-statistics (in parenthesis). Portfolios are constructed by ranking firms independently on net entire and individual external financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. Time series averages of the hedge return to a strategy consisting of a long position in the lowest decile and a short position in the highest decile with the associated t-statistic (in parenthesis), are also reported. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. The annual one-year ahead raw stock returns RET are measured using compounded 12-month buy-hold returns inclusive of dividends and other distributions from the CRSP monthly files. Then, size-adjusted returns $SRET$ are calculated by deducting the value weighted average return for all firms in the same size-matched decile, where size is measured as the market capitalization (price per share (item 199) times shares outstanding (item 25)) at the beginning of the return cumulation period. All variables are defined in Panel A of Table 1.

Notes: Panel C of Table 2 presents results from statistical arbitrage tests on one-year ahead raw stock returns RET for hedge strategies based on the magnitude of net entire and individual external financing activities. Portfolios are constructed by ranking firms independently on net entire and individual external financing activities and allocate them into ten equal-sized portfolios (deciles) based on these ranks. The portfolios are held for one year and then rebalanced. Note that we require at least a four-month gap between the portfolio formation month and the fiscal year end to ensure that investors have financial statement data prior to forming portfolios. A hedge strategy consists of a long position in the lowest decile and a short position in the highest decile. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. The annual one-year ahead raw stock returns RET are defined in panel A of Table 2 and all other variables are defined in panel A of Table 1.

Table 3: External Financing Measures vs. Total Accruals

Panel A: $SRET$ for Intersection of Portfolios based on $\Delta XFIN$ and $TACC$

Portfolios	Total	$TACC(1)$	$TACC(2)$	$TACC(3)$
$\Delta XFIN(1)$	0.051 (6.654)	0.073 (5.951)	0.029 (3.08)	-0.016 (-0.507)
$\Delta XFIN(2)$	0.031 (4.444)	0.081 (3.99)	0.027 (3.681)	-0.018 -(1.531)
$\Delta XFIN(3)$	-0.039 (-3.148)	-0.001 (-0.021)	-0.034 (-1.514)	-0.052 (-3.95)
Hedge	0.09 (5.564)	0.074 (1.576)	0.063 (2.225)	0.036 (1.049)
Long on $\{\Delta XFIN(1), TACC(1)\}$ **& Short on** $\{\Delta XFIN(3), TACC(3)\}$				0.125 (7.093)
Difference between $(\Delta XFIN, TACC)$ **and** $\Delta XFIN$ **Hedge Strategy**				0.035 (2.487)
Difference between $(\Delta XFIN, TACC)$ **and** $TACC$ **Hedge Strategy**				0.01 (0.859)

Panel B: $SRET$ for Intersection of Portfolios based on $\Delta EQUITY$ and $TACC$

Portfolios	Total	$TACC(1)$	$TACC(2)$	$TACC(3)$
$\Delta EQUITY(1)$	0.033 (4.334)	0.076 (4.623)	0.021 (2.433)	0.001 (0.077)
$\Delta EQUITY(2)$	0.032 (4.954)	0.086 (5.277)	0.028 (3.935)	-0.023 (-2.4)
$\Delta EQUITY(3)$	-0.023 (-1.246)	0.028 (0.811)	-0.012 (-0.557)	-0.064 (-3.702)
Hedge	0.056 (2.548)	0.048 (1.374)	0.033 (1.259)	0.065 (2.88)
Long on $\{\Delta EQUITY(1), TACC(1)\}$ **& Short on** $\{\Delta EQUITY(3), TACC(3)\}$				0.14 (6.559)
Difference between $(\Delta EQUITY, TACC)$ **and** $\Delta EQUITY$ **Hedge Strategy**				0.084 (4.156)
Difference between $(\Delta EQUITY, TACC)$ **and** $TACC$ **Hedge Strategy**				0.025 (1.38)

