External Financing and Future Stock Returns*

Scott A. Richardson

University of Pennsylvania, Philadelphia, PA

Richard G. Sloan

University of Michigan Business School, Ann Arbor, MI

February 2003

Abstract

We develop a comprehensive and parsimonious measure of the extent to which a firm is raising (distributing) capital from (to) capital market participants. We show that the relation between our measure of net external financing and future stock returns is stronger than has been documented in previous research focusing on individual categories of financing transactions. Decompositions of our measure reveal additional insights. First, the weaker results of previous research are attributable to 'refinancing' transactions having no change on net external financing. Second, after controlling for refinancing transactions, there is a consistently strong and negative relation between all major categories of external financing transactions and future stock returns. Third, the negative relation between external financing and future stock returns is most consistent with a combination of over-investment and aggressive accounting.

Keywords: External financing; Capital structure, Capital markets; Market efficiency.

JEL classification: M4

---

*We would like to thank Mark Bradshaw, Patricia Dechow, Russ Lundholm and Irem Tuna for their comments and suggestions.

Correspondence: Richard G. Sloan
University of Michigan Business School
701 Tappan Street
Ann Arbor, MI 48109-1234
Phone (734) 764-2325 Fax (734) 936-0282
Email sloanr@umich.edu

1. Introduction

A large body of evidence documents a negative relation between external financing transactions and future stock returns. Future stock returns are unusually low in the years following equity offerings (Loughran and Ritter, 1995), debt offerings (Spiess and Affleck-Graves, 1999) and bank borrowings (Billett, Flannery and Garfinkel, 2001). Conversely, future stock returns are unusually high following stock repurchases (Ikenberry and Vermaelen, 1995). A frequent conclusion emerging from this literature is that firms time their external financing transactions to exploit the mispricing of their securities in capital markets (e.g., Ikenberry et al, 2000).

In this paper, we provide a comprehensive analysis of the relation between external financing transactions and future stock returns. Previous research has focussed on individual categories of financing transactions (common stock issues, debt issues, common stock repurchases etc.). However, firms frequently engage in refinancing transactions that involve little net change in total capital, but simply shuffle capital between different categories (e.g., issuing debt to repurchase equity). These transactions represent potential omitted variables in prior research. For example, a firm issuing debt to repurchase equity may consider both its debt and equity underpriced, but its equity relatively more underpriced. Under such circumstances, past research would mistakenly classify the issuance of debt as an attempt to exploit the perceived overvaluation of debt. By simultaneously examining all external financing transactions, we provide more powerful tests of the mispricing hypothesis.

Our results provide several new insights. First, we find that our comprehensive measure of net external financing has a stronger relation with future stock returns than the individual categories of financing transactions examined in previous research. We show that this result arises because our measure nets out refinancing transactions involving no net change in external financing. For example, we show that debt repurchases are positively correlated with both debt and equity issuances. Controlling for these refinancing transactions results in increased predictive ability with respect to future stock returns.

Second we show that, after controlling for refinancing transactions, there is a strong and consistent relation between all major categories of external financing and future stock returns. Controlling for refinancing transactions is particularly important in the case of preferred stock issuances and debt repurchases. Only after controlling for refinancing transactions do we find that each of these external financing transactions has a strong relation with future stock returns. What matters for predicting future stock returns is not the category of the external financing transaction, but the extent to which it involves a change in net external financing.

Finally, we show that the predictive ability of net changes in external financing with respect to future stock returns hinges critically on the use of the proceeds. The negative relation between changes in external financing and future stock returns is greatest when the proceeds fund growth in operating assets. In contrast, the negative relation is significantly weaker when the proceeds are used for refinancing, retained as financial assets or immediately expensed. We also show that growth in operating assets that is funded internally through retained earnings is negatively related to future stock returns. Taken as a whole, our results suggest that the predictable future stock returns are primarily attributable to over-investment.

Finally, our results are closely linked to the accrual results documented by Sloan (1996) and Richardson et al. (2002). Those papers document a negative relation between accounting accruals and future stock returns. An accounting accrual arises when a firm spends cash, and books an operating asset on the balance sheet rather than an expense on the income statement. Consistent with these papers, we show that the predictable future stock returns associated with external financing are greatest when the proceeds are booked as net operating assets rather than expensed.

The remainder of the paper is organized as follows. The next section develops our motivation and research design. Section 3 describes our data and section 4 analyzes our results. Section 5 concludes.

2. Motivation and Research Design

A large body of research indicates that investors under-react to information in external financing transactions about firm value. However, the nature of the information revealed by external financing transactions is not clear. Loughran and Ritter (1995) suggest that firms exploit transitory windows of opportunity by issuing securities when they are overvalued and repurchasing securities when they are undervalued. One discrepancy between their 'misvaluation exploitation' explanation and existing empirical evidence is that the negative relation between external financing transactions and future stock returns is similar for both debt and equity transactions. If firms engage in financing transactions to exploit misvaluation, equity transactions would be the natural choice, as equity is more sensitive to changes in firm value. The fact that similar results are observed for debt transactions suggests that misvaluation exploitation is, at best, a partial explanation for the negative future stock returns.

A second potential explanation is that firms' external financing transactions are systematically associated with over-investment decisions by management. Under this explanation, the firms raising the most new financing are engaging in the most new investment and tend to be over-investing. This explanation has received relatively little attention in the external financing literature, but is consistent with research by Sloan (1996), Beneish et al. (2001), Titman et al. (2001) and Richardson et al. (2002), who all document a strong negative relation between new investment and future stock returns.

While the 'misvaluation exploitation' and 'over-investment' explanations both predict a negative relation between external financing and future stock returns, each explanation also makes its own unique predictions. Misvaluation exploitation predicts that the documented mispricing will be the greatest for equity transactions, since equity securities are the most sensitive to perceived changes in firm value. Moreover, misvaluation exploitation predicts that firms can engage in strategic refinancing transactions. For example, a firm with overvalued equity could issue additional equity and use the proceeds to repurchase debt. In other words, firms can exploit mispricing without making additional investment expenditures. In contrast, the over-investment explanation is predicated on increased investment expenditures. Moreover, the over-investment explanation predicts that the relation between external financing transactions and future stock returns should not depend on the financing category. For example, after controlling for refinancing transactions, both equity repurchases and debt repurchases should have similar predictive ability with respect to future stock returns. Finally, the over-investment hypothesis predicts that the relation between investment and future stock returns should be similar for both externally and internally financed investment expenditures. Firms that are aggressively reinvesting free cash flow should also experience lower future stock returns.

In order to discriminate between these competing explanations, we develop a comprehensive framework for analyzing firms' financing and investing transactions. This framework starts with a parsimonious measure of net external financing. We then use detailed financial statement data to decompose this measure according to the underlying financing and investing transactions. The remainder of this section describes our framework.

2.1 A Measure of Net External Financing

Previous research examining the relation between external financing has focused on individual categories of financing transactions (IPOs, stock repurchases, public debt issues, bank loans etc.). Our objective in this paper is to start with a comprehensive measure of net external financing and then decompose it into its various components. The purpose of our comprehensive measure is to capture the net financing flows between the firm and all of its external capital providers. At the most general level, we can decompose capital providers into the categories of debt and equity. Thus, our measure of the change in net external financing, ΔXFIN, can be expressed as:

ΔXFIN = Cash Received from Issuance of New Debt and Equity Financing

- Cash Used for Retirement of Existing Debt and Equity Financing

While this measure looks straightforward, some finer points require elaboration. The first point concerns whether interest payments on debt should be classified as cash used to retire debt, or whether they should be classified as a financing charge associated with the use of debt. Where possible, we adopt the latter approach and exclude interest payments from our measure. However, for debt issued at a discount or premium (e.g., zero coupon bonds), it can be difficult to distinguish interest payments from principal repayments. The second point concerns whether dividend payments on equity should be classified as cash used to retire equity, or whether they are a financing charge associated with the use of equity. As with debt, we treat preferred stock dividends as a financing charge. However, given the more discretionary nature of common stock dividends, we treat them as retirements of equity. Nevertheless, common stock dividend payments tend to be much more persistent that stock repurchases, so we examine them separately in our decomposition analysis. Our decompositions are described in more detail below.

2.2 Balance Sheet Decomposition

The objective of our balance sheet decomposition is to decompose ΔXFIN based on the nature of the underlying securities that are being issued and retired. We conduct the balance sheet decomposition in two stages. The initial balance sheet decomposition distinguishes between the broad balance sheet categories of common equity, preferred equity and debt:

$$\Delta XFIN = \Delta CEQUITY + \Delta PEQUITY + \Delta DEBT$$

where

ΔCEQUITY = Common Equity Issuances – Common Equity Repurchases and Dividends

ΔPEQUITY = Preferred Equity Issuances – Preferred Equity Retirements and Repurchases

ΔDEBT = Debt Issuances – Debt Retirements and Repurchases.

This decomposition allows us to investigate two issues. First, we can compare the relative magnitudes of the predictable future stock returns across the different categories of financing. If firms engage in refinancing transactions to exploit temporary misvaluation, then we would expect the predictable returns to be greatest for common equity issuances. This result is expected both because common equity securities are the most sensitive to perceived changes in firm value and because it is the future returns on the common equity securities themselves that are the focus of our analysis (Baker and Wurgler, 2000). Second, this decomposition allows us to document and control for refinancing transactions that involve replacing one category of external financing with another category of external financing (e.g., issuing debt and using the proceeds to repurchase equity). In other words, it allows us to study the impact on future stock returns of external financing transactions that result in a non-zero change in net external financing.

Our extended balance sheet decomposition provides a more detailed analysis of ΔDEBT. Debt comes in many different forms and firms identify some of the major categories on their balance sheets. The extended balance sheet decomposition takes the following form:

$$\Delta XFIN = \Delta CEQUITY + \Delta PEQUITY + \Delta CVDEBT + \Delta LTDEBT + \Delta NOTES$$

where

ΔCVDEBT = Convertible Debt Issuances – Convertible Debt Retirements and Repurchases

ΔLTDEBT = Other Long-Term Debt Issuances – Other Long-Term Debt Retirements and Repurchases

ΔNOTES = Net Change in Short-Term Borrowings

Our extended decomposition of debt facilitates the same type of analysis as our initial balance sheet decomposition. Convertible debt tends to be more sensitive to changes in firm value, and so should have the strongest relation with future stock returns under the mispricing exploitation story. Conversely, short-term notes payable tends to be the least sensitive to changes in firm value, and so should have the weakest relation with future stock returns under the mispricing exploitation story. The extended balance sheet decomposition also allows us to investigate the impact of refinancing transactions involving the swapping of debt between the three categories.

2.3 Statement of Cash Flows Decomposition

The balance sheet decomposition allows us to document and control for refinancing activities involving swaps between different financing categories. However, it does not allow us to control for refinancing activities that involve the same financing category. For example, firms routinely fund retiring debt by issuing new debt. Information on the gross amount of securities issuances and retirements/repurchases can be obtained from the statement of cash flows and forms the basis for our statement of cash flows decomposition. Our initial statement of cash flows decomposition simply splits the change in net external financing into its equity and debt components:

ΔXFIN = ΔEQUITY + ΔDEBT

where

ΔEQUITY = Common and Preferred Equity Issuances – Common and Preferred Equity Repurchases - Common Equity Dividends

ΔDEBT = Debt Issuances – Debt Retirements and Repurchases.

The initial decomposition allows for comparisons with the balance sheet decomposition. While both decompositions are identical in theory, there are some accounting classification issues that can cause them to deviate in practice. By cross-validating our balance sheet and statement of cash flows decompositions, we can quantify the impact of these classification issues. Note also that equity transactions are not decomposed into common and preferred on the statement of cash flows, so we cannot perform this stage of the decomposition.

