The External Financing Anomaly beyond Real Investment and Earnings Management*

F.Y. Eric C. Lam
Department of Finance and Decision Sciences
Hong Kong Baptist University
Kowloon Tong, Kowloon, Hong Kong
Email: fyericcl@hkbu.edu.hk
Tel: (852)-3411-5218
Fax: (852)-3411-5585

K.C. John Wei
Department of Finance
Hong Kong University of Science and Technology
Clear Water Bay, Kowloon, Hong Kong
Email: johnwei@ust.hk
Tel: (852)-2358-7676
Fax: (852)-2358-1749

This version: February 13, 2012

* We appreciate the helpful comments and suggestions from Chau Kin Au-Yeung, Santiago Bazdresch, James Brown, Pengjie Gao, Vidhan Goyal, Xiaoquan Jiang, Jung-Ho Lai, Chen Lin, Laura Liu, Michelle Lowry, Qinghao Mao, Hyun-Seung Na, Issac Otchere, Baozhi Qu, Douglas Rolph, Roberto Steri, Aris Stouraitis, Garry Twite, Tom Vinaimont, James Wang, Xueping Wu, Guochang Zhang, Shaojun Zhang, Hong Zou, finance doctoral research workshop participants at the Hong Kong University of Science and Technology, seminar participants at the City University of Hong Kong, and conference participants at the 2011 Annual Conference of the Multinational Finance Society in Rome, the 2010 Annual Meeting of the Financial Management Association International in New York, the 2010 China International Conference in Finance in Beijing, the 2010 Asian Finance Association International Conference in Hong Kong, the 2010 City University of Hong Kong International Conference on Corporate Finance and Financial Markets, the 2009 Annual Conference on Financial Economics and Accounting at Rutgers University, and the 2009 Conference on the Theories and Practices of Securities and Financial Markets at National Sun Yat-sen University, where this paper won the Best Research Award. The authors also thank Alice Cheung for editorial assistance. All remaining errors are ours. The previous version of the paper was titled "External financing, access to debt markets, and stock returns."

The External Financing Anomaly beyond Real Investments and Earnings Management

Abstract

Recent literature argues that the relation between overall external financing activities and future stock returns can be explained by the efficient real investment hypothesis and the accrual anomaly. We find that a measure of firms' external financing that is unrelated to overall investment and operation growth also predicts future stock returns. The predictability is mainly driven by the equity underperformance around earnings announcements of unrated firms that have high financing activities. These firms, which issue equity in addition to private debt, are among the smallest, youngest, and most unprofitable, and yet have the highest R&D spending and market-to-book ratios.

JEL Classification: G14, G31, G32, M41, M42

Keywords: Accruals; Asset growth; External financing; Cross-section of stock returns

1. Introduction

Extensive studies have documented a negative relation between corporate external financing activities and future stock returns. The relation holds across a wide range of individual external financing activities (Ritter, 2003) and overall equity financing activities (e.g., Daniel and Titman, 2006; Pontiff and Woodgate, 2008; and Fama and French, 2008). Bradshaw, Richardson, and Sloan (2006) find that *net* overall external financing activities negatively predict future stock returns more strongly than the individual activities. They argue that the result is consistent with the managerial market timing hypothesis suggested by Loughran and Ritter (1995, 2000) and Ritter (2003). The hypothesis argues that there exists a negative relation between net equity financing and future stock returns because firms successfully issue (repurchase) equity when it is overvalued (undervalued) to exploit temporary stock market mispricing. When equity is mispriced, firms deliberately choose to issue more equity in the external financing mix.

In a recent study, Butler, Cornaggia, Grullon, and Weston (2011) show that the *amount* of external financing is more important in predicting future stock returns than the equity-debt *composition* of external financing. They therefore argue that the negative relation is more likely attributable to the efficient real investment hypothesis (the *q*-theory of investment or the real options theory) instead of the timing hypothesis. The *q*-theory of investment (Cochrane, 1991, 1996; Li and Zhang, 2010) argues that when the expected return or cost of capital is lower and hence the net present values of projects are higher, firms increase capital investment. The real options theory (Berk, Green, and Naik, 1999; Carlson, Fisher, and Giammarino, 2004, 2006) predicts that when firms make capital investments, growth options are converted into less risky real assets. In response, the expected returns decrease. As capital investment is funded by and correlated with external financing, there exists a negative relation between external financing and future stock returns.

On the other hand, Cohen and Lys (2006) and Dechow, Richardson, and Sloan (2008) argue that the negative relation is a representation of the accrual anomaly that firms with higher accounting accruals have lower future stock returns (Sloan, 1996). They propose that the financing-return relation is explained by the earnings management hypothesis. This hypothesis argues that when firms have decided to increase (reduce) external financing, managers tweak their earnings upwards (downwards) through accounting accruals to increase (reduce) offering (distribution) proceeds.

In this paper, we examine the conclusiveness of the efficient real investment hypothesis and the earnings management hypothesis in explaining the financing-return relation. We construct a measure of *residual* net overall external financing that is unrelated to investment and operation growth, which are proxied by total asset growth and accruals, respectively. This residual financing measure retains the same ordering as the conventional financing measure and it is negatively related to future stock returns. The raw return spread between the low and high residual financing deciles is 0.66% per month, which is about half of the return spread based on the conventional measure. The negative *residual* financing-return relation is mostly driven by the underperformance of high financing firms. The findings are neither captured by the exposures to conventional risks, firm characteristics, the accrual risk factor, nor the asset-growth risk factor, and are not driven by performance delistings or delistings associated with negative returns (e.g., defaults or bankruptcies).

The negative relation holds only among firms that have limited access to the public debt market or are unrated by credit analysts. We find that the *proportion* of equity issuance or repurchase in the financing mix does predict future stock returns among these firms only when residual financing is positive. In addition, for firms raising funds, future stock returns are negatively related to the *level* of residual financing. These results suggest that among unrated firms raising external funds, the return predictability of residual financing might be consistent with the timing hypothesis. By contrast, for unrated firms distributing funds, we find that there is a positive relation between future stock returns and the *level* of residual external financing, while the ratio of equity to total funds distributed is not associated with future returns. These results suggest that among unrated firms distributing funds, the return predictability of residual financing are not compatible with either the timing hypothesis or the investment hypothesis.

Further analysis shows that the future abnormal stock returns on unrated high financing firms are significantly negative around earnings announcement dates but are insignificantly different from zero during other periods. Hence, it seems that investors are *ex-post* negatively surprised by these firms in a short window and the evidence is inconsistent with the systematic reductions in expected returns. Finally, the unrated firms with high residual financing are among the youngest, smallest, and most unprofitable, and have the highest market-to-book ratios in the cross-section. While these firms lack internal funding and has limited access to the public debt market, they rely on external financing to pursue intangible growth through heavy R&D spending. These firms issue equity in addition to private debt and they also issue the largest amount of net equities.

This paper contributes to the literature as follows. First, we show that the financing-return relation is largely unexplained by the prominent theories in the literature, namely the efficient real investment hypothesis and the earnings management hypothesis. Secondly, our findings provide a novel explanation for the financing-return relation that complements the current literature.

We find that the relation mainly comes from the severe underperformance of unrated firms that have weak fundamentals but pursue a highly risky growth strategy by raising funds externally and then investing heavily in R&D. These speculative firms are small, young, and unprofitable and are therefore difficult to value. At the same time, optimistic investors overvalue these firms temporarily due to the difference in opinions (Miller, 1977). The overvaluation is corrected when more fundamental information is revealed. Hence, there is a negative relation between external financing and future stock returns.

Brown, Fazzari, and Petersen (2009) find that R&D expenditures among high-tech firms are positively associated with contemporaneous cash flows and new stock issuance. They argue that both internal capital and external equity financing play important roles in promoting economic growth. In this respect, a market-based financial system might be superior to a bank-based financial system. We find that unrated high financing firms invest heavily in R&D but these firms lack internal funds and have limited access to public debt markets. As private debt is an important source of financing for these firms, our findings provide a broader view that both bank-based and market-based systems have their own merits in promoting economic growth.

The remainder of this paper is organized as follows. The next section develops our hypotheses. Section 3 describes our measurements of variables and our sample. Section 4 documents the relation between residual external financing and future stock returns. Section 5 examines the role of access to public debt markets in the financing-return relation. Section 6 tests whether managerial market timing or time-varying expected return explains the relation. Section 7 examines the characteristics of the drivers of the relation and proposes an explanation for it. Section 8 concludes the paper.

2. Literature Review and Hypothesis Development

Various studies have documented a negative relation between corporate external financing activities and future stock returns. As discussed at the outset, the relation holds across a wide range of individual external financing activities. Typically, transactions that raise capital are associated with lower future returns, while transactions that distribute capital are associated with higher future returns. More specifically, stock returns are lower following initial public offerings or seasoned equity offerings (e.g., Ritter, 1991; Loughran and Ritter, 1995, 1997), debt offerings (Spiess and Affleck-Graves, 1999), and bank borrowings (Billett, Flannery, and Garfinkel, 2005). On the other hand, stock returns are higher following stock repurchases (Ikenberry, Lakonishok, and Vermaelen, 1995), dividend initiations (Michaely, Thaler, and Womack, 1995), and debt repayments (Affleck-Graves and Miller, 2006).

The negative relation also holds for overall equity financing activities. Daniel and Titman (2006), Pontiff and Woodgate (2008), and Fama and French (2008) find that net stock issuance and future stock returns are negatively related. McLean, Pontiff and Watanabe (2009) document that equity issuance predicts cross-sectional stock returns in 41 countries outside the United States. Furthermore, Bradshaw, Richardson, and Sloan (2006) find that net overall external financing activities, measured by the net amount of cash that a firm raises (distributes) from (to) equity and debt markets, are negatively related to future stock returns and are stronger than those based on the individual categories of external financing activities.[1]

The negative relation holds for net cash flow not only from equity but also from debt financing. In addition, the errors in analysts' forecasts are more negative but stock

[1]Using the event study approach, Billett, Flannery, and Garfinkel (2011) show that stock return underperformance following external financing occurs only for subsequent financing events but not for initial financing events. Furthermore, the underperformance occurs only for the issuance of multiple types of security and not for the issuance of a single type of security.

recommendations are better for firms with higher external financing. Bradshaw, Richardson, and Sloan (2006) therefore argue that these results are inconsistent with the wealth transfer hypothesis (Eberhart and Siddique, 2002) or the issuer risk hypothesis (e.g., Eckbo, Masulis, and Norli, 2000; Brav, Geczy, and Gompers, 2000; Eckbo and Norli, 2005). However, they are consistent with the managerial market timing hypothesis.[2] That is, when equity is mispriced, firms deliberately choose to involve more equity in the external financing mix.

Butler, Cornaggia, Grullon, and Weston (2011) find that the negative relation is attributable to the efficient real investment hypothesis rather than the timing hypothesis. The investment hypothesis offers two explanations. First, the *q*-theory of investment argues that when the expected return is lower, firms invest more.[3] Second, the real option theory predicts that when firms invest, growth options are converted into less risky real assets and in response the expected returns decrease. As capital investment is funded by and correlated with external financing, there exists a negative relation between external financing and future stock returns. The investment hypothesis predicts that the external financing *amount* matters more, while the timing hypothesis predicts that the financing *composition* matters more.