Panel C: $SRET$ for Intersection of Portfolios based on $\Delta DEBT$ and $TACC$

Portfolios	Total	$TACC(1)$	$TACC(2)$	$TACC(3)$
$\Delta DEBT(1)$	0.049 (6.082)	0.072 (5.487)	0.034 (3.398)	-0.091 (-3.604)
$\Delta DEBT(2)$	0.026 (3.802)	0.078 (3.868)	0.024 (3.465)	-0.038 (-3.512)
$\Delta DEBT(3)$	-0.023 (-2.571)	0.038 (0.996)	-0.012 (-1.232)	-0.037 (-2.964)
Hedge	0.072 (7.389)	0.034 (0.896)	0.046 (3.736)	-0.054 (-2.271)
Long on $\{\Delta DEBT(1), TACC(1)\}$ **& Short on** $\{\Delta DEBT(3), TACC(3)\}$				0.109 (6.259)
Difference between $(\Delta DEBT, TACC)$ **and** $\Delta DEBT$ **Hedge Strategy**				0.038 (3.375)
Difference between $(\Delta DEBT, TACC)$ **and** $TACC$ **Hedge Strategy**				-0.006 (-0.67)

Panel E: $SRET$ **for Intersection of Portfolios based on** $\Delta SDEBT$ **and** $TACC$

Portfolios	**Total**	$TACC(1)$	$TACC(2)$	$TACC(3)$
$\Delta SDEBT(1)$	0.035 (4.482)	0.08 (4.679)	0.02 (2.195)	-0.07 (-3.824)
$\Delta SDEBT(2)$	0.024 (3.1)	0.068 (4.116)	0.026 (2.978)	-0.033 (-2.913)
$\Delta SDEBT(3)$	-0.002 (-0.255)	0.079 (3.258)	0.005 (0.466)	-0.041 (-3.256)
Hedge	0.037 (4.221)	0.001 (0.042)	0.015 (1.404)	-0.029 -(1.505)
Long on $\{\Delta SDEBT(1), TACC(1)\}$ **& Short on** $\{\Delta SDEBT(3), TACC(3)\}$				0.121 (5.795)
Difference between $(\Delta SDEBT, TACC)$ **and** $\Delta SDEBT$ **Hedge Strategy**				0.084 (4.875)
Difference between $(\Delta SDEBT, TACC)$ **and** $TACC$ **Hedge Strategy**				0.006 (0.461)

Panel F: $SRET$ **for Intersection of Portfolios based on** $\Delta LDEBT$ **and** $TACC$

Portfolios	**Total**	$TACC(1)$	$TACC(2)$	$TACC(3)$
$\Delta LDEBT(1)$	0.04 (5.15)	0.064 (4.881)	0.031 (3.791)	-0.065 (-2.821)
$\Delta LDEBT(2)$	0.027 (3.826)	0.086 (4.956)	0.024 (3.227)	-0.035 (-3.026)
$\Delta LDEBT(3)$	-0.017 (-1.655)	0.049 (1.418)	-0.004 (-0.407)	-0.039 (-2.862)
Hedge	0.057 (5.217)	0.015 (0.482)	0.035 (2.959)	-0.026 (-1.094)
Long on $\{\Delta LDEBT(1), TACC(1)\}$ **& Short on** $\{\Delta LDEBT(3), TACC(3)\}$				0.103 (5.666)
Difference between $(\Delta LDEBT, TACC)$ **and** $\Delta LDEBT$ **Hedge Strategy**				0.046 (4.011)
Difference between $(\Delta LDEBT, TACC)$ **and** $TACC$ **Hedge Strategy**				-0.012 (-1.067)

Notes: Table 3 reports time series averages of annual mean values of one-year ahead size-adjusted stock returns $SRET$ for simple portfolios based on the magnitude of net external financing measures and their intersections with portfolios based on the magnitude of total accruals, along with their associated t-statistics (in parenthesis). For this purpose, each year firms are sorted independently on external financing measures and total accruals, and allocated into three portfolios: the bottom 20 percent (Portfolio 1), middle 60 percent (Portfolio 2), and top 20 percent (Portfolio 3). Portfolios are held for one year and then rebalanced, while we require at least a four-month gap between the portfolio formation month and the fiscal year end. We then focus, on the resulted intersections from the above mentioned sorts. Time series averages of the hedge return to a strategy consisting of a long position in the lowest portfolio and a short position in the highest portfolio with the associated t-statistic (in parenthesis), are also reported. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. The one-year ahead size-adjusted stock returns $SRET$ are defined in panel B of Table 2 and all other variables are defined in panel A of Table 1.