The unique contribution of the statement of cash flows decomposition is in the extended decomposition, where we distinguish between issues and repurchases/retirements:

$$\Delta XFIN = EQ\_ISS - EQ\_REP - DIVS + LTD\_ISS - LTD\_REP + \Delta NOTES$$

where

EQ_ISS = Cash Generated from the Issuance of Common or Preferred Stock

EQ_REP = Cash Used to Repurchase or Retire Common or Preferred Stock

DIVS = Cash Dividends Paid on Common or Preferred Stock

LTD_ISS = Cash Generated from the Issuance of Long-Term Debt

LTD_REP = Cash Used to Repurchase or Retire Long-Term Debt

ΔNOTES = Net Change in Short-Term Borrowings

Our extended statement of cash flows decomposition allows us to determine whether it is the volume of financing activities or the net amount of new financing that drives future stock returns. The over-investment explanation predicts that only net increases in external financing that finance additional investment should lead to lower future stock returns. The predictions of the misvaluation exploitation explanation are, however, more ambiguous. For example, a firm that is incorrectly perceived by the market to be a lower credit risk than in the past could exploit this misperception by refinancing its debt on more favorable terms (assuming that the old debt is callable). Thus, the volume of refinancing as well as the net change in financing may be important for this explanation.

2.4 Investment Decomposition

Our first two decompositions focus on the characteristics of the financing transactions. Our final decomposition focuses on the use of the proceeds of any changes in the amount of net external financing. This final decomposition offers the greatest potential for distinguishing between the valuation exploitation and over-investment explanations for the predictable stock returns following external financing transactions. The over-investment explanation predicts that the predictable future stock returns should be the greatest when the proceeds from financing transactions are immediately invested in operating activities. In contrast, the mispricing exploitation explanation does not hinge on the use of the proceeds. For example, an overpriced firm without worthwhile investment opportunities could hold the proceeds in financial assets until such time as the mispricing reverses. Our investment decomposition takes the following form:

$$\Delta XFIN = \Delta NOA + \Delta CASH - INCOME$$

where

ΔNOA = Change in Net Operating Assets

$\Delta CASH$ = Change in Cash and Cash Equivalents

INCOME = Net Income

Our investment decomposition follows from the balance sheet identity:

$$CASH + NOA = FIN$$

where

OA = Operating Assets (defined as all non-cash assets)

OL = Operating Liabilities (defined as all non-financing liabilities)

NOA = OA-OL

FIN = Total Financing (the sum of all debt and equity financing).

Note that changes in FIN (ΔFIN) can be attributable to both changes in external financing (ΔXFIN) and internally generated financing (INCOME):

$$\Delta FIN = \Delta XFIN + INCOME$$

First differencing the balance sheet identity, distinguishing between internal and external financing and re-arranging gives our investment decomposition.

The investment decomposition highlights three potential uses of a net increase in external financing. First, it could be used to fund an increase in net operating assets (ΔNOA). The over-investment explanation predicts that it is ΔNOA that leads to the negative relation between external financing and future stock returns. Second, it could be retained as cash, leading to an increase in the cash balance (ΔCASH). While an increase in cash could ultimately lead to future over-investment, the effects are delayed and less certain, so the over-investment explanation predicts a weaker relation between ΔCASH and future stock returns. Third, it could be invested in the firm's operating activities and immediately expensed to earnings (ΔINCOME). Like the first potential use, this potential use involves the immediate investment of the proceeds from external financing in the firm's operating activities. They key difference is in the accounting treatment. Instead of being capitalized as an operating asset, the invested capital is immediately charged against earnings. Sloan (1996) and Richardson et al. (2002) provide evidence that predictable future stock returns are associated with investment expenditures that are capitalized rather than charged to net income. They refer to this phenomenon as the accrual effect, whereby investment that is initially capitalized leads to declines in future earnings and stock returns. This provides an accrual twist to our over-investment story. If the predictable stock returns associated with external financing transactions are attributable to accounting accruals, then we do not expect to see a relation between the INCOME component of the investment decomposition and future stock returns.

3. Data

Our empirical tests employ data from two sources. Financial statement data are obtained from the *Compustat* annual database and stock returns data are obtained from the *CRSP* daily stock returns files. Our empirical analysis is based on two overlapping samples. The first sample utilizes balance sheet data and we refer to this sample as our 'balance sheet sample', subscripting associated variables with a BS. The second sample utilizes statement of cash flow data and we refer to this sample as our 'cash flow sample', subscripting associated variables with a CF.

Compustat balance sheet data is available back to the 1950s for a small number of companies, but the coverage expands significantly during the 1960s. We start our balance sheet sample period in 1963, the first year in which data is available for a substantial number of firms. The requirement that we have future stock return data available for our sample makes 2000 the last possible sample year. The final balance sheet sample consists of 128,609 firm-year observations from 1963 to 2000. This sample includes all available firms with the requisite balance sheet data on *Compustat* and the requisite stock return data on *CRSP*. Table 1 shows the distribution of our balance sheet sample by year.

Compustat statement of cash flow data is only available starting in 1971.[1] Moreover, cash flow data is not reported for banks and insurance companies, further limiting the cash flow sample relative to the balance sheet sample. The cash flow sample consists of 101,212 firm-year observations from 1971 to 2000. This sample includes all available firms with the requisite cash flow statement data on *Compustat* and the requisite stock return data on *CRSP*. We relax the data inclusion requirements for one of the cash flow variables (*Compustat* item 301 , 'Change in Current Debt'). While other variables were available for all of the 101,212 firm-years, this variable was only available for 38,740 firm-years. Further investigation revealed that many firms do not break this amount out separately on their statement of cash flows, but instead include it in a generic line item that *Compustat* classifies as 'Financing Activities – Other' (*Compustat* item 312). So as to avoid losing 60% of our sample, we simply set *Compustat* item 301 to zero in cases where it is missing and all other requisite data items are available. This procedure limits the inferences we can make about short-term debt using our cash flow sample. Fortunately, we have more complete short-term debt information for our balance sheet sample. Table 1 shows the distribution of our cash flow sample by year.

Recall that our balance sheet decomposition takes the following form:

$$\Delta XFIN = \Delta CEQUITY + \Delta PEQUITY + \Delta DEBT$$

where

$$\Delta DEBT = \Delta CVDEBT + \Delta LTDEBT + \Delta NOTES$$

Accordingly, total net external financing for our balance sheet decomposition, $\Delta XFIN_{BS}$, is calculated as the sum of the change in common equity ($\Delta CEQUITY_{BS}$), the change in preferred equity ($\Delta PEQUITY_{BS}$) and the change in total debt ($\Delta DEBT_{BS}$). $\Delta XFIN_{BS}$ and all its components are deflated by average total assets to control for differences in firm size. Our general approach of inferring financing transactions from changes in successive balance sheet amounts is subject to several limitations (see Hribar and Collins, 2002). In some cases we can address these limitations, but in other cases, we must simply acknowledge that they introduce noise into our balance sheet analysis. We discuss these limitations in more detail below. Fortunately, however, the statement of cash flows decomposition is not subject to these limitations, and so we can investigate the robustness of our results by comparing related components across the two samples.

$\Delta CEQUITY_{BS}$ is measured as the change in the book value of common equity (*Compustat* item #60) less net income (*Compustat* item #172). We subtract net income because it represents an internal as opposed to an external source of financing. There are a variety of more obscure non-financing transactions that can also affect the balance of common equity. These include foreign-currency translation adjustments and unrealized gains and losses on certain marketable securities. The relatively obscure nature of these transactions means that they are unlikely to have a significant impact on the change in equity, so we expect most of the change in equity to be driven by financing transactions, namely equity issuances, equity repurchases and cash dividends.

---

[1] Note that the current format for the statement of cash flows was not introduced until the late 1980s through FAS 95. While earlier formats were less standardized, they nevertheless provided sufficient detail for *Compustat* to code the financing variables required for our tests.

ΔPEQUITY$_{BS}$ is calculated as the change in the book value of preferred equity (*Compustat* item #130). There are relatively few limitations with this variable. Preferred stock is simply carried at its fair market value at the date of issuance. An exception occurs with mandatorily redeemable preferred stock when the fair value differs from the mandatory redemption amount and periodic amortizations are required. The cash proceeds from open market repurchases of preferred stock can also differ from the book value at the time of repurchase. But such differences are not expected to be either large or frequent.

ΔDEBT$_{BS}$ is the change in total debt. It is calculated as ΔLTDEBT$_{BS}$ plus ΔCVDEBT$_{BS}$ plus ΔNOTES$_{BS}$. ΔLTDEBT$_{BS}$ is the change in non-convertible long term debt, where non-convertible long-term debt is calculated as total long term debt (*Compustat* item #9) plus the current portion of long term debt (*Compustat* item #44) less convertible debt (*Compustat* item #79). ΔCVDEBT$_{BS}$ is the change in convertible debt (*Compustat* item #79) and ΔNOTES$_{BS}$ is the change in notes payable, where notes payable is calculated as total short term debt (*Compustat* item #34) less the current portion of long term debt (*Compustat* item #44). There are a number of limitations with the debt variable. First, as with preferred stock, periodic amortizations are required when the fair value of debt at issuance differs from the redemption value. For example, the discount on the issuance of zero coupon bonds is gradually amortized over the life of the bond. Second, open market repurchases of bonds can involve cash payments that differ from the carrying value of the debt. Finally, debt can be added to the balance sheet through mergers and acquisitions rather than through the issuance of new debt. The overall effect of these limitations could be important, but fortunately we can use our cash flow sample to investigate the robustness of our balance sheet results for debt.

Our statement of cash flows decomposition takes the following form:

ΔXFIN = ΔEQUITY + ΔDEBT

where

ΔEQUITY = EQ_ISS - EQ_REP - DIVS

and

ΔDEBT = LTD_ISS - LTD_REP + ΔNOTES

Total net external financing for our statement of cash flows decomposition, $\Delta XFIN_{CF}$, is calculated as the sum of net equity financing from the statement of cash flows ($\Delta EQUITY_{CF}$) and net debt financing from the statement of cash flows ($\Delta DEBT_{CF}$). We are unable to decompose common and preferred equity from the statement of cash flows, since *Compustat* does not provide this level of detail. As with our balance sheet decomposition, $\Delta XFIN_{CF}$ and all its components are deflated by average total assets. We calculate $\Delta EQUITY_{CF}$ as cash proceeds from the sale of common and preferred stock, EQ_ISS_{CF} (*Compustat* item #108) less cash payments for the purchase of common and preferred stock, EQ_REP_{CF} (*Compustat* item #115) less cash payments for dividends, $DIVS_{CF}$ (*Compustat* item #127). $\Delta DEBT_{CF}$ is calculated as cash proceeds from the issuance of long term debt, LTD_ISS_{CF} (*Compustat* item #111) less cash payments for long term debt reductions, LTD_REP_{CF} (*Compustat* item #114) plus the net change in current debt, $\Delta NOTES_{CF}$ (*Compustat* item #301). Recall from our earlier discussion that *Compustat* item 301 is not available for most firm-years and is set to zero in these cases, limiting the usefulness of this variable. It is also important to note that the cash flow decomposition does not suffer from the limitations described for the balance sheet decomposition (see Hribar and Collins, 2002).

Our investment decomposition takes the following form:

$$\Delta XFIN = \Delta NOA + \Delta CASH - INCOME$$

Total net external financing for our investment decomposition, $\Delta XFIN_{BS}$, is exactly the same variable we use in our balance sheet decomposition. The difference is in the way that we decompose this variable. The second component, $\Delta CASH_{BS}$, is simply the change in the balance of cash and short-term investments (*Compustat* data item #1). The third component, INCOME, is net income for the period (*Compustat* item #172). As with the other two decompositions, each of these components is deflated by average total assets. The first component, ΔNOA_{BS}, is then simply defined as:

$$\Delta NOA_{BS} = \Delta XFIN_{BS} - \Delta CASH_{BS} + INCOME$$

While this is the most parsimonious way in which to compute ΔNOA_{BS}, note that we could have alternatively computed it from the asset side of the balance sheet:

$$\Delta NOA = \Delta OA - \Delta OL$$

This expression highlights that ΔNOA represents the increase in non-cash assets less the increase in non-debt liabilities. ΔNOA_{BS} suffers from some of the same limitations described above for the balance sheet decomposition. While we interpret ΔNOA_{BS} as the amount of new investment in net operating assets, ΔNOA_{BS} is also affected by mergers, divestitures and foreign currency translation adjustments (see Hribar and Collins, 2002).

Note that ΔNOA_{BS} is almost identical to the variable of the same name in Richardson et al. (2002).[2]

Finally, as in previous research using financial ratios, we find that the distributions of our scaled financial variables are characterized by a small number of extreme outliers. We therefore follow the procedure adopted by Richardson et al. (2002) of winsorizing observations with an absolute value greater than 1. This winsorization procedure makes sense on a priori grounds, because situations where individual components of the balance sheet change by more than 100% of average total assets are clearly unusually cases that should not be excessively weighted in our analysis. However, for most of our variables, less than 1% of the observations are winsorized and the proportion of winsorizations never exceeds 3%.[3] Our results are qualitatively similar if we delete the winsorized observations, or if we leave them in the analysis (though in the latter case, the standard errors are larger, coefficients are more volatile, and tests of statistical significance are somewhat weaker).