On the other hand, the accounting literature argues that the negative relation is a manifestation of the accrual anomaly documented by Sloan (1996). Richardson and Sloan (2003) find that the financing-return relation is stronger when cash proceeds are invested in net operating assets, but is weaker when the proceeds are used for refinancing, retained as financial assets, or immediately expensed. Cohen and Lys (2006) observe that external financing is positively correlated with accruals and the financing-return relation becomes less significant

---

[2]The transfer hypothesis predicts a positive relation between debt financing and future stock returns. The risk hypothesis requires investors to fully anticipate the changes in fundamentals signaled by external financing.

[3] Also see Xing (2008), Li, Livdan, and Zhang (2009), Liu, Whited, and Zhang (2009), Chen, Novy-Marx, and Zhang (2010).

when accruals are controlled for in multivariate regressions. Dechow, Richardson, and Sloan (2008) show that the financing-return relation is less significant when reinvested earnings (i.e., the sum of accruals and the change in cash) are controlled for in portfolio analysis. Papanastasopoulos, Thomakos, and Wang (2008) further show that the overlap between the financing-return relation and the accrual-return relation is due to capital investment related accruals.

As a result, the accounting literature proposes that the financing-return relation is explained by the earnings management hypothesis (e.g., Rangan, 1998; Teoh, Welch, and Wong, 1998; Shivakumar, 2000). This hypothesis argues that when firms have decided to increase (reduce) external financing, managers tweak their earnings upwards (downwards) through accounting accruals to increase (reduce) offering (distribution) proceeds. The overlap between the financing-return and the accrual-return relation is also predicted by the *q*-theory of investment. Wu, Zhang, and Zhang (2010) argue that firms increase accruals or working capital investment when the expected return or cost of capital is lower and hence the net present values of projects are higher. Since working capital investment is funded by and correlated with external financing, there exists a negative relation between external financing and future stock returns.

Since external financing is highly positively correlated with overall investment and operation growth, we use *residual* external financing that is unrelated to overall investment and operation growth to test whether the above competing hypotheses truly explain the external financing anomaly. Our first hypothesis is stated as follows.

H_1. If the external financing anomaly can be explained away by the investment hypothesis or the earnings management hypothesis or both, residual external financing should not predict future stock returns.

We then test whether the timing hypothesis can explain the relation between *residual* external financing and future stock returns. Similar to Butler, Cornaggia, Grullon, and Weston (2011), if firms successfully issue (repurchase) overvalued (undervalued) equity and deliberately choose to involve more equity in the external financing mix, the equity-debt *composition* of external financing should be more important than the *amount* of residual external financing in predicting future stock returns. This leads to our second hypothesis.

H_2. If the timing hypothesis can explain the residual external financing anomaly, the equity-debt *composition* of external financing should have a stronger association with future stock returns than does the *amount* of residual external financing.

Finally, we test whether the time-varying expected returns can explain the relation between future stock returns and *residual* external financing. Firms might become less risky after high residual financing activities. That is, firms may convert intangible growth options to less intangible growth opportunities and/or to tangible assets in place that are not captured by our proxies for investment and operation growth. Therefore, the costs of capital should reduce and we would observe uniformly lower *ex-post* average stock returns on these firms during the holding period. We follow La Porta, Lakonishok, Shleifer, and Vishny (1997) to separately examine the abnormal stock returns around earnings announcement dates and other periods. This leads to our final hypothesis.

H_3. The relation between *residual* external financing and future stock returns is negative and has the same strength whether it is around earnings announcement dates or during other periods.

3. Variable Measurements and Sample Description

Following Bradshaw, Richardson, and Sloan (2006), we use the net amount of cash flow from external financing activities ($\Delta XFIN$) as a composite measure of annual net external financing. $\Delta XFIN$ is the sum of net cash flow from both equity and debt financings between fiscal year-end $t-2$ to fiscal year-end $t-1$, scaled by average total assets over the period. This measure automatically accounts for refinancing transactions, such as cash proceeds of equity issuance that are used to retire debt. Net cash flow from equity financing ($\Delta EQUITY$) is the cash proceeds from sales of common and preferred stocks (Compustat annual data item #108) less cash payments for purchases of common and preferred stocks (item #115) less cash payments for dividends (item #127). $\Delta EQUITY$ is a measure of how much capital a firm raises (distributes) from (to) the stock market. Net cash flow from debt financing ($\Delta DEBT$) is the cash proceeds from the issuance of long-term debt (item #111) less cash payments for long-term debt reductions (item #114) plus the net changes in current debt (item #301, set to zero if it is missing).[4] $\Delta DEBT$ is a measure of how much capital a firm raises (distributes) from (to) the debt market. $\Delta XFIN$ measures how much capital a firm raises (distributes) from (to) the capital markets.

[4] Setting a missing value in item #301 to zero provides us with a much larger sample. Bradshaw, Richardson, and Sloan (2006) find that the relation between $\Delta XFIN$ and future stock returns is qualitatively similar among firms with item #301 available.

Following Cohen and Lys (2006), we use total accruals (*TAC*) to measure annual accounting accruals or working capital investment. *TAC* is the change in non-cash assets (the change in item #6 less the change in item #11) less the change in non-debt liabilities (the change in item #181 less the change in item #9 less the change in item #34) between fiscal year-end t–2 to fiscal year-end t–1, scaled by the average of total assets over the period. Our results remain similar when total accruals are replaced by discretionary accruals as in Xie (2001). Following Fama and French (2006, 2008) and Cooper, Gulen, and Schill (2008), we use total asset growth (*TAG*) to measure annual overall capital investment and operation growth. *TAG* is calculated as the percentage of growth of total assets (item #6) from fiscal year-end t–1 to fiscal year-end t.

We construct an annual net external financing measure for firm k whose cross-sectional variation is unrelated to variations in investment and operation growth using the following contemporaneous firm-level cross-sectional regression:

$$\Delta XFIN_{k,t-1} = \alpha_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1}, \tag{1}$$

where $k = 1,.., N_{t\text{-}1}$ and $N_{t\text{-}1}$ is the total number of firms in the regression in year t-1. We define the residual value ($\varepsilon_{k,t\text{-}1}$) of the above regression as the annual *residual* external financing activities, denoted as $\Delta XFIN_r$. $\Delta XFIN_r$ represents the part of annual net external financing that is cross-sectionally uncorrelated with total accruals and total asset growth.

We start with all domestic firms listed on NYSE, AMEX, and Nasdaq. Financial statement figures are from Compustat. Stock market data are from the Center of Research in Security Prices (CRSP). Like Fama and French (1992, 1993), we exclude certificates, ADRs, SBIs, unit trusts, closed-end funds, REITs, and financial firms. We also require a firm to have appeared in Compustat for at least two years in order to mitigate the potential survivorship or selection bias inherent in the way Compustat adds firms to its database. We delete firms for which the data necessary for us to compute variables of interest are unavailable. The sample consists of firm-level financial statement data from 1971 to 2006 and monthly stock returns from May of 1972 to December of 2007.[5] The sample consists of 111,845 firm-year observations over the whole sample period with an average of 3,107 firms per year.

We first form portfolios to confirm that our sample is consistent with previous studies. To ensure that investors had access to the necessary financial information, all stocks with available data are grouped into decile portfolios at the end of April of each year *t* based on a sorting variable of interest.[6] More specifically, we match monthly stock returns between May of year *t* and April of year *t*+1 with financial statement figures of the fiscal year ending in calendar year *t*–1. These portfolios are equally weighted and are not rebalanced over the twelve-month holding period. Delisting returns are used to mitigate the survivorship bias.[7]

We use three approaches to compute the adjusted returns. First, we use the size-adjusted returns (Ret_{SZ}) to control for the firm size (*SZ*) characteristic by subtracting the returns on the ten size-matching benchmark portfolios from the raw stock returns (*Ret*). The size-matching benchmark portfolios are formed at the end of April every year using market capitalization at the end of April. Second, we use the size and book-to-market adjusted returns ($Ret_{SZ,BM}$) to control for the firm size (*SZ*) and book-to-market equity (*BM*) characteristics by subtracting the returns on Fama and French's (1992) 25 size and book-to-market matching benchmark portfolios from the raw stock returns.[8] The size and book-to-market benchmark portfolios are

[5] Relevant cash flow data for calculating Δ*XFIN* have become widely available from Compustat since 1971.
[6] We form portfolios at the end of April instead of June in order to make our results comparable to the literature on the external financing anomaly. The results remain the same when portfolios are formed at the end of June.
[7] Shumway (1997) suggests that the delisting returns of stocks delisted due to poor performance (delisting codes 500 to 584) are usually not available. We use delisting returns of –100% for these firms. Studies in the literature do the same. Nevertheless, we will perform a robustness check on this adjustment.
[8] These adjustments of characteristics are made to accommodate the possibilities that firm size and/or book-to-market equity are priced into stock returns as characteristics rather than as the systematic factor risks they proxy for. See Daniel and Titman (1997) and Daniel, Titman, and Wei (2001) for more details.

formed at the end of April every year using market capitalization at the end of April and book-to-market equity at the end of the previous December. Third, to control for factor risks, we estimate the intercept (α, called the risk-adjusted return) from the following regression with Fama and French's (1993) three risk factors and the Carhart (1997) momentum factor as the explanatory variables:

$$R_{p,t} - R_{f,t} = \alpha_p + b_{p,Mkt} R_{Mkt,t} + s_{p,SMB} R_{SMB,t} + h_{p,HML} R_{HML,t} + m_{p,MOM} R_{MOM,t} + \varepsilon_{p,t}, \qquad (2)$$

where R_p is the raw return on portfolio p and R_f is the risk-free rate. R_{Mkt}, R_{SMB}, and R_{HML} are returns on the market, size, and book-to-market factors, respectively, as constructed by Fama and French (1993). R_{MOM} is the return on the momentum factor as constructed by Carhart (1997). Factor returns and the risk-free rates are obtained from Professor Kenneth French's website.

Panel A of Table 1 presents returns on decile portfolios based on external financing $\Delta XFIN$. High external financing firms (Decile 10) and low external financing firms (Decile 1) differ by more than 62% in financing activities relative to their total assets. Consistent with Bradshaw, Richardson, and Sloan (2006), we find that subsequent size-adjusted returns on high external financing firms are significantly lower than those on low external financing firms by 1.22% per month. This return spread pattern is robust to alternative return measures.[9] Panels B and C of Table 1 present returns on decile portfolios based on total accruals and total asset growth, respectively. Consistent with the literature, we find that subsequent stock returns are significantly lower on high total-accrual firms than on low total-accrual firms. We also find that subsequent returns are significantly lower on high total-asset-growth firms than on low total-asset-growth firms.

[Insert Table 1 here]

[9] The risk-adjusted returns across $\Delta XFIN$ deciles are also similar to the CAPM alphas or the three-factor alphas of Bradshaw, Richardson, and Sloan (2006).

External financing, total accruals, and asset growth are highly correlated. For example, high external financing firms have significantly higher total accruals and total asset growth than do low external financing firms. Similar patterns are found for accrual portfolios and asset growth portfolios. However, the spreads in accruals (31% relative to the existing asset base) and the spreads in asset growth (88%) between high and low external financing firms are much smaller than the spreads in accruals (70%) and the spreads in asset growth (159%) across their own decile rankings.

