Online Data Appendix for "Where Did All the Dollars Go? The Effect of Cash Flows on Capital and Asset Structure"
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Variable Construction

A. Balance Sheet Sample

For this sample we construct the variables as follows. *Cash Holding* is defined following Almeida, Campello, and Weisbach (2004). We calculate *External Finance* following Baker and Wurgler (2002). *Cash Flow* is defined according to Bushman, Smith and Zhang (2011). *Tobin's Q* is defined as in Almeida, Campello and Weisbach (2004). Because most of these variables are defined using data items from Balance Sheet, we call this sample Balance Sheet Sample. The specific definitions are as follows.

Change in Cash Holding: change in cash and cash equivalents (data1)
Net issuances of Equity: change in book equity – change in retained earnings (data36), where book equity is measured as total assets (data6) – total liabilities (data181) – preferred stock (data10) + deferred taxes (data35) + convertible debt (data79). When preferred stock is missing, redemption value of preferred stock (data56) is used instead
Net issuances of Debt: change in long term debt (data9) + change in short term debt (data34)
External Finance: net issue of equity + net issue of debt
Net issuances of long term debt: change in long term debt (data9)
Net issuances of short term debt: change in short term debt (data34)
Dividends: common stock dividends (data21) + preferred stock dividends (data19)
Capital Expenditure: capital expenditure (data128)
Working Capital Accruals: (change in current assets (data4) – change in cash and cash equivalents (data1)) – (change in current liabilities (data5) – change in short-term debt (data34) – change in tax payable (data71))[1]
Cash Flow: income before extraordinary items (data18) + depreciation and amortization (data14) – working capital accruals

All flow variables used in the regressions are divided by the *t-3* total assets (data6) (recall that our specification involves two lags of cash flows) to account for heteroscadasticity.

B. Statement of Cash Flow Sample

To conduct our tests under the condition that the uses of funds equal the sources of funds, we rely on

[1] This definition follows Bushman et al (2011), Table 1.

the Statement of Cash Flow sample. According to the COMPUSTAT manual, with the adoption of Statement of Financial Accounting Standard (SFAS) 95, U.S. firms are required to issue Statement of Cash Flow (COMPUSTAT format code 7) with effect from 15th July, 1988. Prior to that, three different types of formats (CAMPUSTAT format code 1, 2 and 3) were available to firms to report their cash flows. Our Statement of Cash Flow sample makes use of not only the Statement of Cash Flow but all the other three types of formats available from 1971 to 1988, as in Frank and Goyal (2003).

Before we explain the details of variable construction for this sample, it is useful to consider the structure of a typical Statement of Cash Flow, which can also be found in the fourth chapter of the COMPUSTAT manual. This structure helps us to check whether flow of funds identity holds.

Statement of Cash Flow from COMPUSTAT (Format Code 7)

Annual Variable	Item #
Indirect Operating Activities	
Income Before Extraordinary Items	123
Depreciation and Amortization	125
Extraordinary Items and Discontinued Operations	124
Deferred Taxes	126
Equity in Net Loss (Earnings)	106
Sale of Property, Plant, and Equipment and Sale of Investments – Loss (Gain)	213
Funds from Operations – Other	217
Accounts Receivables – Decrease (Increase)	302
Inventory – Decrease (Increase)	303
Accounts Payable and Accrued Liabilities – Increase (Decrease)	304
Income Taxes – Accrued – Increases (Decrease)	305
Assets and Liabilities – Other (Net Change)	307
Operating Activities – Net Cash Flow	308
Investing Activities	
Increase in Investments	113
Sale of Investments	109
Short – Term Investments – Change	309
Capital Expenditures	128
Sale of Property, Plant, and Equipment	107
Acquisitions	129
Investing Activities – Other	310

Investing Activities – Net Cash Flow	311
Financing Activities	
Sale of Common and Preferred Stock	108
Purchase of Common and Preferred Stock	115
Cash Dividends	127
Long – Term Debt – Issuance	111
Long – Term Debt – Reduction	114
Changes in Current Debt	301
Financing Activities – Other	312
Financing Activities – Net Cash Flow	313
Exchange Rate Effect	314
Cash and Cash Equivalents – Increase (decrease)	274

The definition of variables for Statement of Cash Flow sample is as follows:

Change in Cash Holding: data274.