Table 4: External Financing Measures vs. Working Capital Accruals

Panel A: $SRET$ **for Intersection of Portfolios based on** $\Delta XFIN$ **and** $CACC$

Portfolios	**Total**	$CACC(1)$	$CACC(2)$	$CACC(3)$
$\Delta XFIN(1)$	0.051 (6.654)	0.073 (5.555)	0.041 (4.455)	-0.004 (-0.225)
$\Delta XFIN(2)$	0.031 (4.444)	0.064 (3.889)	0.027 (3.844)	0.012 (1.016)
$\Delta XFIN(3)$	-0.039 (-3.148)	-0.029 (-1.049)	-0.026 (-1.757)	-0.059 (-4.511)
Hedge	0.09 (5.564)	0.102 (3.435)	0.067 (3.539)	0.055 (2.393)
Long on $\{\Delta XFIN(1), CACC(1)\}$ **& Short on** $\{\Delta XFIN(3), CACC(3)\}$				0.132 (6.741)
Difference between $(\Delta XFIN, CACC)$ **and** $\Delta XFIN$ **Hedge Strategy**				0.042 (2.907)
Difference between $(\Delta XFIN, CACC)$ **and** $CACC$ **Hedge Strategy**				0.055 (3.663)

Panel B: $SRET$ **for Intersection of Portfolios based on** $\Delta EQUITY$ **and** $CACC$

Portfolios	**Total**	$CACC(1)$	$CACC(2)$	$CACC(3)$
$\Delta EQUITY(1)$	0.033 (4.334)	0.075 (4.811)	0.023 (2.392)	0.009 (0.636)
$\Delta EQUITY(2)$	0.032 (4.954)	0.066 (4.807)	0.03 (4.197)	-0.003 (-0.285)
$\Delta EQUITY(3)$	-0.023 (-1.246)	-0.003 (-0.107)	-0.013 (-1.36)	-0.057 (-2.993)
Hedge	0.056 (2.548)	0.078 (3.002)	0.036 (1.411)	0.066 (2.565)
Long on $\{\Delta EQUITY(1), CACC(1)\}$ **& Short on** $\{\Delta EQUITY(3), CACC(3)\}$				0.132 (6.425)
Difference between $(\Delta EQUITY, CACC)$ **and** $\Delta EQUITY$ **Hedge Strategy**				0.076 (3.823)
Difference between $(\Delta EQUITY, CACC)$ **and** $CACC$ **Hedge Strategy**				0.055 (3.021)

Panel C: $SRET$ **for Intersection of Portfolios based on** $\Delta DEBT$ **and** $CACC$

Portfolios	**Total**	$CACC(1)$	$CACC(2)$	$CACC(3)$
$\Delta DEBT(1)$	0.049 (6.082)	0.061 (4.221)	0.043 (4.745)	-0.001 -(0.021)
$\Delta DEBT(2)$	0.026 (3.802)	0.069 (4.189)	0.023 (3.333)	-0.01 (-0.863)
$\Delta DEBT(3)$	-0.023 (-2.571)	-0.039 (-1.777)	-0.01 (-0.996)	-0.042 (-3.271)
Hedge	0.072 (7.389)	0.1 (3.673)	0.053 (4.626)	0.041 (2.115)
Long on $\{\Delta DEBT(1), CACC(1)\}$ **& Short on** $\{\Delta DEBT(3), CACC(3)\}$				0.103 (5.396)
Difference between $(\Delta DEBT, CACC)$ **and** $\Delta DEBT$ **Hedge Strategy**				0.032 (2.426)
Difference between $(\Delta DEBT, CACC)$ **and** $CACC$ **Hedge Strategy**				0.026 (2.074)