Total accruals of high and low external financing deciles are 26.98% and -4.43%, respectively. Based on the accrual-return relation, this accrual spread represents a size-adjusted-return spread of 0.68% per month, which is approximately 72% of the return spread between the two extreme external financing deciles. The asset growths of high and low external financing deciles are 87.64% and -0.34%, respectively. Based on the asset growth-return relation, this asset growth spread represents a spread of 0.45% per month in the size and book-to-market adjusted return. This return spread is only about 47% of that between the two extreme external financing deciles. These results suggest that the cross-sectional variation in external financing may contain extra information beyond accruals and asset growth in predicting future stock returns.

4. Residual External Financing and Stock Returns

4.1. Portfolio Analysis

We test whether the residual external financing is related to future stock returns (H_1) by examining the returns on decile portfolios sorted by the residual external financing $\Delta XFIN_r$. Panels A and B of Table 2 report the key findings. There is significant cross-sectional variation in $\Delta XFIN_r$ and it has the same ordering as the conventional external financing measure $\Delta XFIN$. The variation in $\Delta XFIN$ across the ranking by $\Delta XFIN_r$ is also significant.

[Insert Table 2 here]

Stock returns are significantly lower on high $\Delta XFIN_r$ firms (Decile 10) than on low $\Delta XFIN_r$ firms (Decile 1) by 0.48% to 0.87% per month depending on the measure of returns. The return spreads are mainly driven by the underperformance of high $\Delta XFIN_r$ firms. The return spreads are approximately half of the return spreads between the high and low $\Delta XFIN$ deciles (see Panel A, Table 1). That is, about half of the stock return predictability in the conventional measure of external financing is captured by our residual external financing variable. In addition, the return spreads between firms in $\Delta XFIN_r$ Deciles 2 and 9 are also significant.

Although the spread in accruals between the high and low $\Delta XFIN_r$ decile portfolios is significant at the 5% level, it is only 1.5% of the existing asset base, which is economically small compared with the accrual spread of 70% between accrual Deciles 1 and 10 (see Panel B, Table 1). If we match the accruals of the low and high $\Delta XFIN_r$ deciles with the corresponding accrual deciles, the return differential between the low and high $\Delta XFIN_r$ deciles derived from the accrual-return relation is about 0.10% per month based on the risk-adjusted return. This translates into about 18% of the return spread between the high and low $\Delta XFIN_r$ deciles. On the other hand, the spread in asset growth between these two deciles is insignificant.[10]

To check the robustness of the risk-adjusted return, we augment the regression equation (2) with the accrual factor and the asset growth factor. Like Fama and French (1993) and Lyandres, Sun, and Zhang (2008), at the end of June each year, we sort all stocks independently into size

---

[10] We also perform our test by examining the returns on quintile portfolios sorted by $\Delta XFIN_r$. The untabulated results show that, similar to the decile portfolios, stock returns are significantly lower on high $\Delta XFIN_r$ firms (Quintile 5) than on low $\Delta XFIN_r$ firms (Quintile 1) and the return spreads are also mainly driven by the underperformance of high $\Delta XFIN_r$ firms.

terciles, book-to-market equity terciles, and accruals or asset growth terciles. The accrual (or asset growth) factor is constructed as the equal-weighted average of the returns on the nine low accrual (or asset growth) portfolios minus the equal-weighted average of the returns on the nine high accrual (or asset growth) portfolios. Averaging over size terciles and book-to-market equity terciles to construct the extreme accrual (or asset growth) portfolios controls for the size and book-to-market effects. During our sample period, the average monthly return on the accrual factor is 0.54% (*t*-statistic = 8.44) and the average monthly return on the asset growth factor is 0.47% (*t*-statistic = 6.28).

The results are reported in Columns 6 to 8 of Panels B in Table 2. The spreads in risk-adjusted returns, $\alpha_{FF,TAC}$, $\alpha_{FF,TAG}$, and $\alpha_{FF,TAC,TAG}$, based on regression equation (2) augmented with the accrual factor alone, the asset growth factor alone, and both factors together, respectively, are significant at the 1% level. Similar to the previous results reported in Columns 3 to 5, the return spreads based on the alternative risk-adjusted returns are mainly driven by the underperformance of high $\Delta XFIN_r$ firms. Results (unreported) are very similar when the accrual and asset growth factors are formed from value-weighted portfolios. When the additional factors are value weighted, the estimated intercepts are around 0.70%, which is slightly lower than those reported in Table 2.

To examine whether the underperformance of high $\Delta XFIN_r$ firms might be driven by subsequent performance delistings or delistings associated with negative returns (e.g., defaults or bankruptcies), we exclude firms that are associated with these events from the portfolios and repeat the analysis. Panel C of Table 2 reports the results. Although the returns on the high $\Delta XFIN_r$ decile become slightly less negative, they remain significant. The return spreads between the high and low $\Delta XFIN_r$ decile portfolios also remain significantly positive. The results suggest that the relation between $\Delta XFIN_r$ and future stock returns is not driven by performance delistings or delistings associated with negative returns.

4.2. Alternative Measures for Residual External Financing

External financing, accruals, and asset growth may occur in sequential years. That is, if firms engage in earnings management, they are likely to raise accruals in the year prior to raising external financing. To examine the effect of the possible non-synchronicity of past corporate events on the relation between the residual net external financing and future stock returns, we modify equation (1) to include lagged accruals and/or lagged asset growth:

$$\Delta XFIN_{k,t-1} = \alpha_0 + a_1 TAC_{k,t-1} + a_2 TAC_{k,t-2} + a_3 TAG_{k,t-1} + a_4 TAG_{k,t-2} + \varepsilon_{k,t-1}. \quad (3)$$

We consider four cases: (1) lagged accruals and concurrent asset growth; (2) concurrent accruals and lagged asset growth, (3) lagged accruals and lagged asset growth, and (4) the full model of equation (3). Unreported results indicate that the orthogonalization effect in Cases (1) to (3) is not as strong as that based on equation (1), although the effect in Case 4 is similarly strong. Our main results on return predictability remain unchanged. In particular, the return spreads between the high and low $\Delta XFIN_r$ decile portfolios remain significantly positive. The spreads are also mainly driven by the significantly negative returns on the high $\Delta XFIN_r$ firms. The results suggest that the relation between $\Delta XFIN_r$ and future stock return is robust to the inclusion of lagged accruals and asset growth.[11]

4.3 Year-by-year Returns on a Hedge Portfolio Based on Residual Net External Financing

[11] We also consider a case where *TAG* in equation (1) is replaced with ln*TAG* to compute residual external $\Delta XFIN$. The unreported results indicate that our main finding and conclusion remain unchanged.

To examine the time variation of the return spread between firms with extreme residual external financing and the persistence of the negative relation between $\Delta XFIN_r$ and stock returns, we examine the time series of year-by-year returns on the $\Delta XFIN_r$-hedged portfolio. The hedged portfolio is formed by longing low $\Delta XFIN_r$ stocks (Decile 1) and shorting high $\Delta XFIN_r$ stocks (Decile 10) at the end of April and is rebalanced every year.

Table 3 presents the annual returns from May 1972 to April 2007 and from April 2007 to December 2007.[12] The average annual raw return on the $\Delta XFIN_r$-hedged portfolio is statistically significant with a mean of 8.53%. In addition, the low $\Delta XFIN_r$ decile portfolio outperforms the high $\Delta XFIN_r$ decile portfolio in about 78% of the years in the sample. The results suggest that the relation between $\Delta XFIN_r$ and future stock returns is persistent and is unlikely due to pure chance.

[Insert Table 3 here]

4.4. Multivariate Analysis: Fama-MacBeth Regressions

We examine the relation between $\Delta XFIN_r$ and future stock returns while controlling for accruals and asset growth with the following Fama-MacBeth (1973) type regression:

$$R_{k,SZ,BM,t} = b_0 + b_1 \Delta XFIN_{k,t-1} + b_2 \Delta XFIN_{r,k,t-1} + b_3 TAC_{k,t-1} + b_4 TAC_{r,k,t-1} + b_5 TAG_{k,t-1} + \varepsilon_{k,t}, \quad (4)$$

where all variables are defined previously except TAC_r and $R_{k,SZ,BM,t}$. The regression is estimated cross-sectionally every year between 1972 and 2007. $R_{k,SZ,BM,t}$ is the annualized size and book-to-market adjusted return on stock k between May of year t and April of year t+1 (between May and December for year 2007).[13] TAC_r is the residual value from the following contemporaneous cross-sectional regression:

$$TAC_{k,t-1} = c_0 + c_1 TAG_{r,k,t-1} + \varepsilon_{k,t-1}. \quad (5)$$

[12] To make the returns comparable across years, the return from May to December in 2007 is multiplied by 1.5.
[13] To make the returns comparable across years, the return from May to December in 2007 is also multiplied by 1.5.

The variable TAC_r represents the cross-sectional variation in accruals that is uncorrelated with variation in asset growth. As accruals and asset growth are correlated, we use TAC_r instead of accruals in our multivariate regression setting to avoid multicollinearity problems.[14]

Table 4 reports the time-series averages of the annual coefficient estimates and the individual *t*-statistics for testing the null hypothesis that the true coefficient is zero. We adjust the standard errors of the coefficient estimates for autocorrelations according to Newey and West (1987). We find that the previous results from portfolio analysis are robust. In univariate regressions (Models 1, 2, 3, and 5 in Table 4), the slope coefficients of $\Delta XFIN$, $\Delta XFIN_r$, TAC, and TAG are all significantly negative.[15] The slope coefficient of TAC_r is also significantly negative.[16]

[Insert Table 4 here]

The multivariate regression results in the last row show that the slope coefficient of $\Delta XFIN_r$ remains highly significantly negative when TAC_r and TAG are simultaneously controlled for.[17] Our findings illustrate that the relation between $\Delta XFIN_r$ and future stock returns exists in addition to the accrual-return relation and the asset growth-return relation. The results (unreported) are qualitatively similar when the size and book-to-market adjusted stock return is replaced by raw stock returns or size-adjusted stock returns.

The results in this section show that there is external financing variation that is unrelated to variations in overall investment and operation growth but is robustly related to future stock

[14] By construction, $\Delta XFIN_r$ is uncorrelated with both TAC (hence TAC_r) and TAG in the contemporaneous cross section.

[15] The slope coefficient estimate of $\Delta XFIN$ (unreported) is very close to the estimate based on annualized size-adjusted returns between May of 1972 and April of 2001 in Panel A of Table 5 of Bradshaw, Richardson, and Sloan (2006).

[16] The slope estimate of TAC_r is only slightly smaller than that of TAC, so it is fair to believe that TAC_r captures a significant portion of the accruals-return relation.