Debt Finance: data111 – data114 – data301 for firms with format code 1; data111 – data114 + data301 for firms with format codes 2, 3 and 7.

Equity Finance: data108 – data115 for firms with format codes 1, 2 and 3; data108 – data115 + 312 for firms with format code 7.

External Finance: debt finance + equity finance.

Long Term Debt Finance: data111 – data114.

Short Term Debt Finance: - data301 for firms with format code 1, data301 for firms with format code 2, 3, and 7.

Capital Expenditure: data128.

Dividends: data127.

Total Investment: data128 + data113 + data129 +data219 – data107 – data109 for firms with format codes 1, 2 and 3; data128 + data113 + data129 – data107 – data109 – data309 – data310 for firms with format code 7.

Working Capital Accruals: data236 for firms with format code 1; – data236 for firms with format codes 2 and 3; – data302 – data303 – data304 – data305 – data307 for firms with format code 7.

Cash Flow: data123 + data124 + data125 + data126 + data106 + data213 + data217 + data218 – working capital accruals for firms with format codes 1, 2 and 3; data123 + data124 + data125 + data126 + data106 + data213 + data217 + data314 – working capital accruals for firms with format code 7.

All the flow variables used in the regressions are divided by total assets (data6) at time *t-3*.

Additional Notes on Variable Construction for the SFC Sample: Our variable construction method for SCF sample mainly follows Frank and Goyal (2003). We also recode missing values for any variables to zero to keep as many observations as possible. However to satisfy the requirements of our research design we make some important changes. Frank and Goyal (2003) design their definitions to suit tests of capital structure theories, so some modifications are needed for our purposes and compatibility with the literature on cash flow sensitivity. Major adjustments are the following. (i) We regard *Change in Current Debt* (data301) as a component of debt financing and *Financing Activities-Other* (data312) as a part of equity financing. We make this change because these two items are originally classified by the COMPUSTAT manual in the Financing Activities section of the Statement of Cash Flow. Moreover, some researchers (Frank and Goyal (2003), Almeida and Campello (2010)) consider only long-term debt as a source of external debt finance but ignore the short-term debt. For our purposes, inclusion of short-term debt is appropriate. Recall also that we treat C*ash and cash equivalents* (data274) separately as a dependent variable of one of our regressions. (ii) Due to the above changes, unlike Frank and Goyal (2003), our definition of working capital accruals does not include the three items (data274, data301 and data312). (iii) We subtract working capital accruals from the conventional definition of cash flow, exactly as we did for the BS sample.

C. Common Control Variables

Leverage: (long-Term Debt (data9) + debt in Current Liabilities (data34)) / total assets (data6)

Zscore: 1.2*(current assets (data4) – current liabilities (data5)) / total assets (data6) + 1.4*retained earnings (data36) / total assets (data6) + 3.3*(pretex income (data170) + interest expense (data15)) / total assets (data6) + 0.999*sales (data12) / total assets (data6)

Size: ln (total asset (data6))

Tobin's Q: (total assets (data6) + market capitalization (data199*data25) – common equity (data60)) / total assets (data6)

Credit rating: S&P long-term issuer credit rating (data280)

Stock returns volatility: standard deviation of daily stock returns in a fiscal year

Share turnover: median monthly volume over a fiscal year / mean shares outstanding over a fiscal year

Stock price run-ups: compounded monthly stock returns over the fiscal year

For *leverage* and *zscore*, we use year t-3 level as control variables. For *size*, *Tobin's Q*, *stock returns volatility* and *share turnover,* we take average of annual levels over t-2, t-1 and t as control variables. For stock return run-up, we use average of annual levels over t-3, t-2 and t-1 as control variable. We define *credit rating* over three years, t-2, t-1 and t as a dummy variable. It equals one if a firm has

credit rating in any year of t-2, t-1 or t and zero otherwise.

References

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