Our stock return tests use data from the *CRSP* daily files. Stock returns are measured using compounded buy-hold returns, inclusive of dividends and other distributions. Results reported in the tables use size adjusted returns. Size-adjusted returns are calculated by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the most recent calendar year. Returns are calculated

---

[2] The only difference is that they classify investments and advances as financial assets, and so exclude them in the computation of ΔNOA_{BS}.

[3] Interestingly, the variable with the greatest number of winsorizations is $\Delta XFIN_{BS}$, and most of these are on the positive side (value of greater than 1). We see much fewer such cases for $\Delta XFIN_{CF}$, suggesting that our winsorization procedure is successfully eliminating extreme changes in the balance sheet variables due to confounding factors, such as mergers.

for a twelve-month period beginning four months after the end of the fiscal year. For firms that de-list during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvesting any remaining proceeds in the value-weighted market portfolio.[4] This mitigates any hindsight bias that may be caused by requiring firms to survive into future periods.

4. *Results*

We present our results in three sections. Section 4.1 begins by documenting univariate statistics and pairwise correlations for each of the external financing decompositions. These statistics reveal the relative importance of and interrelations between the various components. Section 4.2 presents future stock returns for portfolios formed on the components of each of the decompositions. These portfolio tests facilitate the comparison of our results with prior research that has relied on similar tests. Finally, section 4.3 employs multivariate regression analysis to isolate the marginal effects of each external financing component on future stock returns.

Before turning to these results, we briefly discuss unreported results on the correlation between our two measures of the change in external financing, $\Delta XFIN_{BS}$, and $\Delta XFIN_{CF}$. For the intersecting sample of 100,719 observations, the Pearson (Spearman) correlation between the two measures is 0.87 (0.80). Recall that section 3 discussed limitations of the balance sheet approach. The very high correlations between these two

[4] Firms that were delisted due to poor performance (delisting codes 500 and 520-584) frequently have missing delisting returns (Shumway 1997). We correct for this bias, by using delisting returns of –100% for firms with these delisting codes.

variables indicate that noise introduced via the balance sheet approach is of second order importance.

4.1 Descriptive Statistics

Panel A of Table 2 presents univariate statistics for the balance sheet decomposition. The positive mean and median values for $\Delta XFIN_{BS}$ of 0.084 and 0.012 respectively indicate that the typical firm is increasing external financing. Inspection of the components indicates that common equity ($\Delta CEQUITY_{BS}$) and long-term debt ($\Delta LTDEBT_{BS}$) are the most common sources of external financing. These components have the highest means, medians, standard deviations, and interquartile ranges. Preferred equity ($\Delta PEQUITY_{BS}$), convertible debt ($\Delta CVDEBT_{BS}$) and short-term debt ($\Delta NOTES_{BS}$) are all relatively less important, but all three are still of economic significance, with annual standard deviations in excess of 5%.

Panel B of Table 2 reports pairwise correlations between each of the components of the balance sheet decomposition. The first takeaway from this panel is that many of the correlations are far from zero. Previous research has examined each of these components in isolation, but there are clearly important interactions. Most importantly, common equity financing is negatively correlated with most other sources of financing. For example, the Pearson correlation between $\Delta CEQUITY_{BS}$ and $\Delta PEQUITY_{BS}$ is -0.220, while the Pearson correlation between $\Delta CEQUITY_{BS}$ and $\Delta DEBT_{BS}$ is -0.071. The correlations indicate that many financing transactions are refinancing transactions that shuffle capital between balance sheet categories. Such transactions represent important omitted variables in prior research. Recall that the existence of such transactions is important for helping us to distinguish between the misvaluation exploitation and over-investment explanations for the future stock returns associated with external financing transactions.

Panel A of Table 3 presents univariate statistics for the statement of cash flows decomposition. Inspection of the standard deviations and interquartile ranges indicates that equity issuances (EQ_ISS_{CF}), long-term debt issuances (LTD_ISS_{CF}) and long-term retirements/repurchases (LTD_ISS_{CF}) are the components exhibiting the most activity. The standard deviations of LTD_ISS_{CF} and LTD_ISS_{CF} are each higher than the standard deviation of the net change in debt financing ($\Delta DEBT_{CF}$), indicating the presence of a significant amount of refinancing activity in the debt category. The Pearson (Spearman) correlations between the pair-wise correlations in panel B of Table 3 confirm this refinancing activity. The Pearson (Spearman) correlation between LTD_ISS_{CF} and LTD_REP_{CF} is 0.716 (0.543). There is also a positive, though much weaker, correlation between equity issuances (EQ_ISS_{CF}) and equity repurchases (EQ_REP_{CF}). There is also more evidence of the cross-category refinancing activity that we first saw in Table 2. In particular, there is evidence of a strong positive correlation between equity issuances (EQ_ISS_{CF}) and debt repurchases (LTD_REP_{CF}). Overall, these correlations confirm that previous research focusing on individual categories of financing transactions suffers serious correlated omitted variables problems.

Panel A of Table 4 presents univariate statistics for the investment decomposition. The standard deviations for each of the components of $\Delta XFIN_{BS}$ are fairly similar, ranging from a low of 0.170 for $\Delta CASH_{BS}$ to a high of 0.209 for ΔNOA_{BS}. Thus, unlike the other two decompositions, our investing decomposition is not dominated by one or two components. The intuition behind these components is worth emphasizing at this point. The net proceeds for external financing activities can be invested in one of two broad categories. First, the proceeds can be invested in liquid financial assets, such as cash and short-term investments. This category is captured by $\Delta CASH_{BS}$. Firms that are raising sufficient capital to fund several years of planned future investment expenditures will tend to fall into this category. Second, the proceeds can be immediately invested in operating activities. This category is captured by the difference between ΔNOA_{BS} and $INCOME_{BS}$. Note that we must net ΔNOA_{BS} against INCOME to control for changes in net operating assets that are funded by retained earnings rather than external financing.

The correlations in panel B of Table 4 reveal a couple of additional insights. First, INCOME is positively correlated with both ΔNOA_{BS} and $\Delta CASH_{BS}$, indicating that more profitable firms tend to keep their additional profits within the firm rather than distributing them to equity holders. Second, there is a negative correlation between ΔNOA_{BS} and $\Delta CASH_{BS}$, indicating that firms retain a cash 'buffer' to facilitate changes in their net operating asset requirements without having to always rely on external financing.

4.2 Portfolio Results

Previous research investigating the relation between external financing and future stock returns has focused on the future stock returns for portfolios of firms engaging in specific financing transactions. This research is summarized in Table 5 of Ritter (2003). To allow for comparisons with this research, we also present returns for portfolios of firms that are formed by ranking on the components of our external financing decompositions. Each year, we rank all the firms in each of our samples on each of the components of the decompositions. For each component, we then allocate firms in equal numbers to deciles based on the ranks. Starting 4 months after the fiscal year end of each firm year, we then compute the equal-weighted size-adjusted stock return over the following 12 months.

Our portfolio results differ from earlier research in three important respects.[5] First, our sample is much more comprehensive, covering a longer time period and a much larger sample of firms. Second, instead of forming portfolios based upon the existence of a particular category of financing transaction (e.g., an equity offering or a stock repurchase), we form portfolios based on both the existence and magnitude of such transactions. We expect our approach to allow for more powerful tests, because larger transactions should result in a stronger relation with future stock returns. Third, our decile ranking procedure is conducted annually, while previous research typically equal-weights observations regardless of distribution in calendar time. This difference is potentially important, because financing transactions are well-known to be clustered in 'hot' markets (Ritter, 1991). We rank annually to make sure that our portfolio returns represent implementible strategies and do not incorporate hindsight bias about transaction size. In unreported tests we find that our results are slightly stronger if we assign firms to portfolios based on the sample-wide ex post distribution of transaction sizes. We also confirm that the stronger results arise because financing transactions tend to be clustered in calendar time, so that ex post assignment of ranks results in greater variation in the magnitude of financing transactions across portfolios.

[5] One exception is Dichev and Piotroski (1999), who also use balance sheet data. However, their tests focus only on debt issuances.

Long-horizon stock returns for our balance sheet and cash flow measures of net external financing, $\Delta XFIN_{BS}$ and $\Delta XFIN_{CF}$, are plotted in Figures 1 and 2. The graphs plot the cumulative returns for the lowest decile (thin line) and highest decile (bold line) of each measure. The thin line therefore represents firms that are the greatest net repurchasers of capital, while the bold line represents firms that are the greatest net issuers of capital. We start cumulating returns 5 years before year zero, which is the ranking year, to provide an indication of stock price performance for these firms in the pre-ranking period. We then reset the cumulative return to zero and start cumulating for the five years following the ranking year to provide an indication of future returns.

Despite the smaller size of the cash flow sample and the potential limitations of the balance sheet computations, the plots are remarkably similar. We therefore focus our discussion on Figure 1. The most prominent feature of Figure 1 is the large run-up in returns for the issuers in the pre-ranking period. Issuers tend to be past winners with cumulative abnormal returns over the five year pre-ranking period of almost 100%. Conversely, repurchases have been past losers, with cumulative abnormal returns over the last five years of almost -20%. The asymmetry in these results can be explained by the asymmetry in the distribution of $\Delta XFIN_{BS}$. Recall from Table 3 that the distribution is skewed, with a lower quartile of -0.034 and an upper quartile of 0.114.

Turning to the post-ranking period, we see that the well-documented negative relation between external financing activities and future stock returns is captured nicely by $\Delta XFIN_{BS}$. Issuers underperform by about -10% over the next year and cumulative underperformance grows to almost -20% after 3 years. Conversely, repurchasers outperform by about 5% over the next year and cumulative underperformance grows to almost 10% after 3 years. Thus, the cumulative return to a zero net investment hedge portfolio going long in issuers and short in repurchasers is around 15% after the first year and grows to around 30% after 3 years. In short, our measure of net external financing does an excellent job of predicting future stock returns across a broad sample of stocks. The hedge portfolio returns documented here dwarf the hedge portfolio returns to other 'anomalies' that have been documented using similar research designs and a similar sample of stocks.[6]

One point of contrast between the results in Figure 1 and the results in previous research is that we document the largest predictable returns in the year immediately following the ranking year, while previous research has often found the largest future returns in the second year.[7] This difference can be explained by the fact that we are unable to pinpoint the transaction date and don't begin our return cumulation period until 4 months after the fiscal year end. For example, if a firm has a December fiscal year-end and makes an equity issuance in January of 1999, we wouldn't begin our return cumulation period relating to this issuance until the end of April 2000. Fortunately, because the predictable abnormal returns tend to lag the issue date by 6-12 months, this limitation of our research design is not important. For brevity, our portfolio tests focus exclusively on the year following the ranking year.

The portfolio returns for our balance sheet decomposition are reported in Table 5. We report the mean returns of each decile portfolio for each component of the decomposition. We also report the hedge portfolio obtained by subtracting the return on

[6] See Fama (1998) and Schwert (2003) for a review of other anomalies.
[7] See, for example, table 1 in Ritter (2003).

the highest decile portfolio from the return on the lowest decile portfolio, along with its t-statistic.[8] The first point to note from this table is that the hedge portfolio return is the largest (15.7%) for $\Delta XFIN_{BS}$. This summary measure of net external financing does a good job of synthesizing information about future stock returns from each of the underlying components. For the underlying components, common equity and long-term debt have the highest predictable returns, while preferred stock and convertible debt have the lowest predictable returns. However, recall from Table 2 that common equity and long-term debt display the greatest variation, while preferred stock and convertible debt display the least variation. Moreover, the univariate analysis in Table 5 does not control for refinancing transactions, so conclusions about the relation between different categories of financing transactions and future stock returns would be premature.