[17] The result is qualitatively similar when we replace TAC_r with TAC. However, the significance level of the slope coefficient estimate of TAG becomes lower. When we run the regression with $\Delta XFIN$, TAC, and TAG on the right hand side, we find that the slope coefficient estimates of $\Delta XFIN$ and TAC remain negative and significant but become much smaller while the slope coefficient estimate of TAG becomes very small and insignificant. That is, without first orthogonalizing $\Delta XFIN$ to TAC and TAG as in equation (1), the incremental role of $\Delta XFIN$ on top of TAC and TAG in predicting future stock returns is unclear.

returns. Hence the external financing-return relation is not fully explained by the two prominent explanations, namely the efficient real investment hypothesis and the earnings management hypothesis.

5. The Role of Access to Public Debt Markets in the Residual Financing-Return Relation

Faulkender and Petersen (2006) argue that a firm's capital structure decision is related to its sources of capital and they find that firms with better access to public debt markets, as proxied by the availability of credit rating, have more debt financing. The implication is that firms with better access to public debt markets prefer issuing debt to raise external financing. The different preferences for the external financing mix due to the availability of capital sources motivates us to examine the relation between residual external financing and future stock returns separately for firms that have ready access to public debt markets and those that have limited access.

We first construct a firm-level credit rating dummy variable. The rating dummy is zero (unrated) if a firm has never had an S&P long-term credit rating in the Compustat database in the sample period and one (rated) otherwise.We then examine the $\Delta XFIN_r$-return relation in each of the rated and unrated group of firms. Table 5 reports the results. Among rated firms (Panel A), the future adjusted stock returns on high $\Delta XFIN_r$ stocks (Decile 10) are negative but there is no return spread between low and high $\Delta XFIN_r$ firms. On the other hand, among unrated firms (Panel B), the adjusted returns on high $\Delta XFIN_r$ stocks are significantly negative and the return spreads between firms with extreme residual external financing are significantly positive. Moreover, unrated high $\Delta XFIN_r$ firms underperform significantly more than rated high $\Delta XFIN_r$ firms. The findings based on quintiles (Panels D to F) are similar. The results show that while the relation between residual external financing and future stock returns holds among firms that have limited access to public debt markets, it does not hold among firms that have ready access to public debt markets.

[Insert Table 5 here]

6. Do Managerial Market Timing and Time-varying Expected Returns Explain the Residual Financing-Return Relation?

6.1. Equity-debt Composition of the External Financing and Future Stock Returns on Unrated Firms

To test whether the equity-debt *composition* of the external financing has a stronger association with future stock returns than the *amount* of the residual external financing (H_2), we perform the following Fama-MacBeth (1973) type regression among unrated firms:

$$R_{k,SZ,BM,t} = b_0 + b_1 ER_{k,t-1} \times \Delta XFIN^{-}_{r,k,t-1} + b_2 ER_{k,t-1} \times \Delta XFIN^{+}_{r,k,t-1} + b_3 \Delta XFIN_{r,k,t-1} \times \Delta XFIN^{-}_{r,k,t-1} + b_4 \Delta XFIN_{r,k,t-1} \times \Delta XFIN^{+}_{r,k,t-1} + \varepsilon_{k,t}, \quad (7)$$

where all variables are defined previously except *ER*, $\Delta XFIN_r^-$, and $\Delta XFIN_r^+$. *ER* is the equity-debt ratio of external financing, which is the ratio of $\Delta EQUITY$ to ($\Delta EQUITY + \Delta DEBT$). $\Delta XFIN_r^-$ is a dummy variable that equals 1 if $\Delta XFIN_r$ is negative and 0 otherwise. It indicates whether a firm has negative residual external financing activities. $\Delta XFIN_r^+$ is a dummy variable that equals 1 if $\Delta XFIN_r$ is positive and 0 otherwise. It indicates whether a firm has positive residual external financing activities.

Both the timing hypothesis and the efficient real investment hypothesis predict that future stock returns should be negatively related to the *level* of the residual external financing. That is, the timing hypothesis suggests that coefficients b_3 and b_4 should both be negative. This hypothesis further predicts that (i) the stocks of unrated firms raising funds ($\Delta XFIN_r^+ = 1$) should underperform more when more equity is involved in financing activities and hence b_2 should also be negative; and (ii) the stocks of unrated firms distributing funds ($\Delta XFIN_r^- = 1$) should outperform more when more equity is involved in financing activities and hence b_1 should be positive. By contrast, the efficient real investment hypothesis predicts that both b_1 and b_2 are zero. Thus, b_1 and b_2 can be used to distinguish the timing hypothesis from the investment hypothesis.

The result in Model 1 of Table 6 indicates that b_1 is insignificant, while b_2 is significantly negative (b_2 = -0.006 with *t*-statistic = -2.89). The result suggests that the equity-debt *composition* of overall external financing matters in predicting negative future stock returns among unrated firms raising funds (i.e., b_2). But for firms distributing funds, the equity-debt *composition* is not important in predicting future returns. When the level of residual financing activities is included in the regression (Model 2), b_2 is still significant although it is reduced by half. In addition, while b_4 is significantly negative (b_4 = -0.208 with *t*-statistic = -5.06), b_3 is positive and marginally significant at the 10% level (b_3 = 0.072 with *t*-statistic = 1.94). The result suggests that when unrated firms raise capital, the *level* of residual external financing predicts negative future returns. On the other hand, when unrated firms distribute funds, the *level* of residual external financing predicts positive future returns.

Overall, our result suggests that among unrated firms that have positive residual financing, not only the *level* of residual financing but also the *ratio* of the equity-debt mix are important in predicting future *negative* returns. In this regard, the finding seems to be more consistent with the timing hypothesis than the real investment hypothesis for unrated firms raising positive residual external funds. However, the finding of no relation between the *mix* of residual financing and future returns seems to be inconsistent with the timing hypothesis for unrated firms that have negative residual financing. Besides, the finding of a positive relation between the *level* of residual financing and future returns seems to be inconsistent with both hypotheses for unrated firms that have negative residual financing.

[Insert Table 6 here]

6.2. Stock Returns of Unrated Firms with Extreme Residual External Financing around Earnings Announcements

We test whether the relation between the residual external financing and future stock returns is negative and has a similar strength around earnings announcement dates versus during other periods (H_3). We define the abnormal daily return on a stock as the daily return in excess of that on an equal-weighted or value-weighted market portfolio. We then identify the earnings announcement dates (item rdqe) from the quarterly Compustat data files. After grouping unrated stocks into decile portfolios based on the residual external financing $\Delta XFIN_r$, we compute the mean abnormal daily stock return Ret_{EAD} for the three-day window centered on each of the four quarterly earnings announcements in the one-year holding period. We include a firm only if it has at least one daily return available in each three-day window. We also compute the mean abnormal daily return Ret_{other} for the rest of the year.

Table 7 reports the findings based on the equal-weighted (Panel A) and value-weighed (Panel B) market portfolios. For unrated firms with low $\Delta XFIN_r$ (Decile 1), both the average Ret_{EAD} and Ret_{other} are insignificant. For unrated firms with high $\Delta XFIN_r$ (Decile 10), Ret_{EAD} is significantly negative but Ret_{other} is insignificant. The spreads in Ret_{EAD} between unrated firms with extreme residual external financing are significantly positive but the spreads in Ret_{other} are insignificant. The result suggests that the $\Delta XFIN_r$-return relation, which is mostly driven by the underperformance of unrated high $\Delta XFIN_r$ stocks, holds within short windows around quarterly earnings announcements. More specifically, about 43% of the holding-period-return spreads among unrated firms with extreme residual external financing come from just 4.8% of the one-year holding period based on the equal-weighted market portfolio. As the ex-post average stock returns on high $\Delta XFIN_r$ firms are not uniformly lower during the holding period, the residual financing-return relation we document does not seem to be attributable to systematic reductions in risk or expected returns.

[Place Table 7 here]

7. Characteristics of Unrated High Residual Financing Firms

Table 8 reports the median decile-portfolio characteristics of rated and unrated firms grouped by residual net external financing. The characteristics include firm age, firm size, profitability, R&D expenditure, and the market-to-book ratio of assets. Firm age (*AGE*) is the number of years that a stock has appeared in CRSP by the end of year *t*-1. Firm size is the market value of equity at the end of year *t*-2 ($SIZE_{t\text{-}2}$) or year *t*–1 ($SIZE_{t\text{-}1}$). Profitability is the operating income after depreciation (Compustat item #178), scaled by the average of total assets at the beginning and the end of the corresponding year for fiscal year *t*-2 ($ROA_{t\text{-}2}$) or fiscal year *t*-1 ($ROA_{t\text{-}1}$). R&D expenditure (item #46) is scaled by the average of total assets at the beginning and the end of the corresponding year for fiscal year *t*-2 ($RD_{t\text{-}2}$) or fiscal year *t*-1 ($RD_{t\text{-}1}$). The market-to-book ratio of asset is the ratio of the market value of assets to the book value of assets at the end of year *t*–2 ($Q_{t\text{-}2}$) or year *t*-1 ($Q_{t\text{-}1}$). The market value of assets is the book value of assets (item #6) plus the market value of common equity minus the sum of the book value of common equity (item #60) and balance sheet deferred taxes (item #74).

[Place Table 8 here]

Consistent with Faulkender and Petersen (2006), the equity-debt choice of residual external financing ($\Delta XFIN_r$) is different between firms with and without access to public markets. While rated low $\Delta XFIN_r$ firms reduce similar amounts of equity and debt, unrated low $\Delta XFIN_r$ firms reduce less equity than debt. On the other hand, high $\Delta XFIN_r$ firms with access to the public debt market issue debt only but high $\Delta XFIN_r$ firms without access issue equity in addition to private debt. Besides, it seems that unrated high $\Delta XFIN_r$ firms are the main issuers of residual equity ($\Delta EQUITY_r$).

While firms with higher residual external financing tend to be younger, smaller, and less profitable, unrated high $\Delta XFIN_r$ firms tend to be among the youngest and smallest. While unrated high $\Delta XFIN_r$ firms have the lowest, indeed negative, profitability, they tend to have the highest R&D expenditures. In pursuing intangible growth opportunities, the lack of internal funds might force these firms to opt for high residual external financing. Furthermore, these firms have the highest market-to-book ratio of assets.[18]

To summarize, the results suggest that the needs of firms that have limited access to public debt markets for external funding to sustain intangible growth motivate them to issue a high level of equity in addition to private debt financing. Given the intangible growth opportunities, the equities of these smallest, youngest, and most unprofitable firms are also difficult to value and investors may have temporarily upward biased valuations of them under uncertainty.

8. Conclusions

Extensive studies document a negative relation between corporate external financing activities and future stock returns. The relation holds across a wide range of individual external financing activities as well as net overall external financing activities. Butler, Cornaggia, Grullon, and Weston (2011) show that the data are consistent with the efficient real investment hypothesis (the

[18]Lakonishok, Shleifer, and Vishny (1994) show that stocks with high valuation multiples tend to be overvalued. These stocks are also generally recommended by sell-side analysts (Jegadeesh, Kim, Krische, and Lee, 2004).

q-theory of investment and the real options theory) but is inconsistent with the managerial market timing hypothesis. On the other hand, Cohen and Lys (2006) and Dechow, Richardson, and Sloan (2008) find that the financing-return relation overlaps with the accrual-return relation and propose that the earnings management hypothesis explains the former relation.