Panel E: $SRET$ for Intersection of Portfolios based on $\Delta SDEBT$ and $CACC$

Portfolios	Total	$CACC(1)$	$CACC(2)$	$CACC(3)$
$\Delta SDEBT(1)$	0.035 (4.482)	0.074 (4.305)	0.02 (1.937)	-0.029 (-1.866)
$\Delta SDEBT(2)$	0.024 (3.1)	0.056 (3.577)	0.023 (3.246)	-0.014 (-1.164)
$\Delta SDEBT(3)$	-0.002 (-0.255)	-0.018 (-0.921)	0.013 (1.13)	-0.026 (-1.889)
Hedge	0.037 (4.221)	0.092 (3.785)	0.007 (0.563)	-0.003 (-0.143)
Long on $\{\Delta SDEBT(1), CACC(1)\}$ **& Short on** $\{\Delta SDEBT(3), CACC(3)\}$				0.10 (5.302)
Difference between $(\Delta SDEBT, CACC)$ **and** $\Delta SDEBT$ **Hedge Strategy**				0.063 (4.124)
Difference between $(\Delta SDEBT, CACC)$ **and** $CACC$ **Hedge Strategy**				0.023 (1.846)

Panel F: $SRET$ for Intersection of Portfolios based on $\Delta LDEBT$ and $CACC$

Portfolios	Total	$CACC(1)$	$CACC(2)$	$CACC(3)$
$\Delta LDEBT(1)$	0.04 (5.15)	0.047 (3.423)	0.038 (3.821)	0.005 (0.288)
$\Delta LDEBT(2)$	0.027 (3.826)	0.073 (4.653)	0.026 (3.755)	-0.016 (-1.318)
$\Delta LDEBT(3)$	-0.017 (-1.655)	-0.008 (-0.336)	-0.01 (-0.904)	-0.055 (-4.296)
Hedge	0.057 (5.217)	0.055 (2.176)	0.048 (3.991)	0.06 (3.373)
Long on $\{\Delta LDEBT(1), CACC(1)\}$ **& Short on** $\{\Delta LDEBT(3), CACC(3)\}$				0.102 5.098
Difference between $(\Delta LDEBT, CACC)$ **and** $\Delta LDEBT$ **Hedge Strategy**				0.045 (2.852)
Difference between $(\Delta LDEBT, CACC)$ **and** $CACC$ **Hedge Strategy**				0.025 (1.861)

Notes: Table 4 reports time series averages of annual mean values of one-year ahead size-adjusted stock returns $SRET$ for simple portfolios based on the magnitude of external financing measures and their intersections with portfolios based on the magnitude of working capital accruals, along with their associated t-statistics (in parenthesis). For this purpose, each year firms are sorted independently on external financing measures and working capital accruals, and allocated into three portfolios: the bottom 20 percent (Portfolio 1), middle 60 percent (Portfolio 2), and top 20 percent (Portfolio 3). Portfolios are held for one year and then rebalanced, while we require at least a four-month gap between the portfolio formation month and the fiscal year end. We then focus, on the resulted intersections from the above mentioned sorts. Time series averages of the hedge return to a strategy consisting of a long position in the lowest portfolio and a short position in the highest portfolio with the associated t-statistic (in parenthesis), are also reported. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. The one-year ahead size-adjusted stock returns $SRET$ are defined in panel B of Table 2 and all other variables are defined in panel A of Table 1.

Table 5: External Financing Measures vs. Investing Capital Accruals

Panel A: $SRET$ **for Intersection of Portfolios based on** $\Delta XFIN$ **and** $NCACC$