Table 6 reports portfolio returns for the statement of cash flows decomposition. As with the balance sheet decomposition, we find that $\Delta XFIN_{CF}$, our summary measure of net external financing activities, has the greatest predictive ability with respect to future stock returns. Panel B of Table 6 contains some additional results of particular interest. In interpreting this panel, it is important to remember that the sign of the hedge portfolio returns should flip for components of the decomposition that represent cash distributions (i.e., EQ_REP_{CF}, $DIVS_{CF}$ and LTD_REP_{CF}). The key results of interest are that equity repurchases are the only cash distribution for which the higher portfolios have higher returns. Higher dividends and debt repurchases are instead associated with lower future returns. The absence of a high returns for high dividend portfolios is perhaps not

[8] In unreported tests we have also tested the significance of the portfolio hedge returns using a Fama and Macbeth (1973) approach. Specifically, we calculate the hedge return for each year and then calculate the average hedge return and use the time series variation to compute test statistics. Using this alternative approach we find portfolio hedge returns of similar magnitudes and significance levels.

surprising, as dividends are fairly small and stable from year to year. The absence of high returns for the high debt repurchase portfolios is, at first blush, more difficult to reconcile with the existing misvaluation exploitation and over-investment explanations. Panel A of Table 3 shows debt repurchases tend to be both large and highly variable. However, recall from Table 3 panel B that debt repurchases are highly positively correlated with equity and debt issuances. These other financing transactions are potentially important correlated omitted variables in our univariate analysis of debt repurchases.

Table 7 reports portfolio returns for the investment decomposition. The portfolio returns for ΔNOA_{BS} dominate this decomposition. At 17.2%, the hedge portfolio return for ΔNOA_{BS} is actually greater than the hedge portfolio return on $\Delta XFIN_{BS}$ of 15.7%. The hedge portfolio returns on $\Delta CASH_{BS}$ and INCOME of 4.0% and 2.3% respectively pale in comparison. Recall from Table 4 that all three of these components exhibit substantial variation, but Table 7 shows that it is clearly ΔNOA_{BS} that drives the bulk of the predictive ability with respect to future stock returns. Note that the predictive ability of ΔNOA_{BS} with respect to future stock returns has been previously documented by Richardson et al. (2002). However, we are the first to isolate this variable as the driver of the negative relation between external financing transactions and future stock returns. The fact that this variable is the key driver supports the over-investment explanation. We defer a more detailed discussion of this issue to our multivariate regression analysis.

4.3 Regression Results

Our regression analysis involves regressions of future stock returns on the net change in external financing and each of its underlying components for each of our three decompositions. The regression analysis offers two advantages over our portfolio tests. First, it allows us to control for differences in transaction magnitudes, as the regression coefficients represent the future stock price response to a common-sized change in each component. Second, by simultaneously examining the effect of all components on future stock returns, we are able to control for refinancing transactions that represent potentially important correlated omitted variables in our portfolio analysis. The regression results presented in Tables 8-10 are based on pooled samples. We have re-performed all regressions by year and then used the annual coefficient estimates to compute test statistics (Fama and Macbeth, 1973). Results from these analyses are very similar to the pooled regression analyses reported.

Table 8 reports the regression analysis for the balance sheet decomposition. We begin with a simple univariate regression of one year ahead returns on $\Delta XFIN_{BS}$. We next report univariate regressions of returns on each of the components of $\Delta XFIN_{BS}$. We then culminate with a multivariate regression of returns on the components of the balance sheet decomposition. By comparing the univariate regressions with the multivariate regression, we can quantify the omitted variables biases affecting previous research.

Table 8 presents regression results for the balance sheet decomposition. Panel A reports on the univariate regression of returns (SRET) on $\Delta XFIN_{BS}$. Consistent with the portfolio results, the coefficient on $\Delta XFIN_{BS}$ is negative and highly statistically significant. The coefficient magnitude of 0.186 indicates that an increase in external financing equal to 100% of total assets results in a -18.6% abnormal stock return over the subsequent year. Panel B begins with univariate regressions for each of the components of the initial balance sheet decomposition. Consistent with the portfolio results,

$\Delta CEQUITY_{BS}$ and $\Delta DEBT_{BS}$ have significant negative coefficients, while $\Delta PEQUITY_{BS}$ has an insignificant coefficient. Next, panel B reports the multivariate regression of returns on all three components. The key change is that the coefficient on $\Delta PEQUITY_{BS}$ becomes negative, statistically significant and of the same order of magnitude as the coefficients on $\Delta CEQUITY_{BS}$ and $\Delta DEBT_{BS}$. After controlling for simultaneous refinancing transactions involving debt and equity, we find that marginal changes in preferred stock have the same negative relation with stock returns as common stock and debt. Recall from Table 2 panel B that preferred stock financing is negatively correlated with changes in common equity and this must bias the coefficients in the univariate analysis. The coefficients of common equity and debt also become more negative and statistically significant in the multivariate regression relative to the univariate regressions. The other financing components represent omitted variables in the univariate regressions, biasing the coefficients in these regressions toward zero.

Panel C of Table 8 reports regression results for the extended balance sheet decomposition. As with panel B, we see that the coefficients in the multivariate regression are all more negative and more statistically significant than in their respective univariate regressions. Note also that the magnitudes of the coefficients on all three components of debt ($\Delta LTDEBT_{BS}$, $\Delta CVDEBT_{BS}$ and $\Delta NOTES_{BS}$) are similar. The significant differences across these components in the univariate analyses arise because of omitted variables biases.

Overall, the results in Table 8 are more consistent with the over-investment explanation than with the valuation exploitation explanation. First, Table 8 shows that it is the net change in external financing that predicts future stock returns - controlling for refinancing transactions results in increased predictive ability with respect to future stock returns. Second, the magnitudes of the coefficients on the different financing components are almost identical. The misvaluation exploitation explanation is most consistent with a more negative coefficient on common equity, because common equity is most sensitive to changes in firm value.

Table 9 presents regression results for the statement of cash flows decomposition. Panel A reports the univariate regression of returns on $\Delta XFIN_{CF}$. Consistent with the results for $\Delta XFIN_{BS}$ in Table 8, the coefficient is -0.186 and highly statistically significant. Panel B presents univariate regressions for each of the components of the initial cash flow decomposition. Both the equity and debt components of $\Delta XFIN_{BS}$ are negative and statistically significant in the univariate regressions, though their statistical significance increases in the multivariate regression.

Panel C of Table 9 reports regression results for the extended cash flow decomposition. The univariate regression results tell a similar story to the portfolio results. Equity issues and debt issues have the strongest negative relation with future stock returns, and debt repurchases have a significantly positive instead of a negative coefficient.[9] Things change, however, in the multivariate analysis. Most notably, the coefficient on debt repurchases becomes negative, statistically significant and of the same order of magnitude as the coefficient on equity and debt issuances. The explanation for this change again involves refinancing transactions. Recall from panel B of Table 3 that debt repurchases are highly positively correlated with debt and equity issuances. After

[9] Note that we enter variables that cause external financing to go down (EQ_REP_{CF}, $DIVS_{CF}$ and LTD_REP_{CF}) into the regression with a negative sign. Thus, a negative coefficient is predicted for all components in panel C.

controlling for these refinancing transactions, we find that the marginal effect of debt repurchases is similar to other external financing transactions. Overall, the results in multivariate regression in panel C indicate that marginal changes in equity issuances, equity repurchases, debt issuances and debt repurchases all have similar predictive ability with respect to future stock returns.

The coefficients on dividends ($DIVS_{CF}$) and short-term debt ($\Delta NOTES_{CF}$) do not have the predicted negative coefficients. The stable nature of dividends over time probably explains the dividend result. The insignificant result on short-term debt probably reflects the fact that this variable is missing for about two thirds of our observations. Recall that most firms do not identify this variable their statements of cash flows, so we are forced to set it to zero for most firms, introducing significant measurement error. The fact that this variable loads negatively as predicted in our balance sheet decomposition suggests that its insignificance here is due to measurement error.

Like the results in Table 8, the results in Table 9 are more consistent with the over-investment explanation than with the valuation exploitation explanation. Table 9 also shows that it is the net change in external financing that predicts future stock returns. The significant negative coefficient on debt repurchases in the multivariate analysis is particularly telling. This coefficient tells us that, absent refinancings, debt repurchases have about the same predictive ability with respect to future stock returns as equity repurchases. It is difficult to see how debt repurchases can be as effective as equity repurchases at exploiting firm undervaluation.

Table 10 presents regression results for the investment decomposition. This decomposition provides the cleanest test for distinguishing between the misvaluation exploitation explanation and over-investment explanations. The misvaluation exploitation explanation predicts that future stock returns should be related to external financing transactions regardless of the use of the proceeds. In contrast, the over-investment explanation predicts that stock returns will only be associated with external financing transactions leading to changes in investment, as reflected in $\Delta XFIN_{BS}$. Panel B of Table 10 reports univariate and multivariate regression results for the components of the balance sheet decomposition. The misvaluation exploitation hypothesis predicts that the coefficients should be equal across the components and about the same magnitude as the coefficient on $\Delta XFIN_{BS}$ in panel A. The over-investment hypothesis predicts that the coefficient on ΔNOA_{BS} should dominate the relation with future stock returns. The univariate and multivariate regressions both confirm that ΔNOA_{BS} has the greatest predictability with respect to future stock returns. Focusing on the multivariate regression, the coefficient on ΔNOA_{BS} is -0.251, while the coefficients on $\Delta CASH_{BS}$ and INCOME are only -0.12 and -0.058 respectively.[10] The coefficient on $\Delta CASH_{BS}$ indicates that the relation between external financing and future stock returns is only about half as strong if the proceeds are stored as cash. One possible reason that the coefficient on $\Delta CASH_{BS}$ is negative is that some of the cash is subsequently invested in NOA.[11] The coefficient on INCOME indicates that both externally and internally financed investment lead to lower future stock returns. A 100% increase in ΔNOA_{BS} that

---

[10] An F-test easily rejects the null hypothesis that the coefficients on the three components are equal.

[11] In unreported tests, we confirm that there is a strong positive relation between ΔNOA_{BS} and lagged $\Delta CASH_{BS}$.

is funded via external financing leads to a 25.1% reduction in future stock returns, while a 100% increase in ΔNOA_{BS} that is funded via retained earnings leads to a 19.3% reduction in future stock returns.[12] There is evidence that over-investment is problematic not only for internally generated cash (Richardson, 2002), but also externally raised cash.

Finally, we note that the coefficients on ΔNOA_{BS} and INCOME have a second more subtle interpretation. From an accounting perspective, there are three possible treatments of the capital raised via $\Delta XFIN_{BS}$. First, if the capital is stored as cash, it will show up in $\Delta CASH_{BS}$. Second, if the capital is spent and capitalized as an operating asset on the balance sheet, it will show up in ΔNOA_{BS}. Third, if the capital is spent and immediately charged against operating income, it will show up as lower INCOME. Our results indicate that the future stock returns are the lowest if the capital is spent and capitalized in ΔNOA_{BS} and the highest if the capital is spent and immediately charged against INCOME. This interpretation is consistent with the future stock returns being driven by earnings management at the time of external financing transactions and is consistent with research by Teoh et al., (1998a, 1998b), Rangan (1998) and Richardson et al. (2002).

5. *Conclusion and Implications*

This paper investigates the determinants of the negative relation between external financing and future stock returns. Overall, our evidence is most consistent with the over-investment explanation being the driving force behind the relation. We find no

[12] The marginal effect of externally financed increases in net operating assets is given by γ_1, while the marginal effect of internally financed increases in net operating assets is given by $\gamma_1 - \gamma_3$.

evidence that the relation varies systematically as a function of the category of the refinancing transaction (debt versus equity) and we find no evidence that the relation is present for refinancing transactions (e.g., issuing equity to repurchase debt). We do find that the relation varies systematically as a function of the use of the proceeds, with a stronger negative relation existing when the proceeds are invested in net operating assets as opposed to being stored as cash or immediately charged against income. We also find that both externally and internally financed increases in net operating assets are negatively related to future stock returns. However, the negative relation is somewhat stronger when the increase in net operating assets is externally as opposed to internally financed, so the misvaluation exploitation explanation may be present as a second order effect.

Our research highlights the importance of simultaneously examining all financing categories in studies of external financing. Firms frequently engage in refinancing transactions that can lead to important omitted variables in studies that just consider one financing category in isolation. Our research also illustrates how the structure of the financial statements can be used to facilitate systematic decompositions of firms' financing and investing decisions. Previous finance research has tended to collect samples relating to specific corporate events (e.g., security issuances, restructurings, capital investment projects). We show that exploiting aggregated information in the financial statements relating to such events can result in more powerful tests.