This paper examines the conclusiveness of these prominent explanations and finds that a residual measure of net overall external financing that is unrelated to accruals and total asset growth is actually negatively related to future stock returns. The results are inconsistent with the earnings management hypothesis and the efficient investment hypothesis. In addition, we find that our results seem to be more consistent with the timing hypothesis than the investment hypothesis for unrated firms that have positive residual external financing. But our results are not compatible with either hypothesis for unrated firms that have negative residual external financing.

This paper provides a novel explanation for the financing-return relation. Our findings suggest that the external financing anomaly is mainly attributed to the extreme underperformance of speculative unrated firms that pursue high intangible growth but have limited access to the public debt market and so choose to issue a high level of equity in addition to private debt. Since these speculative firms are also very difficult to value, optimistic investors seem to overvalue them temporarily due to the difference of opinions (Miller, 1977; Harrison and Kreps, 1978,) but correct the mispricing eventually, especially during earnings announcement dates. This correction leads to a negative relation between overall external financing and future stock returns.

References

Affleck-Graves, J., Miller, R.E., 2006, The information content of calls of debt: Evidence from long-run stock returns, Journal of Financial Research, 57, 421-447.

Berk, J.B., Green, R.D., Naik, V., 1999, Optimal investment, growth options and security returns, Journal of Finance 54, 1553-1607.

Billett, M.T., Flannery, M.J., Garfinkel, J.A., 2006, Are bank loans special? Evidence on the post-announcement performance of bank borrowers, Journal of Financial and Quantitative Analysis 41, 733-751.

Billett, M.T., Flannery, M.J., Garfinkel, J.A., 2011, Frequent issuers' influence on long-run post-issuance returns, Journal of Financial Economics 99, 349-364.

Bradshaw, M.T., Richardson, S.A., Sloan, R.G., 2006, The relation between corporate financing activities, analysts' forecasts and stock returns, Journal of Accounting and Economics 42, 53-85.

Brav, A., Geczy, C., Gompers, P.A, 2000, Is the abnormal return following equity issuances anomalous, Journal of Financial Economics 56, 209-249.

Brown, J.R., Fazzari, S.M., Petersen, B.C., 2009, Financing innovation and growth: Cash flow, external equity, and the 1990s R&D boom, Journal of Finance64, 151-185.

Butler, A.W., Cornaggia, J., Grullon, G., Weston, J.P., 2011, Corporate financing decisions, managerial market timing, and real investment, Journal of Financial Economics 101, 666-683.

Carhart, M.M., 1997, On persistence in mutual fund performance, Journal of Finance 52, 57-82.

Carlson, M., Fisher, A., Giammarino, R., 2004, Corporate investment and asset pricing dynamics: Implications for the cross-section of returns, Journal of Finance 59, 2577-2603.

Carlson, M., Fisher, A., Giammarino, R., 2006, Corporate investment and asset pricing dynamics: Implications for SEO event studies and long-run performance, Journal of Finance 61, 1009-1034.

Chen, L., Novy-Marx, R., Zhang, L., 2010, An alternative three-factor model, Unpublished working paper, Ohio State University, Washington University, and University of Chicago.

Cohen, D.A., Lys, T.Z., 2006, Weighing the evidence on the relation between external corporate financing activities, accruals and stock returns, Journal of Accounting and Economics 42, 87-105.

Cooper, M.J., Gulen, H., Schill, M.J., 2008, Asset growth and the cross-section of stock returns, Journal of Finance 63, 1609-1651.

Daniel, K., Titman, S., 1997, Evidence on the characteristics of cross-sectional variation in stock returns, Journal of Finance 52, 1-33.

Daniel, K., Titman, S., 2006, Market reactions to tangible and intangible information, Journal of Finance 61, 1605-1643.

Daniel, K., Titman, S., Wei, K.C.J., 2001, Explaining the cross-section of stock returns in Japan: Factors or characteristics? Journal of Finance 56, 743-766.

Dechow, P.M., Richardson, S.A., Sloan, R.G., 2008, The persistence and pricing of the cash component of earnings, Journal of Accounting Research 46, 537-566.

Eberhart, A.C., Siddique, A., 2002, The long-term performance of corporate bonds (and stocks) following seasoned equity offerings, Review of Financial Studies 15, 1385-1406.

Eckbo, B.E., Masulis, R.W., Norli, Ø., 2000, Seasoned public offerings: Resolution of the 'new issues puzzle', Journal of Financial Economics 56, 251-291.

Eckbo, B.E., Norli, Ø., 2005, Liquidity risk, leverage and long-run IPO returns, Journal of Corporate Finance 11, 1-35.

Fama, E.F., French, K.R., 1992, The cross-section of expected stock returns, Journal of Finance 47, 427-465.

Fama, E.F., French, K.R., 1993, Common risk factors in the returns on stocks and bonds, Journal of Financial Economics 33, 3-56.

Fama, E.F., French, K.R., 2006, Profitability, investment and average returns, Journal of Financial Economics 82, 491-518.

Fama, E.F., French, K.R., 2008, Dissecting anomalies, Journal of Finance 63, 1653-1678.

Fama, E.F., MacBeth, J.D., 1973, Risk, return and equilibrium: Empirical tests, Journal of Political Economy 81, 607-636.

Faulkender, M., Petersen, M.A., 2006, Does the source of capital affect capital structure? Review of Financial Studies 19, 45-79.

Harrison, J.M., Kreps, D.M., 1978, Speculative investor behavior in a stock market with heterogeneous expectations, Quarterly Journal of Economics 92, 323–36.

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

Jegadeesh, N., 2000, Long-term performance of seasoned equity offerings: Benchmark errors and biases in expectations, Financial Management 29, 5-30.

Jegadeesh, N., Kim, J., Krische, S.D., Lee, C.M.C., 2004, Analyzing the analysts: When do recommendations add value? Journal of Finance 59 1083-1124.

La Porta, R., Lakonishok, J., Shleifer, A., Vishny, R., 1997, Good news for value stocks: Further evidence on market efficiency, Journal of Finance, 52, 859-874.

Lakonishok, J., Shleifer, A., Vishny, R.W., 1994, Contrarian investment, extrapolation, and risk, Journal of Finance 49, 1542-1578.

Li, D., Zhang, L., 2010, Does *q*-theory with investment frictions explain anomalies in the cross-section of returns? Journal of Financial Economics 98, 297-314.

Li, E.X., Livdan, D., Zhang, L., 2009, Anomalies, Review of Financial Studies 22, 2973-3004.

Liu, L.X., Whited, T.M., Zhang, L., 2009, Investment-based expected return, Journal of Political Economy 117, 1105-1139.

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

Loughran, T., Ritter, J.R., 1997, The operating performance of firms conducting seasoned equity offerings, Journal of Finance 52, 1823-1850.

Loughran, T., Ritter, J.R., 2000, Uniformly least powerful tests of market efficiency, Journal of Financial Economics 55, 361-389.

Lyandres, E., Sun, L., Zhang, L., 2008, The new issues puzzle: Testing the investment-based explanation, Review of Financial Studies 21, 2825-2855.

McLean, R.D., Pontiff, J., Watanabe, A., 2009, Share issuance and cross-sectional returns: International evidence, Journal of Financial Economics 94, 1-17.

Michaely, R., Thaler, R.H., Womack, K.L., 1995, Price reactions to dividend initiations and omissions: Overreaction or drift? Journal of Finance 50, 573-608.

Miller, Edward M, 1977, Risk, uncertainty, and divergence of opinion, *Journal of Finance* 32, 1151-1168.

Newey, W.K., West, K.D., 1987, A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix, Econometrica 55, 703-708.

Papanastasopoulos, G., Thomakos, D., Wang, T., 2008, Accruals and the performance of stock returns following external financing activities, The British Accounting Review, forthcoming.

Pontiff, J., Schill, M.J., 2001, Long-run seasoned equity offering returns: Data snooping, model misspecification, or mispricing? A costly arbitrage approach, Working paper.

Pontiff, J., Woodgate, A., 2008, Share issuance and cross-sectional returns, Journal of Finance 63, 921-945.

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

Richardson, S.A., Sloan, R.G., 2003, External financingand future stock returns, Working paper.

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, in Constantinides, G.M., Harris, M.,Stulz, R.M., ed.: Handbook of Economics and Finance: Corporate Finance Volume 1A (Elsevier Science B.V.).

Shivakumar, L., 2000, Do firms mislead investors by overstating earnings before seasoned equity offerings? Journal of Accounting and Economics 29, 339-371.

Shumway, T., 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, Accounting Review 3, 289-315.

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

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

Wu, J., Zhang, L., Zhang, X.F., 2010, The *q*-Theory Approach to Understanding the Accrual Anomaly, Journal of Accounting Research 48, 177-223.

Xie, H., 2001, The mispricing of abnormal accruals, Accounting Review 76, 357-373.

Xing, Y., 2008, Interpreting the value effect through the *q*-theory: an empirical investigation, Review of Financial Studies 21, 1767-1795.

Zhang, L., 2005, The value premium, Journal of Finance 60, 67-103.

Zhang, X.F., 2007, Accruals, investment, and the accrual anomaly, Accounting Review 82, 1333-1363.

Table 1
Returns on Decile Portfolios Sorted by Net External Financing, Total Accruals, or Total Asset Growth

At the end of April of each year, stocks are sorted into deciles based on net external financing activities ($\Delta XFIN$), total accruals (*TAC*) or total asset growth (*TAG*). $\Delta XFIN$ is the sum of net cash flow from equity financing and net cash flow from debt financing between fiscal year-end t–2 to fiscal year-end t–1, scaled by average total assets over the period. Net cash flow from equity financing is the cash proceeds from sales of common and preferred stocks less cash payments for the purchase of common and preferred stocks less cash payments for dividends. Net cash flow from debt financing is the cash proceeds from the issuance of long-term debt less cash payments for long-term debt reductions plus the net changes in current debt. $\Delta XFIN$ is a measure of how much capital a firm raises (distributes) from (to) capital markets. *TAC* is the change in non-cash assets less the change in non-debt liabilities between fiscal year-end t–2 to fiscal year-end t–1, scaled by average total assets over the period. It measures annual accounting accruals. *TAG* is the percentage change in total assets from fiscal year-end t–2 to fiscal year-end t–1. It measures overall capital investment growth and asset expansions. Stocks are held for one year from May of year t to April of year t+1. Panels A, B, and C report the time series averages of $\Delta XFIN$, *TAG*, *TAC* and monthly returns on equal-weighted portfolios based on $\Delta XFIN$, *TAC*, and *TAG* ranking, respectively. (1 – 10) is the differences in attributes or returns between the bottom and top portfolios. The raw portfolio returns (*Ret*) are the time series averages of equal-weighted stock returns. The size-adjusted returns (Ret_{SZ}) are the time series averages of equal-weighted stock returns in excess of the returns on the ten size-matching benchmark portfolios. The size and book-to-market adjusted portfolio returns ($Ret_{SZ,BM}$) are the time series averages of equal-weighted stock returns in excess of the returns on Fama and French's (1992) 25 size and book-to-market matching benchmark portfolios. The risk-adjusted returns (α) are the estimated intercepts from the following regression:

$$R_{p,t} - R_{f,t} = \alpha_p + b_{p,Mkt}R_{Mkt,t} + s_{p,SMB}R_{SMB,t} + h_{p,HML}R_{HML,t} + m_{p,MOM}R_{MOM,t} + \varepsilon_{p,t},$$

where R_p is the return on portfolio p and R_f is the risk-free rate; R_{MKT}, R_{SMB}, and R_{HML} are the returns on the market, size, and book-to-market factors, respectively, of Fama and French (1993); R_{MOM} is the return on the momentum factor of Carhart (1997). The return sample period is from May 1972 to December 2007. Each decile portfolio contains 311 firms per year on average. The t-statistics are reported in parentheses. * and ** denote statistical significance at the 5% and 1% levels, respectively.