Portfolios	Total	$NCACC(1)$	$NCACC(2)$	$NCACC(3)$
$\Delta XFIN(1)$	0.051 (6.654)	0.065 (5.506)	0.035 (3.818)	-0.015 (-0.655)
$\Delta XFIN(2)$	0.031 (4.444)	0.076 (4.068)	0.028 (3.841)	-0.013 (-1.321)
$\Delta XFIN(3)$	-0.039 (-3.148)	-0.032 (-0.853)	-0.031 (-1.573)	-0.05 (-3.707)
Hedge	0.09 (5.564)	0.097 (2.394)	0.066 (2.63)	0.035 (1.402)
Long on $\{\Delta XFIN(1), NCACC(1)\}$ **& Short on** $\{\Delta XFIN(3), NCACC(3)\}$				0.115 (6.637)
Difference between $(\Delta XFIN, NCACC)$ **and** $\Delta XFIN$ **Hedge Strategy**				0.025 (1.887)
Difference between $(\Delta XFIN, NCACC)$ **and** $NCACC$ **Hedge Strategy**				0.015 (1.131)

Panel B: $SRET$ **for Intersection of Portfolios based on** $\Delta EQUITY$ **and** $NCACC$

Portfolios	Total	$NCACC(1)$	$NCACC(2)$	$NCACC(3)$
$\Delta EQUITY(1)$	0.033 (4.334)	0.06 (3.871)	0.023 (2.883)	0.008 (0.577)
$\Delta EQUITY(2)$	0.032 (4.954)	0.077 (5.419)	0.031 (4.315)	-0.021 (-2.106)
$\Delta EQUITY(3)$	-0.023 (-1.246)	0.022 (0.591)	-0.018 (-0.983)	-0.058 (-3.863)
Hedge	0.056 (2.548)	0.038 (0.934)	0.041 (1.828)	0.066 (3.359)
Long on $\{\Delta EQUITY(1), NCACC(1)\}$ **& Short on** $\{\Delta EQUITY(3), NCACC(3)\}$				0.118 (5.985)
Difference between $(\Delta EQUITY, NCACC)$ **and** $\Delta EQUITY$ **Hedge Strategy**				0.062 (3.841)
Difference between $(\Delta EQUITY, NCACC)$ **and** $NCACC$ **Hedge Strategy**				0.018 (0.94)

Panel C: $SRET$ **for Intersection of Portfolios based on** $\Delta DEBT$ **and** $NCACC$

Portfolios	Total	$NCACC(1)$	$NCACC(2)$	$NCACC(3)$
$\Delta DEBT(1)$	0.049 (6.082)	0.068 (5.391)	0.039 (3.902)	-0.058 (-2.403)
$\Delta DEBT(2)$	0.026 (3.802)	0.066 (3.83)	0.025 (3.519)	-0.025 (-2.233)
$\Delta DEBT(3)$	-0.023 (-2.571)	0.011 (0.427)	-0.014 (-1.325)	-0.037 (-2.847)
Hedge	0.072 (7.389)	0.057 (2.156)	0.053 (4.142)	-0.021 (-0.826)
Long on $\{\Delta DEBT(1), NCACC(1)\}$ **& Short on** $\{\Delta DEBT(3), NCACC(3)\}$				0.105 (6.231)
Difference between $(\Delta DEBT, NCACC)$ **and** $\Delta DEBT$ **Hedge Strategy**				0.034 (2.997)
Difference between $(\Delta DEBT, NCACC)$ **and** $NCACC$ **Hedge Strategy**				0.005 (0.679)

Panel D: $SRET$ for Intersection of Portfolios based on $\Delta SDEBT$ and $NCACC$

Portfolios	Total	$NCACC(1)$	$NCACC(2)$	$NCACC(3)$
$\Delta SDEBT(1)$	0.035 (4.482)	0.069 (4.278)	0.029 (3.052)	-0.051 (-3.145)
$\Delta SDEBT(2)$	0.024 (3.1)	0.067 (4.507)	0.025 (2.872)	-0.025 (-2.409)
$\Delta SDEBT(3)$	-0.002 (-0.255)	0.043 (2.099)	0.005 (0.422)	-0.045 (-3.566)
Hedge	0.037 (4.221)	0.026 (1.275)	0.024 (2.102)	-0.006 (-0.356)
Long on $\{\Delta SDEBT(1), NCACC(1)\}$ **& Short on** $\{\Delta SDEBT(3), NCACC(3)\}$				0.114 (5.77)
Difference between $(\Delta SDEBT, NCACC)$ **and** $\Delta SDEBT$ **Hedge Strategy**				0.077 (4.622)
Difference between $(\Delta SDEBT, NCACC)$ **and** $NCACC$ **Hedge Strategy**				0.014 (1.12)