Finally, this study documents strong and pervasive evidence of capital market inefficiency. A challenge for future research is to determine why such inefficiencies arise and why sophisticated market participants do not trade them away.

REFERENCES

Baker, M., and J. Wurgler, 2000. The equity share in new issues and aggregate stock returns. *Journal of Finance*, 55, 2219-2257.

Beneish, M. D., C. M. C. Lee, and R. L. Tarpley, 2001. Contextual fundamental analysis in the prediction of extreme returns. *Review of Accounting Studies*, 6, 165-189.

Billett, M. T., M. J. Flannery and J. A. Garfinkel, 2001. The long-run performance of firms following loan announcements. Working paper, University of Iowa.

Dichev, I. D., and J. D. Piotroski, 1999. The performance of long-run stock returns following issues of public and private debt. *Journal of Business Finance and Accounting*, 26, 1103-1132.

Fama, E. F., 1998. Market efficiency, long-run returns and behavioral finance. *Journal of Financial Economics*, 49, 283-306.

Fama, E. F., and J. D. Macbeth, 1973. Risk, return and equilibrium – empirical tests. *The Journal of Political Economy*, 81, 607-636.

Hribar, P., and D. W. Collins, 2002. Errors in Estimating Accruals: Implications for Empirical Research. *Journal of Accounting Research*, 40, 105-135.

Ikenberry, D. L., J. Lakonishok and T. Vermaelen, 2000. Stock repurchases in Canada: Performance and strategic timing. *Journal of Finance*, 55, 2373-2397.

Ikenberry, D. L., and T. Vermaelen, 1995. Market underreaction to open market share repurchases. *Journal of Financial Economics*, 39, 181-208.

Loughran, T. and J. R. Ritter, 1995. The new issues puzzle. *Journal of Finance*, 50, 23-51.

Rangan, S., 1998. Earnings management and the performance of seasoned equity offerings. *Journal of Financial Economics*, 50, 101-122.

Richardson, S. A., 2002. Corporate governance and the over-investment of surplus cash. Working paper, University of Pennsylvania.

Richardson, S. A., R. G. Sloan, M. Soliman and A. I. Tuna, 2002. Information in accruals about earnings persistence and future stock returns. Working paper, University of Pennsylvania.

Ritter, J. R., 1991. The long run performance of initial public offerings. *Journal of Finance*, 46, 3-27.

Ritter, J. R., 2003. Investment banking and securities issuance. Chapter 9 of Handbook of Economics and Finance, edited by G. Constantinides, M. Harris and R. Stulz, North-Holland publishing.

Schwert, G. W., 2003. Anomalies and market efficiency. Chapter 17 of Handbook of Economics and Finance, edited by G. Constantinides, M. Harris and R. Stulz, North-Holland publishing.

Shumway, T. G., 1997. The Delisting Bias in CRSP Data. *Journal of Finance*, 52, 327-340.

Sloan, R. G., 1996. Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings? *The Accounting Review*, 71, 289-315.

Spiess, D. K. and J. Affleck-Graves, 1999. The long-run performance of stock returns following debt offerings', *Journal of Financial Economics*, 54, 45-73.

Teoh, S. H., I. Welch and T. J. Wong, 1998a. Earnings management and the post-issue underperformance in seasoned equity offerings. *Journal of Financial Economics*, 50, 63-99.

Teoh, S. H., I. Welch and T. J. Wong, 1998b. Earnings management and the long run performance of initial public offerings. *Journal of Finance*, 42, 943-963.

Titman, S., K. C. Wei, and F. Xie, 2001. Capital investments and stock returns. Working paper, University of Texas at Austin.

Table 1
Sample Sizes by Year for the Balance Sheet and Statement of Cash Flows Samples

Year	*Balance Sheet Sample*	*Cash Flow Sample*
1963	196	0
1964	354	0
1965	433	0
1966	567	0
1967	996	0
1968	1,246	0
1969	1,401	0
1970	1,557	0
1971	1,735	1,235
1972	2,507	2,089
1973	2,966	2,646
1974	3,130	2,757
1975	3,523	3,179
1976	3,576	3,252
1977	3,481	3,161
1978	3,434	3,103
1979	3,400	3,004
1980	3,412	2,982
1981	3,566	3,077
1982	3,655	3,115
1983	3,807	3,221
1984	3,939	3,378
1985	3,902	3,283
1986	4,120	3,433
1987	4,329	3,565
1988	4,322	3,640
1989	4,252	3,575
1990	4,265	3,617
1991	4,351	3,730
1992	4,636	4,052
1993	4,989	4,369
1994	5,725	4,659
1995	5,968	4,760
1996	6,217	4,718
1997	6,122	4,480
1998	5,759	4,216
1999	5,611	4,060
2000	1,160	856
Total	128,609	101,212

Table 2
Univariate Statistics and Pairwise Correlations for Net External Financing and Its Components Using the Balance Sheet Decomposition

Panel A: Univariate Statistics

	Mean	**Std. Dev.**	**25%**	**Median**	**75%**
$\Delta XFIN_{BS}$	0.084	0.253	-0.035	0.012	0.114
$\Delta CEQUITY_{BS}$	0.055	0.218	-0.020	-0.001	0.018
$\Delta PEQUITY_{BS}$	-0.001	0.060	0	0	0
$\Delta DEBT_{BS}$	0.029	0.154	-0.019	0.002	0.065
$\Delta LTDEBT_{BS}$	0.023	0.129	-0.013	0	0.042
$\Delta CVDEBT_{BS}$	0.003	0.051	0	0	0
$\Delta NOTES_{BS}$	0.004	0.080	-0.001	0	0.008

The sample consists of 128,609 firm years from 1963 to 2000.

$\Delta XFIN_{BS}$ is net external financing obtained using the balance sheet approach. It is calculated as $\Delta CEQUITY_{BS}$ + $\Delta PEQUITY_{BS}$ + $\Delta DEBT_{BS}$. $\Delta XFIN_{BS}$ and all its components are deflated by average total assets.

$\Delta CEQUITY_{BS}$ is the change in common equity. It is defined as $CEQUITY_t$ – $CEQUITY_{t-1}$ – $INCOME_t$. Where CEQUITY is the book value of common equity (*Compustat* item #60) and INCOME is Net Income (*Compustat* item #172).

$\Delta PEQUITY_{BS}$ is the change in preferred equity. It is defined as $PEQUITY_t$ - $PEQUITY_{t-1}$. Where PEQUITY is the book value of preferred equity (*Compustat* item #130).

$\Delta DEBT_{BS}$ is the change in total debt. It is calculated as $\Delta LTDEBT_{BS}$ + $\Delta CVDEBT_{BS}$ + $\Delta NOTES_{BS}$.

$\Delta LTDEBT_{BS}$ is the change in long term debt, calculated as $LTDEBT_t$ – $LTDEBT_{t-1}$ and LTDEBT is total long term debt (*Compustat* item #9) plus the current portion of long term debt (*Compustat* item #44) less convertible debt (*Compustat* item #79).

$\Delta CVDEBT_{BS}$ is the change in convertible debt, calculated as $CVDEBT_t$ – $CVDEBT_{t-1}$ and CVDEBT is convertible debt (*Compustat* item #79).

$\Delta NOTES_{BS}$ is the change in notes payable, calculated as $NOTES_t$ – $NOTES_{t-1}$ and NOTES is total short term debt (*Compustat* item #34) less the current portion of long term debt (*Compustat* item #44).

Panel B: Pairwise Correlation Matrix - Pearson (above diagonal) and Spearman (below diagonal) (p-values shown in italics below correlations)

	$\Delta XFIN_{BS}$	$\Delta CEQUITY_{BS}$	$\Delta PEQUITY_{BS}$	$\Delta DEBT_{BS}$	$\Delta LTDEBT_{BS}$	$\Delta CVDEBT_{BS}$	$\Delta NOTES_{BS}$
$\Delta XFIN_{BS}$	--	0.803	-0.059	0.498	0.415	0.146	0.195
		(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*
$\Delta CEQUITY_{BS}$	0.577		-0.220	-0.071	-0.043	-0.015	-0.059
	(0.0001)	--	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*
$\Delta PEQUITY_{BS}$	0.049	0.011		0.042	0.043	-0.001	0.013
	(0.0001)	*(0.0001)*	--	*(0.0001)*	*(0.0001)*	*(0.8224)*	*(0.0001)*
$\Delta DEBT_{BS}$	0.655	-0.018	0.036		0.793	0.308	0.452
	(0.0001)	*(0.0001)*	*(0.0001)*	--	*(0.0001)*	*(0.0001)*	*(0.0001)*
$\Delta LTDEBT_{BS}$	0.503	-0.005	0.038	0.747		-0.016	-0.072
	(0.0001)	*(0.0762)*	*(0.0001)*	*(0.0001)*	--	*(0.0001)*	*(0.0001)*
$\Delta CVDEBT_{BS}$	0.096	0.016	0.0334	0.147	-0.009		-0.011
	(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0008)*	--	*(0.0001)*
$\Delta NOTES_{BS}$	0.277	-0.034	0.007	0.447	-0.012	-0.003	
	(0.0001)	*(0.0001)*	*(0.0110)*	*(0.0001)*	*(0.0001)*	*(0.3185)*	--

All variables are as defined in panel A.

Table 3
Univariate Statistics and Pairwise Correlations for Net External Financing and Its Components Using the Statement of Cash Flows Decomposition

Panel A: Univariate Statistics

	Mean	Std. Dev.	25%	Median	75%
$\Delta XFIN_{CF}$	0.064	0.229	-0.037	0	0.081
$\Delta EQUITY_{CF}$	0.045	0.203	-0.020	-0.001	0.007
$\Delta DEBT_{CF}$	0.019	0.133	-0.021	0	0.044
EQ_ISS_{CF}	0.068	0.193	0	0.002	0.016
EQ_REP_{CF}	0.009	0.038	0	0	0.002
$DIVS_{CF}$	0.014	0.045	0	0.001	0.019
LTD_ISS_{CF}	0.087	0.168	0	0.013	0.099
LTD_REP_{CF}	0.070	0.141	0.003	0.020	0.067
$\Delta NOTES_{CF}$	0.001	0.058	0	0	0

The sample consists of 101,212 firm years from 1971 to 2000.

$\Delta XFIN_{CF}$ is net external financing obtained using the statement of cash flows approach. It is calculated as EQ_ISS_{CF} - EQ_REP_{CF} - $DIVS_{CF}$ + LTD_ISS_{CF} - LTD_REP_{CF} + $\Delta NOTES_{CF}$. $\Delta XFIN_{CF}$ and all of its components are deflated by average total assets.

$\Delta EQUITY_{CF}$ is net equity financing from the statement of cash flows approach. It is calculated as EQ_ISS_{CF} - EQ_REP_{CF} - $DIVS_{CF}$.

$\Delta DEBT_{CF}$ is net debt financing from the statement of cash flows approach. It is calculated as LTD_ISS_{CF} - LTD_REP_{CF} + $\Delta NOTES_{CF}$.

EQ_ISS_{CF} is the cash proceeds from the sale of common and preferred stock (*Compustat* item #108).

EQ_REP_{CF} is the cash payments for the purchase of common and preferred stock (*Compustat* item #115).

$DIVS_{CF}$ is the cash payments for dividends (*Compustat* item #127).

LTD_ISS_{CF} is the cash proceeds from the issuance of long term debt (*Compustat* item #111).

LTD_REP_{CF} is the cash payments for long term debt reductions (*Compustat* item #114).

$\Delta NOTES_{CF}$ is the net changes in current debt (*Compustat* item #301).