	$\Delta XFIN$ (%)	*TAC*(%)	*TAG* (%)	*Ret* (%)	Ret_{SZ}(%)	$Ret_{SZ,BM}$(%)	α (%)
			Panel A: Net external financing ($\Delta XFIN$) decile portfolios				
1 (low)	-15.98**	-4.43**	-0.34	1.60**	0.36**	0.27**	0.44**
2	-6.52**	0.61**	4.51**	1.57**	0.36**	0.22**	0.43**
3	-3.99**	1.54**	7.77**	1.56**	0.36**	0.19**	0.41**
4	-2.32**	2.37**	6.68**	1.52**	0.31**	0.15**	0.36**
5	-0.93**	3.16**	6.51**	1.60**	0.37**	0.21**	0.44**
6	0.36**	3.87**	8.24**	1.63**	0.38**	0.26**	0.47**
7	2.37**	6.52**	13.25**	1.38**	0.21**	0.09*	0.32**
8	6.15**	9.63**	18.36**	1.14**	-0.02	-0.13*	0.06
9	13.82**	16.30**	35.44**	0.93**	-0.23**	-0.28**	-0.18
10 (high)	46.35**	26.98**	87.64**	0.29	-0.86**	-0.68**	-0.64**
1 – 10	-62.33**	-31.41**	-87.99**	1.31**	1.22**	0.95**	1.08**
	(-18.96)	(-27.07)	(-14.42)	(7.33)	(7.31)	(7.54)	(7.14)

Table 1 – Continued

	$\Delta XFIN$	*TAC*	*TAG*	*Ret*	Ret_{SZ}	$Ret_{SZ,BM}$	*A*
			Panel B: Total accruals (*TAC*) decile portfolios				
1 (low)	-2.08**	-24.07**	-12.98**	1.79**	0.42**	0.35**	0.59**
2	-1.41**	-6.85**	-0.70**	1.80**	0.51**	0.35**	0.61**
3	-0.94**	-2.21**	3.08**	1.54**	0.32**	0.16*	0.37**
4	-0.52**	0.76**	8.27**	1.51**	0.32**	0.16**	0.40**
5	0.11	3.34**	8.49**	1.47**	0.30**	0.14**	0.34**
6	1.14**	6.00**	10.39**	1.38**	0.22**	0.09	0.29**
7	3.06**	9.17**	14.16**	1.28**	0.14*	0.04	0.19
8	5.56**	13.57**	20.03**	1.09**	-0.06	-0.14**	0.02
9	10.24**	20.91**	31.05**	0.96**	-0.19**	-0.18**	-0.08
10 (high)	24.14**	45.94**	106.22**	0.40	-0.75**	-0.68**	-0.61**
1 – 10	-26.22**	-70.01**	-119.20**	1.39**	1.17**	1.03**	1.19**
	(-21.68)	(-28.94)	(-12.96)	(9.28)	(9.52)	(9.00)	(7.95)
			Panel C: Total asset growth (*TAG*) decile portfolios				
1 (low)	-2.59**	-15.69**	-25.64**	1.79**	0.37**	0.35**	0.54*
2	-2.44**	-3.70**	-7.51**	1.81**	0.49**	0.30**	0.67**
3	-2.54**	-0.42**	-1.32**	1.55**	0.32**	0.12*	0.39**
4	-1.90**	1.77**	2.70**	1.46**	0.27**	0.07	0.35**
5	-1.02**	3.76**	6.15**	1.39**	0.24**	0.06	0.27**
6	0.12*	5.97**	9.80**	1.39**	0.24**	0.08	0.25**
7	1.83**	8.11**	14.31**	0.27**	0.13	0.02	0.15
8	4.61**	11.91**	21.17**	1.22**	0.08	0.03	0.14
9	10.66**	17.83**	34.87**	0.99**	-0.12	-0.07	-0.03
10 (high)	32.58**	37.00**	133.48**	0.36	-0.77**	-0.63**	-0.58**
1 – 10	-35.17**	-52.69**	-159.13**	1.43**	1.14**	0.97**	1.12**
	(-16.53)	(-29.44)	(-14.19)	(7.32)	(7.99)	(7.33)	(5.82)

Table 2
Returns on Portfolios Sorted by the Residual Net External Financing

At the end of April of each year, stocks are sorted into portfolios based on the residual value ($\Delta XFIN_r$) from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1},$$

where $\Delta XFIN_r$ represents the residual component of $\Delta XFIN$ that is uncorrelated with *TAC* and *TAG*. Stocks are held for one year from May of year *t* to April of year *t*+1. Panel A reports the time-series averages of $\Delta XFIN_r$, $\Delta XFIN$, *TAC* and *TAG* of equal-weighted portfolios based on $\Delta XFIN_r$ decile (quintile) ranking, differences in attributes between the bottom and top $\Delta XFIN_r$-sorted portfolios, and the *t* statistics of the differences. Panel B reports the time-series averages of monthly returns on equal-weighted portfolios based on $\Delta XFIN_r$ decile ranking, differences in returns between the bottom and top portfolios, and the *t* statistics of the differences. α_{TAC} is the estimated intercept from the following regression:

$$R_{p,t} - R_{f,t} = \alpha_p + b_{p,Mkt} R_{Mkt,t} + s_{p,SMB} R_{SMB,t} + h_{p,HML} R_{HML,t} + m_{p,MOM} R_{MOM,t} + t_{p,TAG} R_{TAG,t} + \varepsilon_{p,t},$$

where R_{TAC} is the return on the accruals factor. α_{TAG} is the estimated intercept from the above regression with the accruals factor replaced by the asset growth factor. $\alpha_{TAC,TAG}$ is the estimated intercept from the above regression augmented with the asset growth factor. Like Fama and French (1993), at the end of June each year, we sort stocks independently into size terciles, book-to-market equity terciles, and *TAC* (or *TAG*) terciles. The accrual (asset growth) factor is the equal-weighted average of the returns on the nine low *TAC* (*TAG*) equal-weighted portfolios minus the equal-weighted average of the returns on the nine high *TAC* (*TAG*) equal-weighted portfolios. Panel C reports the monthly average returns on the high (Decile 10), low (Decile 1), and hedged (Decile 1 minus Decile 10) portfolios based on $\Delta XFIN_r$, excluding stocks that experience delistings related to poor performance or delistings associated with negative delisting returns during the one year holding period after portfolio formation. The return sample period is from May 1972 to December 2007. The *t*-statistics are reported in parentheses. * and ** denote statistical significance at the 5% and 1% levels, respectively.

	$\Delta XFIN_r$	$\Delta XFIN$	*TAC*	*TAG*
Panel A: Characteristics of decile portfolios based on $\Delta XFIN_r$				
1 (low)	-19.85**	-12.24**	12.59**	48.94**
2	-9.36**	-5.66**	6.78**	11.75**
3	-6.72**	-3.47**	5.70**	10.70**
4	-4.95**	-2.11**	4.75**	9.28**
5	-3.42**	-0.11**	3.81**	8.41**
6	-1.86**	0.48**	3.59**	7.43**
7	0.04	2.44**	3.64**	7.92**
8	2.81**	5.49**	4.36**	9.44**
9	8.22**	12.26**	7.27**	17.80**
10 (high)	34.27**	43.02**	14.08**	56.37**
1 – 10	-54.12**	-55.25**	-1.50*	-7.43
	(-17.75)	(-17.29)	(-2.58)	(-1.69)

Table 2 – Continued

	Ret	Ret_{SZ}	$Ret_{SZ,BM}$	α	α_{TAC}	α_{TAG}	$\alpha_{TAC,TAG}$
			Panel B: Returns of decile portfolios based on $\Delta XFIN_r$				
1 (low)	1.23**	0.04	0.02	0.15	0.09	0.04	0.12
2	1.45**	0.27**	0.19**	0.35**	0.25**	0.26**	0.28**
3	1.46**	0.28**	0.16**	0.35**	0.29**	0.29**	0.31**
4	1.47**	0.30**	0.14**	0.36**	0.25**	0.26*	0.26**
5	1.53**	0.35**	0.17**	0.36**	0.22*	0.23*	0.26**
6	1.57**	0.37**	0.17**	0.39**	0.19	0.20	0.23*
7	1.46**	0.25**	0.08	0.34*	0.14	0.05	0.04
8	1.40**	0.16**	0.02	0.27	-0.02	-0.03	0.04
9	1.10**	-0.13*	-0.18**	-0.03	-0.35*	-0.37*	-0.27
10 (high)	0.56	-0.63**	-0.46**	-0.41**	-0.78**	-0.79**	-0.69**
2 – 9	0.35**	0.40**	0.37**	0.38**	0.61**	0.63**	0.55**
	(2.56)	(3.78)	(3.49)	(2.95)	(4.56)	(5.07)	(4.29)
1 – 10	0.66**	0.66**	0.48**	0.55**	0.87**	0.83**	0.82**
	(3.82)	(4.44)	(4.06)	(3.43)	(5.24)	(5.28)	(5.02)
		Panel C: Returns on $\Delta XFIN_r$ decile portfolios excluding performance delistings or delistings with negative returns					
1 (low)	1.26**	0.07	0.06	0.18	0.18	0.15	0.20
10 (high)	0.68	-0.52**	-0.35**	-0.28	-0.46*	-0.48*	-0.43
1 – 10	0.58**	0.59**	0.41**	0.47**	0.65**	0.62**	0.63**
	(3.39)	(3.93)	(3.44)	(2.93)	(3.88)	(3.86)	(3.78)

Table 3
Year-by-year Returns on Portfolios Sorted by the Residual Net External Financing

At the end of April of each year, stocks are sorted into deciles based on the residual value ($\Delta XFIN_r$) from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1}.$$

Stocks are held for one year from May of year *t* to April of year *t*+1. This table reports the year-by-year returns (eight months of returns for formation year 2007) on the hedged portfolio (Decile 1 minus Decile 10) based on $\Delta XFIN_r$. The return sample period is from May 1972 to December 2007. The *t*-statistics are reported in parentheses. * and ** denote statistical significance at the 5% and 1% levels, respectively.