Panel E: $SRET$ for Intersection of Portfolios based on $\Delta LDEBT$ and $NCACC$

Portfolios	Total	$NCACC(1)$	$NCACC(2)$	$NCACC(3)$
$\Delta LDEBT(1)$	0.04 (5.15)	0.063 (5.373)	0.028 (2.753)	-0.054 (-2.187)
$\Delta LDEBT(2)$	0.027 (3.826)	0.071 (4.595)	0.026 (3.416)	-0.026 (-2.394)
$\Delta LDEBT(3)$	-0.017 (-1.655)	0.026 (0.797)	-0.005 (-0.553)	-0.035 (-2.699)
Hedge	0.057 (5.217)	0.037 (1.148)	0.033 (2.539)	-0.019 (-0.7)
Long on $\{\Delta LDEBT(1), NCACC(1)\}$ **& Short on** $\{\Delta LDEBT(3), NCACC(3)\}$				0.098 (5.672)
Difference between $(\Delta LDEBT, NCACC)$ **and** $\Delta LDEBT$ **Hedge Strategy**				0.041 (3.551)
Difference between $(\Delta LDEBT, NCACC)$ **and** $NCACC$ **Hedge Strategy**				-0.002 (-0.121)

Notes: Table 5 reports time series averages of annual mean values of one-year ahead size-adjusted stock returns $SRET$ for simple portfolios based on the magnitude of external financing measures and their intersections with portfolios based on the magnitude of investing capital accruals, along with their associated t-statistics (in parenthesis). For this purpose, each year firms are sorted independently on external financing measures and investing capital accruals, and allocated into three portfolios: the bottom 20 percent (Portfolio 1), middle 60 percent (Portfolio 2), and top 20 percent (Portfolio 3). Portfolios are held for one year and then rebalanced, while we require at least a four-month gap between the portfolio formation month and the fiscal year end. We then focus, on the resulted intersections from the above mentioned sorts. Time series averages of the hedge return to a strategy consisting of a long position in the lowest portfolio and a short position in the highest portfolio with the associated t-statistic (in parenthesis), are also reported. The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. The one-year ahead size-adjusted stock returns $SRET$ are defined in panel B of Table 2 and all other variables are defined in panel A of Table 1.

Table 6

Regressions of RET on External Financing Measures and Total Accruals

Panel A: Regressions of RET on External Financing Measures and $TACC$ (Full Sample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$TACC$
0.281	-0.019	0.021	-0.053					-0.088
(3.2)	(-2.448)	(1.708)	(-1.623)					(-2.866)
0.302	-0.019	0.02		-0.04				-0.114
(3.686)	(-2.592)	(1.682)		(-1.402)				(-5.515)
0.312	-0.018	0.021			-0.01			-0.119
(4.134)	(-2.152)	(1.707)			(-0.686)			(-5.614)
0.317	-0.018	0.021				-0.003		-0.124
(4.302)	(-2.141)	(1.733)				(-0.305)		(-7.035)
0.315	-0.018	0.021					-0.007	-0.122
(4.143)	(-2.155)	(1.681)					(-0.572)	(-6.226)

Panel B: Regressions of RET on External Financing Measures and $TACC$ (Overlap Subsample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$TACC$
0.268	-0.018	0.022	-0.062					-0.083
(2.819)	(-2.311)	(1.655)	(-1.404)					(-1.934)
0.296	-0.018	0.015		-0.029				-0.128
(3.378)	(-2.208)	(1.168)		(-0.754)				(-4.106)
0.336	-0.018	0.021			0.01			-0.14
(4.539)	(-2.224)	(1.564)			(0.604)			(-6.354)
0.32	-0.017	0.019				0.005		-0.134
(4.415)	(-2.103)	(1.435)				(0.433)		(-7.376)
0.329	-0.018	0.023					0.009	-0.134
(4.3)	(-2.112)	(1.706)					(0.59)	(-6.813)