Panel B: Pairwise Correlation Matrix - Pearson (above diagonal) and Spearman (below diagonal) (p-values shown in italics below correlations)

	$\Delta XFIN_{CF}$	$\Delta EQUITY_{CF}$	$\Delta DEBT_{CF}$	EQ_ISS_{CF}	EQ_REP_{CF}	$DIVS_{CF}$	LTD_ISS_{CF}	LTD_REP_{CF}	$\Delta NOTES_{CF}$
$\Delta XFIN_{CF}$	--	0.832	0.459	0.797	-0.081	-0.211	0.315	0.028	0.182
		(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*
$\Delta EQUITY_{CF}$	0.572		-0.093	0.958	-0.112	-0.239	0.032	0.110	-0.028
	(0.0001)	--	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*
$\Delta DEBT_{CF}$	0.634	-0.061		-0.087	0.034	-0.001	0.517	-0.135	0.403
	(0.0001)	*(0.0001)*	--	*(0.0001)*	*(0.0001)*	*(0.8880)*	*(0.0001)*	*(0.0001)*	*(0.0001)*
EQ_ISS_{CF}	0.418	0.558	0.001		0.064	-0.018	0.035	0.110	-0.030
	(0.0001)	*(0.0001)*	*(0.8426)*	--	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*
EQ_REP_{CF}	-0.204	-0.413	0.023	0.017		0.020	0.037	0.018	-0.001
	(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	--	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.6757)*
$DIVS_{CF}$	-0.295	-0.643	0.055	-0.104	0.166		-0.029	-0.034	-0.006
	(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	--	*(0.0001)*	*(0.0001)*	*(0.0410)*
LTD_ISS_{CF}	0.402	0.069	0.501	0.052	-0.004	-0.010		0.716	-0.019
	(0.0023)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.2031)*	*(0.0023)*	--	*(0.0001)*	*(0.0001)*
LTD_REP_{CF}	-0.010	0.144	-0.171	0.043	-0.028	-0.092	0.543		-0.003
	(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	--	*(0.3909)*
$\Delta NOTES_{CF}$	0.183	-0.038	0.318	-0.028	0.017	0.0142	-0.020	-0.007	
	(0.0001)	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0001)*	*(0.0185)*	--

All variables are as defined in panel A.

Table 4
Univariate Statistics and Pairwise Correlations for Net External Financing and Its Components Using the Investment Decomposition

Panel A: Descriptive Statistics

	Mean	Std. Dev.	25%	Median	75%
$\Delta XFIN_{BS}$	0.084	0.253	-0.035	0.012	0.114
ΔNOA_{BS}	0.080	0.209	-0.016	0.052	0.150
$\Delta CASH_{BS}$	0.025	0.170	-0.018	0.002	0.034
INCOME	0.013	0.173	0.005	0.041	0.083

The sample consists of 128,609 firm years from 1963 to 2000.

$\Delta XFIN_{BS}$ is net external financing obtained using the balance sheet approach. It is calculated as ΔNOA_{BS} + $\Delta CASH_{BS}$ - INCOME. $\Delta XFIN_{BS}$ and all its components are deflated by average total assets.

ΔNOA_{BS} is the change in net operating assets, calculated as $NOA_t - NOA_{t-1}$ and NOA is equal to total short term debt (*Compustat* item #34) plus total long term debt (*Compustat* item #9) plus common equity (*Compustat* item #60) plus preferred equity (*Compustat* item #130) less cash and short-term investments (*Compustat* item #1).

$\Delta CASH_{BS}$ is the change in short-term investments, $CASH_t - CASH_{t-1}$ (*Compustat* item #1).

Note that $\Delta XFIN_{BS}$ obtained using the balance sheet decomposition in Table 2 is equivalent to $\Delta XFIN_{BS}$ obtained using the investment decomposition used in this table. To see this, note that using the definitions from Table 2, we can express ΔNOA_{BS} as:
$\Delta NOA_{BS} = \Delta CEQUITY_{BS} + \Delta PEQUITY_{BS} + \Delta DEBT_{BS} + INCOME - \Delta CASH_{BS}$, so:
$\Delta NOA_{BS} + \Delta CASH_{BS} - INCOME$
$= \Delta CEQUITY_{BS} + \Delta PEQUITY_{BS} + \Delta DEBT_{BS}$

Panel B: Pairwise Correlation Matrix - Pearson (above diagonal) and Spearman (below diagonal) (p-values shown in italics below correlations)

	$\Delta XFIN_{BS}$	ΔNOA_{BS}	$\Delta CASH_{BS}$	INCOME
$\Delta XFIN_{BS}$	--	0.631 *(0.0001)*	0.482 *(0.0001)*	-0.403 *(0.0001)*
ΔNOA_{BS}	0.650 *(0.0001)*	--	-0.023 *(0.0001)*	0.174 *(0.0001)*
$\Delta CASH_{BS}$	0.169 *(0.0001)*	-0.138 *(0.0001)*	--	0.036 *(0.0001)*
INCOME	-0.189 *(0.0001)*	0.285 *(0.0001)*	0.179 *(0.0001)*	--

All variables are as defined in panel A.

Table 5
Annual Mean Future Size-Adjusted Stock Returns for Decile Portfolios Formed on Net External Financing and its Components Using the Balance Sheet Decomposition.

Panel A: Initial Balance Sheet Decomposition

Portfolio	$\Delta XFIN_{BS}$	$\Delta CEQUITY_{BS}$	$\Delta PEQUITY_{BS}$	$\Delta DEBT_{BS}$
Lowest	0.048	0.022	-0.011	0.012
2	0.040	0.014	-0.003	0.038
3	0.041	0.016	0.005	0.028
4	0.040	0.038	0.005	0.032
5	0.042	0.024	0.005	0.045
6	0.014	0.034	0.005	0.013
7	-0.008	0.019	0.005	0.002
8	-0.029	-0.016	0.005	-0.013
9	-0.052	-0.046	0.002	-0.031
Highest	-0.109	-0.079	-0.031	-0.089
Hedge	0.157	0.101	0.019	0.101
t-statistic	16.04	10.89	1.25	11.17

Panel B: Extended Decomposition of the Change in Debt Financing

Portfolio	$\Delta DEBT_{BS}$	$\Delta LTDEBT_{BS}$	$\Delta CVDEBT_{BS}$	$\Delta NOTES_{BS}$
Lowest	0.012	0.022	-0.053	-0.010
2	0.038	0.029	-0.012	0.007
3	0.028	0.016	-0.002	0.006
4	0.032	0.022	0.012	0.017
5	0.045	0.023	0.008	0.019
6	0.013	0.005	-0.029	-0.004
7	0.002	-0.004	-0.081	-0.001
8	-0.013	-0.014	-0.060	-0.015
9	-0.031	-0.023	-0.109	-0.029
Highest	-0.089	-0.075	-0.109	-0.058
Hedge	0.101	0.097	0.057	0.048
t-statistic	11.17	10.96	2.25	4.11

The sample consists of 128,609 firm-years from 1963 to 2000.

Firm-year observations are ranked annually on the respective variable and assigned in equal numbers to decile portfolios.

Stock returns are measured using compounded buy-hold returns, inclusive of dividends and other distributions. Size-adjusted returns are calculated by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the year. Returns are calculated for a twelve-month period beginning four months after the end of the fiscal year. For firms that delist during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvest any remaining proceeds in the value-weighted market portfolio.

Hedge represents the net return generated by taking a long position in the ‘Low’ portfolio and an equal sized short position in the ‘High’ portfolio. The t-statistic tests whether hedge is statistically different from zero.

$\Delta XFIN_{BS}$ is net external financing obtained using the balance sheet approach. It is calculated as $\Delta CEQUITY_{BS}$ + $\Delta PEQUITY_{BS}$ + $\Delta DEBT_{BS}$. $\Delta XFIN_{BS}$ and all its components are deflated by average total assets.

$\Delta CEQUITY_{BS}$ is the change in common equity. It is defined as $CEQUITY_t$ – $CEQUITY_{t-1}$ – $INCOME_t$. Where CEQUITY is the book value of common equity (*Compustat* item #60) and INCOME is Net Income (*Compustat* item #172).

$\Delta PEQUITY_{BS}$ is the change in preferred equity. It is defined as $PEQUITY_t$ - $PEQUITY_{t-1}$. Where PEQUITY is the book value of preferred equity (*Compustat* item #130).

$\Delta DEBT_{BS}$ is the change in total debt. It is calculated as $\Delta LTDEBT_{BS}$ + $\Delta CVDEBT_{BS}$ + $\Delta NOTES_{BS}$.

$\Delta LTDEBT_{BS}$ is the change in long term debt, calculated as $LTDEBT_t$ – $LTDEBT_{t-1}$ and LTDEBT is total long term debt (*Compustat* item #9) plus the current portion of long term debt (*Compustat* item #44) less convertible debt (*Compustat* item #79).

$\Delta CVDEBT_{BS}$ is the change in convertible debt, calculated as $CVDEBT_t$ – $CVDEBT_{t-1}$ and CVDEBT is convertible debt (*Compustat* item #79).

$\Delta NOTES_{BS}$ is the change in notes payable, calculated as $NOTES_t$ – $NOTES_{t-1}$ and NOTES is total short term debt (*Compustat* item #34) less the current portion of long term debt (*Compustat* item #44).

Table 6
Annual Mean Future Size-Adjusted Stock Returns for Decile Portfolios Formed on Net External Financing and its Components Using the Statement of Cash Flows Decomposition.

Panel A: Initial Statement of Cash Flows Decomposition

Portfolio	$\Delta XFIN_{CF}$	$\Delta EQUITY_{CF}$	$\Delta DEBT_{CF}$
Lowest	0.040	0.016	-0.001
2	0.030	0.005	0.023
3	0.021	0.013	0.029
4	0.033	0.013	0.026
5	0.040	0.016	0.018
6	0.025	0.023	0.030
7	-0.010	0.015	-0.009
8	-0.025	0.004	-0.011
9	-0.054	-0.045	-0.026
Highest	-0.111	-0.092	-0.079
Hedge	0.151	0.108	0.078
t-statistic	14.29	10.35	7.68

Panel B: Extended Statement of Cash Flows Decomposition

Portfolio	EQ_ISS_{CF}	EQ_REP_{CF}	$DIVS_{CF}$	LTD_ISS_{CF}	LTD_REP_{CF}	$\Delta NOTES_{CF}$
Lowest	0.020	-0.010	0.003	0.024	0.006	-0.039
2	0.019	0.004	-0.002	0.015	0.000	-0.004
3	0.000	0.004	-0.004	0.005	0.000	-0.026
4	0.016	0.010	-0.002	-0.003	0.000	0.015
5	0.008	0.010	-0.003	0.000	0.003	0.010
6	0.015	0.018	-0.006	-0.002	0.008	0.003
7	0.002	0.039	0.003	-0.013	0.004	-0.016
8	-0.023	0.016	0.002	-0.034	0.006	0.015
9	-0.065	0.020	-0.010	-0.046	-0.012	-0.028
Highest	-0.088	0.028	-0.023	-0.082	-0.033	-0.028
Hedge	0.108	-0.037	0.026	0.106	0.038	-0.011
t-statistic	9.72	-3.36	3.75	12.13	4.12	-0.56

The sample consists of 101,212 firm years from 1971 to 2000.

Firm-year observations are ranked annually on the respective variable and assigned in equal numbers to decile portfolios.

Stock returns are measured using compounded buy-hold returns, inclusive of dividends and other distributions. Size-adjusted returns are calculated by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the year. Returns are calculated for a twelve-month period beginning four months after the end of the fiscal year. For firms that delist during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvest any remaining proceeds in the value-weighted market portfolio.

Hedge represents the net return generated by taking a long position in the 'Low' portfolio and an equal sized short position in the 'High' portfolio. The t-statistic tests whether hedge is statistically different from zero.

$\Delta XFIN_{CF}$ is net external financing obtained using the statement of cash flows approach. It is calculated as EQ_ISS_{CF} - EQ_REP_{CF} - $DIVS_{CF}$ + LTD_ISS_{CF} - LTD_REP_{CF} + $\Delta NOTES_{CF}$. $\Delta XFIN_{CF}$ and all of its components are deflated by average total assets.

$\Delta EQUITY_{CF}$ is net equity financing from the statement of cash flows approach. It is calculated as EQ_ISS_{CF} - EQ_REP_{CF} - $DIVS_{CF}$.

$\Delta DEBT_{CF}$ is net debt financing from the statement of cash flows approach. It is calculated as LTD_ISS_{CF} - LTD_REP_{CF} + $\Delta NOTES_{CF}$.

EQ_ISS_{CF} is the cash proceeds from the sale of common and preferred stock (*Compustat* item #108).

EQ_REP_{CF} is the cash payments for the purchase of common and preferred stock (*Compustat* item #115).

$DIVS_{CF}$ is the cash payments for dividends (*Compustat* item #127).

LTD_ISS_{CF} is the cash proceeds from the issuance of long term debt (*Compustat* item #111).