Portfolio formation year	*Ret*	Ret_{SZ}	$Ret_{SZ,BM}$
1972	15.14	13.22	14.65
1973	2.02	-1.32	1.83
1974	-4.97	-3.75	-5.69
1975	-7.31	-2.84	0.15
1976	-6.36	-3.91	-0.76
1977	3.95	5.18	4.75
1978	-5.84	-2.67	-2.72
1979	2.15	-2.53	-1.75
1980	1.69	3.37	3.03
1981	10.15	10.46	8.21
1982	11.15	9.11	6.50
1983	12.53	12.33	6.52
1984	22.74	18.09	14.73
1985	3.02	0.13	-1.51
1986	2.97	2.78	-0.61
1987	5.02	4.89	-1.10
1988	19.19	15.61	11.43
1989	15.21	13.69	12.72
1990	0.66	-1.60	-2.06
1991	-5.42	-2.77	-3.40
1992	10.13	7.20	1.64
1993	10.47	7.99	4.69
1994	29.75	26.28	20.39
1995	-10.20	-5.80	-6.11
1996	35.95	33.46	27.83
1997	26.21	17.14	12.14
1998	9.07	1.65	4.44
1999	-22.85	-12.21	-9.62
2000	48.83	44.06	29.88
2001	29.00	27.13	20.12
2002	16.59	15.21	12.73
2003	-23.78	-6.78	-6.82
2004	24.81	20.71	16.26
2005	4.12	5.55	4.28
2006	10.57	6.34	5.22
2007	10.80	1.14	0.99
Average	8.53**	7.68**	5.64**
	(3.37)	(3.80)	(3.56)
% positive	77.78	69.44	66.67

Table 4
Stock Return Predictability of the Residual External Financing beyond Asset Growth and Accruals

This table reports the estimated coefficients in the Fama-MacBeth regression:

$$R_{k,SZ,BM,t} = b_0 + b_1\Delta XFIN_{k,t-1} + b_2\Delta XFIN_{r,k,t-1} + b_3TAC_{k,t-1} + b_4TAC_{r,k,t-1} + b_5TAG_{k,t-1} + \varepsilon_{k,t},$$

where $R_{k,SZ,BM}$ is the annual size and book-to-market adjusted stock return between May of year t and April of year t+1 (or between May and December for year 2007 annualized by multiplying by a factor of 1.5). The regression is estimated cross-sectionally every year between 1972 and 2007. Results are qualitatively similar when size and book-to-market adjusted stock returns are replaced by raw stock returns or size-adjusted stock returns. $\Delta XFIN_r$ is the residual value from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1TAC_{k,t-1} + a_2TAG_{k,t-1} + \varepsilon_{k,t-1}.$$

TAC_r is the residual value from the following contemporaneous cross-sectional regression:

$$TAC_{k,t-1} = c_0 + c_1TAG_{k,t-1} + \varepsilon_{2,k,t-1}.$$

TAC_r represents the residual component of *TAC* that is uncorrelated with *TAG*. The estimated regression coefficients are the time series averages of the cross-sectional estimates. The *t*-statistics based on the Newey and West (1987) standard errors are reported in parentheses.

Model	Intercept	$\Delta XFIN$	$\Delta XFIN_r$	*TAC*	TAC_r	*TAG*
1	0.003	-0.165				
	(0.80)	(-6.00)				
2	-0.003		-0.114			
	(-0.83)		(-6.81)			
3	0.006			-0.125		
	(1.37)			(-4.06)		
4	-0.003				-0.096	
	(-0.84)				(-3.00)	
5	0.003					-0.040
	(0.80)					(-3.14)
6	0.004		-0.114		-0.096	-0.040
	(0.80)		(-6.78)		(-3.00)	(-3.12)

Table 5
Portfolio Returns by Availability of Credit Rating and the Residual Net External Financing

At the end of April of each year, stocks are sorted into portfolios based on $\Delta XFIN_r$ and independently into two categories by a credit rating dummy. $\Delta XFIN_r$ is the residual value from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1}.$$

The rating dummy is zero if a firm has never had an S&P long-term credit rating in the Compustat database in the sample period and one otherwise. Stocks are held for one year from May of year *t* to April of year *t*+1. Panels A and B (D and E) report stock returns on equal-weighted portfolios based on $\Delta XFIN_r$ decile (quintile) ranking for stocks with credit rating and for stocks without credit rating, respectively. Panel C (F) reports differences in the decile (quintile) portfolio returns between firms with and firms without credit rating. The return sample period is from May 1972 to December 2007. The *t*-statistics are reported in parentheses. * and ** denote statistical significance at the 5% and 1% levels, respectively.

	$\Delta XFIN_r$ Ranking											
	1 (low)	2	3	4	5	6	7	8	9	10 (high)	1 – 10	*t*-stat
	Panel A: Decile portfolios with credit rating											
Ret	1.33**	1.45**	1.43**	1.44**	1.36**	1.48**	1.47**	1.30**	1.44**	1.25**	0.08	(0.41)
Ret_{SZ}	0.23*	0.37**	0.32**	0.34**	0.28*	0.38**	0.41**	0.22	0.41**	0.18	0.05	(0.28)
$Ret_{SZ,BM}$	0.25*	0.34**	0.24**	0.22**	0.17*	0.25**	0.28**	0.07	0.25*	0.18	0.07	(0.37)
α	0.39**	0.45**	0.42**	0.38**	0.25**	0.40**	0.38**	0.27**	0.34*	0.34*	0.05	(0.28)
	Panel B: Decile portfolios without credit rating											
Ret	1.21**	1.45**	1.48**	1.48**	1.58**	1.59**	1.46**	1.42**	1.08**	0.53	0.68**	(3.94)
Ret_{SZ}	-0.00	0.25*	0.28**	0.29**	0.37**	0.36**	0.21**	0.15*	-0.20**	-0.69**	0.69**	(4.36)
$Ret_{SZ,BM}$	-0.02	0.16*	0.14*	0.13*	0.17**	0.16**	0.04	0.01	-0.24**	-0.51**	0.49**	(3.94)
α	0.10	0.34**	0.35**	0.37**	0.40**	0.40**	0.34*	0.29	-0.06	-0.45**	0.55**	(3.39)
	Panel C: Differences between decile portfolios with and without credit rating											
Ret	-0.12	-0.00	0.04	0.04	0.21	0.11	-0.00	0.12	-0.36	-0.72**	0.60**	
	(-0.79)	(-0.02)	(0.29)	(0.30)	(1.36)	(0.62)	(-0.01)	(0.59)	(-1.69)	(-2.94)	(3.00)	
Ret_{SZ}	-0.23*	-0.12	-0.05	-0.05	0.09	-0.02	-0.20	-0.07	-0.61**	-0.87**	0.64**	
	(-2.28)	(-1.45)	(-0.49)	(-0.55)	(0.92)	(-0.18)	(-1.47)	(-0.49)	(-4.23)	(-4.31)	(3.08)	
$Ret_{SZ,BM}$	-0.26**	-0.18*	-0.10	-0.09	-0.00	-0.09	-0.24*	-0.06	-0.48**	-0.68**	0.42*	
	(-2.75)	(-2.26)	(-1.17)	(-1.18)	(-0.01)	(-1.04)	(-2.17)	(-0.50)	(-3.96)	(-4.09)	(2.25)	
α	-0.29	-0.11	-0.07	-0.00	0.15	-0.00	-0.04	0.02	-0.40	-0.78**	0.50*	
	(-1.92)	(-0.86)	(-0.48)	(-0.04)	(1.00)	(-0.02)	(-0.21)	(0.10)	(-1.87)	(-3.07)	(2.35)	

Table 5–Continued

	$\Delta XFIN_r$ Ranking						
	1 (low)	2	3	4	5 (high)	1 – 5	*t*-stat
	Panel D: Quintile portfolios with credit rating						
Ret	1.40**	1.44**	1.41**	1.37**	1.39**	0.02	(0.11)
Ret_{SZ}	0.31**	0.33**	0.32**	0.30**	0.34**	-0.03	(-0.22)
$Ret_{SZ,BM}$	0.30**	0.23**	0.20**	0.16**	0.23*	0.07	(0.56)
α	0.42**	0.40**	0.32**	0.31**	0.35**	0.07	(0.56)
	Panel E: Quintile portfolios without credit rating						
Ret	1.32*	1.48**	1.58**	1.44**	0.79*	0.53**	(3.71)
Ret_{SZ}	0.12*	0.28**	0.36**	0.18**	-0.46**	0.58**	(4.55)
$Ret_{SZ,BM}$	0.06	0.13**	0.16**	0.03	-0.38**	0.44**	(4.29)
α	0.21*	0.36**	0.40**	0.31*	-0.26	0.48**	(3.53)
	Panel F: Differences between quintile portfolios with and without credit rating						
Ret	-0.08	0.04	0.17	0.07	-0.60**	0.52**	
	(-0.56)	(0.32)	(1.07)	(0.39)	(2.81)	(3.64)	
Ret_{SZ}	-0.19*	-0.05	0.04	-0.12	-0.79**	0.60**	
	(-2.48)	(-0.62)	(0.45)	(-0.98)	(-5.43)	(4.22)	
$Ret_{SZ,BM}$	-0.23**	-0.09	-0.04	-0.13	-0.61**	0.38**	
	(-3.25)	(-1.48)	(-0.63)	(-1.47)	(-5.67)	(3.14)	
α	-0.21	-0.04	0.08	0.00	-0.61**	0.41**	
	(-1.62)	(-0.29)	(0.52)	(0.02)	(2.87)	(2.74)	

Table 6
Cross-sectional Analysis of Equity-debt Ratio, Residual Net External Financing, and Stock Returns

This table reports the estimated coefficients in the Fama-MacBeth regression:

$$R_{k,SZ,BM,t} = b_0 + b_1 ER_{k,t-1} \times \Delta XFIN^{-}_{r,k,t-1} + b_2 ER_{k,t-1} \times \Delta XFIN^{+}_{r,k,t-1}$$
$$+ b_3 \Delta XFIN_{r,k,t-1} \times \Delta XFIN^{-}_{r,k,t-1} + b_4 \Delta XFIN_{r,k,t-1} \times \Delta XFIN^{+}_{r,k,t-1} + \varepsilon_{k,t},$$

where $R_{k,SZ,BM}$ is the annual size and book-to-market adjusted stock return between May of year *t* and April of year *t*+1 (or between May and December for year 2007 annualized by multiplying by a factor of 1.5). Results are qualitatively similar when size and book-to-market adjusted stock returns are replaced by raw stock returns or size-adjusted stock returns. *ER* is the ratio of $\Delta EQUITY$ to ($\Delta EQUITY + \Delta DEBT$). $\Delta EQUITY$ is net cash flow from equity financing and $\Delta DEBT$ is net cash flow from debt financing between fiscal year-end *t*–2 to fiscal year-end *t*–1, scaled by average total assets over the period. Net cash flow from equity financing is the cash proceeds from sales of common and preferred stocks less cash payments for the purchase of common and preferred stocks less cash payments for dividends. Net cash flow from debt financing is the cash proceeds from the issuance of long-term debt less cash payments for long-term debt reductions plus the net changes in current debt. $\Delta EQUITY$ is a measure of how much capital a firm raises (distributes) from (to) the stock market. $\Delta DEBT$ is a measure of how much capital a firm raises (distributes) from (to) the debt market. $\Delta XFIN_r$ is the residual value from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1}.$$

$\Delta XFIN_r^-$ is a dummy variable that equals 1 if $\Delta XFIN_r$ is negative and 0 otherwise. It indicates whether a firm has negative residual net external financing. $\Delta XFIN_r^+$ is a dummy variable that equals 1 if $\Delta XFIN_r$ is positive and 0 otherwise. It indicates whether a firm has positive residual net external financing. The regression is estimated cross-sectionally among stocks without credit rating every year between 1972 and 2007. The estimated regression coefficients are the time series averages of the cross-sectional estimates. The *t*-statistics based on the Newey and West (1987) standard errors are reported in parentheses.