Panel C: Regressions of RET on External Financing Measures and $TACC$ (Nonoverlap Subsample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$TACC$
0.293	-0.021	0.016	-0.049					-0.075
(3.477)	(-2.61)	(1.584)	(-1.162)					(-2.487)
0.315	-0.022	0.026		-0.039				-0.093
(3.868)	(-3.005)	(2.184)		(-1.076)				(-3.785)
0.329	-0.019	0.029			0.008			-0.083
(4.352)	(-2.261)	(2.425)			(0.604)			(-3.904)
0.331	-0.018	0.026				0.012		-0.103
(4.419)	(-2.172)	(2.119)				(1.038)		(-5.299)
0.333	-0.02	0.026					0.01	-0.09
(4.354)	(-2.36)	(2.186)					(0.791)	(-4.579)

Notes: Table 6 reports results from Fama - MacBeth (1973) regressions of one-year ahead raw returns RET on external financing measures and total accruals, after controlling for size $SIZE$ and book to market ratio BM/MV. For this purpose, we estimate annual cross-sectional regressions and report the time series averages of the parameter coefficients along with their associated t-statistics (in parenthesis). The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. $SIZE$ is natural logarithm of market capitalization (price per share (item 199) times shares outstanding (item 25)), while BM/MV is the natural logarithm of the ratio of the fiscal year end book value of equity (item 60) to the market capitalization. RET are defined in Panel B of Table 1 and all other variables in Panel A of Table 1.

Table 7
Regressions of RET on External Financing Measures and Working Capital Accruals

Panel A: Regressions of RET on External Financing Measures and $CACC$ (Full Sample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$CACC$
0.251	-0.021	0.022	-0.093					-0.05
(3.208)	(-2.541)	(1.824)	(-4.672)					(-3.136)
0.284	-0.022	0.022		-0.064				-0.076
(3.622)	(-2.842)	(1.864)		(-2.461)				(-5.218)
0.266	-0.019	0.025			-0.06			-0.064
(3.704)	(-2.261)	(2.01)			(-4.659)			(-4.555)
0.296	-0.019	0.025				-0.021		-0.078
(4.117)	(-2.322)	(2.036)				(-1.818)		(-5.715)
0.275	-0.019	0.025					-0.051	-0.074
(3.79)	(-2.252)	(1.983)					(-4.835)	(-5.42)

Panel B: Regressions of RET on External Financing Measures and $CACC$ (Overlap Subsample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$CACC$
0.255	-0.02	0.02	-0.084					-0.059
(3.276)	(-2.571)	(1.455)	(-3.087)					(-2.529)
0.287	-0.023	0.015		-0.063				-0.08
(3.662)	(-2.896)	(1.131)		(-2.247)				(-3.804)
0.311	-0.021	0.024			-0.025			-0.093
(4.412)	(-2.536)	(1.774)			(-1.897)			(-6.139)
0.32	-0.021	0.021				0.001		-0.096
(4.543)	(-2.503)	(1.638)				(0.106)		(-6.726)
0.297	-0.02	0.025					-0.031	-0.085
(4.133)	(-2.363)	(1.842)					(-2.395)	(-5.829)

Panel C: Regressions of RET on External Financing Measures and $CACC$ (Nonoverlap Subsample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$CACC$
0.253	-0.021	0.025	-0.119					-0.075
(3.204)	(-2.406)	(2.277)	(-4.684)					(-3.486)
0.288	-0.021	0.029		-0.063				-0.083
(3.661)	(-2.763)	(2.581)		(-1.986)				(-4.108)
0.281	-0.018	0.032			-0.045			-0.05
(3.862)	(-2.174)	(2.707)			(-3.385)			(-3.547)
0.296	-0.018	0.030				-0.019		-0.07
(4.113)	(-2.151)	(2.409)				(-1.849)		(-4.892)
0.296	-0.02	0.031					-0.029	-0.055
(3.986)	(-2.325)	(2.568)					(-2.374)	(-3.812)

Notes: Table 7 reports results from Fama - MacBeth (1973) regressions of one-year ahead raw returns RET on external financing measures and working capital accruals, after controlling for size $SIZE$ and book to market ratio BM/MV. For this purpose, we estimate annual cross-sectional regressions and report the time series averages of the parameter coefficients along with their associated t-statistics (in parenthesis). The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. $SIZE$ is natural logarithm of market capitalization (price per share (item 199) times shares outstanding (item 25)), while BM/MV is the natural logarithm of the ratio of the fiscal year end book value of equity (item 60) to the market capitalization. RET are defined in Panel B of Table 1 and all other variables in Panel A of Table 1.