LTD_REP_{CF} is the cash payments for long term debt reductions (*Compustat* item #114).

$\Delta NOTES_{CF}$ is the net changes in current debt (*Compustat* item #301).

Table 7
Annual Mean Future Size-Adjusted Stock Returns for Decile Portfolios Formed on Net External Financing and its Components Using the Investment Decomposition.

Portfolio	$\Delta XFIN_{BS}$	ΔNOA_{BS}	$\Delta CASH_{BS}$	INCOME
Lowest	0.048	0.060	0.016	-0.015
2	0.040	0.056	-0.009	0.002
3	0.041	0.038	0.011	0.008
4	0.040	0.023	0.000	0.012
5	0.042	0.030	-0.004	0.017
6	0.014	0.013	-0.004	0.000
7	-0.008	-0.002	0.006	0.007
8	-0.029	-0.024	0.016	-0.011
9	-0.052	-0.055	0.018	-0.003
Highest	-0.109	-0.112	-0.024	0.008
Hedge	0.157	0.172	0.040	-0.023
t-statistic	16.04	15.85	3.62	-1.93

The sample consists of 128,609 firm years from 1963 to 2000.

Firm-year observations are ranked annually on the respective variable and assigned in equal numbers to decile portfolios.

Stock returns are measured using compounded buy-hold returns, inclusive of dividends and other distributions. Size-adjusted returns are calculated by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the year. Returns are calculated for a twelve-month period beginning four months after the end of the fiscal year. For firms that delist during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvest any remaining proceeds in the value-weighted market portfolio.

Hedge represents the net return generated by taking a long position in the 'Low' portfolio and an equal sized short position in the 'High' portfolio. The t-statistic tests whether hedge is statistically different from zero.

$\Delta XFIN_{BS}$ is net external financing obtained using the balance sheet approach. It is calculated as $\Delta NOA_{BS} + \Delta CASH_{BS}$ - INCOME. $\Delta XFIN_{BS}$ and all its components are deflated by average total assets.

ΔNOA_{BS} is the change in net operating assets, calculated as $NOA_t - NOA_{t-1}$ and NOA is equal to total short term debt (*Compustat* item #34) plus total long term debt (*Compustat* item #9) plus common equity (*Compustat* item #60) plus preferred equity (*Compustat* item #130) less cash and short-term investments (*Compustat* item #1).

$\Delta CASH_{BS}$ is the change in short-term investments, $CASH_t - CASH_{t-1}$ (*Compustat* item #1).

Note that $\Delta XFIN_{BS}$ obtained using the balance sheet decomposition in Table 2 is equivalent to $\Delta XFIN_{BS}$ obtained using the investment decomposition used in this table. To see this, note that using the definitions from Table 2, we can express ΔNOA_{BS} as:
$\Delta NOA_{BS} = \Delta CEQUITY_{BS} + \Delta PEQUITY_{BS} + \Delta DEBT_{BS} + INCOME - \Delta CASH_{BS}$, so:
$\Delta NOA_{BS} + \Delta CASH_{BS} - INCOME$
$= \Delta CEQUITY_{BS} + \Delta PEQUITY_{BS} + \Delta DEBT_{BS}$

Table 8
Ordinary Least Squares Regressions of Size-Adjusted Future Returns on Net External Financing and its Components Using the Balance Sheet Decomposition

Panel A: Base Case Regression

$$SRET_{t+1} = \gamma_0 + \gamma_1\ \Delta XFIN_{BS,t} + \upsilon_{t+1}$$

	γ_0	γ_1	Adj. R^2
Coefficient	0.018	-0.186	0.005
(t-statistic)	(9.06)	(-24.54)	

Panel B: Regressions for Initial Balance Sheet Decomposition

$$SRET_{t+1} = \gamma_0 + \gamma_1\ \Delta CEQUITY_{BS,t} + \gamma_2\ \Delta PEQUITY_{BS,t} + \gamma_3\ \Delta DEBT_{BS,t} + \upsilon_{t+1}$$

	γ_0	γ_1	γ_2	γ_3	Adj. R^2
Coefficient	0.011	-0.157			0.003
(t-statistic)	(5.68)	(-17.80)			
Coefficient	0.002		-0.047		0.000
(t-statistic)	(1.37)		(-1.47)		
Coefficient	0.008			-0.187	0.002
(t-statistic)	(4.18)			(-14.94)	
Coefficient	0.018	-0.177	-0.167	-0.202	0.005
(t-statistic)	(8.93)	(-19.58)	(-5.09)	(-16.13)	

Panel C: Regressions for Extended Balance Sheet Decomposition

$$SRET_{t+1} = \gamma_0 + \gamma_1\ \Delta CEQUITY_{BS,t} + \gamma_2\ \Delta PEQUITY_{BS,t} + \gamma_3\ \Delta LTDEBT_{BS,t} + \gamma_4\ \Delta CVDEBT_{BS,t} + \gamma_5\ \Delta NOTES_{BS,t} + \upsilon_{t+1}$$

	γ_0	γ_1	γ_2	γ_3	γ_4	γ_5	Adj. R^2
Coefficient	0.011	-0.157					0.003
(t-statistic)	(5.68)	(-17.80)					
Coefficient	0.003		-0.047				0.000
(t-statistic)	(1.37)		(-1.47)				
Coefficient	0.007			-0.182			0.001
(t-statistic)	(3.52)			(-12.25)			
Coefficient	0.003				-0.193		0.000
(t-statistic)	(1.68)				(-5.13)		
Coefficient	0.003					-0.140	0.000
(t-statistic)	(1.67)					(-5.82)	
Coefficient	0.018	-0.177	-0.167	-0.201	-0.216	-0.191	0.005
(t-statistic)	(8.92)	(-19.56)	(-5.08)	(-13.51)	(-5.76)	(-7.95)	

The sample consists of 128,609 firm-years from 1963 to 2000.

SRET is the annual size adjusted stock return. It is measured using compounded buy-hold returns, inclusive of dividends and other distributions. The size adjustment is made by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the year. Returns are calculated for a twelve-month period beginning four months after the end of the fiscal year. For firms that delist during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvest any remaining proceeds in the value-weighted market portfolio.

$\Delta XFIN_{BS}$ is net external financing obtained using the balance sheet approach. It is calculated as $\Delta CEQUITY_{BS}$ + $\Delta PEQUITY_{BS}$ + $\Delta DEBT_{BS}$. $\Delta XFIN_{BS}$ and all its components are deflated by average total assets.

$\Delta CEQUITY_{BS}$ is the change in common equity. It is defined as $CEQUITY_t - CEQUITY_{t-1} - INCOME_t$. Where CEQUITY is the book value of common equity (*Compustat* item #60) and INCOME is Net Income (*Compustat* item #172).

$\Delta PEQUITY_{BS}$ is the change in preferred equity. It is defined as $PEQUITY_t$ - $PEQUITY_{t-1}$. Where PEQUITY is the book value of preferred equity (*Compustat* item #130).

$\Delta DEBT_{BS}$ is the change in total debt. It is calculated as $\Delta LTDEBT_{BS}$ + $\Delta CVDEBT_{BS}$ + $\Delta NOTES_{BS}$.

$\Delta LTDEBT_{BS}$ is the change in long term debt, calculated as $LTDEBT_t - LTDEBT_{t-1}$ and LTDEBT is total long term debt (*Compustat* item #9) plus the current portion of long term debt (*Compustat* item #44) less convertible debt (*Compustat* item #79).

$\Delta CVDEBT_{BS}$ is the change in convertible debt, calculated as $CVDEBT_t - CVDEBT_{t-1}$ and CVDEBT is convertible debt (*Compustat* item #79).

$\Delta NOTES_{BS}$ is the change in notes payable, calculated as $NOTES_t - NOTES_{t-1}$ and NOTES is total short term debt (*Compustat* item #34) less the current portion of long term debt (*Compustat* item #44).

Table 9

Ordinary Least Squares Regressions of Size-Adjusted Future Returns on Net External Financing and its Components Using the Statement of Cash Flows Decomposition

Panel A: Base Case Regression

$$SRET_{t+1} = \gamma_0 + \gamma_1\, \Delta XFIN_{CF,t} + \upsilon_{t+1}$$

	γ_0	γ_1	Adj. R^2
Coefficient	0.011	-0.186	0.004
(t-statistic)	(4.71)	(-19.56)	

Panel B: Regressions for Initial Statement of Cash Flows Decomposition

$$SRET_{t+1} = \gamma_0 + \gamma_1\, \Delta EQUITY_{CF,t} + \gamma_2\, \Delta DEBT_{CF,t} + \upsilon_{t+1}$$

	γ_0	γ_1	γ_2	Adj. R^2
Coefficient	0.006	-0.159		0.002
(t-statistic)	(2.67)	(-14.83)		
Coefficient	0.002		-0.188	0.001
(t-statistic)	(1.07)		(-11.51)	
Coefficient	0.011	-0.172	-0.213	0.004
(t-statistic)	(4.69)	(-15.99)	(-12.96)	

Panel C: Regressions for Extended Statement of Cash Flows Decomposition

$$SRET_{t+1} = \gamma_0 + \gamma_1\, EQ\_ISS_{CF,t} - \gamma_2\, EQ\_REP_{CF,t} - \gamma_3\, DIVS_{CF,t} + \gamma_4\, LTD\_ISS_{CF,t} - \gamma_5\, LTD\_REP_{CF,t} + \gamma_6\, \Delta NOTES_{CF,t} + \upsilon_{t+1}$$

	γ_0	γ_1	γ_2	γ_3	γ_4	γ_5	γ_6	Adj. R^2
Coefficient	0.010	-0.172						0.002
(t-statistic)	(4.55)	(-15.26)						
Coefficient	-0.003		-0.163					0.000
(t-statistic)	(-1.21)		(-2.86)					
Coefficient	0.000			0.089				0.000
(t-statistic)	(0.03)			(1.84)				
Coefficient	0.013				-0.161			0.002
(t-statistic)	(5.22)				(-12.37)			
Coefficient	0.004					0.069		0.000
(t-statistic)	(1.48)					(4.47)		
Coefficient	-0.001						-0.001	0.000
(t-statistic)	(-0.56)						(-0.01)	
Coefficient	0.021	-0.183	-0.256	0.117	-0.267	-0.184	-0.033	0.005
(t-statistic)	(7.79)	(-16.06)	(-4.49)	(2.41)	(-14.33)	(-8.24)	(-0.88)	

The sample consists of 101,212 firm years from 1971 to 2000.

SRET is the annual size adjusted stock return. It is measured using compounded buy-hold returns, inclusive of dividends and other distributions. The size adjustment is made by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the year. Returns are calculated for a twelve-month period beginning four months after the end of the fiscal year. For firms that delist during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvest any remaining proceeds in the value-weighted market portfolio.

$\Delta XFIN_{CF}$ is net external financing obtained using the statement of cash flows approach. It is calculated as EQ_ISS_{CF} - EQ_REP_{CF} - $DIVS_{CF}$ + LTD_ISS_{CF} - LTD_REP_{CF} + $\Delta NOTES_{CF}$. $\Delta XFIN_{CF}$ and all of its components are deflated by average total assets.

$\Delta EQUITY_{CF}$ is net equity financing from the statement of cash flows approach. It is calculated as EQ_ISS_{CF} - EQ_REP_{CF} - $DIVS_{CF}$.

$\Delta DEBT_{CF}$ is net debt financing from the statement of cash flows approach. It is calculated as LTD_ISS_{CF} - LTD_REP_{CF} + $\Delta NOTES_{CF}$.

EQ_ISS_{CF} is the cash proceeds from the sale of common and preferred stock (*Compustat* item #108).

EQ_REP_{CF} is the cash payments for the purchase of common and preferred stock (*Compustat* item #115).

$DIVS_{CF}$ is the cash payments for dividends (*Compustat* item #127).

LTD_ISS_{CF} is the cash proceeds from the issuance of long term debt (*Compustat* item #111).

LTD_REP_{CF} is the cash payments for long term debt reductions (*Compustat* item #114).

$\Delta NOTES_{CF}$ is the net changes in current debt (*Compustat* item #301).