Model	Intercept	$ER \times \Delta XFIN_r^-$	$ER \times \Delta XFIN_r^+$	$\Delta XFIN_r \times \Delta XFIN_r^-$	$\Delta XFIN_r \times \Delta XFIN_r^+$
1	-0.010	-0.000	-0.006		
	(-2.19)	(-0.27)	(-2.89)		
2	0.002	-0.000	-0.003	0.072	-0.208
	(0.33)	(-0.40)	(-2.14)	(1.94)	(-5.06)

Table 7
Abnormal Daily Returns on Unrated Portfolios around Earnings Announcement Dates
Sorted by Residual Net External Financing

At the end of April of each year, stocks without credit rating are sorted into deciles based on $\Delta XFIN_r$. $\Delta XFIN_r$ is the residual value from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1}.$$

Stocks are held for one year from May of year *t* to April of year *t*+1.The abnormal daily return on a stock is the daily stock return in excess of the daily return on an equal-weighed or value-weighted market portfolio. The abnormal daily portfolio return around earnings announcements (Ret_{EAD}) is the time series average of the mean equal-weighted abnormal daily stock returns over the four three-day windows centered at earnings announcement dates during the one-year holding period after portfolio formation. The abnormal daily portfolio return not around earnings announcements (Ret_{other}) is the time series average of the mean equal-weighted abnormal daily stock returns outside the four three-day windows centered at earnings announcement dates during the one-year holding period after portfolio formation. Panel A reports Ret_{EAD} and Ret_{other} for the bottom and top $\Delta XFIN_r$-decile portfolios based on the equal-weighted market portfolio. (1 – 10) is the difference in the returns between the bottom and top portfolios. (Ret_{EAD} – Ret_{other}) is the difference between Ret_{EAD} and Ret_{other} for a given portfolio. Panel B reports the corresponding results based on the value-weighted market portfolio. The return sample period is from May 1972 to December 2007. The *t*-statistics are reported in parentheses. * and ** denote statistical significance at the 5% and 1% levels, respectively.

$\Delta XFIN_r$ rank	Ret_{EAD}	Ret_{other}	Ret_{EAD} – Ret_{other}	
			Difference	*t*-stat
Panel A: Daily return over the equal-weighted market portfolio				
1 (low)	0.03	0.01	0.02	(1.02)
10 (high)	-0.12*	-0.01	-0.11*	(-2.56)
1 – 10	0.15**	0.01	0.14**	
t-statistic	(2.87)	(1.32)	(2.82)	
Panel B: Excess daily return over the value-weighted market portfolio				
1 (low)	0.01	0.00	0.01	(0.56)
10 (high)	-0.14**	-0.01	-0.13**	(-2.94)
1 – 10	0.16**	0.01	0.14**	
t-statistic	(3.02)	(1.33)	(2.99)	

Table 8
Characteristics of Portfolio Sorted by the Residual Net External Financing and Availability of Credit Rating

At the end of April of each year, stocks are sorted into deciles based on $\Delta XFIN_r$ and independently into two categories by a credit rating dummy. $\Delta XFIN_r$ is the residual value from the following contemporaneous cross-sectional regression:

$$\Delta XFIN_{k,t-1} = a_0 + a_1 TAC_{k,t-1} + a_2 TAG_{k,t-1} + \varepsilon_{k,t-1}.$$

Stocks are held for one year from May of year t to April of year t+1. $\Delta EQUITY_r$ and $\Delta DEBT_r$ are the residual values from the above contemporaneous cross-sectional regression with $\Delta XFIN$ being replaced by its components, i.e. the net cash flow from equity financing and the net cash flow from debt financing. $\Delta EQUITY_r$ ($\Delta DEBT_r$) represents the residual component of the net cash flow from equity (debt) financing that are uncorrelated with *TAC* and *TAG*. *AGE* is the number of years a stock has appeared in CRSP by the end of December of year t-1 and it is a proxy of firm age. $SIZE_{t-2}$ and $SIZE_{t-1}$ (in 10^8) are the market values of equity at the end of Decembers of year t-2 and year t–1, respectively. ROA_{t-2} and ROA_{t-1} (in %) are the operating income after depreciation scaled by the average of total assets at the beginning and the end of the corresponding year for fiscal year t-2 and fiscal year t-1, respectively, and they measure accounting profitability. RD_{t-2} and RD_{t-1} (in %) are the research and development expenses for fiscal year t-2 and fiscal year t-1, respectively, scaled by the average of total assets at the beginning and the end of the corresponding year. Q_{t-2} and Q_{t-1} are the ratios of market value to book value of assets at the end of Decembers of year t–2 and year t-1, respectively. TAG_{t-2} and TAG_{t-1} are the percentage changes in total assets from fiscal year-end t–3 to fiscal year-end t–2 and total assets from fiscal year-end t–2 to fiscal year-end t–1, respectively. *TAG* measures overall capital investment growth and asset expansions. Panels A and B report the time series averages of the median attributes of portfolios based on $\Delta XFIN_r$ ranking for stocks with and without credit rating, respectively. Panel C reports the time series averages of differences in the median attributes between high $\Delta XFIN_r$ portfolios with credit rating and high $\Delta XFIN_r$ portfolios without credit rating. The portfolio formation starts at May 1972 and ends at May 2007. The t-statistics are reported in parentheses. * and ** denote statistical significance at the 5% and 1% levels, respectively.

Table 8 – Continued

Δ*XFIN*$_r$ rank	Δ*XFIN*$_r$	Δ*E*$_r$	Δ*D*$_r$	*AGE*	SZ_{t-2}	SZ_{t-1}	ROA_{t-2}	ROA_{t-1}	RD_{t-2}	RD_{t-1}	Q_{t-2}	Q_{t-1}	TAG_{t-2}	TAG_{t-1}
Panel A: Characteristics of rated portfolios sorted by Δ*XFIN*$_r$														
1 (low)	-13.87**	-7.89**	-6.29**	20.64**	16.73**	19.16**	17.33**	18.08**	0.30**	0.38**	1.81**	1.81**	9.40**	8.74**
2	-8.39**	-4.37**	-3.88**	22.88**	14.83**	17.04**	14.04**	14.38**	0.25*	0.30*	1.42**	1.45**	8.57**	7.58**
3	-5.95**	-3.47**	-2.49**	27.43**	13.37**	15.04**	11.82**	12.19**	0.14*	0.15**	1.22**	1.25**	7.06**	6.41**
4	-4.29**	-2.72**	-1.54**	27.38**	13.05**	14.49**	10.41**	10.51**	0.11*	0.11*	1.14**	1.15**	7.69**	6.26**
5	-2.85**	-2.39**	-0.48**	24.08**	9.60**	10.62**	9.67**	9.67**	0.06	0.06*	1.09**	1.10**	7.26**	6.60**
6	-1.37**	-1.90**	0.56**	25.83**	8.91**	9.81**	8.88**	8.72**	0.03	0.04	1.08**	1.08**	7.89**	7.88**
7	0.40*	-1.58**	1.95**	24.00**	8.36**	9.09**	8.60**	8.31**	0.05	0.08	1.08**	1.08**	8.82**	8.82**
8	2.93**	-1.25**	4.24**	21.40**	7.22**	8.12**	8.81**	8.26**	0.01	0.00	1.11**	1.10**	10.75**	12.04**
9	7.29**	-0.87**	7.92**	17.29**	5.24**	5.84**	9.22**	8.55**	0.00	0.00	1.18**	1.16**	13.54**	21.22**
10 (high)	17.78**	0.92	16.32**	9.85**	3.04**	3.90**	9.74**	8.79**	0.04	0.02	1.42**	1.34**	18.73**	51.96**
1 – 10	-31.64**	-8.81**	-22.61**	10.79**	13.69**	15.26**	7.59**	9.29**	0.27**	0.35**	0.38**	0.47**	-9.33**	-43.22**
	(-22.39)	(-9.94)	(-19.55)	(6.85)	(6.11)	(6.19)	(11.04)	(15.49)	(2.99)	(3.32)	(5.82)	(7.55)	(6.82)	(-9.82)
Panel B: Characteristics of unrated portfolios sorted by Δ*XFIN*$_r$														
1 (low)	-14.72**	-5.26**	-9.40**	9.06**	0.81**	0.97**	12.33**	13.51**	0.06*	0.05	1.47**	1.48**	8.19**	8.15**
2	-8.39**	-3.23**	-5.09**	10.38**	0.90**	1.02**	12.54**	13.13**	0.01	0.02	1.32**	1.32**	8.69**	7.95**
3	-5.97**	-2.49**	-3.42**	10.78**	0.89**	1.02**	11.48**	11.80**	0.02	0.00	1.23**	1.23**	8.10**	7.49**
4	-4.28**	-1.93**	-2.36**	10.94**	0.83**	0.92**	10.05**	10.12**	0.05	0.05	1.17**	1.16**	7.39**	6.94**
5	-2.84**	-1.37**	-1.44**	10.56**	0.74**	0.78**	8.70**	8.64**	0.08	0.09*	1.11**	1.11**	7.04**	6.07**
6	-1.37**	-0.92**	-0.44**	9.78**	0.60**	0.64**	7.29**	6.90**	0.16*	0.17*	1.09**	1.08**	6.44**	4.88**
7	0.42**	-0.47*	0.89**	9.33**	0.54**	0.53**	6.41**	5.48**	0.40*	0.43*	1.10**	1.08**	6.63**	4.09**
8	2.93**	-0.15	3.01**	8.83**	0.48**	0.46**	5.70**	4.26**	0.60*	0.60*	1.13**	1.11**	7.28**	4.55**
9	7.44**	0.37	6.79**	7.65**	0.44**	0.41**	4.98**	2.94**	0.57*	0.57*	1.21**	1.17**	9.29**	8.91**
10 (high)	22.61**	11.54**	9.55**	6.14**	0.44**	0.48**	-2.66	-4.99*	2.62**	2.44**	1.87**	1.73**	11.86**	28.50**
1 – 10	-37.32**	-16.80**	-18.95**	2.92**	0.37*	0.49*	14.99**	18.50**	-2.55**	-2.39**	-0.40**	-0.24**	-3.67**	-20.35**
	(-18.99)	(-7.15)	(-13.74)	(7.34)	(2.17)	(2.46)	(9.24)	(10.75)	(-3.78)	(-3.76)	(-3.61)	(-2.93)	(-4.09)	(-8.13)
Panel C: Differences in characteristics between rated and unrated top Δ*XFIN*$_r$-decile portfolios														
	-4.83**	-10.61**	6.77**	3.71**	2.60**	3.42**	12.40**	13.78**	-2.59**	-2.42**	-0.45**	-0.38**	6.86**	23.46**
	(-6.49)	(-5.27)	(5.03)	(4.34)	(6.64)	(6.46)	(7.21)	(7.92)	(-3.79)	(-3.70)	(-4.13)	(-4.27)	(-5.61)	(-8.26)