Table 8
Regressions of RET on External Financing and Investing Capital Accruals

Panel A: Regressions of RET on External Financing Measures and $NCACC$ (Full Sample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$NCACC$
0.254	-0.019	0.022	-0.077					-0.059
(2.969)	(-2.462)	(1.859)	(-2.839)					(-2.274)
0.286	-0.019	0.022		-0.047				-0.095
(3.495)	(-2.54)	(1.849)		(-1.646)				(-4.734)
0.277	-0.017	0.024			-0.038			-0.085
(3.641)	(-2.048)	(1.930)			(-2.958)			(-4.706)
0.294	-0.017	0.024				-0.02		-0.103
(3.969)	(-2.03)	(1.923)				(-1.747)		(-6.255)
0.293	-0.017	0.024					-0.018	-0.098
(3.804)	(-2.029)	(1.881)					(-1.589)	(-5.258)

Panel B: Regressions of RET on External Financing Measures and $NCACC$ (Overlap Subsample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$NCACC$
0.264	-0.019	0.023	-0.065					-0.079
(2.775)	(-2.46)	(1.806)	(-1.638)					(-1.978)
0.268	-0.017	0.020		-0.046				-0.098
(3.061)	(-2.218)	(1.720)		(-1.196)				(-3.123)
0.294	-0.016	0.026			-0.02			-0.102
(4.066)	(-2.047)	(1.992)			(-1.218)			(-5.301)
0.295	-0.016	0.023				-0.01		-0.11
(4.182)	(-1.956)	(1.764)				(-0.780)		(-6.706)
0.301	-0.016	0.025					-0.006	-0.109
(3.997)	(-1.953)	(1.955)					(-0.435)	(-5.671)

Panel C: Regressions of RET on External Financing Measures and $NCACC$ (Nonoverlap Subsample)

Constant	$SIZE$	BM/MV	$\Delta XFIN$	$\Delta EQUITY$	$\Delta DEBT$	$\Delta SDEBT$	$\Delta LDEBT$	$NCACC$
0.255	-0.019	0.020	-0.08					-0.055
(3.019)	(-2.378)	(1.633)	(-2.601)					(-1.837)
0.302	-0.02	0.022		-0.046				-0.084
(3.669)	(-2.792)	(1.656)		(-1.418)				(-3.467)
0.307	-0.019	0.03			-0.016			-0.065
(3.944)	(-2.22)	(2.348)			(-1.211)			(-3.539)
0.311	-0.018	0.027				-0.008		-0.091
(4.093)	(-2.093)	(2.111)				(-0.621)		(-4.943)
0.32	-0.019	0.029					0.002	-0.074
(4.056)	(-2.264)	(2.287)					(0.124)	(-4.133)

Notes: Table 8 reports results from Fama MacBeth (1973) regressions of one-year ahead raw returns RET on external financing measures and investing capital accruals after controlling for size $SIZE$ and book to market ratio BM/MV. For this purpose, we estimate annual cross-sectional regressions and report the time series averages of the parameter coefficients along with their associated t-statistics (in parenthesis). The sample consists of 105,119 firm year observations covering firms (except financial firms) with available data on Compustat and CRSP for the period 1963-2003. $SIZE$ is natural logarithm of market capitalization (price per share (item 199) times shares outstanding (item 25)), while BM/MV is the natural logarithm of the ratio of the fiscal year end book value of equity (item 60) to the market capitalization. RET are defined in Panel B of Table 1 and all other variables in Panel A of Table 1.