Table 10

Ordinary Least Squares Regressions of Size-Adjusted Future Returns on Net External Financing and its Components Using the Investment Decomposition

Panel A: Base Case Regression

$$SRET_{t+1} = \gamma_0 + \gamma_1\ \Delta XFIN_{BS,t} + \upsilon_{t+1}$$

	γ_0	γ_1	Adj. R^2
Coefficient	0.018	-0.186	0.005
(t-statistic)	(9.06)	(-24.54)	

Panel B: Regressions for Investment Decomposition

$$SRET_{t+1} = \gamma_0 + \gamma_1\ \Delta NOA_{BS,t} + \gamma_2\ \Delta CASH_{BS,t} - \gamma_3\ INCOME_{,t} + \upsilon_{t+1}$$

	γ_0	γ_1	γ_2	γ_3	Adj. R^2
Coefficient	0.022	-0.241			0.005
(t-statistic)	(10.68)	(-26.17)			
Coefficient	0.006		-0.111		0.001
(t-statistic)	(2.84)		(-9.81)		
Coefficient	0.003			-0.001	0.000
(t-statistic)	(1.39)			(-0.13)	
Coefficient	0.025	-0.251	-0.120	-0.058	0.006
(t-statistic)	(12.08)	(-26.92)	(-10.64)	(-5.20)	

The sample consists of 128,609 firm-years from 1963 to 2000.

SRET is the annual size adjusted stock return. It is measured using compounded buy-hold returns, inclusive of dividends and other distributions. The size adjustment is made by deducting the corresponding value-weighted return for all available firms in the same size-matched decile, where size is measured using market capitalization as of the beginning of the year. Returns are calculated for a twelve-month period beginning four months after the end of the fiscal year. For firms that delist during our future return window, we calculate the remaining return by first use the de-listing return from CRSP and then reinvest any remaining proceeds in the value-weighted market portfolio.

$\Delta XFIN_{BS}$ is net external financing obtained using the balance sheet approach. It is calculated as $\Delta NOA_{BS} + \Delta CASH_{BS}$ - INCOME. $\Delta XFIN_{BS}$ and all its components are deflated by average total assets.

ΔNOA_{BS} is the change in net operating assets, calculated as $NOA_t - NOA_{t-1}$ and NOA is equal to total short term debt (*Compustat* item #34) plus total long term debt (*Compustat* item #9) plus common equity (*Compustat* item #60) plus preferred equity (*Compustat* item #130) less cash and short-term investments (*Compustat* item #1).

$\Delta CASH_{BS}$ is the change in short-term investments, $CASH_t - CASH_{t-1}$ (*Compustat* item #1).

Note that $\Delta XFIN_{BS}$ obtained using the balance sheet decomposition in Table 2 is equivalent to $\Delta XFIN_{BS}$ obtained using the investment decomposition used in this table. To see this, note that using the definitions from Table 2, we can express ΔNOA_{BS} as:
$\Delta NOA_{BS} = \Delta CEQUITY_{BS} + \Delta PEQUITY_{BS} + \Delta DEBT_{BS} + INCOME - \Delta CASH_{BS}$, so:
$\Delta NOA_{BS} + \Delta CASH_{BS} - INCOME$
$= \Delta CEQUITY_{BS} + \Delta PEQUITY_{BS} + \Delta DEBT_{BS}$

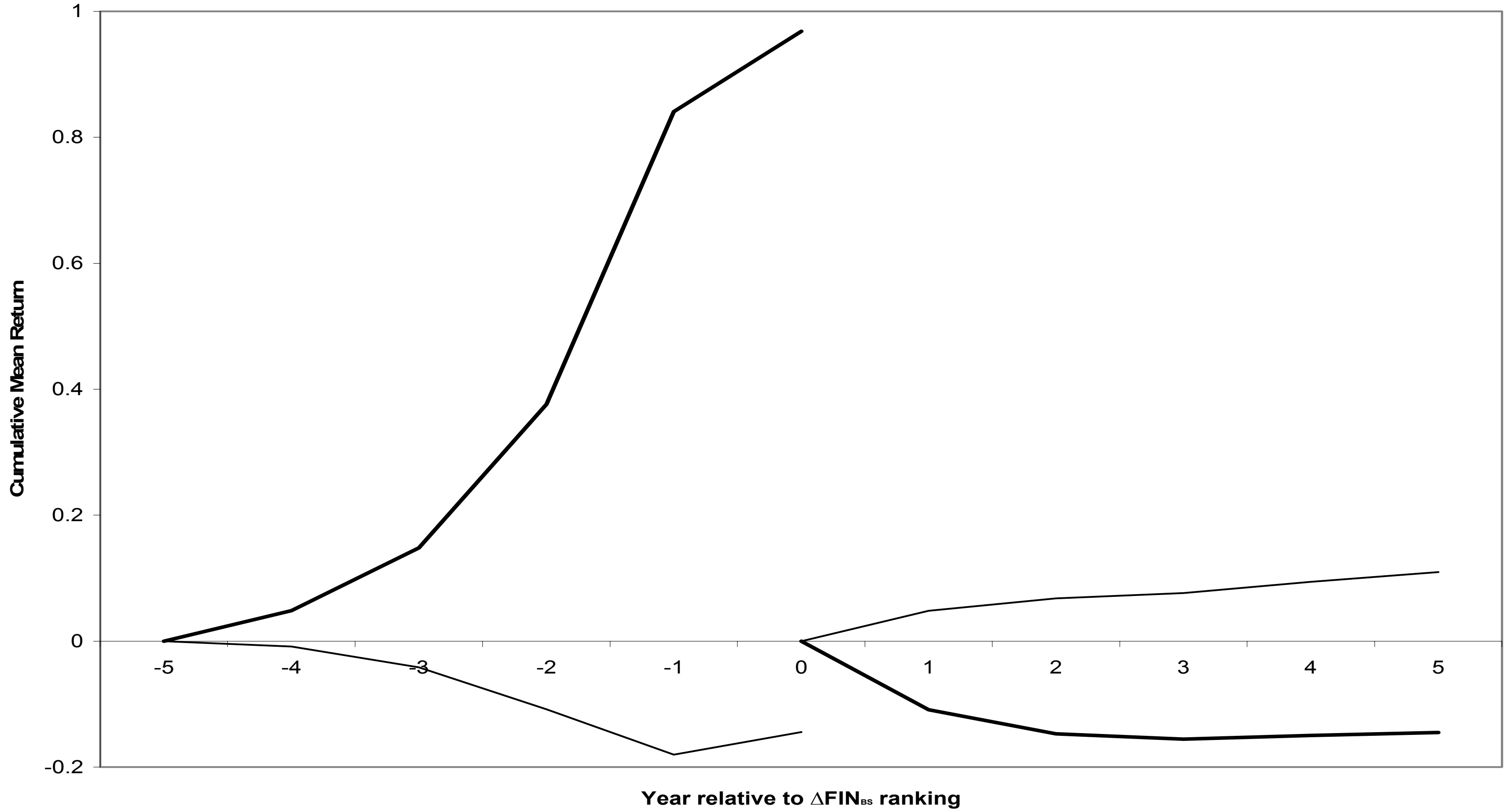

Figure 1: Cumulative returns surrounding net external financing activity using the balance sheet approach. The figure depicts mean cumulative returns (size-adjusted) for firms in the extreme deciles based on $\Delta XFIN_{BS}$. Firm-years are ranked in year 0 based on the magnitude of $\Delta XFIN_{BS}$. The bold (thin) line is for firm-years in the top (bottom) decile of $\Delta XFIN_{BS}$. The top (bottom) decile corresponds to firms who are issuing (repurchasing) the greatest amount of equity and debt. Cumulative returns are shown for two distinct windows. The left half of the figure shows returns in the period leading up to year 0. The right half of the figure captures cumulative returns following year 0. We calculate cumulative returns using the mean annual return for each year. This avoids introducing a hindsight bias by requiring firms to have 5 years of prior or future return data.

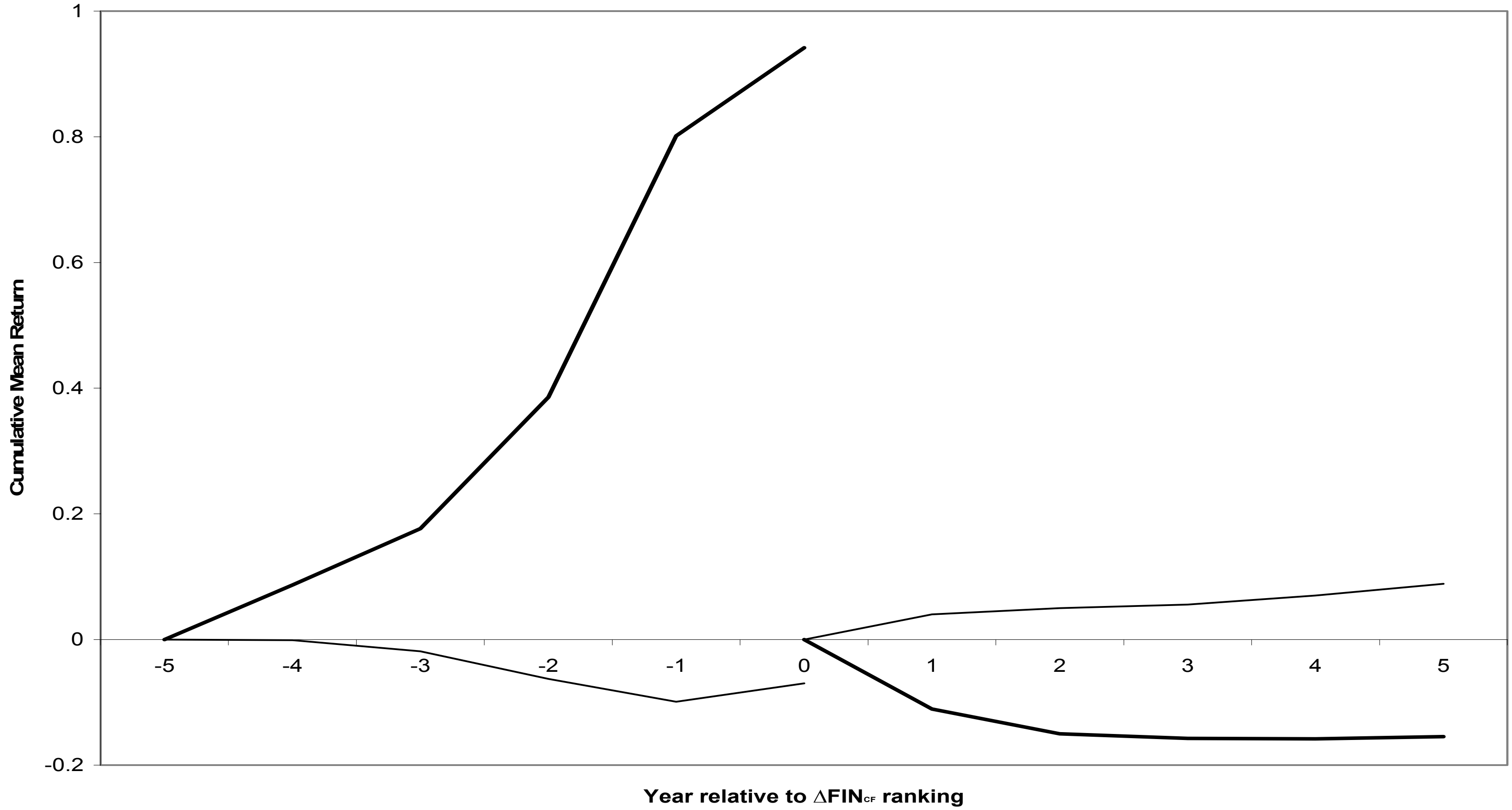

Figure 2: Cumulative returns surrounding net external financing activity using the statement of cash flows approach. The figure depicts mean cumulative returns (size-adjusted) for firms in the extreme deciles based on $\Delta XFIN_{CF}$. Firm-years are ranked in year 0 based on the magnitude of $\Delta XFIN_{CF}$. The bold (thin) line is for firm-years in the top (bottom) decile of $\Delta XFIN_{CF}$. The top (bottom) decile corresponds to firms who are issuing (repurchasing) the greatest amount of equity and debt. Cumulative returns are shown for two distinct windows. The left half of the figure shows returns in the period leading up to year 0. The right half of the figure captures cumulative returns following year 0. We calculate cumulative returns using the mean annual return for each year. This avoids introducing a hindsight bias by requiring firms to have 5 years of prior or future return data.